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BOARD OF EDUCATION.

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SPECIAL REPORTS  
ON  
EDUCATIONAL SUBJECTS.

VOLUME 15.

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SCHOOL TRAINING FOR THE HOME DUTIES OF WOMEN.

PART I.

THE TEACHING OF "DOMESTIC SCIENCE" IN THE UNITED STATES  
OF AMERICA.

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Presented to both Houses of Parliament by Command of His Majesty.

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PREFATORY NOTE TO VOLUME 15  
OF  
SPECIAL REPORTS ON EDUCATIONAL SUBJECTS.

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The following Report was prepared by Miss Ravenhill as the result of an investigation made by her at the joint request of the Board of Education, the West Riding County Council and the Royal Sanitary Institute. Reports upon certain aspects of her inquiries have already been presented to the West Riding County Council and the Royal Sanitary Institute, whilst the present volume contains the Report prepared by her for the Board of Education. Miss Ravenhill's paper was, with the exception of the Index, to all intents and purposes ready for publication in June, 1903, but in the autumn of that year, when the plans for the issue of a series of papers dealing with School Training for the Home Duties of Women, which had been laid by Mr. Sadler, came to be considered in detail, it was found necessary for various reasons to delay the preparation and publication of reports dealing with the work being done in this country. The results of investigation showed that, until the new Local Education Authorities had found more opportunity to organise this part of their work by the introduction of more systematised methods than have hitherto been possible, it would be wise to postpone any review in published form. On the other hand the absence of any material relating to certain European countries which devote special attention to the teaching of Domestic Economy rendered delay in the publication of a volume dealing with foreign countries inevitable. The intention was, therefore, to await the completion of reports from these countries before issuing any of the material which had been collected, but the increasing attention drawn to all matters affecting the health and well-being of the individual and the family, which has resulted from the Report of the Inter-departmental Committee on Physical Deterioration and the action of influential organisations which represented educational opinion of various kinds, have made it seem desirable to publish as much of the information as possible immediately. The lines of development in the United States of America have been national and little affected by the continental conditions of the Old

World, so that there was less reason here for grouping Miss Ravenhill's Report with the other foreign material. Hence its issue as Part I. of the Series.

It must be understood that, as in the case of previous Special Reports issued by the Board of Education, the Board do not make themselves responsible for the terms employed nor for the opinions expressed in the Report—such responsibility resting entirely with the Author.

The Board desire to take this opportunity of expressing their thanks to the many officials and teachers who, by their willing courtesy, aided Miss Ravenhill in collecting the materials for this Report; they also wish to place on record their indebtedness for the loan of the blocks from which the various plans inserted in this volume have been printed.

Office of Special Inquiries and Reports.  
May, 1905.

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**THE TEACHING OF "DOMESTIC SCIENCE"**  
**IN THE**  
**UNITED STATES OF AMERICA.**

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# THE TEACHING OF "DOMESTIC SCIENCE" IN THE UNITED STATES OF AMERICA.

## INTRODUCTION.

### A.—SCHEME OF PUBLIC EDUCATION.

One essential to the acquirement of an intelligent knowledge of the scope, methods and ultimate value of any special course of study carried on in the schools of a country is a clear comprehension of its educational system. In the case of the United States this process is considerably facilitated by the general adoption of one broad, basic principle, *viz.*, the provision throughout the country, from public funds, of a system of free education in all grades, from Kindergarten to University; merely nominal fees being exacted for text-books and laboratory equipment. President Draper, of the State University of Illinois, refers in one of his luminous and suggestive addresses to the public school system of the United States as the "one institution more completely representative of the American plan, spirit and purpose than any other in existence." Limits of space permit only of a very brief *résumé* of this comprehensive system, but some of its most salient features have been selected for presentation. The whole may be grouped under six divisions:—

1. Kindergartens, open to children from 3 to 7 years of age, where attendance is voluntary.

2. and 3. Primary and Grammar Schools, the curricula of which cover the ages of compulsory school attendance (variable in the different States), usually from 7 or 8 to 12 or 14 years of age.

4. High, or Secondary, Schools, offering a four-years' course, for pupils from 14 to 18. (Provision for evening classes is usually made in all city Grammar and High Schools.)

5. Colleges (State, Agricultural, Normal, etc.), attended by students from 18 to 22.

6. Universities, for post graduate courses.

That part of the system usually described as PUBLIC consists of three or four grades of schools, known as Primary, Grammar and High, or as Primary, Intermediate, Grammar and High. These grades of schools are distinguished from one another by the topics and methods introduced into their courses of study, and by the kind of mental activity required in pursuing them. In Primary, Intermediate, and Grammar Schools (which are very generally grouped under the denomination "Grade Schools"), the curriculum usually includes reading, writing, arithmetic, geography, history, physiology and hygiene, drawing, nature study and physical culture. In the more advanced educational institutions the "elective" system in force permits selection from a wider range of subjects, while actually reducing the number included in the particular course selected by the individual student. The majority of High Schools provide six or seven alternative courses; these include a good "all round" general

course, a classical, a scientific, a commercial course, and so forth. High Schools especially for "manual training" (mechanics, engineering, the domestic sciences, etc.) are provided in most cities, and take equal rank with those whose special aim is the preparation of pupils for college. The manual training courses include modern languages, literature, history and geography, in addition to the study of chemistry, physics, drawing, etc., with the direct object of developing breadth of view and well-balanced minds in their students. The High School movement is growing with enormous rapidity at the present time.

Private  
Schools.

In addition to this general provision for the education of the people, in which the nation believes enthusiastically, a certain number of private schools (kindergarten, grammar, high, commercial, art, industrial, professional, denominational) are to be found in large cities, such as New York, Boston, Chicago and Detroit. In these the courses are practically identical with those in the public schools, but the demands of social caste are considered and secured by the exaction of fees.

State  
Agricultural  
Colleges.

State Agricultural Colleges are the outcome of a general intellectual and industrial advance which widely affected public sentiment in the United States about half a century ago, from which arose a demand for a new class of institution to be entirely devoted to scientific and technical education. Some efforts were made to supply this demand by private enterprise, but the people soon grasped the advantage which would result from the organisation and maintenance of these new institutions under State or national patronage; consequently the Bill, introduced into the House of Representatives in 1857 by Mr. Morrill, for the purpose of donating public lands to the several states and territories, received sufficient support to be passed in 1862. This Act secured "the endowment, support, and maintenance of at least one college in each State, where the leading objects shall be, without including other scientific and classical studies, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislature of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life." This great work has given free tuition to thousands of students, who have by this means been enabled to bring trained minds to the development of industries, and to utilise scientific facts and principles for their advancement. Under the provisions of the Morrill Acts, 64 State Colleges are now in operation in the several states and territories. They may be divided into three classes:—Colleges which have courses in agriculture only; Colleges which have courses in agriculture together with others in a variety of subjects, including specially, mechanic arts; and, thirdly, Colleges, or Schools, or Departments of Agriculture which form a part of universities. Their organisations are so wisely varied to meet the needs of local environment, that no one institution will serve as a type for all, but a representative university of this kind briefly describes,

itself in its publications as "simply the 13th, 14th, 15th, and 16th Grades of the State System of Public Free Education"; it considers itself to be related to the High schools just as they, in turn, are related to the Grades, and sets forth that it should be as natural for a pupil to look forward from the High school to the University as from the 8th Grade to the High school. The prevalent aim in these colleges is to give to the young people of both sexes the largest possible opportunity for both general and special training to prepare them for life; and to touch, in a practical and helpful way, every interest in the State. Admission to them has been hitherto on very easy terms; candidates are required to be 16 years of age, and can frequently matriculate on the strength of a High school certificate; but the whole standard of entrance requirements is likely to be considerably influenced in future, and undoubtedly will be raised, by the action of the recently formed College Entrance Examination Board.

The first Normal schools in the United States were founded in 1839. They, too, were an outgrowth of the national interest in popular education, particularly after German influence began to be felt; at first they were the joint product of private and public liberality; very soon, however, a considerable number became incorporated into the State system of public instruction. State or Municipal Governments now support upwards of 160, but this by no means represents the sources of supply for teachers in the States, as there are in addition, at least 178 private Normal schools; only about one-fourth as many students, however, graduate annually from these as from the institutions supported by public funds. Normal Schools.

The generosity of wealthy citizens is the source from which have sprung the magnificent, richly-endowed, Technical Institutes, which exert a perceptible influence to-day upon the social and industrial life of the United States. The Pratt Institute at Brooklyn, N.Y., the Drexel Institute at Philadelphia, the Eastman Institute at Rochester, the Lewis and Armour Institutes at Chicago, and many more, are affording opportunities to the ambitious, stimulating the laggard, and raising the tone and standard of student and professor throughout the country. The activity of these great independent educational centres "sets the pace" for institutions subject to state and municipal control; indeed, each derives benefit from the somewhat diverse methods adopted by its compeers to attain a common end. Technical Institutes.

To private munificence also is due, wholly or in part, the existence and endowment of some of the leading Universities, such as Columbia University, New York City, the University of Chicago, the Leland Stanford Junior University, California, and others. It is, perhaps, superfluous to draw attention to the adaptation to national needs of these as of all other parts of the educational system; but it is allowable to recall what Dr. W. T. Harris brings out in his monograph on "Elementary Education," prepared for the United States Educational Exhibit Universities.

at the Paris Exhibition, 1900, that "American universities exhibit only a portion of what, in Europe, is thought necessary to the constitution of a complete university, *viz.*, the traditional four Faculties of Theology, Law, Medicine, and Philosophy," because, "although all four may be in existence, they are not all organised and demonstrated on the same plane; but, on the other hand, they include elements which, in Europe, are strongly marked off from universities, *viz.*, technical schools and undergraduate schools." On this account the formation of new colleges and departments is effected with facility, and their curriculum is extended to include subjects unrecognised in such connections in Europe.

Co-education.

Co-education is the general practice throughout the whole educational system, though a few cities report separation of the sexes in High schools; and a very small minority report separate classes for boys and girls in some Grade schools. From the statistics published in 1900-1 by the National Commissioner of Education, it would appear that in about two-thirds of the total number of private schools reporting to the National Bureau at Washington, and in 65 per cent. of the colleges and universities, co-education is the policy; the advantages of the method preponderate so conclusively that reference to occasionally recorded disadvantages is rarely made.

Sources of Financial Support.

The national school system is supported wholly by taxation, imposed by each State or city, an appropriation for purposes of education being made from the general fund. The Federal Government has never exercised any official control over the public educational work of the country, but it has always shown its intimate interest by generous gifts to education in the form of land rights from the public domain; and its moral influence is wide reaching through the Bureau of Education at Washington. This Government Department was organised for the purpose of gathering the fullest information from the whole educational world, at home and abroad, and for its gratuitous dissemination to all interested therein; when the Bureau is under the direction of such a master mind as that of the present National Commissioner of Education, Dr. W. T. Harris, the extent of this influence for good is wellnigh incalculable.

National Bureau of Education.

Compulsory Attendance.

Attendance is compulsory, either at a public or approved private school, in thirty States, one Territory, and the District of Columbia; the most general obligatory period is from 8 to 14 years of age. Though the length of the nominal school year is about 200 days, statistics show that the average is considerably lower, amounting to not much more than 140. This is accounted for by the fact that, in rural districts, in order to facilitate agricultural operations, it is still a common practice to open the schools during the winter only, when, owing to difficulties of transit and bad weather, the regular attendance is much interfered with; thus the "average" length of the school year for the whole school population is very materially diminished. Laws which absolutely prohibit the employment

of children under a specified limit of age, in mercantile or manufacturing establishments, are in force and enforced in several States.

The Local Boards which have the management of the schools are generally termed "Boards of Education," and form departments of the State or city government. (In townships and districts the designations most generally used are School Directors or School Trustees. A township usually signifies six square miles of land, quite irrespective of the population, which may be numerous or nil; so many townships constitute a county, so many counties form a State.) These Boards are corporate bodies, and are empowered to make contracts; to acquire, hold, and dispose of property; to employ teachers and fix their salaries; to make the rules and regulations for schools, and to fix the course of study and the list of text-books to be used.

The following notes on the typical organisation of a city school system will serve to explain allusions in the text of this Report. Each Board of Education, created by law, is, in the majority of instances, elected by the people, though some important cities constitute exceptions to this rule of popular control; in these cases the members of the Board are nominated by the Mayor, or by the City Council, or even by the city judges, as at Philadelphia. The members serve gratuitously, and have full powers to establish, maintain, and control free public schools for all children of school age within the limits of the city, township, county, or State. In most cities the teachers are appointed by a committee of the Board; to an increasing extent they are required to be graduates of the city or county Normal School, or of an institution of equal or higher grade, i.e., they must have received definite training in the art of teaching. Annual estimates of the disbursements anticipated during the coming year must be made and submitted to the City Council. That body appropriates such varying sums of money for the purposes named in the estimates as they think proper, in view of all the other claims on the city's funds. Once appropriated, all such money is controlled by the Board of Education. Each Board has two principal executive officers, a secretary and a superintendent. The latter is expected to be an experienced educator, well versed in school management and a student of pedagogy on its philosophical side, he should also possess good administrative ability; the course of study adopted is, to a great extent, framed by the superintendent, and usually embodies his ideas. There are county superintendents of rural or township schools in about thirty-five States. In thirteen of these they are elected by the people, in the remainder they are appointed by certain state or county officers, or are chosen by the combined vote of the School Board. In addition, each State has a Superintendent of Public Instruction; he is variously described as Superintendent of Common Schools, of Public Schools, of Education, or as Commissioner of Public Schools.

It must be always borne in mind that the central Government of the United States exercises remote authority over the public Government.

schools, and has never attempted any control over education in the several States, though it has aided them by donations of land, and, in some cases, of money.

Develop-  
ment of  
Grade  
School  
Curriculum  
in Massa-  
chusetts.

A sketch of the progressive development of the Grade school programme in one State will best indicate the gradual expansion of the nation's educational ideals, and the influence exerted on public bodies by private initiative, when based on sound principles. The statutes of the State of Massachusetts require that in all the "common" schools, instruction be given in orthography, reading, writing, English language and grammar, geography, arithmetic, drawing, history of the United States, physiology and hygiene, and manual training. In cities and towns which have a population of more than 20,000, the same statutes *authorise* instruction, at the discretion of the school committees, in the following additional subjects: book-keeping, algebra, geometry, one or more of the foreign languages, the elements of natural science, kindergarten training, agriculture, sewing, cooking, vocal music, physical training, civil government and ethics. Thus to the reading and writing of the original colonial schools of Massachusetts have been added, in the following order: English grammar, spelling and arithmetic, in 1789; geography in 1826; history of the United States in 1857; music (optional) in 1860; drawing in 1870; sewing (optional) in 1876; physiology and hygiene in 1885; manual training in 1898. Several of these subjects were at first *allowed* and later *required*. Physiology, for instance, was *allowed* in 1850, *required* in 1885; drawing was *allowed* in 1860, *required* in 1870; manual training was *allowed* in 1884, *required* in 1898. The causes and the forces behind all this enlargement have been largely sociological, to a much less degree pedagogical. It is most significant that the original petition to the legislature in 1869 for compulsory instruction in industrial drawing was signed exclusively by business men, leaders in the great industries of the Commonwealth. They declared that for the United States to maintain its standard as a manufacturing nation drawing was an "essential" in elementary education. For similar utilitarian reasons manual training was introduced. Of the authorised subjects, several have been forced into the front rank of "essentials" by modern social conditions; this is specially true of sewing, cooking, physical training and elementary science; the last under the modern title "Nature Study" has very strong claims, and is now often utilised as an introduction to the science of home life as well as to physiology.

Education  
as a Social  
Institution.

This outline, necessarily incomplete, endorses the assertion that "the present elementary school course in the United States is not a miscellaneous collection of subjects brought together by the chance efforts of enthusiasts, but a conscious and intelligent effort of the people to frame a scheme of elementary instruction and training adapted to the changing conditions of social life. It is wisely recognised that when the Legislature decrees a certain subject shall be taught in all the schools, it does not by that Act say that it shall be taught to each pupil; the principle



of universal opportunity is the educational watchword." Dr. Murray Butler recently expressed this spirit in terms so suitable and explicit that their quotation from the "Educational Review" for May 1900 will best enforce the point. "Education, conceived as a social institution, is now being studied in the United States more widely and more energetically than ever before. The Chairs of education in the great universities are the natural leaders in this movement. It is carried on also in normal schools, in teachers' training classes, and in countless voluntary associations and clubs in every part of the country. Problems of organisation and administration, of educational theory, of practical procedure in teaching, of child nature, of hygiene and sanitation, are engaging attention everywhere. Herein lies the promise of great advances in the future. Enthusiasm, earnestness, and scientific method are all applied to the study of education in a way which makes it certain that the results will be fruitful. The future of democracy is bound up with the future of education."

Of the moulding influences at work on the great State system none is more powerful for good than the National Educational Association, which numbers its members by thousands, and is guided by some of the most gifted as well as most experienced educational leaders in the States. The bulky records of its annual meetings contain a mass of experience and suggestion combined with full recognition of the dignity and responsibility of teachers, and constitute a useful record of the worth of teaching ideals and of improved practice. Of the numerous organisations employed in the education of public opinion few can compete with this potent, wisely regulated force; though to University Extension lectures, Summer Schools and other culture agencies may be attributed a part of the prevalent public sympathy with, and respect for, the profession of teaching which prevails over a large part of the United States.

Influence of  
National  
Educational  
Association.

Under such circumstances it is conceivable that rational and universal education is looked upon by the American people as an element of national as well as of social strength; and that the public mind is set upon utilising a well-balanced school curriculum as a factor in the attainment of that high standard of prosperous life to which the nation aspires.

In the United States, as in Great Britain, detailed conceptions of the best methods to follow in the scheming of a school programme are almost as numerous as the individuals who concern themselves with the question in any of its aspects; but, emerging from this sea of opinions, are a few prominent personalities, whose freedom from prejudices or party spirit, scientific bases for their convictions, and courageous perseverance in face of obstacles and apparent failure, secure a fair trial for their systems, and influence gradually the educational spirit and practice of their country. Of these one of the most notable is Dr. John Dewey of Chicago University, who has drawn public attention to two "tragic" weaknesses in the old school system where, in his opinion, social spirit was wanting, being replaced

The School  
and the  
Home.

by "that mediæval misconception which limited learning to books." By precept and undaunted practice, Dr. Dewey impresses on those who have ears to hear and eyes to see that "the ideal school should reproduce systematically, and in a large, intelligent, and competent way, what in most households is done only in a comparatively meagre and haphazard manner;" while he maintains that "the root question of education is that of taking hold of a child's activities, of giving them direction, and of so training them as to produce valuable results."

#### B.—HISTORY AND DEVELOPMENT OF DOMESTIC SCIENCE TEACHING.

Educational  
versus  
utilitarian  
value of  
Domestic  
Science  
Teaching.

It seemed to me that these two broad generalisations constitute to-day the chief motive forces at work in the organisation of the best Domestic Science teaching in the United States. The original purely utilitarian spirit which led to its introduction is now somewhat adversely criticised and often strongly resisted; while the undoubted pedagogical and sociological value of the subject is emphasised and evidenced under the auspices of its ablest exponents. But though the end is not yet (for the finest courses are admittedly tentative, and those responsible for them are only "feeling their way," and buying their experience often at a high price) encouragement is not absent; men and women of many interests and of diverse callings are giving in their adherence to the belief that on pedagogical and sociological as well as on utilitarian and economical grounds, Domestic Science, under one or other of its designations, deserves, and must eventually find, a place in the well-balanced curriculum of all grades of educational institutions. For a small proportion of the population, or even of its responsible directing units, to reach this conclusion has demanded time, as is demonstrated by the following brief sketch of the growth of the movement.

On both sides of the Atlantic the term Domestic Science is still limited by a surprising number of people to the two subjects of cooking and sewing. The scope is nevertheless usually extended sufficiently to include an introduction to the elements of personal hygiene and house sanitation; and, in England, laundry work frequently comes under the same head. In the greater number of the States, this latter subject is very rarely included in any elementary school Domestic Economy curriculum, though it is being gradually introduced into Household Science courses in the High schools and colleges. In the first instance, the utilitarian aspect of Domestic Science alone was that considered in America; those who pressed its introduction into the schools were stimulated by a realisation of the deficiencies apparent in home management and experienced a sense of dismay at the evils to the community which result from this ignorance. A quarter of a century ago education was still defined as "the preparation for life," instead of being recognised, as it is now, as co-extensive with life; so, as this period of preparation was limited for a large proportion of the population, the desirability of including a practical knowledge of the Domestic

Arts in the Grade school programme seemed urgent, and led to the persevering efforts of private individuals which culminated in the adoption of cooking and sewing in the grammar schools of a few cities.

Almost without exception the existing recognition of the value of Domestic Science as a school subject, utilitarian or educational, is owing, in the first instance, to private enterprise, but before educational authorities would permit the introduction of the subject into schools, cookery lessons were given to public school children, from 1876 onwards, under the auspices of the Young Women's Christian Association, and other philanthropic bodies. The children of the poorest classes were those gathered in by these benevolent individuals; they were first instructed in the elements of needlework; simple training in housewifery under the name of "kitchen gardening"\* followed, succeeded later on by lessons in plain cooking.

Sewing was adopted first in the public schools of Boston, which led the way in this matter, about 1840, though little was done until 1865, when a lady furnished the materials for the children's work and defrayed the expenses of a seamstress and of a dress-maker, each of whom was engaged to teach an advanced class for half a day a week in the different schools. Eight years later a teacher was appointed to give her whole time to this work, and received an equal compensation with the regular teachers; in 1875 the important step was taken of appointing a special committee to supervise sewing in the schools throughout the whole city. At this promising moment the hopes of those interested were apparently doomed to disappointment, for the solicitor of the City Board of Education reported that it was illegal to spend public money for this purpose. Again private enterprise came to the rescue, and for the next twelve months the work was carried on entirely by private funds, until the legislature had passed a law authorising instruction in sewing in the public schools. To the present day, however, sewing is far from universally taught in the grade schools of the United States: and in quite a number of those where it is now found, it has been regularly introduced only within the last four or five years.

The germ from which the New York Cooking School has since developed came into being 30 years ago, when Miss Juliet Corson organised cooking classes for women of all social grades; public and private lessons being offered. The first public lesson to working women resulted in the formation of mission classes in cooking for children, and, about the same date, the Principal of Lassell's Seminary (Auburndale, Mass.) had sufficient enterprise

\*In the United States the term "kitchen gardening" signifies the training of children in domestic work under the guise of play. The utensils provided are in the form of toys, and each household operation is conducted on a scale proportioned to the size of the utensil. Small children from five years old and upward appear extremely interested and happy when thus engaged, but I think this method of teaching Household Science, has, in all cases, been confined to private organisations; it has never been considered sufficiently educational for adoption even in the kindergartens of the public schools.

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to invite Miss Maria Parloa to give a course of lessons to its students. In 1879, this lady pioneered the first training course in cooking to *teachers* at Chautauqua Summer Schools, but the subject was not introduced into the public schools even of Boston (which has been the most progressive city in this respect) until 1885. Philadelphia, Providence and Washington, rapidly followed Boston's example, and to-day cooking courses in grade schools are found in over fifty cities in the States, while each year sees an increase in this number. The introduction of sewing thus apparently preceded cooking, but its development has followed very similar lines, and in numerous cities both subjects are included in the curriculum. Meanwhile Domestic Science, on a far broader and more thorough basis, has been gradually receiving recognition at the hands of High school and college authorities, with excellent results. These indicate the altered conception of the educational value of the subject since the first awakening of interest in Domestic Economy some thirty-five years ago. It was somewhat after this date that the advocates for early introduction to, and training in, the domestic arts pressed their point by calling attention to the advantages these offer for the exercise of manual dexterity by girls. Unwittingly they made themselves responsible for the plausible and still current belief, that to deal with plastic materials under conditions where the attainment of the desired end (cultivation of strict accuracy and manual dexterity) by occasional failure and repeated practice cannot be permitted on account of cost or want of time, is of equal educational worth with the manipulation of wood and iron carried on simultaneously by the boys. This misunderstanding, in conjunction with the still evident existence of the purely utilitarian spirit, has hampered true progress in the treatment of Domestic Science throughout a large proportion of the United States. Fortunately a powerful note of progress has been sounded during the last decade, which has gained greatly in volume since the concentration of effort resulting from the initiation, in 1899, of the Lake Placid Conference of Teachers of Home Economics. The directly educational value of the subject in schools, its great scope, its intimate bearing on every phase of life, is now steadily gaining recognition, while the field it offers for the application of scientific principles, rather than for the mere acquirement of manual dexterity, is forcibly emphasised by sound authorities.

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Three or four years ago, Prof. W. O. Atwater (United States Dept. of Agriculture) made the observation that "the Science of Household Economics is now in what the chemists call the state of supersaturated solution which needs to crystallise out. Sometimes the point of a needle will start such crystallisation." This needle point would seem to have been introduced by the members of the Lake Placid Conference when they held their first meeting in September, 1899. The initiators believed that the time was ripe for some united action on the part of those most interested in Home Science (or Household Economics); (1) because of the benefit derived from wise organisation and

co-operation; (2) because of the growing popular feeling that the study of Home Science was one of the most important questions before the nation; (3) because the real worth but often mistaken treatment of the subject demanded the direction and initiative of trained, enthusiastic experts. Invitations were, therefore, issued for a conference on this important sociological problem; and the generous hospitality of the Lake Placid Club (in the Adirondack Mountains, New York State), was offered to, and accepted by, twenty or twenty-five ladies and gentlemen, earnest students of the subject, to whom it has been extended for the same purpose each successive year. The cordial recognition of the great services rendered to Household Science by Mrs. Ellen H. Richards, Professor of Sanitary Chemistry in the Massachusetts Institute of Technology, led to her unanimous election as chairman of the conference, a tribute to the unremitting and tactful efforts, which, backed by her profound scientific knowledge, are responsible for a high proportion of the recent developments in this subject, whether in the social or educational world.

The conference devoted its first meeting to the selection of a suitable designation for its subject, such as should be simple and yet comprehensive enough to cover sanitation, cookery, and kindred household sciences and arts, whether the instruction concerning them were given in kindergarten or college. After full discussion, the name "Home Economics" was agreed upon as the best title for the whole general subject. When thus classified as a distinct section of Economics, it can take its place logically in the college or university course to which its dignity, scope and sociological value entitle it; restricted to the narrower conception implied by the title of Household Arts, the conference was of opinion that it could not be suitably recognised as a part of a university curriculum. Though Home Economics was selected as the general descriptive term, it was agreed that other phrases might be advisedly used for subdivisions of the subject. Domestic Economy, for instance, might be appropriately reserved for lessons adapted to young pupils in kindergartens and grammar schools; Domestic Science might be applied to it in high schools, where food and house sanitation should be studied by scientific methods, while Household or Home Economics appeared the title best suited for college courses. It was also at once emphasised that the teacher of Domestic Science and Household Arts should be an "all round" woman; she should be qualified to bring a knowledge of many sciences and arts to bear on her work, and to this end a thorough practical training in each of these would be essential. The general opinion was in favour of intimate co-operation between special teachers of this subject with the other members of a school or college staff, and the desirability was pointed out of drawing the attention of educational authorities to the value of including some branches at least of Home Economics in school and college curricula, if only to combat the prevalent tendency to dissociate home life and interests from education, and thus, incidentally, to depreciate its dignity and influence.

At the second annual conference, held in July, 1900, a large proportion of the sessions was devoted to debates on courses of study; (a) for public schools; (b) for training teachers; (c) for colleges and universities; (d) for vacation and evening schools; (e) for university and extension teaching, as well as for other agencies devoted to the scientific and sociological study of the home. In the course of her introduction to the special subject for one meeting, namely, "Courses of study for the Grade schools," Mrs. Ellen H. Richards referred to the need of fundamental work that will touch the lives of *all* the people, and showed that, under existing conditions, the only place where this can be done is in the Grade Schools, where she said the aims of the whole course should be to develop power in children and to guide them in the use of this power over their own environment, food, clothing and shelter. The quotation of recent statistics showed that at least 40 per cent.

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of the pupils first enrolled drop out of school before the fifth grade ; and, though the National Commissioner of Education reports that "the increase in the number of high schools and in the number of students enrolled in them is something phenomenal," and highly satisfactory figures can also be quoted as to the growth in numbers of college students, it is but relatively few who as yet follow more advanced courses of study ; while, of these, the percentage who elect to devote definite attention during a part of these precious years to any aspect of sanitation, though on the increase, is still modest. This opinion was not merely endorsed by this conference, but is shared by those responsible for the grade school courses in several important cities.

With a view to discover to what extent such teaching is given in the elementary and secondary schools of the country, an inquiry was addressed during the following year to the Boards of Education of a number of cities by a specially appointed sub-committee. This *questionnaire* included the following points : (1) topics included ; (2) syllabus of courses ; (3) grades in which taught ; (4) time per hour, per week, per lesson ; (5) size of classes ; (6) cost of equipment and material ; (7) the value attached to the subject ; (8) the methods used to develop its value, either as manual training, applied science, or economics ; and (9) the methods used to correlate the subject to others. Unfortunately only 25 replies were received, and these, in several instances, were not complete. All but one course included cooking, however, in some form ; 13 included sanitation in part (as the care of plumbing and personal hygiene) ; 9 included sewing ; 10 included economics, but confined the subject chiefly to the economics of food supply ; few indicated appreciation of the value of time or of energy ; money value alone being taken into account. Even these imperfect returns seemed to indicate that the workers placed the educational value first, one alone emphasised the utilitarian phase, though great diversity of opinion was reported as to the methods used to develop the value of the subject. In their discussion of an analysis of these returns, the conference concluded that to take its proper place in educational work, the subject of Home Economics or Domestic Economy must be both narrowed and broadened ; narrowed till it shut out much that, though useful, is not of great educational value, in that it has not been correlated with other branches of study ; made broader, in that the subject of the hygiene of the home, including foods and sanitation, should be so woven into the sciences and economics that it will be the foundation for a liberal culture.

Another sub-committee of the same conference presented through its representative, Dean Marion Talbot, Professor of Sanitary Science in the University of Chicago, a report upon the existing courses of study related to Home Economics in colleges and universities ; the work of inquiry had been carried out by Mrs. Mary Robert Smith of Leland Stanford University. Circular letters were sent to 89 different institutions, asking what they offered in courses on domestic science or household economics, personal hygiene, sanitation, nursing, bacteriology, domestic architecture, etc. Out of the 89, 58 reported work in one or other lines ; 13 had nothing, and 18 did not reply.

One of the concluding resolutions at this second conference has already borne fruit. It was resolved that "the time has come when public interest demands the recognition of Home Economics as a training of the child for efficient citizenship ; that the National Education Association be asked to consider and create a Department of Home Economics." This resolution was passed in July, 1900. In July, 1901, the Council of the National Educational Association included a "Round Table" of Domestic Science for the first time in the programme of its annual meeting.

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ference. It was my pleasant privilege to attend the third annual meeting of the Lake Placid Conference, where the 30 invited members included teachers or professors in every grade of educational institution, inspectors, and the presidents of the most prominent social organisations for the advancement of Hygiene and Domestic Science. The representative character of the conference is apparent from the fact that its members were at work in at least 15 States, and held degrees from 15 different colleges.

The attention of the conference was concentrated chiefly on the consideration of a Report, prepared by a small committee and presented by the chairman, Miss Helen Kinné, Professor of Domestic Science at Teachers College, Columbia University. This report had occupied 3 years in its preparation and its suggestive, useful character may be best gauged by a perusal of the following extracts:—"While there is a growing appreciation of such work (*i.e.*, the teaching of Household Economics) in the schools, as evidenced by its introduction in many new places, there is also a sceptical attitude in the minds of many as to its value, a tendency to class it among fads, to regard it as one more of the new subjects that are over-crowding the curriculum. Even among superintendents, general teachers, and parents who are its friends, there is a lack of formulated opinion as to its value, and a tendency to throw responsibility on the special teacher, and consequently there is lack of vital connection with other school work. There is also no common understanding among special teachers of the subject, and little intelligent and interested discussion in general educational conferences. Yet statistics show that so-called Domestic Science, in some form, is taught in the elementary schools of more than fifty cities in the United States, in high schools and manual training schools supported by public funds, and that it is established in an increasing number of State agricultural colleges and universities. There are hundreds of teachers at work at good salaries, and schools of pedagogy and technical schools are sending out more workers each year. Hence the schoolman who takes time to consider the situation finds himself confronted by an extraordinary economic incongruity, the expenditure by School Boards of public funds for maintaining a subject about which they know little or nothing. The purpose of the report is to present the whole matter to principals and general teachers for discussion, by defining the subject, formulating a statement of its educative value, and proposing definite courses of study. It, therefore, propounds the problem 'What is Domestic Science and Art, or Home Economics?' Here are various household arts, such as preparation of food, making of garments and household articles, and keeping of things clean. In carrying on certain of these processes, particularly cooking and cleaning, we are working with forces outside ourselves, and when we ask what these forces are, and how they behave, we discover that here in these matters of daily life we are applying the principles of chemistry, physics and biology. In other processes, such as sewing, weaving, and basketry, we are dealing with form and colour, and so are applying the fine arts in the home. *Per se*, then, broadly speaking, our subject is one form of applied science and art.

"But home economics is more than the application of science and fine arts merely to the end that certain results may be correctly reached, or certain articles artistically made, for we must consider the place of these arts in the social order, and this brings us immediately to the thought of the home and its conduct; *the home, as the place where the individual is given such physical and ethical surroundings, that he is made an effective human being; the conduct of the home, on the material side, as the seeking to produce the best results with the least expenditure of energy, material, time, and money.* Here we have reached the study of economics; the economics of home consumption. To sum up the whole matter, then, our subject consists of certain household arts and activities, based on a number of sciences, and leading to the study of economics."

The Report next discusses the value of the subject, which it presents from three points of view; that of society, of the individual, and of the school in its attempt to train the individual for himself and for society.

"... Does society as a whole show any needs that such a study would meet and answer? Surely the most casual student of present social conditions must see that a large proportion of our population, both rich and poor, is in a poor physical condition, and that there is in consequence great economic waste; for lack of vigour means lack of effective accomplishment, and also makes necessary large expenditure for remedial measures. With better shelter, food, water, ventilation, rational cleanliness and proper clothing, a check would be placed on this enormous waste, more real work would be

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done, and there would be fewer patent foods, medicines, and hospitals. Another common waste is through poor buying and extravagant use of materials." "To what," it continues, "are these things due? Doubtless to many influences, but potent among them are two: (1) Ignorance of women on these points in the management of the household; and, (2) Ignorance of men and women together in the management of that larger household, the city. (1) Domestic and economic conditions have greatly changed during the last half century, and while men have met such changes in their business lives and adapted themselves to them, women go on in many respects in the ways which were adequate in the days of their grandmothers, but which are far from sufficient now. Again, the daughter from the family of small means must often take her place as a breadwinner outside the home, and the child of well-to-do parents is absorbed in her school life. Both, equally, enter upon their married life with little or no knowledge of the business of house-keeping before them. (2) If all our citizens, both men and women, were alive to the physical and economic evils consequent on bad building, imperfect water supplies, defective disposal of waste, and dirty streets, these things could not exist. No political organisation could hoodwink such intelligence into surrender of the right to sanitary surroundings. The teaching of Home Economics should go far to correct these errors, for it emphasises health as a normal condition, and gives knowledge of the physical conditions that will maintain this; emphasises the home as the unit of society, and the management of the home as a business needing brain and special training; shows how, on the economic side of marriage, the wife is the business partner, that her part as spender and manager is no less important than the husband's as earner, and that he cannot succeed if she fails to meet her obligations."

The Report next dwells upon the educational advantages to the individual consequent upon a right introduction of the subject into the school timetable. "Experience offers evidence that children gain increased power of muscular control and expression through the hand work; they become self-reliant and useful to others by the capacity thus evolved, while the variety of occupation is not only agreeable at the time, but conduces to their social value. The subject also affords excellent opportunities for the development of the relating power, that is, for tracing cause and effect, and for the realisation that successful practice depends upon a firm grasp of underlying principles. Luck becomes a myth; judgment as to time is developed, and good taste is formed in regard to colour and form, in furnishings and clothing. It becomes apparent to the most self-willed child, that in dealing with materials and forces it is not as *we* please, but as *nature* pleases, and to control her we must obey her. While, at first sight, it may seem a small matter for pupils to make a loaf of good bread, yet see what it involves. They are free individuals and may do as they please. They may please to pour boiling water on the yeast, forget the salt, refuse to make their muscles work effectively, let the dough stand a length of time convenient to themselves, and fail to manage the oven dampers; what then? Nature has gone quietly on her way and returns to them their just due; their own careless, irresponsible selves expressed in a soggy, dark, sour, ill-shaped loaf of bread. We have here in concrete terms the whole matter of the limitation of the individual by his environment. Through a series of such experiences there comes an understanding of what law means, and self-control, obedience, and freedom. . . . Taking the thought and hand work together, the subject gives the school a field where the knowledge and powers gained in other subjects may be applied to practical ends; and conversely, it stimulates an interest in other subjects. This idea of application is an essential part of the plan that aims to make a close connection between school and home life."

The Report proceeds to consider the general order of the subjects included in Household Arts, and Economics, beginning with the lower elementary grades and running through the high school. Remembering the definition of the subject as a whole, as consisting of household arts based on several sciences and leading to the study of economics, the committee recommend that as, in the lower grades, the child is interested in the mere doing (the play element should enter largely into his activities),



the art side alone should be given; such processes as sewing, weaving, basketry and cooking may be used as "forms of expression," with an occasional short series of cooking lessons. "In the Upper Elementary, the scientific aspect can be introduced; sewing, cooking, cleaning, can be given in continuous courses; the reasons why can be developed and principles established. The economic aspect also arises in the necessary decisions upon the best way to carry on a process in order to save time or strength, all other things being equal, or the best material to select for a given purpose. The health aspect finds its place by a study of cleanliness, not merely as the cleaning of things soiled by use, but, as the provision of clean air, clean water, clean food, and good drainage. In the high school, the activities must continue, but are less prominent, therefore the scientific aspect should be further emphasised, and the economic somewhat fully developed. The definite subjects of study are food, in its relation to nutrition; clothing in its relation to health, and as embodying the beautiful; the house with its artistic and hygienic furnishing, its sanitation and practical management; the health of the household, as dependent on personal hygiene—this should comprehend the care of little children, as well as of those who are ill and injured. Thus, looked at as a whole, from the Primary Grades through the High School, the subject is seen to develop from the concrete doing through the scientific to the economic, but with no sharp dividing lines. This is not only the natural unfolding of the subject in itself, but it meets the natural interest of the pupil at each stage of his growth. First, we like to do, just for the pleasure of doing; then we ask why; and not until the mind is maturing do we care to balance values, and judge of the worth of things in relation to each other; and here are the three phases of our subject, the art, the science, and the economic."

The Committee's next consideration was the arrangement of definite courses, where "it is necessary to have in mind some of the practical difficulties which arise in the arrangement of an ideal course; and where the differences of opinion which exist among thoughtful special teachers must be clearly understood and be given due weight." These include the problems of the school itself. "Our first stumbling block is the fact that if we are to help the mass of our people by means of this subject, we must do it in the elementary school; and if the work is to have real social value, we must enforce there those economic aspects that in an ideal scheme develop in perfection in the high school. The problem is to do this without overcrowding the school course, to make the work natural and interesting, and to avoid dogmatizing. Our second difficulty meets us in the high school. In spite of the numbers of manual training high schools, and high schools giving so called English, scientific, or general courses, large numbers of our high school pupils are in college preparatory schools. The main purpose of the college preparatory is to put the pupil into college, and 'time is worth £1,000 a minute.' Of course, the manual training school gives an adequate amount of time to the home subjects; the 'general' course may do so, and becomes a better course in consequence; but the 'college preparatory,'—how can it! What it can or can not do depends on the dictum of the colleges. While it is encouraging to note the broadening of entrance requirements, in general, there is nothing as yet that really touches this subject. And is it not to these very girls, who are to spend four years as college students, removed from responsibility as to home life, that we need to give a bent toward the thought of home as a field for the use of their best powers?"

The opinions of special teachers are next taken into account. "While thoughtful teachers are agreed as to the purpose of this work, and have the same ends in view, it is but natural that they should differ as to the form of the work. The main points at issue occur in the lower elementary and in the high school. There are some teachers who advocate, even in the first, second, and third years in school, continuous courses in cooking, and would, indeed, have it run through every year of the elementary. Others advocate an occasional short series of cooking lessons as expression work, specially in connection with a study of primitive life, equally with other hand work. It may be said for the former that they certainly touch

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a large mass of children on the practical side, for the dropping out from school soon begins. Against this plan and in favour of the second, it may be said that this form of hand work is in itself more difficult and better suited to the older pupils, and that the youngest pupils are not ready to grasp the principles that need to be developed. Again, economy of time must be considered; a subject may be good, but others, too, are good, and each subject should claim only that amount of time that makes it effective in connection with others for the child's development, rather than for its own complete unfolding. It would seem that cooking and cleaning need not require so much time as this first plan involves, when properly combined with other household arts and with all other kinds of hand work. It must be added that such work in the lower elementary is new, and is carried on in few schools. It is fortunate, however, that both of these schemes are in actual practice and that experience will argue for or against. The difference in opinion as to the high school courses is in regard to the amount of practical work and its relation to the other work of the high school. One attitude is this: that the hand work belongs strictly in the elementary school, because that is the time to develop self-activity and right habits of doing; that if the household arts belong in the high school at all, they should be at the minimum and in connection with some other subject, not in consecutive courses; as, for instance, in studying acids and bases in chemistry, baking powder could be made, and even baking powder biscuit; or in physics, in studying siphonage, traps could be examined and cleaned. The main thought is to emphasise the scientific and economic aspect, by reducing the actual practice of the arts themselves, and by giving those arts directly in connection with the scientific courses. Another plan while emphasising and developing the scientific and economic aspects, would retain the practice of the arts in continuous courses, running parallel with the science and fine arts work, and closely connected with them. The advocates of this arrangement feel that in this way the girl's nature and likings are taken into account as they are not in the other. The first plan seems to assume a sudden change in the girl in passing from the elementary to the high school that really does not occur. Indeed, the first year high school girl is apt to be in a state of disorganisation, and is in the high school rather than of it, so far as serious and thoughtful work is concerned. She cares little for science *per se*, and nothing for economics, but is delighted still to plan, prepare, and serve a meal or trim a hat. Shall we not take her as she is, give her what she likes to do, and lead her through that doing to see what lies below it, and so develop her interest in science and in greater things? While the former plan may be the ideal one, the real girl seems to demand its modification. . . ."

To facilitate the criticisms and suggestions which it was the object of this Report to provoke, several tabulated schemes are included, illustrative of these various stages and methods of treating the subject. Its comprehensive character is further emphasised by the following extracts: "Certain practical considerations will suggest themselves as to the teaching staff, equipment, and cost of materials. First, as to the teacher. It is being demonstrated in a few schools that in the lowest grades the general teacher can carry on the various kinds of hand work without difficulty or overcrowding. In the 7th and 8th Grades it is desirable to have a special teacher for household arts, but teachers can be found who are able to combine the various kinds of work. In the high school, if the course is well developed, running through two or three years, and with large numbers of pupils, more than one special teacher is proved to be necessary; and, so far, there seems to have arisen a natural division between the household arts that lean towards the sciences and those that lean towards the fine arts.

"Next, equipment and material. Up to the 7th grade most of the work, such as weaving, basketry, and sewing, can be carried on in the ordinary schoolroom. If cooking and cleaning are introduced below the 7th grade, some small amount of equipment is necessary. This, however, can be provided at a cost of from \$30 to \$100 (£6 to £20) for fifteen to twenty children, and may consist of two or three work tables, a few gas stoves, and

utensils, and a cupboard for utensils and necessary food materials. Below the 7th grade the cost of all kinds of materials per child is from two to three cents (1d. or 1½d.) per lesson. For the work in the 7th and 8th grades, where cooking, housekeeping, and cleaning are taught, an extra room and special equipment, costing from \$500 to \$1,000 (£100 to £200), are necessary. In these grades cost of material for cooking and cleaning is four to five cents per child per lesson. In the high school cost of equipment will depend on the nature of the work, as indicated above. Equipments, ranging from \$1,000 to \$1,500 (£200 to £300), and even more, are put into our manual training schools, but effective work can be done with an equipment at \$1,000 or less. But when the amount of money expended is too small, results must be unsatisfactory. The conditions are so variable that no fixed standard in equipment is possible. Apparatus should be good in quality but not excessive in amount. If too meagre, the work is restricted, and pupils do not learn the principles or value of good tools. If too elaborate, ingenuity is not developed, and extravagant standards are established. Cost of materials, too, is variable. Salaries of special teachers in elementary grades are \$600 to \$1,000 (£120 to £200) a year; in high schools, \$800 to \$1,800 (£160 to £360); this will vary in different localities, depending on cost of living governed by local conditions."

In conclusion, this suggestive and well-considered Report declares that "Good teaching of this subject is based upon the same principles as good teaching of other subjects, and the work should be in the hands of trained teachers, not of those who are familiar with the practical side of the subject only;" while, with compulsory briefness, it touches on the question as to the desirability of giving Home Economics to boys. "So far, boys and girls have shared in such work in the lower elementary grades, and in one school in the upper elementary also. Usually in the upper elementary the boys carry on heavier work in place of the domestic arts, and follow this by metal work in the high school. It seems necessary that boys as well as girls should understand hygiene and food values and their practical applications. If they do not share the household economic work with the girls, provision should certainly be made for this in their study of science, bearing in mind the responsibilities they assume later on as fathers, householders, or members of civic councils."

The consideration as to how far boys' education should include some introduction to the subject of Home Economics; and, in the event of its educational and sociological values being recognised, to what extent and in what form it should be presented, has assumed some prominence in certain minds, whose opinion is respected in the United States. Whether it be the immediate result of the co-educational teaching of the elements of Physiology and Hygiene during the first 7 or 8 years of school life, or whether the prevalent determination to attain the premier position among nations be the incentive, a realisation is evident on the part of both sexes that each is intimately connected with and responsible for the maintenance of the conditions essential to a healthy life. Some credit for this evident impulse to improve the conditions of home life is probably due to the State Board of Agriculture at Washington, which has carried on, for many years, true missionary work along lines at once simple and scientific, by the gratuitous diffusion of sound knowledge on the subject of food and diet in relation to the health of human beings. Then the desire to purify municipal politics, and to secure to each citizen in fact that which the constitution accords to him in theory, may

Influence of Lake Placid Conference. (a) Concerning the importance of home economics for both sexes.

also account for the growing appreciation that mere election by popular vote to a position of authority does not carry with it innate qualifications for the responsibilities assumed, but that previous preparation is demanded by honesty, if by no other motive. "Municipal Housekeeping," in which men play by far the more prominent part, is a common topic just now in many parts of the United States. As a consequence, opportunities have already been provided for students of both sexes in Colleges and Universities to follow courses in sanitation, chiefly in connection with the study of Sociology, Bacteriology, Household Science and Architecture. These assume that both have already received a slight, though practical, foundation in the elements of Hygiene in the Grade and High schools, where, obviously, such preliminary instruction is of great moment. As a matter of fact well-nigh every child does receive some teaching in the subject, but the time available is often limited, and the lessons may be not alone purely theoretical but confined to a very narrow presentation, so that at most, but a slight conception of its myriad ramifications through the whole structure of life is formed. It is against such unsatisfactory, contracted, lopsided teaching, that the Lake Placid Conference enters a protest. Two points hitherto often overlooked in the framing of school courses have been, the desirability of linking school and home life with ties of mutual interest, and the unrecognised importance attached by children to subjects included in their school programme. If home and the conduct of daily life be ignored by the teaching staff and find no place in the weekly studies, the scholars are apt tacitly to assume that they are of no account, that training in right methods is requisite only in school subjects, and that household duties do not demand, or are not worth, the exercise of qualities studiously cultivated in school practice for use in other phases of future life. Possibly these thoughts, too, as well as the point of early leakage from school, were in the minds of those responsible for the Report from which I have quoted at such length.

(b) On  
Women's  
Social  
Organisa-  
tions.

As has been pointed out, the Lake Placid Conference conceives of Home Economics as a subject well-nigh as all-embracing as that comprehensive term, Hygiene. That this influence and these conceptions carry social weight is apparent from their echoes in the following quotation from a pamphlet on "Domestic Economy," widely circulated among, and approved by, the Ohio Federation of Women's Clubs, which numbers many thousand members.

"The question is frequently asked—'What is meant by Domestic Economy?' and the answer is confidently given—'Cooking and Sewing.' Such a conception is pitifully narrow. If domestic economy spans no broader horizon than this, there is just reason why educators should stop and count the cost, but cooking and sewing are only small parts of the subject, as are carbon and hydrogen small parts in the science of chemistry. To those of us who have most studied the subject, it is as broad as the world and as vital as life. . . . By political economy or national economy is meant all that bears most intimately upon state and nation; domestic economy then should include *all* that bears upon home life and human development, and if this is true it is the nucleus of every other economy in

the world. No ology or ism but touches it. History, science, literature, language and economics are part and parcel with it, and link us to the past. Art is the stimulus to greater beauty and truer ideals for to-day, and sociology and religion are the beacon lights for the future. . . . Dewey says, 'After all, *life* is the great thing, the life of the child, not more than the life of the man,' and domestic economy means the conception and maintenance of life at its best. Its whole aim should be to create the best children, to place them in the safest environment, and to so train them that they shall develop into the most perfect type of men or women, physically, mentally, and morally. . . . To accomplish the desired result help must come from all sides, the ward school has its particular field, the high school may advance the work, the college and university must train the leaders, but back of all must stand the home and the men and women who are bearing the burdens of life to-day. When the parents of our country are convinced that a training for the most practical and sacred duties of life is needful for the truest development of their children, then from educators and statesmen will come a response to their call. . . . An improved home life is perhaps not all that is necessary to humanity, but if mothers and teachers were better informed concerning the actual needs of the human being, the result would be a superior race of men. From no source but from the homes can a nation recruit her citizens, and upon the training of her girls depend these homes. . . . We are yet to learn that there is power in correct living, and that nothing which pertains to life is trivial or unimportant.\*

The gradual formation of an intelligent public opinion on this subject, the promising growth of popular support in favour of its educational developments, are assisted by the action of this and other State Federations of Women's Clubs, and also by the influence of the National Household Economic Association, the Women's Educational and Industrial Union, the Association of College Alumnae, and similar bodies.\* These social organisations have done good service, not alone in the direction of securing a recognition of the school value of Domestic Science, but by the fact that the grounds upon which their advocacy is based is a realisation, by their members, of their own defective knowledge in this respect and of the price paid by those dependent upon them for their needless and costly ignorance.

Allusion has already been made to the three classes of opinion held and supported in the States as to the character, position, and methods to be employed in the teaching of Domestic Science or Household Economics, each of which finds representation in different cities and in schools of various types and grades:—

Three  
Schools of  
Thought as  
to Domestic  
Science  
Teaching.

1. The utilitarian party, who desire to secure instruction for girls in cooking, sewing, cleaning and the elements of house sanitation, with the sole view of preparing the home makers of the future for the duties which will devolve upon them; and by this means to raise the standard of health and happiness among the people. The supporters of this opinion ask, therefore, that practical work in domestic subjects shall be included at an age which shall secure its advantages for all girls before "leakage" sets in, and that the courses shall bear as directly as may be upon the immediate economic necessities of the pupils; facility of accomplishment being more emphasised than reasons for results gained.

\* See Part III. of Report.

2. The manual training advocates, who hopefully anticipate the attainment of two, or even three, ends; viz., the acquirement of such desirable faculties as quick observation, rapid correlation between hand and eye, careful precision and skilled fingers, by means of and coupled with increased command of the household arts. In addition they hope that a realisation of the dexterity and thought demanded by right manipulation will lend new dignity to the materials employed and to the home in which they find their natural place.

3. Those who have recognised the real educational importance of the subject in all its fulness and scope, when judiciously introduced into schools, quite apart from immediate utility or from the possible acquirement of manual dexterity. The supporters of this view consider the former conceptions incomplete, possibly mistaken, estimates of its real worth. To them its value lies in the field it offers for the application of scientific knowledge and for the exercise of the arts; in the strong social links it forges between school and home life at an early period; in the dignity it attaches to domestic matters at a later stage; and in the introduction which it involves to economic and sociological problems, when studied in its entirety by more advanced students.

Diversity of Educational Methods in Practice.

It will be well at this point to draw attention to, and to lay emphatic stress upon, the fact that no generalisation can be safely made upon educational methods in the United States. The elasticity permitted and independence possessed lead, as one result, to a diversity of detail in each city, often in each school of a city. This, while beneficial to those immediately concerned, is bewildering and discouraging to a "foreigner," who desires to form and to record an accurate conception of which method, among many, yields the most satisfactory results. It is possible to broadly classify the objects in view as utilitarian, manual training, or educational; but, in practice, the line of division is rarely defined with absolute clearness, and exceptions would almost equal the number which conform even to a very broad rule.

Under one or other title, and to a greater or less extent, Domestic Science finds a place in every type of educational institution. These may be classified under the main divisions of I. State Institutions, supported by taxation and controlled by the people, at which attendance is gratuitous; and II. Private Institutions, endowed by individual munificence, independent of popular control, at which the payment of fees is required.

The accompanying table will serve to convey some idea of the diversity of practice which obtains in Grade and High Schools with respect to the teaching of even two branches of Domestic Science. The particulars are adapted by kind permission from "Teachers College Record," for November, 1901, which contains a mass of interesting details upon the subjects therein grouped as Manual Training.

	Grade Schools.									High Schools.			
	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	I.	II.	III.	IV.
Lewiston, Me.					S.	S.	S.	S.	S.				
Brookline, Mass.			S.	S.	S.	S.	S. Ck.	Ck.	Ck.				
Poston, Mass.			S.	S.	S.	S.	S.	Ck.	Ck.				
Concord, Mass.					S.	S.	S.	S.	S.				
Dedham, Mass.				S.	S.	S.	S.	S.	S.				
Fall River, Mass.				S.	S.	S.	S.	S.	S.				
Fitchburg, Mass.								S.	S.	S.			
Medford, Mass.				S.	S.	S.	S.	S.	S.	Ck.			
Natick, Mass.								S.	S.	S.			
N. Easton, Mass.	S.	S.	S.	S.	S.	S.	S.	S.	S. Ck.	S. Ck.			
Waltham, Mass.					S.	S.	S.	S.	S.	Ck.			
Hartford, Ct.										Ck.	Ck.	Ck.	
New Haven, Ct.					S. Ck.	S. Ck.	Ck.	S. Ck.	S. Ck.				
Binghamton, N. Y.										Ck.		S. Ck.	
Brooklyn, N. Y., M. T. H. S.										S. Ck.	S.		
Brooklyn, N. Y., Pratt Institute.										S.	S.	S.	Ck.
Ithaca, N. Y.						S.	S.	S.	S.				
Jamestown, N. Y.	S.	S.	S.	S.	S.	S.	S.	S.	Ck.				
New York, N. Y.			S.	S.	S.	S.	S. Ck.	S.	S.				
Newburgh, N. Y.			S.	S.	S.	S.	S.	S.	S.				
Syracuse, N. Y.						S. Ck.	S. Ck.	S. Ck.	S. Ck.				
Utica, N. Y.					S.	S.	S.	Ck.	Ck.				
Yonkers, N. Y.				S.	S.	Ck.	S.	S.	S.				
Asbury Park, N. Y.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	
Atlantic City, N. Y.					S.	S.	S.	S.	S.				
Camden N. Y.			S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.
Cape May, N. Y.	S.	S.	S.	S.	S.	S.	S.	S.	S.				
Carlstadt, N. Y.					S.	S.	S.	S.	S.				
Garfield, N. Y.			S.	S.	S.	S.	S.	S.	S.				
Hackensack, N. Y.			S.	S.	S.	S.	S.	S.	S.				
Hoboken, N. Y.						S.	S.	S.	S.	Ck.			
Montclair N. Y.						S.	S.	S.	S.				
Newark, N. Y.							S.	S.	S.				
East Orange, N. Y.					S.	S.	S.	S.	S.	S.	S.	S.	
Orange, N. Y.					S.	S.	S.	S.	S.		Ck.	Ck.	
South Orange, N. Y.				S.	S.	S.	S.	S.	S.				
Passaic, N. Y.			S.	S.					Ck.				
Summit, N. Y.							S.	S.	S.				
Wilmington, Del.								S.	S.				
Columbus, Ga.	S.	S.			S.	S.	Ck.	Ck.	Ck.				
Cleveland, O.					S.	S.	Ck.	Ck.	Ck.				
Toledo, O., Uk T. S.					S.	S.	Ck.	Ck.	Ck.	Ck.	S.	Ck.	
Champaign, Ill.	S.	S.	S.	S.				S.	S.				
Chicago, Ill.								S.	S.				
Chicago, Farra School								S.	S.				
Chicago, Jewish Fr. School.	S.	S.	S.	S.	S.	S.	S. Ck.	S. Ck.	S. Ck.				
Minneapolis, Minn.				S.	S.	S.	Ck.	Ck.	Ck.				
Kansas City, Mo.				S.	S.	S.	Ck.	Ck.	Ck.	S.	S.		Ck.
Menominee, Wis.	S.	S.	S.	S.	S.	S.	S.	S.	S.	Ck.	S.	S.	Ck.
Oshkosh, Wis.					S.	S.	S. Ck.	S. Ck.	S. Ck.	S. Ck.	S. Ck.	S. Ck.	S. Ck.
Carthage, Mo.								S.	S.				
Moberly, Mo.						S.							
Denver, Cal., M. T. H. S.										S.	S.	Ck.	
San Francisco, Cal.			S.	S.	S.		S.	Ck.	Ck.				
San Francisco, School of Mech. Arts.										S.	S.	Ck.	

Note.—The above particulars are derived from "The Economics of Handwork in Elementary and Secondary Schools" by Louis Rouillion, Table A. "Manual training subjects given in the various school years in the schools enumerated." *Teachers College Record*, vol. 2, No. 5, November, 1901.

S.—Sewing. Ck.—Cooking.

If, for convenience sake, the broadest English definition of Use of the Domestic Science be employed throughout this Report to cover term Domestic Science. the topics which that subject comprises in this country, it will be found to include the greater part of the ground occupied by the different designations of which use is made for describing the same subjects in the United States. I shall therefore com-

prehend the following subjects under this generic term when discussing their treatment and position in all grades of educational institutions, where they appear variously grouped under the heads of Manual Training, Domestic Sciences, Domestic Arts, Household Economics, Physiology and Hygiene, and Sanitary Science:—

- (i.) Cookery.
- (ii.) Needlework.
- (iii.) Dressmaking.
- (iv.) Millinery.
- (v.) Laundry work.
- (vi.) Housewifery (which includes purchase of commodities).
- (vii.) Elements of Domestic and Personal Hygiene (including house sanitation).
- (viii.) Care of young children.

Scheme of  
the present  
report.

A number of specimen schemes and syllabuses, typical of Domestic Science and Hygiene courses and methods in each grade of institution are included in the text and in the Appendix. In the course of my comments upon these, I shall endeavour to give a just view of the present position and treatment of the subject, though time and space forbid the inclusion of much suggestive material.

In conclusion, concise allusion is also made to the problems of domestic service; for these, it is anticipated that at least partial solution may result from the educational efforts recorded in the following pages.

The Report is sub-divided as follows:—

#### Part I.—*State Institutions.*

- A.—Primary and Grammar, or Grade Schools.
- B.—High Schools.
- C.—Colleges.
- D.—Normal Colleges.

#### Part II.—*Private Institutions.*

- A.—Kindergartens, Primary and Grammar Schools.
- B.—High Schools.
- C.—Technical Institutes.
- D.—Women's Colleges.
- E.—Universities.

#### Part III.—*Social Agencies for the Promotion of Domestic Science Teaching.*

- A.—Women's Clubs.
- B.—Philanthropic Agencies.
- C.—Summer Schools.
- D.—University Extension.
- E.—The Domestic Service Problem.



## PART I.

## STATE INSTITUTIONS.

## A.—GRADE (PRIMARY AND GRAMMAR) SCHOOLS.

As the Report is primarily concerned with State educational methods, this class of institution will be that first treated.

Domestic Science is frequently limited in the Grade Schools to the subject of cookery, and its accompaniment of the elements of cleaning. Needlework is more often included under Manual Training than under Domestic Science, and, in some cities, *e.g.* Cleveland (Ohio), Detroit (Mich.), and Toledo, *both* subjects are classified under the former head. Laundry work has not yet found a place in elementary schools; a great prejudice exists against its introduction, in spite of home washing being the rule in most families, especially in cities where the industry has not been absorbed by the Chinese. Housewifery, apart from that incidental to a cookery course, is rarely taught, but the inclusion is contemplated of definite teaching on simple house sanitation; probably this is now a fact in Philadelphia. Considerable time and attention are devoted to the outlines of domestic and personal hygiene, but as subjects apart from Domestic Science; they constitute the obligatory elements in the curriculum of practically all State elementary schools. Dressmaking and millinery are obviously too advanced for children in the grade schools, though the cutting and making of a simple blouse lends great attraction under some Boards of Education to the last year of the needlework course. The Care of Young Children is not usually dealt with at this period of school life. New York City is a direct exception to this rule, though incidentally scholars of both sexes get some insight into the subject, or, more precisely, gain some conception of the care necessary to ensure health, by means of repeatedly impressed lessons in the elements of hygiene.

Domestic  
Science  
Subjects  
taught in  
Grade  
Schools.

## 1.—Cookery.

Cookery is not yet an obligatory subject under every Board of Education, though it is becoming so in the majority of cities, as the result largely of the gradual removal of the difficulties which previously existed. These included parental objections, want of necessary accommodation, or of appropriations for the purpose, and considerations as to suitable employment for the boys while their girl companions were thus occupied. The subject usually finds a place in the time-tables of the 6th or 7th and 8th grades of the grammar schools, more generally in the last two. As the age for compulsory school attendance is 5 years, the average age when these grades are reached is 12 or 13. Weekly lessons are everywhere the rule during one, or more generally two, school years of 8 or 9 months each. - At Brookline (Mass), where manual training and the domestic arts

Grades in  
which  
generally  
taught.

Length of  
Course and  
Methods of  
Teaching.

were developed and made increasingly educational during the last 10 years of Professor Dutton's valuable service as Superintendent of schools, cooking is practised by the girls for 2 hours a week for three years in the 6th, 7th and 8th grades, and a three years course is available also at Menominee for girls who pass on to the high school. Here the last, or 8th grade, year in the elementary schools is devoted to the introductory stages of cookery, serving, housekeeping, and house sanitation; the course being continued during the first two high school years. At Boston, Washington, Philadelphia, Toledo, and Chicago, the cookery course lasts two years, while in New York City it is confined to a year and a half, and at Cleveland (O.), and St. Louis (Mi.) to one school year. In these cities, however, the lessons are longer,  $2\frac{1}{2}$  hours being the rule, as against the  $1\frac{1}{2}$  hours at Toledo, Washington, and Chicago. Boston stands well with its 2 years' course of 2 hours lessons, but for the weekly loss of this half-hour at Washington some compensation exists in the small number (12) to which each class is limited, which favours careful individual guidance and supervision.

The number of scholars in a class is as variable as the length of the lessons. It is influenced by several factors. One of these is the almost impossible task, in some places, of keeping pace with the growth of the school population. In New York City, *e.g.* (a recognised proportion of whose children consists of very poor and ignorant emigrants), the Domestic Science Organiser (Mrs. Mary E. Williams), advises and sanctions classes of 40 or even 50 girls, in order to secure the advantage of some training for the largest possible number. The same cause and feeling are partially responsible for very similar conditions at Boston, though where possible the classes there are limited to 25, and an assistant is provided where this is not the case. Another factor appears in the relative proportion of boys to girls in any particular locality of a country where co-education is the accepted custom; it is, for instance, responsible at the present time for the organisation of small classes at Washington, though their small size is in part due to the fact that this city is characterised by its large number of relatively small schools, less crowded classes being the result. At Chicago, where the influx of emigrants is large, the size of the Domestic Science classes varies from 18 to 32. The average number in most cities is 20, and the general rule is individual work on the part of each child. Group work—two or more—is only introduced when the article does not lend itself to much subdivision, or when the principle cannot be illustrated without sufficient bulk. To this rule New York City, Washington, and Cleveland are the three prominent exceptions. In these cities one-third only of the girls do practical work, the remainder make observations and take notes. Such large and numerous classes entail very heavy work on the teachers, especially where the work is individual, as at Chicago; here nearly 600 girls pass through the hands of each teacher,

weekly, allowing for four  $1\frac{1}{2}$  hour classes per day of 30 girls each; the additional strain of securing a thorough "clean up" by each class during the already brief lesson involves much nerve tension and physical fatigue. The 2 or  $2\frac{1}{2}$  hour lessons at Philadelphia, although they permit of the attendance of but a quota of girls from each school, reduces the number of weekly classes per teacher to 10, and the number of children to be individually known by each teacher to about 200.

It is of interest to note that in Philadelphia, cookery classes were first organised 15 years ago, in the Girls' High School; the experiment proved so successful that in two years a place was found for the subject in the grade school programmes; even now, it is only an "optional," or "elective," but, nevertheless, very popular subject.

The system of "centres" seems general. These are attached in most instances to new schools, though the adaptation of basement rooms for this purpose is very common, in which case the light and ventilation are apt to be defective; still, great credit is due to organisers and teachers for the skilful care, thought, and personal trouble they spend to make the best of the second best premises. The Supervisor of Manual Training at Cleveland, Ohio (Mr. W. E. Roberts), has introduced a manual training centre method which presents various advantages, and has the merit of not being extravagant. A kitchen for girls and a carpenter's shop for boys are provided as an annex to the selected school buildings; the cost of building and equipment sufficient for classes of 20, respectively, averages £1,000; cloakrooms and sanitary conveniences are attached. Light, airy, suitably arranged apartments are provided, infinitely preferable to the more pretentious basement rooms frequently allotted to these purposes. This plan obviates the necessity for outside classes to enter the school building, and the proximity of the kitchen and workshop promotes mutual interest in each other's work among pupils who pursue all other studies together.\*

The number of centres provided in each city depends upon the time Domestic Science has been adopted as a school subject; whether it is required of all girls in the selected grades; upon the size of the classes; and last, but not least, upon the funds available for building and equipment. At Boston, where the subject has been taught many years, 22 centres exist, each attended by girls from 5 to 7 grammar schools; these centres

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\* Significant of the strong development and recognition of the social spirit in the United States, is a pleasant little custom which prevails in the city of Cleveland for maintaining sympathy between boy and girl classmates. Permission is given at suitable intervals for the interchange of visits at these manual training centres. Simple hospitality is dispensed in their kitchen by the girls, as on the occasion of my visit to the Wade Park School, where preparations were in force to entertain the boys with cocoa and cake, prepared by the young cooks. Later on the courtesy would be returned, by an invitation from the boys to inspect their workshop, when each would present a small specimen of his skill to one of the girl visitors.

“Centre  
System”—  
*continued.*

are convenient in situation, but many of them are only adapted rooms, basement or otherwise, though improvements now in progress will gradually replace these with modern apartments. At Chicago, where the subject was introduced in 1898, I found 11 centres; the same stage of adaptation is being gone through as at Boston, with a like promise of better things, already fulfilled in the newest schools. The accommodation, even with large classes, sufficed for less than one-half of those eligible to receive the instruction. At this date it is probably considerably increased.

Comparison with developments in New York City will exemplify the rapidity with which these take place. In 1898 only 4 cookery teachers were employed by the Board of Education of that city, though the subject had been tentatively introduced into the schools some years before. In May, 1901, the supervisor had 29 teachers under her charge, employed at 40 centres. There the basement plan does not obtain, but the kitchens are located on the top floor of the 4 and 5 storied buildings. This plan involves much stair climbing on all concerned, and on that account should be discountenanced unless lifts are provided, as is customary in High Schools when carried up to this height; in respect of light and ventilation such a position is admirable. Five centres suffice for the needs of a less populous city, such as Toledo, in spite of cookery being obligatory on all girls in the 7th and 8th grades since 1899; previous to that date it was “elective.” Spacious cooking “laboratories” are attached to the newest schools at Washington; hitherto, owing to want of space and the number of centres necessitated by the small classes and numerous schools, private houses have, in some instances, been employed for the purpose, and are still in use; these are unobjectionable under the exceptionable conditions which obtain there.

Equipment.

The small details of equipment are as variable as those of all the other particulars recorded, but the broad general plan is the same in all the cities I visited, or of whose courses I obtained reliable information. Even this, however, is subject to modification according to the method employed, either of individual work or of practice limited to a small group, or by the funds at the disposal of the organisers. Illustrations convey the best idea of the prominent feature which most conspicuously distinguishes an American school kitchen, or “cooking laboratory” from the appearance familiar in England. It consists of a table of varying length and form; three sides of a square to accommodate 20 students, as at the Pratt Institute and some of the Boston school centres; or a short oblong, just sufficient for two, or at most four, workers, as at the Ohio State University, the Toledo Manual Training School or the Bradley Institute, Peoria, Ill. Whatever the length, the table is usually of hard wood, from 30 inches to 33½ inches in height, about 25 inches wide, and calculated to allow from 25 inches to 33 inches per pupil according to size. I saw several instances where the front portion was wood, either plain, polished, covered with metal, slate or white glazed tiles, or coated with some vitreous preparation resembling glass. Mr. Louis Roubillon (Teachers

College, Columbia University) considers "that unglazed, vitrified, Equipment white tile laid over asphalted paper, bound at the table edge by —continued. a metal strip is perhaps the best, although somewhat expensive." At one high school each pupil is supplied with white American cloth to protect the polished wood, and an asbestos mat upon which to place her hot pans. The back half of the table may, or may not, be covered with sheet zinc; above this portion runs an iron grid raised about 6 or 8 inches; this may be continuous the whole length of a long table or be fitted in sections of 12 to 18 inches. It serves the dual purpose of a range which permits of individual cooking, and of a stand for hot pans; bunsen gas burners, or gas rings, are fitted underneath the grid, one for each pupil, and a considerable amount of the cooking processes are conducted by these means. When gas is not available, single burner oil stoves are substituted—one for each pupil. Each pupil's place, about two square feet at the table, is fitted as follows: slid immediately under the top are two boards, one for bread or pastry, one for meat, etc., below are two drawers, the deeper one usually provided with one or two sliding trays. In this drawer is kept the small ware in constant

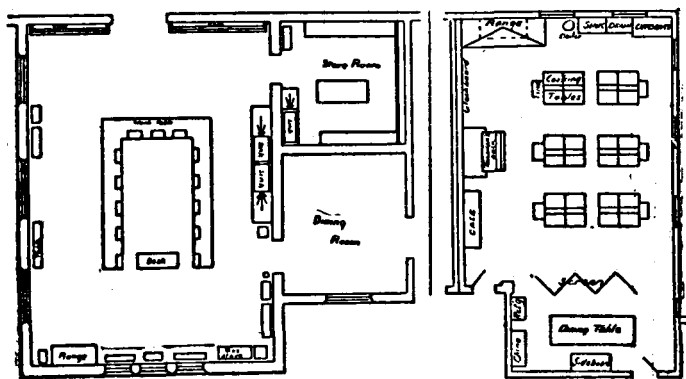


Fig. 1.

PLAN SHOWING HORSESHOE AND GROUP ARRANGEMENT OF COOKING TABLES.

Figs. 1, 2, 3 are reproduced by kind permission from "The Economics of Manual Training," Teachers College Record. Vol. II., No. 5, Nov. 1901.

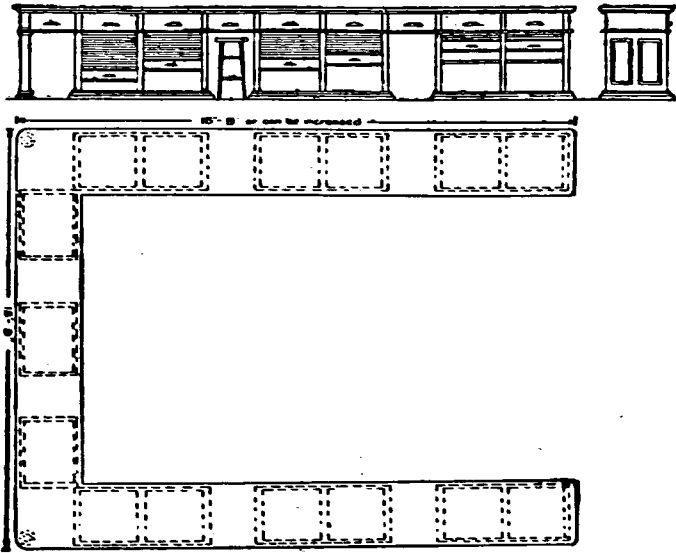


Fig. 2.

PLAN OF CONTINUOUS COOKING TABLE.

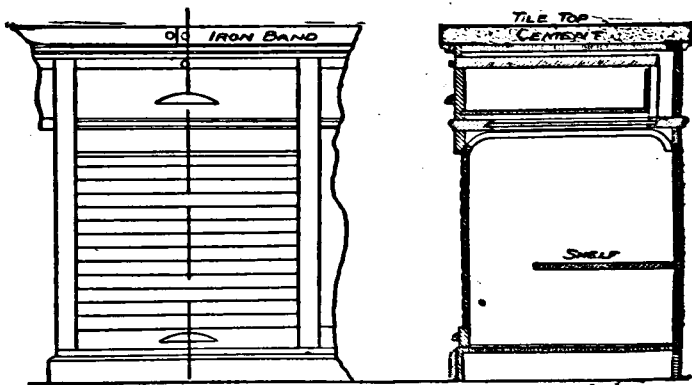


Fig. 3.

DETAIL OF FIG. 2.



use, generally two knives and forks, two tea-spoons, two dessert spoons, two table-spoons, two wooden spoons, two plates, salt and pepper boxes, glass or metal measuring cup,\* a small strainer, patty pans, and a box of matches. (Inexpensive appliances conducive to economic methods are freely provided, *e.g.*, "soap shakers," costing 5 cents; these consist of a small wire soap box at the end of a long wire handle, they are used for the rapid production of lather; the smallest fragments can be utilised for the purpose without wetting the hands, while the handles projecting from the pans serve, upon occasion, to remind the careless that soap is going to waste.) The equipment in hardware, always simple, is usually sufficient for 20-25 individuals. I saw instances of admirable ingenuity exercised by teachers to improvise a supply for the needs of individual work under the stress of the large classes in some cities; but a crowded classroom is not the right opportunity to make such additional demands on an already hard-worked teacher, and the principle of demanding resourcefulness under such conditions cannot be commended. In the second and shallower table-drawer, notebooks, recipes, and so forth, are kept. Below the drawers is a metal bin, used for either flour or potatoes, and a cupboard which usually contains a granite ware and a tin saucepan, a baking-dish, one or two china bowls of different sizes, and so forth. Between one drawer and the bin or cupboard is a sliding seat, of which prompt use is made, if a pause in active work occurs for the purpose of receiving directions from, or watching demonstrations by, the teacher. The dish-cloths, towels, etc., hang at one end of each table, while large utensils, such as a washing-up pan, hang generally at the other.

\*The glass or metal cup measure is too prominent in all cookery teaching and recipes in the United States and Canada not to demand fuller description. It offers the unquestionable advantages of economical simplicity, cleanliness and uniformity in practice, and when of glass leaves little to be desired. Its usual shape is slightly facetted; there are 4 broad and 8 narrow facets, and each of the 4 broad facets bears a scale on a different scheme of measurement, as follows:—

## FACETS.

I.	II.	III.		IV.
½ pint even full.	Coffee cup or 2 Tea cups.	Table spoonful.		Sugar.
6 oz.		Sugar.	Liquid.	5 oz.
1 gill	even full 1 Tea cup. Wine glass.	4	8	4 oz.
4 oz.		3	6	3 oz.
3 oz.		2	4	2 oz.
2 oz.		1	2	1 oz.
1 oz.				

The one measure can thus be employed for fluids and solids, is uniform throughout the country, and is the accepted standard upon which recipes are compounded.



**Equipment**—*continued.* In some recently fitted school-kitchens a small glazed earthen-ware sink finds a place in each cooking table, either at one end, or dividing the table into two halves. More generally the sink accommodation is provided against an outside wall, and, in either case, there is a good supply of hot and cold water available. In other respects the fittings closely conform to those customary in this country, though occasionally a six-foot marble table is provided for the making of pastry or of very refined dishes. The universal custom is to expose all pipes, whether for the supply of water or of gas, or for the removal of waste. The plumbing appears excellent, and, indeed, needs to be, in a country where the climate necessitates the protection of soil-pipes within the dwellings, and where sanitary fittings are furnished with far greater liberality of supply and consideration for comfort than is at present our habit. Pipes are usually painted white, in a few instances they are of polished metal; without exception they are well managed, so that, far from being an offence, they are pleasing to the eye, and contribute to cleanliness and convenience of access. A coal range and a gas range with ovens are found in most schools; in Technical Institutes conveniences for cooking by electricity are occasionally provided in addition. An Aladdin oven is a frequent feature, and is found very useful for soup-making, or for processes requiring slow, steady and prolonged heat. An ice-box of more or less pretension is considered almost as great, if not a greater, necessity than a coal range. Large cupboards are usually fixed against the walls; these are usually glazed. The "supply" cupboard contains the groceries, etc., in constant requisition, and specimens of preserves, canned fruit, etc., often the handiwork of former pupils; the china cupboard frequently displays a tasteful dinner and tea-service in addition to bare necessaries; these are used in the "serving lessons," to which marked attention is paid in all grades of cookery courses. In closed cupboards, or on open shelves below the china, are found the larger utensils in general use, and others more rarely required—stew-pans, double boilers, moulds, cake-pans, and cutters, ice-cream freezers, mincing-machines, coffee-mills, etc. A third cupboard is often subdivided into lockers or small compartments; each member of each class has one assigned and numbered, wherein to keep the cap and apron invariably required to be worn during class-work. The making of these articles constitutes, I was often told, a foretaste of good things to come for small needlewomen, who thus anticipate during the quiet hours of stitching the future active pleasures to be enjoyed when young cooks. Charts and drawings find a place on the walls, and show the various cuts of meat, the proportion of nutrient properties contained in different foods, and the amount of certain nutriments which can be bought for a given price in different foods.

A nice dining table, often with chairs *en suite*, is the rule, as an essential equipment of the table-serving lessons. Good napery is provided in addition to the special china mentioned above. In many cases a recess, or a small separate room is

attached and utilised as a dining room, a great feature being made of tasteful and suitable surroundings. The part of the room in which the table and china are placed is always noticeable for some appearance distinguishing it from the "kitchen" air of the rest of the apartment. I do not know how widely the opinion of the very successful Supervisor of cooking in one large city is held, but it may be partially responsible for the homelike atmosphere observable in many of these school kitchens. She considers that the cookery room should be the "cosy corner" of a school, the place for pleasant surprises and little treats, to which a tired teacher or child can sometimes resort for a cup of tea or other light refreshment. No doubt the elasticity permitted to the schools under some superintendents, and the invariable custom for all food cooked to be consumed on the premises, usually on the spot, by the student responsible for the dish, are also factors of some account in this characteristic.

In quite general use, too, are the sets of admirable wood blocks, first designed and made at the Massachusetts Institute of Technology, Boston, and now supplied by the Pratt Institute, Brooklyn. Of these there are three sets in all; the largest represents, in blocks of various colours, red, blue, white, and yellow, and of various sizes, the proportions of water (blue), proteid (red), fat (yellow), carbo hydrate (white), salts (grey), in the bones, muscle, blood, etc., of a full-grown man. These can be arranged in many useful ways; to illustrate, for instance, the whole amount of each constituent in the body, or the proportion of each in blood, bone, or muscle; their superficial area is 8 inches  $\times$  8, and the total height 5½ feet. The other two sets of blocks are much smaller—superficial area, 3½ inches  $\times$  3½, total height 17 inches; but made to the same scale of proportion they illustrate, respectively, the daily income and outgo of a healthy body the colours being similarly employed to those in the large body blocks, though others have to find a place—indigo blue for the daily intake of oxygen, brown for the daily outgo of urea, and so forth.\*

Among the specimen Grade School Cookery Courses which I have selected to include in this Report are those in use in New York City, Toledo, and Washington. They show the scope and extent of ground covered where the amount of time expended, the number of scholars in a class and the methods of practice are somewhat diverse; it must be borne in mind that all are subject to frequent revision.

In New York City the course at present consists of (a) New weekly lessons for 1½ years; the number of children legally allowed is 40, though, owing to the rapid increase of population, 45 and even 50 names appear on some rolls. It is open to girls in the 6th and 7th grades. In girls' schools, where the whole class follows the course, two-hour lessons are usual, but in mixed schools (by far the more general), the necessarily smaller class is nominally limited to 1½ hours weekly, though, in practice, the principal usually succeeds in allowing 2 hours for this popular lesson.

\*For details and cost of a Model Kitchen equipment, See Appendix A.

(a.) New  
York City  
—continued.

To secure a measure of uniformity among the teachers in presenting both the scientific and practical sides of their subjects, Mrs. M. E. Williams, Supervisor of Cookery, has prepared a comprehensive outline for their guidance, though great elasticity is allowed in the details and actual ground covered. She advocates the method of prefacing each new department of practice with one theoretical lesson; to embrace experiments which bear directly on the principle of cookery involved.

This outline opens the course with instruction on air, fire, and water, the three essentials to life. Very simple experiments and demonstrations with air are carried out, *e.g.*, testing it for carbon dioxide with lime water, subsequently comparing results with expired air and with that in which combustion has taken place. A short study of combustion follows; the series of demonstrations being conducted with the aid of a candle and lamp chimney, wood blocks, cards, and lime water, and so forth. This introduces an examination of the structure and management of kitchen ranges for coal and gas, time being devoted to the study of fuels, hard and soft coal, gas, kerosene, etc. Water and its most salient properties are then studied experimentally, subsequently to which cleanliness and cleaning introduce the girls to their first elementary lessons on moulds, yeasts and bacteria. Natural and artificial aids to cleanliness are illustrated by careful practice; the reason for each process and its constituent parts being carefully followed out. By this time it is anticipated that an intelligent, though, perforce, elementary insight will have been gained into matter, its nature, and changes; the importance of care and accuracy in details will have been impressed, while practical acquaintance will have been made with ordinary utensils and their uses, the principal methods of cooking and the accepted table of measures. A short time is then devoted to a consideration of the elements composing the human body, and of the part played by food in its growth and repair; the subject of food principles being thus introduced. These are classified as water, protein, fats, carbo-hydrates, and mineral matter. Simple starch foods are first cooked, the potato, cereals, wheat; then tissue building foods, as eggs and milk. Bread and bread stuffs follow, succeeded by meat and fish. The practice of frying and sautéing leads to a study of fats as valuable fuel foods, while the preparation of vegetables and fruits turns attention to the acid and salt supplying foods. Throughout, the experimental treatment and explanation of underlying scientific principles is consistently followed. For instance, at an early stage of the course, a potato is subjected to very careful examination, and a rough analysis is carried out to find "what it contains," the iodine test for starch is taught, and the results compared with those obtained with solutions of sugar, cornflower, laundry starch and salt; the effects of heat on albumen are closely observed, and their applications are demanded; milk and flour are subjected in turn to simple analysis, and the results discussed from the points of view of cooking, nutriment, and so forth. Bread making serves to introduce the action of acids on alkalis, and, more immediately, of an acid on baking soda; indeed the study of baking powders is entered into at some length for the sake of its many lessons. What yeast is, its growth, requirements, products, are all included under this study of bread. The principles of broiling, roasting, stewing, braising, frying, baking, soup making, are, of course, explained and illustrated in due order, and "made over" dishes, such as hashes, croquettes and mince, find a place. The practice of "canning" and preserving is made use of to present the germ theory and the effects of moulds on food stuffs.

Near the end of the second year the question is raised as to what constitutes a suitable diet, and experiments on cooked food with saliva, pepsin and pancreatic juice are carried out to demonstrate the processes of digestion. A short study of infant feeding and invalid cooking follows this physiological teaching. The course concludes with the cooking and serving of a simple, nutritious and economical dinner. The syllabus seems to me comprehensive, well-planned, useful, and educational; infinite care is taken to secure "intelligent doing," not mere mechanical practice.

TABLE I.

GRAMMAR SCHOOL COOKING COURSE, NEW YORK CITY, 1902.

Length of Course.	Scope of Course.	
Length of Course, Two years.	<p><b>FIRST YEAR.</b>  <b>AIR.</b>—Why important to life; relation to combustion.</p>	<p><b>SECOND YEAR.</b>  <b>ANIMAL PROTEIN.</b>—Theory and practice.</p>
Grades VI. and VII.	<p><b>FIRE.</b>—Combustion; uses; fuels, varieties of, etc.</p>	<p><b>BOILING AND PARBOILING.</b>—Practice.  <b>ROASTING.</b>—Theory and practice.</p>
Average age, 12.	<p><b>WATER.</b>—Sources; characters; impurities, etc.</p>	<p><b>BROILING.</b>—Simmering; theory and practice.</p>
Number in class, 40 to 50. One-third only do practical work.	<p><b>CHEMISTRY OF CLEANING.</b>—Personal cleanliness; household cleanliness; aids to ventilation, sunlight, disinfectants; care of beds and bedding, floors, walls, ceilings, closets, traps, pantries, ice boxes, dish towels, etc.</p>	<p><b>STEWING.</b>—Theory and practice.  <b>BRAISING.</b>—Theory and practice.  <b>FRICASSEING.</b>—Theory and practice.</p>
METHOD.—Theory, supported by experimental demonstrations of underlying scientific principles, precedes application in practice.	<p><b>THE HUMAN BODY.</b>—Elements composing it, and where obtained.  <b>FOOD.</b>—Its function; food principles.</p>	<p><b>FRYING.</b>—Theory and practice.  <b>MADE-OVER DISHES.</b>—Theory and practice.  <b>SAUTÉING.</b>—Theory and practice.</p>
Lessons, 1½-2 hours weekly.	<p><b>POTATOES</b> (specimen of treatment)—  <b>THEORY.</b>—History; botany, note difference between sweet and white potatoes; composition; experiment showing water, starch test, cellulose, use of microscope; drawing—plant, tuber, starch grains; digestion of starch; salivary glands; action of saliva on glands; test saliva with litmus; pancreatic juice; food value of starch.</p>	<p><b>FISH.</b>—Theory and practice.  <b>SOUPS WITH STOCK.</b>—Theory and practice.</p>
	<p><b>PRACTICE.</b>—                  Boiled                  Baked                  Mashed                  Cream                  Compare nutritive value of same.</p>	<p><b>BEEF-TEA, JUICE EXTRACT.</b>—Theory and practice.  <b>VEGETABLES.</b>—Theory and practice.</p>
	<p><b>CEREALS.</b>—Theory and practice.</p>	<p><b>SALADS.</b>—Theory and practice.  <b>DRESSINGS.</b>—Theory and practice.</p>
	<p><b>BREADS.</b>—Theory and practice.</p>	<p><b>DESSERTS</b> (sweets).—Theory and practice; method of treatment; their relation to food and diet; use and abuse; use of fruits alone, and in combination with other materials; reason for the indigestibility of pastry; use, composition, and adulteration of flavoureds for desserts.</p>
	<p><b>YEAST.</b>—Botanical classification; manner of growth, with experiments; use of microscope; drawings; fermentation—lactic, acetic.</p>	<p><b>Custards.</b>—Practice.  <b>Soufflés.</b>—Practice.  <b>Gelatine Jellies.</b>—Practice.  <b>Batter Puddings.</b>—Practice.  <b>Cakes.</b>—Practice.</p>
	<p><b>FLOUR.</b>—Other wheat preparations; theory and practice.</p>	<p><b>SAUCES.</b>—Practice.  <b>CANNING AND PRESERVING.</b>—Method of treatment.</p>
	<p><b>EGGS.</b>—Theory and practice.</p>	<p><b>GERM THEORY.</b>—Foreign matter in the air; dust, and what it contains; moulds, yeasts, and bacteria; show moulds on bread, lemon, cheese, jellies, etc.; fermented canned fruits; souring of milk, soups, uncooked and cooked food, etc.; use of microscope; food value of canned fruits compared with other foods; practice; canning of fruits in season; jellies.</p>
	<p><b>TEA, COFFEE, COCOA.</b>—Theory and practice.</p>	<p><b>FREEZING.</b>—Theory and practice.</p>
	<p><b>MILK.</b>—Theory; nutritive value; care of; pasteurisation, sterilisation, cleanliness of utensils.</p>	<p><b>PHYSIOLOGY.</b>—Alimentary canal; drawing showing salivary glands of canal; saliva, gastric juice, pancreatic juice; experiments with saliva, pepsin, and pancreatic juice.</p>
	<p><b>BUTTER.</b>—Theory and practice.</p>	<p><b>INVALID COOKING.</b>  <b>INFANT FEEDING.</b></p>
	<p><b>CHEESE.</b>—Theory and practice.</p>	<p><b>COOKING AND SERVING OF A SIMPLE DINNER.</b>—Table-setting, decoration, serving.</p>
	<p><b>VEGETABLE CLASSIFICATION.</b></p>	
	<p><b>VEGETABLE PROTEIN.</b></p>	

(a) New  
York City  
—continued.

Details are largely left to the discretion of individual teachers: *e.g.*, in a Jewish quarter, special care is given to showing better methods of cooking the fish and coarser kinds of poultry which form the staple diet of "Hebrews," as well as the right methods of keeping and preserving fruit and vegetables, which they consume in large quantities; or, in an Italian quarter, where home made wine is the rule, the process, conducted under conditions of scrupulous cleanliness, is introduced into the school kitchen. Habitually the girls "can" and preserve fruit and vegetables for use throughout the winter months.

The regrettable and very weak point in this course is that so few pupils share in the actual practice work of each lesson. The group method on a large scale is compulsorily adopted in all schools, about one-third of the girls doing practical work, while the remainder make notes and observations. The one-third who are selected for the practice are subdivided into cooks, house-keepers, and scullery-maids, thus the actual number which handles the food is very small, and no one child carries through a dish from first to last. This incidentally prevents also the formation of a true estimate of the time necessary for a single individual to prepare either a dish or a meal, as the "house-keepers" are expected to put ready to the hands of the "cooks" all the material and utensils they need at the very moment they are required, while the "scullery-maids" remove and wash each article immediately after use, by which means the final clearing up is reduced to a minimum. The coincident demand upon the attention of the observers is rather severe; they are expected to concentrate their minds for over an hour upon processes in which they take no active share. Excellent and most comfortable "tablet" armchairs were provided in the kitchens of the New York City schools I visited, but many children stood throughout the time in order to see, as the large room had no raised gallery to facilitate observation. The supervisor is well aware of the disadvantage of the present system, but until far larger "appropriations" are made by the Board of Education neither staff nor equipment can be supplied on the scale essential where individual work at each lesson is the rule; meanwhile Mrs. Williams believes that she does the greatest good to the greatest number by pursuing the present policy. The interest aroused among parents, the cordial support they accord to the subject, and the facilities afforded to the girls for home practice, are all factors in the formation of a public opinion which will presently insist upon the provision of further opportunities for each girl in every school. The system of alternate demonstration and practice lessons, such as is the rule in England, is quite the exception in the United States, even if it be anywhere found. In New York City it is the custom to demonstrate part of the time more or less early in the course, but only to do so just enough to secure right manipulation at each step by beginners. In the "bread" lesson, for example, the teacher would begin the kneading; if "omelettes" be the subject she would make one first; but if the process be simple, the girls would carry out the whole under her.

direction, and this is the ordinary plan with lessons on the (a) New cooking of vegetables, or the broiling and roasting of meat, etc. Marks are given for conduct; no examination is held, knowledge being tested by the prevalent custom of revision. It is usual to inquire and to record which girls have practised at home what has been learnt at previous lessons, and samples of home work, to which special encouragement is given, are brought habitually for criticism or approval. Experience shows that home applications are general, even in well-to-do homes where competent servants are kept. (a) New York City  
—continued.

High qualifications are demanded of the special teachers, and it is proposed to insist in future upon a college degree, plus a special course in cookery of at least one year. Teachers must be licensed under the New York State Examination Board, after passing a successful qualifying examination, of which the following is a specimen paper:—

### EXAMINATION FOR LICENCE TO TEACH COOKING.

NEW YORK BOARD OF EXAMINERS.

19th October, 1899.

*Time, three hours.*

1. (a) Describe the structure of a coal range, stating the use of each part.  
(b) Describe the operating of such a range.  
(c) Describe your method of teaching the structure of a coal-range and the use of its parts.
2. Which is more easily digestible, a crust of bread well browned or a boiled potato? Give reasons in full, indicating the chief physical, chemical, and physiological processes involved.
3. Describe your method of giving a lesson on meat soup as regards (a) instruction, (b) laboratory management. Give reasons.
4. (a) Classify the food principles.  
(b) State the nutritive function of each food principle.  
(c) State with reasons the approximate proportion of each food principle in the average daily ration.
5. Discuss impurities in drinking water and in ice, treating (a) their kinds, (b) their source, (c) their effects, (d) household precautions or counter-agents, with reasons.
6. (a) Show how in the matter of language instruction, the cooking teacher may co-operate with the regular teacher.  
(b) Suggest specimen themes for compositions drawn from your subject.  
(c) How would you correct such compositions?  
(d) What directions would you give regarding note-taking and the keeping of note-books in your class?  
(e) Frame two arithmetical problems such as you would give pupils in connection with their cooking lesson: in measure and proportion, and in cost of food.
7. (a) Classify the cooking processes with reference to the mode of applying heat.  
(b) State the approximate temperature of the several processes.

- (c) State in degrees Fahrenheit the proper temperature for baking a loaf of bread; muffins; meat. Give reasons.
- (d) Give two ways in which the temperature of the oven may be approximately determined without the use of a thermometer.

The salaries for teachers of cooking and sewing are as follows: First year, \$900 (about £180), with a rise of \$100 (£20) a year for the succeeding three years, making a maximum of \$1,200 (about £240). Supervisors of these subjects receive \$1,500 (£300) the first year, and progress by annual increase of \$100 to the maximum of \$2,000 (about £400). The Supervisor in New York City gives personal instruction at the Teachers' Conferences on the division of the work in the different grades, and teachers are required to give, in turn, a lecture from some subject chosen from the excellent little manual in use, "The Elements of the Theory and Practice of Cooking." Free use of the blackboard during each lesson is advocated, also composition and dictation lessons on the class subjects. In addition to the use by teachers of the State Board of Agriculture's Food Bulletins, Professor Atwater's "Principles of Food and Diet" is employed as a reading book in each class; Mrs. Williams also desires and ensures that pupils should be familiarised with quotations on cooking, cleaning, and housekeeping from the best authors, to emphasise the dignity of the subject, and to illustrate the high estimate attached to home life by the most eminent writers. Valuable books of reference, both for teachers and pupils, are provided in the school libraries, and care is taken to keep these abreast of the progress made by investigation and research in this line of work. To afford useful stimulus and assistance to her staff the Supervisor periodically conducts parties of these special teachers to visit manufactories of food products, such as flour mills, cream of tartar works, canning and baking establishments, or tea and spice importing works.

(3) Toledo.  
Table II.

In Toledo, cooking is an obligatory subject for girls of the 7th and 8th grades of the grammar schools. The average age is 13, and the average number 30 in a class; the otherwise excellent work being done has its practical value seriously neutralised by the limited time allotted for the lessons. One and a quarter hours per week is the period assigned to all classes of manual training, and though this may suffice for deriving some of the advantages offered by sewing, chip-carving and carpentry, it is quite inadequate for cooking classes, where girls first receive a small amount of theoretical instruction, then prepare and cook a dish, and subsequently clear up the utensils employed in the lesson. A one-year course of 2½ hours weekly lessons, such as is provided in Philadelphia, is on many accounts preferable to half the lesson period for two years, as is the case at Toledo. The syllabus finds a place in this Report for two reasons—(1) Because the City Superintendent of Instruction states that, in spite of its shortcomings, the influence of the Domestic Economy course in the public schools is distinctly apparent in the homes of the people, a statement amply confirmed by several teachers; the Superintendent is

satisfied that not only are families served with better food, but houses are cleansed and their inmates refined because of this training. In four years it covers the field of the selection, making and care of the wearing apparel of a family; instructs girls in the art and economy of the purchase, preparation and serving of meals, and demonstrates some of the elementary principles of those sciences and arts which underlie housekeeping and the beautifying of homes. (2) Because, though the syllabus drawn up by Miss Matilda Campbell of the Manual Training High School has naturally much the same scope as that generally found, it approaches the subject in an educational as well as a utilitarian spirit, and deals more directly than is usual with the municipal protection of food and water by means of the Public Health enactments. The experimental demonstrations are on lines similar to those in the New York City Course, but, apparently, rather more detailed attention is given to the various methods employed for the preservation of food; the useful question of adulterations and sophistications is raised on several occasions, while some possible causes of water pollution are not only discussed, but pupils are incited to make their own outside observations and to bring reports for discussion. The chemistry of cleaning is introduced towards the completion of the course, rather than at its commencement, which, conceivably, might lead to more intelligent appreciation of its principles. An experienced eye, however, quickly detects the compulsory limitation of choice to rapidly-cooked dishes, and trained teachers will perceive that time does not permit the whole preparation of even these to be carried through in class, though here, as in New York City, general, well-justified reliance seemed to me to be placed on home practice. The girls work in groups of two and the equipment is good, but materials are cut down to an unwise limit. Each teacher is responsible for 20 classes a week, and receives poor remuneration, \$360 per annum (about £75). No normal training in addition to their special subject is required at present of teachers, indeed, it could not be at the existing salary.

With the exception of the syllabus, which is framed on some-  
what old-fashioned conventional lines, Philadelphia offers a <sup>(c) Phila-</sup>delphia.  
favourable contrast to the conditions obtaining in respect of the cooking classes at Toledo. The first permanent cooking centre for grammar schools was established in 1889. In 1901, 13 school kitchens were in operation, and provided instruction for about two-thirds of the whole number of girls eligible to attend. The course extends through the nine months of one school year; each weekly lesson averages 2½ hours, and is open to 6th grade scholars. The system gives each teacher of cooking 10 classes a week, and about 250 girls attend each centre; the actual number in a class is variable—the inevitable result of co-education in the schools. There is keen competition to be among the selected quota from each school; indeed, the children coming from the best houses are often among the most eager applicants.



TABLE II.  
TOLEDO GRAMMAR GRADE SCHOOLS.  
SCHEDULE OF COURSE IN COOKING.

	1st YEAR.	2nd Year.—Cont.
Length of Course, Two Years.	INTRODUCTION, History and importance of cooking. TABLE OF WEIGHTS AND MEASURES (illustrated). BOILING OF WATER, TEMPERATURE, etc. COMBUSTION, different fuels used, making and care of a fire. Effect of cold and boiling water on food principles in starch and albumen.	Eggs. Composition and food value. Effect of heat upon albumen. Test for fresh eggs—preservation of. Soft and hard cooked. SOUP.—Made from meat. Amount of meat: slow cooking. Stock. MEAT. Review cuts of meat. CHICKENS. How to buy. How to prepare for cooking. FISH. How to tell fresh fish. Composition and food value. Practice. REVIEW MAKING BREAD. DIGESTION OF FOOD. Experiments with artificial digestion. FRYING. PASTRY. WATER (typical treatment). Surface wells. Deep wells.
Average age, 13.	CEREALS. VEGETABLE CLASSIFICATION. Seeds    Shoots    Flowers Roots   Stalks    Fruits Tubers   Leaves    Fungi Composition and food value. FRUITS. Composition and food value. RECITATION AND REVIEW (typical treatment). Milk, its composition and food value. Analysis: Fat shown by making a small amount of butter. Casein, by action of rennet and acids. Milk sugar with alcohol test. Danger of disease from milk. Introduce opinion of Health Officer as to some sources of contamination. Sterilization and its object. SOUPS, economy of as food. Composition and food value of TEA, COFFEE and COCOA. Lessons on the CUTS OF MEAT. STEWING. Economy of thus using cheap cuts of meat. Preservation of meat by different methods. Smoking, salting, freezing, cold storage, etc. BROILING. Direct application of intense heat to cut surface of fibrin of meat. How to retain the juices of meat. Evils of frying meat.	Its source { Rivers and brooks. { Springs. { Rain water. Test of hard and soft water. Reasons for boiling { For cooking purposes. { To destroy germ life. Danger of surface wells. Pupils investigate wells in their neighbourhood and report. Possible sources of contamination. SALADS. DESSERTS. Use and abuse. Use of fruits alone and in composition. Adulteration of flavouring extracts. CHEMISTRY OF CLEANING. Materials { Soap. { Salsoda.    Washing Powder { Ammonia    Sapolio Dirt { Visible { Dust { Grease, etc. { Invisible { Germs { Bacteria Disinfectants { Natural { Fresh air. { Sunlight. { Heat { Artificial { Carbolic acid. { Corrosive sublimate. { Sulphur fumes.
No. in class, 30.	Composition and food value. RECITATION AND REVIEW (typical treatment). Milk, its composition and food value. Analysis: Fat shown by making a small amount of butter. Casein, by action of rennet and acids. Milk sugar with alcohol test. Danger of disease from milk. Introduce opinion of Health Officer as to some sources of contamination. Sterilization and its object. SOUPS, economy of as food. Composition and food value of TEA, COFFEE and COCOA. Lessons on the CUTS OF MEAT. STEWING. Economy of thus using cheap cuts of meat. Preservation of meat by different methods. Smoking, salting, freezing, cold storage, etc. BROILING. Direct application of intense heat to cut surface of fibrin of meat. How to retain the juices of meat. Evils of frying meat. Composition & food value of meats. BAKING POWDER. Composition. Chemical union of acid and alkali, liberating CO <sub>2</sub> ; adulteration with alum and starch. Proportions of acids and alkali. BREADS. CAKES. INVALID COOKING. Neatness and daintiness of service. Thorough cooking of starchy foods. Low temperature cooking of albuminous foods. Practice. CHEESE. Manufacture, composition and food value. TABLE SETTING AND SERVING. Cooking and serving of a simple dinner by each class. FREEZING.	FLLOUR.—Manufactured flour. Spring wheat. Winter wheat. Analysis of. Separating starch and gluten. BURN flour to show presence of water and mineral matter. Yeast.—Where found. Method of Growth. Chemical caused by its growth. FERMENTATION { Lactic. { Alcoholic (Illus- { Acetic (trated.) TABLE SETTING AND SERVING. Daintiness, cleanliness, quietness, carefulness.
Grades VII & VIII.	Composition and food value. RECITATION AND REVIEW (typical treatment). Milk, its composition and food value. Analysis: Fat shown by making a small amount of butter. Casein, by action of rennet and acids. Milk sugar with alcohol test. Danger of disease from milk. Introduce opinion of Health Officer as to some sources of contamination. Sterilization and its object. SOUPS, economy of as food. Composition and food value of TEA, COFFEE and COCOA. Lessons on the CUTS OF MEAT. STEWING. Economy of thus using cheap cuts of meat. Preservation of meat by different methods. Smoking, salting, freezing, cold storage, etc. BROILING. Direct application of intense heat to cut surface of fibrin of meat. How to retain the juices of meat. Evils of frying meat. Composition & food value of meats. BAKING POWDER. Composition. Chemical union of acid and alkali, liberating CO <sub>2</sub> ; adulteration with alum and starch. Proportions of acids and alkali. BREADS. CAKES. INVALID COOKING. Neatness and daintiness of service. Thorough cooking of starchy foods. Low temperature cooking of albuminous foods. Practice. CHEESE. Manufacture, composition and food value. TABLE SETTING AND SERVING. Cooking and serving of a simple dinner by each class. FREEZING.	FLLOUR.—Manufactured flour. Spring wheat. Winter wheat. Analysis of. Separating starch and gluten. BURN flour to show presence of water and mineral matter. Yeast.—Where found. Method of Growth. Chemical caused by its growth. FERMENTATION { Lactic. { Alcoholic (Illus- { Acetic (trated.) TABLE SETTING AND SERVING. Daintiness, cleanliness, quietness, carefulness.
Lessons, 1½ hours weekly.	2nd YEAR. CLASSIFICATION OF FOOD. Uses of food in the body. THE HUMAN BODY. Elements and compounds composing it. Growth. Food, its function, waste and repair: heat and energy. Typical foods of different nations.	FLLOUR.—Manufactured flour. Spring wheat. Winter wheat. Analysis of. Separating starch and gluten. BURN flour to show presence of water and mineral matter. Yeast.—Where found. Method of Growth. Chemical caused by its growth. FERMENTATION { Lactic. { Alcoholic (Illus- { Acetic (trated.) TABLE SETTING AND SERVING. Daintiness, cleanliness, quietness, carefulness.

The course comprises instruction in the usual processes, economy, cleanliness, method, promptness, and the development of executive ability being the primary objects; the high standard demanded of the special teachers obviates any risk of disparagement of the importance of the intellectual value of Domestic Science. A manual is provided for the use of the pupils, which contains a very extensive variety of dishes, including delicate invalid cookery, the selection from which is left to the judgment of the teacher. The recipes are generally distributed, legibly printed on cards, for use during the lessons, which minimises the large amount of time otherwise absorbed by note making, which is then limited to a record of methods or other observations. The girls work either individually or in groups, according to the particular recipe to be carried out. Both oral teaching and practical demonstrations are given by the teachers; the proportion of time devoted to the two depends upon the subject under consideration, and a little upon the individuality of the teacher; the whole period is never devoted to teaching or demonstration except at the introductory lesson. The teacher actively directs the pupils' work, and where group work is for some good reason inevitable, she divides it so far as may be among the members of the group in such a way that each member may take part in each step of the process. Periodical "quizzes" are conducted by the teachers, and examinations form part of the curriculum; table setting, and the cleaning of room, sink and utensils constitute a part of such tests. The equipment, with the exception of the necessary plumbing, is left entirely to the discretion of the Supervisor, Miss Wright; while very simple it seems complete. All cooking teachers are required to be graduates of the Drexel Institute, and their sound scientific training must gradually influence school methods; the Supervisor is also hopeful of securing by degrees more connection with physiology and other suitable subjects now included in the regular school course. Numerous instances of home applications were advanced, and each child is systematically called upon to say what she has done at home each week during the interval between the classes.

At Washington, cooking is an obligatory subject for girls in the 7th and 8th grades, the total number of lessons in the two years' course is 72, of 1½ hours' duration. The classes are held at centres, each of which serves a weekly average of 200 pupils. As has been said, the number in each class rarely exceeds 12—an arrangement supported by the Supervisor, Miss Emma Jacobs, for various reasons, to which I have referred below. In the new schools large cooking laboratories are provided; well fitted, spacious, with an air of great comfort. The arrangement of lessons varies somewhat each year, though in substance the syllabus is the same; that employed the first year is repeated in a more extended form during the second. All recipes are written from memory after the article has been made, except in such cases as soup stock and bread, when it is impossible to complete the entire process in the

(d) Washington, D.C.  
Table III.

(2) Washington lesson period; these recipes are, therefore, dictated. The out-  
 ton—com- lines of an ox, sheep, calf and lamb are supplied to each girl  
 tinued.

TABLE III.  
 WASHINGTON, D.C., GRAMMAR GRADE SCHOOL.  
 SYNOPSIS OF FIRST YEAR OF COOKING COURSE.

PARTICULARS OF COURSE.	INTRODUCTORY.	BOILING.	STEWING.	BROILING.	BAKING.	FRYING.
Length of Course, Two Years.	(1) Definition.	Definition.	Definition.	Definition.	Definition.	Definition.
Grades VII and VIII. (Girls).	(2) Purposes.	MATERIALS.—Fresh beef, mutton, fish, poultry. Cured beef, pork, fish, tongue. Soup, beef, lamb, mutton, fish, poultry.  VEGETABLES.—Large potatoes, beets, onions, small beans, peas, grains.  DOUGHS.—Dumplings. Roly-poly puddings.  LIQUIDS.—Custards, sauces, beverages, tea, coffee, cocoa.  UTENSILS.—Tin; copper; earthen; iron, plain, galvanized, tinned.	Materials. { Meats. Vegetables. Fruits.	MATERIALS.—Veal, beef, sirloin, tenderloin, porterhouse, flank, round.  CHOPS.—Pork, lamb, mutton.  FISH.—Shad, salmon, cod, oysters, clams, bread.  UTENSILS.—Grid-iron, broiler, spit, toaster.	Bread (raised by yeast) bread (raised by the union of soda with an acid.)  Bread (raised by entanglement of air).  Meat, beef, mutton, pork, fish, poultry.  Cake (loaf, small). Pies, puddings, vegetables.	Materials. { Fish. Oysters. Poultry. Batters. Cakes.  UTENSILS.—(Kettle, pan).  PRESERVING. { By sugar (fruits). By vinegar (fruits, vegetables). By salt, smoke, ice (meats).
No. in Class, 12.	(3) Processes.		Materials. {			
Lessons 1½ hours.	(4) Incidental and general information respecting materials, sources, processes of preparation and combination, care and selection of materials.		Materials. {	Materials. {	Materials. {	
A Syllabus, substantially the same as that employed in the first year is repeated in a more extended form during the 2nd year.			Materials. {	Materials. {	Materials. {	

attending the classes: these she fills in and numbers as the joints so defined are cooked or described. The market price is recorded of each article used, and the variation in price of certain articles is also shown, as the date of each statement is recorded for subsequent comparison; pupils are called upon at intervals to compute the cost of meals from data so collected; the recipes provided give quantities sufficient for six persons. Knowledge is tested by revision lessons, which are very liberally introduced; specimens of home efforts are also invited and constantly brought for criticism, while the practical value and influence of the work are evidenced by the frequent letters of approval received from mothers, grateful for the assistance gained in home life from school tuition. The lessons seemed spirited and most practical, and were evidently enjoyed by those who took part in them. There are no demonstrations in the English sense of the term. Miss Jacobs believes that better results attend work performed by the pupils under careful supervision; she therefore allows only one-third of the twelve girls to work at the same time, two as cooks, two as housekeepers, while the remaining eight watch, criticise and make notes. Those who are selected to work, do so, following the explicit verbal directions of the teacher, who can at once see and correct an awkward or imperfect movement. If a pupil fails to secure correct manipulation the teacher will guide the child's hand, and show how the muscles must be controlled, for instance, in the kneading of bread. If the children are likely to have acquired a poor method of holding an implement or using the muscles in some familiar home process, the teacher would show the correct and better way of doing the work before giving her directions, as when beating white of eggs to a stiff paste. The fact that no teacher can watch at once the work of 20 children and be sure that each is doing the work with accurate facility is one of Miss Jacob's strongest arguments in favour of the Washington system. "Our children," she writes, "are able to work from dictation, because from the first day they enter school they are trained to obey directions which call into play the muscles of the hands and other parts of the body in the execution of orders. Manual training begins for them in the Kindergarten, and the work for each grade calls into play more groups of muscles and other powers. I do not mean to say that the manipulation in the cooking classes is all that could be desired, but with only two girls at work the teacher secures better results; thus something more perfect is presented to the class without having to use every alternate lesson for demonstration on her part."

(d) Washing-  
ton—con-  
tinued.

High qualifications are demanded of the teachers; graduates of the Pratt or Drexel Institutes, or of some first-class training school are preferred. Details of the lessons and personal observation show the attention devoted to learning the "reason why," to basing practice on intelligent knowledge, and the importance attached to thoroughness. Frequent revision, even at the expense of fewer recipes, is preferred to mere mechanical

compliance with a stipulated programme. The intelligent efforts to connect the Domestic Science work with the language, literature and plan work (geography) throughout the grades are largely due to Miss Jacob's influence; e.g. in the Nature work, under animals, the bee, hen, duck and rabbit (creatures of food value to mankind) are discussed and studied; under plants, the development, growth and fruition of the bean and pea and their uses in the daily diet, are observed and noted; under institutional life, ice, ice wagons, ice houses, markets, their produce, how and why sold, find a place. In number work, simple exercises in the application of the number of pecks in a bushel, quarts in a gallon and so on, are based on articles in common family use. In language work, work done in and around a home is often the selected subject, with the direct object of arousing interest in the right fulfilment of home duties. The formation of good habits in the protection and right care of food is fortunately promoted by the stringent milk regulations in force in Washington.\*

Cost of  
Classes.

To summarise accurately the expenditure involved by Grade School Cooking Courses is impossible; the cost of equipment is much affected by the prices which rule in a particular city or State—labour is much dearer in the east than in the west, to the extent of almost doubling the cost of some articles, such as tables—metal work is subject to almost equal variations, and the "appropriations" granted bring in another element of uncertainty. In Chicago, given a suitable room, \$150 (£30) suffices to equip a class of 24 well; but, were other figures quoted, they would admit of no really accurate comparison. In more than one city the cooking tables were made by the boys as part of their manual training course. The cost per head per lesson is much more generally the same, one cent represents a fair average. At New York City the cost varies from  $\frac{3}{4}$  cent to  $1\frac{1}{4}$  cents; at Boston it must not exceed  $\frac{3}{4}$  cent; at Chicago  $1\frac{1}{4}$  cent is the rule; at Detroit,  $1\frac{1}{2}$  cent is allowed. This means that the quantities for individual work are very small, though, as a whole, food stuffs, and especially vegetables and fruit, are cheaper than in England. Each class eats on the spot the food it has prepared, unless request be made to take specimens away from the centre for display to the Principal or teacher at the school attended. This custom is prevalent throughout every grade of institution. I still remember the novel impression it conveyed to me, as a complete stranger, on the occasion of my visit to the Pratt Institute shortly after my arrival in the United States. I had watched the class of normal students engaged in the preparation of a suitable meal for a child of 18 months; immediately the processes were complete and had been criticised by the teacher, each drew out her sliding seat, sat down and, with the most businesslike air, disposed of her handiwork. The English

\* No person or company is permitted to send milk into the city who does not conform to the requirements as to air space, cleanliness, protection of the milk, etc., in the cow byres and dairies from which the milk is despatched. The rules are stated to be rigidly enforced.

method of selling the food cooked excited very severe comments: the general opinion was that only by eating her production could a student of any age test its quality and really gauge its shortcomings or good points. To require children to handle, smell, see, savoury or sweet dishes, and then to turn their backs upon them was considered a relic indeed of Puritan days. As each Grade School Course includes the making of cake and ice cream (the latter really almost a national dish), on some occasions a truly festive spirit pervades the kitchens. The usual plan is to conclude the whole course with the cooking and serving of a simple three-course dinner, to which are invited some members of the Board of Education, or the Principal and a few of the staff; the young cooks are responsible for the provision, for a given sum, of a suitable and seasonable meal, in sufficient nutritive proportions. The dainty ways and quick perceptions observable in American girls make them deft at the table service upon which such stress is laid during the cooking courses, and "table manners" are by no means neglected. I was glad to hear emphasis laid upon daily care and method rather than upon the occasional display for which this concluding dinner might otherwise set a precedent.

Salaries are a variable quantity, though Toledo is fortunately Teachers. conspicuous in its very low scale of remuneration. Those in force at Chicago seem to me a fairly usual average: *i.e.* \$500 (£100) the first year, rising by annual increase of \$50 or \$100 to \$900 (about £180). The tendency is for the salaries of special teachers to rise. As each year the standard of training is somewhat raised, the Normal and Technical Institute classes are followed by a higher class of women; superintendents also realise the value to the work of "all round" as well as of "special" knowledge, and demand evidence of a good general education as well as expert knowledge. The grade school teacher of cookery is not one apart, she is as highly trained and qualified as any one of her colleagues, and shares their lives and interests. I have reason to believe that the teachers at the Hyde School, Boston, are not unique in their frequently voluntary meetings to discuss the inter-relations between the various subjects for which they are severally responsible, so that intelligent interest may be stimulated by co-ordination of subjects in all the various classes, cookery taking its place on equal terms with history, literature, or languages.

## 2.—Needlework.

Needlework is not an accepted "constant quantity" in a United States public school programme as it is in Great Britain. It is not unusual to learn that the introduction of the subject, for so limited a period as even one or two years out of the eight which constitute the full curriculum, coincides only with the comparatively recent adoption of manual training into the schools of such cities as Detroit or Cleveland, and it would be possible to name important towns where no instruction at all in sewing is included in elementary school work. Of recent and limited adoption.

Various causes are assigned for this fact: (1) There are those who attribute it to the very rapid development of the country, with which its system of education, in spite of its great elasticity, finds it no easy task to keep pace; but a few years since, in many districts the distance to be accomplished to reach a school made the attendance so limited in time that only subjects which could not be acquired at home found a place in the time table. (2) The sudden advancement of industrial fortunes coincident with the country's growth threw the mental perspective of the masses awry, so that parental and public misconceptions of the value and dignity of manual occupations bulk yet as large obstacles to the universal introduction of needlework into the Grade schools. (3) The world-wide, slow-dying delusion that book-learning is the only agent of culture, and that attention should be concentrated upon the printed page during school hours, is still responsible for the continued existence of a monotony of method under some Boards of Education by whom the intellectual stimulus derived from variety of occupation is as yet imperfectly recognised.

Methods of  
Teaching  
and Length  
of Course.

Outside New England the present rapid adoption of needlework as a school subject seems to me the direct outcome of an evident reaction in favour of almost any form of manual occupation. The shortcomings for purposes of absolute exactness in manipulation inherent in the employment of finely-woven, pliable materials, which also make considerable demands on eyesight, and favour "coaxings" to conceal slight inaccuracies, are overlooked or condoned, in view of the other facilities offered. One of the most attractive of these is the small expense incurred by the employment of needlework as a branch of manual training for girls, where boys enjoy the superior advantages, for the special educational object in view, of wood and metal work. To maintain, so far as possible, the parallelism of the two employments, several directors of the subject in different cities have adopted the method of dealing with the various stitches as so many "exercises," to be carried out on pieces of unbleached calico from  $4\frac{1}{2} \times 4\frac{1}{2}$  inches square to  $9 \times 5$  inches in size. These are then fastened into a book, to be retained by the pupil; usually written descriptions, and very frequently excellent pencil sketches, are appended of the position of the hand in sewing, for instance, or the fixing of the material for a bias seam. Unless the acquirement of the usual stitches be followed by their sufficient application to a suitable garment, these "exercises" are decidedly unsatisfactory. All difficulties of manipulation are emphasised by the use of such small pieces of material, insufficient in themselves to provide space for real practice or to reproduce ordinary conditions of employment; and the learner only experiences the discouragement attendant on most first attempts, unmitigated by the subsequent realisation of the power gained through repetition and constant application. This from the utilitarian point of view. From that of manual training, does not the real worth of any "exercise" adopted for this purpose depend upon sufficient time allowance to favour, if possible, to

ensure, the individual development of accuracy, facility and skill; does it not almost presuppose sufficient opportunity for repetition, so that success be gained by sturdy strides of independence, though these involve a few bad falls, rather than by carefully guided, faltering, unstable steps, as of an infant, whose leading strings have spared it any hard tumble, but have robbed it at the same time of the healthful spirit of active self-reliance? I am by no means alone in the opinion that these "sample" books, if desired, should form the apex, not the base, of such a course, when their contents would serve to demonstrate the skill gained by long practice on actual garments, rather than the painfully executed handiwork of untrained fingers.

Methods of  
Teaching  
and Length  
of Course  
—continued.

This, at best unsatisfactory, method seemed to me to be carried to an extreme at Toledo, in spite of the undoubtedly good intention of the organiser; all the 5th and 6th grade pupils receive 75 minutes manual training instruction per week. The special teachers visit each school in pairs, a teacher of woodwork and a teacher of sewing together. The mixed classes are divided, and the boys do chip-work on one side of their ordinary class-rooms, while the girls learn to sew upon the other side. The course for each term contains a certain number of problems and pieces, with the object of allowing a pupil to progress slowly or rapidly according to ability, and to secure for each child a fair share of individual attention. Thirty pieces of needlework must be completed during the two years; as a consequence, very small samples of each stitch or its application are possible, and the results, as observed, did not appear very satisfactory. The boys were interested, eager, and happy; the girls uninterested, bored, and rather careless. This introduction to "Manual Training" is succeeded in grades 7 and 8 by cooking for the girls and by carpentry for the boys; the change of attitude among the girls was significant and striking.

The length of these sewing courses as well as the methods adopted are variable; that advocated in "Scientific Sewing and Garment Cutting," by Antoinette Wakeman and Louise M. Heller, illustrates one in common use (this seemed a favourite book with teachers). The latter lady is the originator of a system of cutting out generally adopted, which is guided by simple, easily-comprehended, mathematical principles.

This manual provides for sewing practice throughout the eight public school grades; an exceptional arrangement at present, for there are still cities where girls get no training in needlework under high school age. The usual length of grade school course is two years, though Philadelphia and Brooklyn cover approximately the ground dealt with in Miss Heller's book, during the five years needlework is taught in their schools.

The custom seems general of employing coarse canvas for beginners, and at no period of the grade school course is the use of fine material approved; coloured thread on a cream-toned material is generally employed during the first stages. The methods of instruction and usual scope of practice closely resemble those usual in this country, but I think greater emphasis



is laid on the artistic side; grace of form, taste in colour, selection and combination are dealt with at every stage. Large frames with coarse canvas are supplied for the teachers' demonstrations, and a very liberal use is made of the blackboard for illustrative purposes. Satisfactory importance is attached to cleanliness and care in keeping of materials.\*

Specimen  
Courses.

I include a few notes on the courses and methods I observed in different cities, but, as I have already said, there is too wide a diversity of detail in practice to permit of generalisations, while the tenor of the whole is closely allied to what has been long established in England.

(a.) Brook-  
line, Mass.

At Brookline (Mass.) needlework is continued throughout the grades in a few schools where French and Latin are not taught. In the other schools an hour a week is devoted to it from Grades III. to VI. inclusive. The co-educational system is here consistently enforced: boys share these classes with the girls and prove themselves very adept in the use of the needle. An excellent example of home work recurs to my memory in the form of a neatly patched knee in a cloth knickerbocker, executed by the small boy wearer. At this particular school one room was set apart for sewing. The actual method of instruction by the motherly teacher might be described as "old fashioned," but the results secured and the interest aroused spoke volumes for its merits, plus, of course, the personality of the instructress. She mentioned with gratification the increased neatness and attention to personal appearance apparent after a few weeks' attendance in her classes, and referred also to the influence on posture and carriage which follows the making and fitting of simple blouses by the girls in the upper grades. Additional and useful interest is lent to these sewing lessons by the use of a well-proportioned doll, equal in size to a child of three or four years of age; upon which garments of every description are fitted by their makers, who are thus stimulated to accuracy in measurement, care in cutting out, skill in fitting, and to a generally business-like attitude in their manipulation of materials.

\*Miss Heller describes an inexpensive case in which work and materials can be kept; which, with modifications for convenience, was to be noticed in several schools.

It consists of a series of nine wooden shelves arranged between two standards,  $4\frac{1}{2} \times 1$  ft., placed against a wall. Arranged in tiers of seven on each shelf are strong pasteboard boxes, furnished with small brass rings, so that they can be drawn out with ease. Each box is 12 ins. long by 8 wide by 5 deep. On the front part, beneath the ring, is pasted a slip of paper bearing the name of the pupil whose work is placed in the box. The innate mechanical ability of the Americans shows itself in many little neat, simple devices of this kind, which economise trouble and promote order and cleanliness. At Buffalo, the boys make work-cabinets for the girls' use as part of their manual training. In some Philadelphia schools a simple labour saving appliance is in use, devised and made by one of the staff (Miss Trumble). A piece of stiff card is fitted about  $1\frac{1}{2}$  ins. below the surface of a wooden (cigar) box, the card being perforated with rows of oblong holes. At the conclusion of each sewing class the box is carried round by one of the pupils; each of her companions drops her pair of scissors into one of the slits, the number of which corresponds with the number of scissors in use. The whole number are thus rapidly collected and ready for the next occasion, the absence of a pair is immediately detected, while the scissor blades are protected from damage and dust.

To arouse a similar active spirit of self-help in their sewing (b.) Boston. classes seems the object of many Boston teachers. At an exhibit of the year's needlework in one school I saw not only creditable sewing, especially in the execution of buttonholes, but undergarments and blouses cut out and made at home almost without any assistance or supervision; these gave evidence of personal selection on the part of the maker, combined with efforts to produce what would be of service at home and satisfactory to the teacher at school.

In the schools of Cleveland, Ohio, manual training includes (c.) Cleve- sewing, and the whole is under the charge of a male supervisor, land, Ohio. a not infrequent occurrence; the work is considered to be developing satisfactorily. In the earlier grades simple clay modelling, cutting and pasting of paper into cubes, prisms, etc., is the rule for both sexes. Subsequently boys have drawing, knife and wood work, while girls have sewing in grades V. VI. and VII., and cooking in Grade VIII. The sewing course covers running, basting, overcasting, hemming and stitching. These are applied in grade V. to small model aprons, pillow-slips and laundry bags. In grade VI., in addition to "review lessons" of stitches previously learned, corners are "mitred," patches prepared and hemmed, bands cut and stitched, ruffles gathered and sewn. In grade VII. buttonholes are made, garments brought from home are darned and patched, and simple garments are cut out in calico and print.

In Philadelphia, 40 instructors in sewing work are under the direction of a most able woman supervisor, Miss Kirby. Each of (d.) Phila- her staff has an assigned district comprising adjacent schools; delphia. about 60,000 girls are eligible for, and receive these lessons: Table IV. boys share the instruction in some schools and are among the brightest pupils. The course covers six grades (III. to VIII.). The City allows 6 cents per annum for each child engaged in sewing. There are two lessons a week of 35 or 40 minutes each. Every pupil is provided with needles, pins, thimble, scissors, buttonhole scissors, cotton, dressmakers' scales, emery bags, drafting paper and calico. Very free use is made of the black-board by teachers, who endeavour, by question and answer, to enable each pupil to grasp the underlying principles of their work. The genuine enthusiasm aroused speaks volumes for the excellence of the teaching; great pleasure and pride, of a purely disinterested character, are taken by the children in this subject, for neither marks nor promotion depend upon the proficiency displayed. The reward for progress takes the form of permission to make some dainty and attractive article, such as an embroidered petticoat, a smocked frock, a Liberty hat for a younger member of the family, or some special garment which appeals to the fancy of the young seamstress. In each grade I saw specimens of really exquisite needlework, which seemed the rule rather than the exception. Instruction in how to draft and cut paper patterns is given systematically throughout the course; the elder girls manifestly enjoy the cutting and fitting of a simple dress and blouse, which form the subject of their last year's needlework. All the course is carried through in the ordinary class-rooms; table accommodation is provided for the cutting out.

TABLE IV.

GRAMMAR SCHOOL COURSE IN NEEDLEWORK, PHILADELPHIA.

LENGTH OF COURSE, SIX YE. RS.	THIRD YEAR.		FOURTH YEAR.		FIFTH YEAR.	SIXTH YEAR.	SEVENTH YEAR.	EIGHTH YEAR.
	FIRST HALF.	SECOND HALF.	FIRST HALF.	SECOND HALF.				
Grades III.-VIII.	<p><b>POSITION.</b>—Of the body; of the thumb finger; of the hand.</p> <p><b>DRILL.</b>—Threading the needle; taking stitch; holding the scissors.</p> <p><b>SEWING.</b>—Hemming, basting, fastening a new thread.</p> <p><b>OVERSEWING.</b></p> <p><b>CUTTING.</b></p> <p>(Pupils who sew reasonably well may bring towels, wash-rags, and similar articles to be hemmed.)</p>	<p><b>Review work :</b></p> <p><b>SEWING.</b>—Running seam; backstitch seam; backstitch and running seam; half backstitch seam. Raw edges of all seams to be overcast. Sewing bags, pillow-slips, overleeves, iron-holders, and bibs to be made.</p> <p><b>DRAFTING.</b>—Bibs and simple straight bodices with strap over the armhole.</p>	<p><b>Review work :</b></p> <p><b>SEWING.</b>—Reversible seam; square patches; sheets and tablecloths to be hemmed. Pillow-slips, dust caps, pen-wipers, under bodices with seam over the armhole to be made.</p> <p><b>DRAFTING.</b>—Yokes; under-bodices with seam under the arm; covers to fit books.</p>	<p><b>Review work :</b></p> <p><b>SEWING.</b>—Gathering, darning. Making plain aprons, children's dresses with yokes, children's aprons with bodice and skirt. Books to be covered; worn garments to be mended; shoe buttons sewed on.</p> <p><b>DRAFTING.</b>—Under bodices with under-arm and shoulder seam; drawers; children's aprons with bodices and skirts; children's dresses with yokes; infant's nightdress.</p>	<p><b>Review work :</b></p> <p><b>SEWING.</b>—Making narrow hems and fells.</p> <p><b>TUCKS.</b></p> <p><b>STOCKING DARNING.</b>—Patching and angular dress darning.</p> <p><b>FRENCH FELLS.</b>—Angular patch.</p> <p><b>FINE GATHERING.</b></p> <p><b>BUTTON-HOLES.</b></p> <p>Drawers, combing capes, shoe bags, stocking bags, aprons, under bodices, and plain skirts to be made.</p> <p><b>DRAFTING.</b>—Drawers, under bodices with one dart and one spring to fit the hip.</p>	<p><b>Review work :</b></p> <p><b>SEWING.</b>—Special attention to be paid to button-holes. Bias seams of all kinds.</p> <p><b>GUSSETS.</b>—Stockings re-soled.</p> <p><b>HERRING-BONE STITCH AND FEATHER STITCH</b> for flannel garments.</p> <p><b>CIRCULAR PATCH.</b></p> <p><b>GORED SKIRTS,</b> chemises, blouses, nightshirts and flannel skirts.</p> <p><b>DRAFTING.</b>—Chemise, gored skirt, dress sleeve, nightshirt, blouse.</p>	<p><b>Review work :</b></p> <p><b>SEWING.</b>—French gathering; button-holes with tailor finish; cutting, fitting, and making plain garments. Special attention given to night-dresses, corset-covers, and men's shirts.</p> <p><b>DRAFTING.</b>—Corset-covers, night-dresses, men's shirts, and night shirts.</p>	<p><b>Review work :</b></p> <p><b>SEWING.</b>—Cutting, fitting, and making garments of all kinds. Special attention to men's shirts and to dresses to fit pupils.</p> <p><b>DRAFTING.</b>—Dress bodices, skirts, and sleeves.</p>

In Washington, sewing is taken for  $1\frac{1}{2}$  hours a week during 4 years of the school life. The number in each class averages 25 for plain sewing, 18 for the cutting and fitting of plain dresses; special rooms are provided for these latter classes at convenient centres, and excellent practical training in more than mere dressmaking is the result of the method adopted. Mathematical precision is required in the patterns designed and drafted, "while attention is directed also to the development of the activities and creative faculties" through drawing and colour design. The teacher gives frequent "talks" on the processes of manufacture, illustrated with samples of the various processes to which each material is subjected, and the girls gain a working knowledge of how to distinguish good from bad materials. As a rule, pupils bring a sufficient number of home articles in need of careful darning for ample practice when that stage is reached in the course, and the girls are quite commonly enthusiastic enough to cut out and make blouses for themselves at home, which they subsequently wear at school for the approval of the teacher and the admiration of their friends.

The salaries of sewing teachers are, as a rule, similar to those earned by teachers of cooking. At Boston, for instance, the maximum for both is identical, \$936 (£187); but, whereas, the minimum salary for a teacher of cooking is \$532 (£106), subject to an annual increase of \$48 (about £10) that of the sewing teacher depends on the number of "divisions" for which she is responsible; thus, in the Annual Report by the Boston Board of Education, it is stated in School Document No. 2, 1900, that the salary for a teacher of sewing in one division is \$144 (£28), in two divisions, \$240 (£48), three divisions, \$336 (£67), and so up to eleven divisions \$880 (£176) the maximum is \$936 (£187) for teachers of over eleven divisions.

The custom of employing specially trained women seems invariable; frequently they are required to be graduates of the Pratt or Drexel Institutes, or of some other institution of recognised standing. The special training is as a rule supplementary to the general preparation demanded of all teachers; it includes a knowledge of common textiles and their manufacture, ability to design, draw and draft patterns, practical acquaintance with sewing machines (hand and foot, of various makes), the details of needlework, and a certified familiarity with educational principles as applied in the teaching of sewing.

Although it is a general and advantageous custom to include the cutting and making of a simple blouse in the majority of grade school sewing courses (while in one or two cities the cutting and making of a "housemaid" skirt is utilised to introduce elder girls to the use of the sewing machine), the instruction so given could not be described as dressmaking. Neither that subject, nor millinery, nor laundrywork, have yet found a place in the United States elementary schools. Dressmaking or millinery would be out of place where compulsory school life ends at 13 or 14; of the time devoted to needlework the whole must be expended on the acquisition of its

elements. Considerable diversity of opinion prevails as to the desirability of introducing laundrywork into the grade schools. Parental opposition appears to be pronounced, and those who advocate its inclusion are forced to recognise that the time is not yet ripe. This is the more strange in that most women of all classes take a more active share in housework than is usual in this country, and the washing of ordinary articles is generally done at home; the charges at a public laundry are very high, double or even treble those general in this country; but it must be confessed that the results seem to compensate for the cost: professional laundry work is more of a fine art, more akin to the best French clear starching than it is in England.

### 3.—Housewifery.

Method of  
teaching  
Housewifery  
in Cookery  
Lessons.

Housewifery, as a separate subject, does not appear in Grade school courses. Great attention is given in the cooking courses to the cleaning of kitchen fittings and utensils, and to the cleaning of floor and furniture. A usual method employed is, towards the conclusion of each lesson, to divide the girls into groups of two or three; of these one group will wash utensils, another rinse, a third will dry, a fourth will clean the stove or sink; another group will put each article in its place, while one group is told off to superintend and inspect the work of the rest of the class. As an instance of what care will do, apart from the incidental training in good methods, I saw saucepans in excellent order in one Boston school which had been used for 9 years by 13 classes weekly with 30 girls in each. The causes and sources of household dirt, and the reasons why the different cleansing agents attain their object are usually treated in detail; experiments are made with the cleaning of metals with different materials, and their effectiveness is compared; *e.g.*, tarnished brass articles are rubbed respectively with rottenstone, with rottenstone and water, with rottenstone and oil, with vinegar or with lemon juice; the results are turned to account for the inculcation of underlying scientific principles, which are thus thoroughly brought home to the children, who seem to gain an intelligent comprehension of some of the physical and chemical changes of matter, to be able to differentiate elements from compounds, and to understand practically some of the relations and properties of acids, bases and salts. The staining of steel, the corrosion of tin and other metal ware by potatoes or fruit; the action of the acids in meat or fruit upon the tins in which they are preserved when these are opened to the air; the unwholesome products liable to be so formed; all afford endless opportunities for the application of these principles, once their existence is realised, and should foster "systematic knowledge of things pertaining to the home." The subject of "Living and Dead Dust" treated on similar experimental lines, introduces girls to an elementary conception of the causes which favour the development of moulds, yeasts, and bacteria; *e.g.*, a piece of bread, cheese, or some cooked fruit, is exposed to the air for a few days,

covered sufficiently to be kept moist, and the resultant growth is examined with hand lens and microscope, comparisons being instituted with specimens kept entirely protected from the air, or allowed to dry.

Method of  
teaching  
Housewifery  
in Cookery  
Lessons  
—continued.

Methods of household cleanliness outside the kitchen are included in some cookery courses: at Brookline (Mass.), for instance, a bed and simply furnished room are provided in one school cooking centre, where the airing and making of a bed, with the daily care of a bedroom, are taught by demonstration and practice. This is, however, exceptional; such instruction when given, is most usually theoretical, and is ordinarily deferred to the more advanced High school course.

Great stress is laid in all cooking courses upon the cost of food materials, and the relative nutrient properties of food stuffs of different qualities and of various prices, specially in connection with the different cuts of meat. Thanks to the work of Professor Atwater and his assistants and to the liberality of the State Department of Agriculture, a vast amount of more reliable information upon diet and food-stuffs is gratuitously available in the United States than in Great Britain, and this is turned to excellent practical account by good teachers in the schools. It is not the custom to entrust the outside purchase of commodities to the children composing a class; to send untrained girls to select articles, a judgment of whose qualities they are not competent to form, is regarded as unprofitable. The teacher, without exception, discusses the price of her own purchases, her reason for selection, and the signs by which she has been guided; she will also occasionally take her class to the market and draw their attention to the choice available and to the features which should influence a wise choice. Towards the end of their course the girls are called upon to practise the drawing up of a plan of a day's or a week's meals, which must contain a definite amount of nutriment for a given sum; from a series of these exercises one menu will be selected for preparation, which is then probably served to school managers or parents as the finale of the school year. Reference has been already made to these little functions, which consist usually of a three-course breakfast or dinner.

Table service and "table manners" are dealt with very practically and with repeated emphasis. The girls waiting on the several occasions when refreshment was served to me during visits to schools, gave evidence that their dexterity was the outcome of studied and intelligent practice: the natural deftness of the American girl makes her an apt pupil where taste and neatness are demanded. The higher standard of living which prevails generally in the United States may account for a rather different attitude towards this part of the training from that usual in this country, where, so far, such teaching is confined to our primary schools; nevertheless, in cities like New York, Boston or Chicago, where some quarters are given up to the poorest and, most recently arrived emigrants, I found dainty methods and refined "table manners" inculcated and exercised with reiterated care, and not by any means

in the cooking classes only—the “Good Habits Talks” deal constantly with the subject.

#### 4.—Hygiene.

An Obligatory Subject.

Attitude of Teachers ; Methods of Teaching.

The obligatory inclusion of the elements of Hygiene and Physiology in the time-table of all primary and grammar schools in almost every State of the Union is the direct result of the persistent and successful efforts made to obtain legislation on the subject by the Women's Christian Temperance Union, which advocates this method of arming the rising generation against subsequent temptations to excess in the consumption of either stimulants or narcotics. The extent of this vast influence, which has imposed uniformity in even one particular upon a national system priding itself upon its elastic independence, is not easily appreciated in a country such as ours, where centralisation is the rule, as far, at least, as elementary education is concerned; and though there are some wise and thoughtful minds who question the realisation of the ideal by this means, there certainly appeared to me to be a promise of good fruit, not so much directly from the occasionally crude inculcation of so-called “temperance” doctrines, as, indirectly, from the coincident lessons on good habits, and the simple, reiterated instruction on the beauty and complexity of the human body and its functions. To these lessons so many hours must be devoted for so many weeks each year for the seven or eight years of elementary education; the very text books employed must, in most States, be submitted to the Council of the Temperance Organisation, before circulation in the schools. Both requirements are really working for good, though at a regrettable expenditure of friction and irritation on the part of those who disapprove of the compulsory introduction of highly debateable topics. The “Good Habits Talks” in the lower grades are not only very popular with the little ones, for they deal chiefly with familiar surroundings, and with that centre of deepest interest to the young child—his own self—but they are found to offer a broad field for the cultivation of other subjects. As these simple lessons gradually develop in the higher grades into more specific treatment of hygiene and physiology, direct stress is laid on the dignity of the body, and its dependence upon environment for the attainment of perfection, emphasis being meanwhile given to the claims of home life in all its relations. Such teaching demands previous acquaintance with the subject by the teachers, especially as the tendency is to encourage practical illustrations; consequently more care is now devoted to the study of hygiene and physiology in the Normal schools and State colleges, with undeniable advantages to the students and their prospective pupils.

The irritation and soreness which followed the adoption of these coercive measures are, though visibly existent, gradually giving place among some of the more thoughtful and intelligent to a recognition of the undoubted value of the subject, when shorn of the questionably desirable obligation to include specific

instruction upon the effects of alcohol and narcotics upon the human body. Its educational possibilities show themselves to be ample. It excites interest, exercises observation and reason, links school lessons with daily life, promotes reverence for the body, suggests reasons for everyday customs, and lends them a new dignity, fosters good habits, and affords a convenient gathering ground for the clans of nature work, geography, history, science (elementary or advanced), art and physical exercise. Manual work and field trips, both desirable in a well-planned curriculum, are almost essential elements in its study, while in the upper grades, in skilled hands, the first principles of economics and sociology open young eyes to a wider social world than has been hitherto conceived. Already a respectable proportion of superintendents, inspectors and teachers are agreed as to the undoubted claims of hygiene to recognition on other than reforming grounds; while none but affirmative answers were offered to my persistent inquiries as to its attraction for and influence over the children. The somewhat hot partisan spirit apparent in a number of the recognised text-books, to which exception is taken by principals and teachers alike, results also in the more general employment of that preferable method, which discards implicit reliance on the printed page in favour of more apparently spontaneous instruction by the teacher. In some cases the modified laboratory method adopted enables pupils to gain their information at first hand, chiefly by direct observation of the concrete object, though this plan is yet in its infancy. The details of these State laws vary slightly as to numbers of hours and weeks per year that the instruction must find a place in the time-table: the minimum period appears to be 10 weeks, the maximum 6 months annually, with five, four, three or two weekly periods of instruction, given to both sexes, of each grade, in every public school.

Attitude of  
Teachers ;  
Methods of  
Teaching  
—continued.

A fair presentation of the whole movement and a well-balanced review of the questions involved may be found in the "Educational Review" for March and June, 1902. Superintendent W. B. Ferguson (Middletown, Conn.) takes for his text the recent modification of the State law which was carried a few months ago, and his remarks embody my own impressions of the best educational thought on the subject as I heard it expressed during my recent visit.

In the course of this article Superintendent Ferguson traces the history of what he describes as "one of the most remarkable movements in modern times. The Connecticut statute of 1893 resembled in its general features the statutes of several other States: it was less stringent than the law of New York, Illinois, or New Jersey, but more exact than that of Massachusetts or Pennsylvania." The statute has been in force eight years. "The hope entertained by the Women's Christian Temperance Union of effecting a thorough temperance reform in society by teaching the children the effects of alcohol on the human body rests upon the old Socratic philosophy that knowledge of evil ensures the avoidance of evil, that people do wrong from ignorance only." . . . This instruction was to be given in connection with Physiology and Hygiene, but "temperance was to be made the chief object." The writer points out that the first great



Attitude of  
Teachers ;  
Methods of  
Teaching  
—continued.

mistake made by the temperance leaders was to compel publishers to revise their text books on "Physiology" and to incorporate in them chapters on narcotics. "These books, therefore, instead of being scientifically accurate, contained statements that contradict both science and the everyday observations of men."

Superintendent Ferguson deals admirably with one reason for the general disapproval of these "endorsed" Physiologies by intelligent teachers, namely "the emphasis placed upon facts—or assumed facts—that appeal to fear, and to negative teaching chiefly, to the disregard of facts that appeal to manliness and the moral nature, and to the omission of much that should be given to emphasise the beauty, nobility, and strength of a temperate life. The poverty, crime and misery of the drunkard are hysterically held up to the gaze of the children, but the steady hand, the distinct speech, the quick senses, the healthy body, the clear brain, the success and happiness of the temperate man are scarcely mentioned. Says Professor S. T. Dutton of Columbia University: "We do not teach hygiene by the study of disease, cleanliness by the observation of filth, nor purity by the contemplation of vice. . . . We teach truth, kindness, generosity by pointing to men and women who exemplify those virtues." Froebel's injunction was so "to fill the mind with the beautiful that there will be no room for the ugly." . . . We do not contend that the evil effects of alcohol and tobacco should never be pointed out to children. They should be, but chiefly in order that by contrast the nobility, strength and success of the temperate life may be made more impressive. . . . This temperance education law had been tried in Connecticut eight years with results that were unsatisfactory to both teachers and temperance leaders, when, suddenly, the widespread opposition to the law that had been gathering force among the educators became manifest and made itself felt in favour of radical modifications. . . . It was suggested that a committee of school teachers be appointed to confer with the officers of the temperance organisation of the State, with eminently satisfactory results. . . . Great honour is due to the temperance people of Connecticut, especially the W.C.T.U., for manifesting a broad-mindedness and a spirit of conciliation which made agreement with the teachers possible. They placed duty before policy, good teaching before any desire for a "perfect" law, and the interests of the children before the fear or pleasure of anybody. The future will show, we believe, that in winning the respect and confidence of the teachers by uniting with them in support of a more reasonable temperance education law they "buildd better than they knew." . . . If this statute be compared with that of 1893, the following chief difference will appear, the present law does not require temperance instruction below the fourth grade, nor in the high school ; it does not require the use of text books below the sixth grade, nor the use in any grade of books that devote any definite portion of space to narcotics. Neither does it require the use of text-books by the pupils. All these requirements were definitely specified in the statute of 1893."

It seems probable that similar action will be gradually taken in other States, for which reason I include a reference to the preliminary report of the Committee of the New York State Science Teachers' Association, which is distinguished by its temperate tone, and by its recognition of the unquestionable advantages to be gained if the desired instruction be wisely and scientifically imparted.

The opinions and recommendations submitted in their preliminary Report on "School Instruction in the Effects of Stimulants and Narcotics" by this Committee deals with (1) the discrepancies which exist on this subject between the scientific text books used in Universities and Medical Schools and the "endorsed" text books employed in the public schools; (2) the extreme complexity of the problem involved; (3) a résumé of the opinions of upwards of 200 teachers regarding the present

required methods of teaching physiology; (4) the Committee's conclusions from their investigations, and (5) their recommendations. No doubt is raised as to the great importance of the proper study of physiology in both grade and high schools "because of the practical teachings of hygiene that may be thus widely diffused," but it is pointed out that so far there is no evidence "of a marked change of sentiment in the young either for or against the use of" stimulants and narcotics, while "by the unpedagogic methods employed (frequent and unnecessary repetition, the exhibition of charts showing morbid physiological conditions, etc.) it succeeds only in cultivating in children an abhorrence of the beautiful and useful science of physiology;" therefore the recommendations urge modification of the existing arbitrary laws;—freedom for teachers to decide as to the character and content of their instruction in physiology and hygiene; broad truthful teaching on the subject of alcohol and narcotics until this modification has been effected, time being devoted to a treatment of the subject from the moral and economic rather than the physiological standpoint. I have dwelt thus in detail with the present attitude of the teaching world towards this question, because of its importance to us in Great Britain. Daily evidence of the want of self-control in the use of stimulants confronts even the least observant among us; the necessity for checking the continuance of a menace to the nation's health and prosperity is generally recognised; the most effectual methods of inculcating self-control, and removing causes contributory to its destruction or inhibition are yet to seek. I believe that our great neighbours across the sea are on the right road when they include in their school curriculum lessons in self-respecting patriotism and such a practical acquaintance with the body and its working as to stimulate the acquirement of hygienic habits. It will be readily recognised that meanwhile, and in spite of its limitations, this legal obligation to include the elements of physiology and of personal and domestic hygiene in the curriculum of all Primary and Grammar Schools throughout at least seven-eighths of the United States results in the devotion of much more attention to these subjects than would otherwise be the case. As the primary object has hitherto been to secure to each boy and girl simple teaching, impressed by constant repetition, on the pernicious effects of alcohol and narcotics on the human body, the laws usually demand that one third of the specified time be set apart for this immediate purpose. Originally the coincident lessons on the structure, functions, needs and possibilities of the body were included to supply reasons upon which to base the special instruction. My observations gave me the conviction that in the hands of the greater number of superintendents, principals and teachers, the first has become last; every allowable minute, and possibly a good many more, is devoted to instilling the general principles of healthy living, the "temperance" teaching is reduced to a minimum and often given under protest—wisely so, in the opinion of some who are

Attitude of  
Teachers;  
Methods of  
Teaching  
—continued.

qualified to be the best judges. To give lessons of apparent and desirable simplicity on a highly complex subject to immature minds is an achievement possible only to the few, as, for instance, to such rare brains as those of Professors Huxley and Tyndall. The average well-intentioned, but often indifferently qualified, hard-worked teacher is liable to be led into one of two dangers, rash, exaggerated dogmatism, or commonplace, unimpressive, even ridiculous platitudes, neither of which methods attains the really good object.

The subject of Personal and Domestic Hygiene usually, therefore, takes its place not as a branch of domestic economy, but as one among others, in the general school programme; this is the case at Cleveland (Ohio), Buffalo, Washington (D.C.), or Lynn, (Mass.); but it is not uncommon to find it first brought before children in their language or object lessons, or in the nature study course, which last would seem, for good reasons, the most suitable position. These latter methods have been adopted in Philadelphia and Boston among other large cities. Occasionally this teaching on the physical structure and development of the body is connected with the course on "Conduct and Government," or with that on "Manners and Morals," which find a place in the time-tables of some Boards of Education. The most evident advantage which arises from the obligatory prominence assigned to physiology and hygiene is that boys and girls alike share the instruction, whereas if the subjects appear only as incidental to Domestic Economy, as in England, girls alone devote time or attention to their study, and that to a scant degree. As a rule, all the children appear to enjoy these lessons, if at all suitably given, but if there be a preponderance of interest it is on the side of the boys; this is not the observation of a prejudiced witness, it is the confirmed opinion of experienced school authorities.

Typical  
Courses.

The course at Cleveland, Ohio, has been selected for presentation, because it offers a good illustration of an intelligent method of treatment when physiology forms the backbone of the course and hygiene appears chiefly in the form of applications. The course of study in the Public School of Lynn, Mass., is given as an example of a scheme which starts with the habits familiar to the little ones in home life, supplies reasons for their adoption, and leads up to the structure of the body only in the later years. The third selected course (Hyannis Normal School) also approaches the subject from the familiar side of home habits and is of interest on two accounts (1) as an illustration of the quick observation which enables educators in the United States to remark, appropriate and adapt to their school use, material put into shape in other countries; (2) the fact that this scheme embodies very closely my own views of what should be taught to every child in every school. The original was drawn up four years ago by request of the Council of The Sanitary Institute, with the hope that it might find a place in the Board of Education's Day School Code, a hope not destined to be realised. It was therefore the more satisfactory to find it

(a) Hyannis  
Table VI.

had been meanwhile successfully adopted in some Massachusetts schools, where it has answered its desired ends to a degree which warrants its employment as a model for students in the Practice school of one of the best Normal colleges.

The children in Grade I. at Cleveland make acquaintance with the human body by first having their attention turned to the appearance, position, number, form, use and beauty of its external parts : this suggests the idea of care being desirable, and emphasises one form of that care, viz., cleanliness. Upon this a talk on the skin and its uses follows naturally, and the proper care of hair and nails is a practical point emphasised. The use of the different senses is then taught objectively, and is incidentally useful as a language lesson also : the children must not only touch objects, and name the sensation, for instance, but must mention other substances and the "feeling" they induce ; so with the parallel exercises on sight, smell, taste, sound. The first year's teaching concludes with very simple lessons on why and what and where and when we should eat and drink. In order to comply with the legal requirements, it is suggested to teachers that "they should make a simple statement that people should not use very strong drink if they wish to have good health." Grade II. revises the previous instruction, with considerable amplification, *e.g.*, attention is called to the relations of the parts of the body to each other, and to the purpose of life ; "the neck turns the head, the arms help the hands to reach, to carry," etc. Prominent bones are identified and named (skull, spine, ribs, hip bones) ; the relations of bones and muscles to bodily posture serve to throw light on motion, and to bring in the application of the need for exercise, rest and sleep. The direct purpose of the lessons on the special sense organs in this Grade is to train the children to greater acuteness in distinctions between sounds, colours, forms, distances, flavours and muscular efforts. The idea of growth and nutrition is next connected with food, also the advantages of cooking food are discussed. Table manners as well as table setting are practised as well as preached ; talks on the lungs and on air, with rudimentary ideas on ventilation, introduce another useful topic.

In Grade III. the same points constitute the basis of instruction. The children find, name, and suggest the uses of many more bones. The connection between food, posture, and good physical development is carried further. The special sense organs are subjected to simple tests, and the pleasure derived by their means is emphasised. Various forms of food, right and wrong methods of preparation and consumption, some idea of the process of digestion and the reasons for habitual care of the teeth again culminate in a talk on table manners and arrangements. The mechanical aspect of breathing is discussed, and the good or ill effects of impure air and out of door exercise, together with suitable means of domestic ventilation, find a place. In Grade IV. the instruction substantially follows similar lines, but assumes a less colloquial form, though the importance of simple treatment is emphasised ; thus, in treating of the heart and circulation, teachers are advised not to touch on the subject of cavities or valves at this stage, but practical applications to assist the formation of good habits are to be invariably included. The outline of work in Grade V. is preceded by the following "General Suggestions" for the course of study in the remaining grades :—

"Never lose sight of the practical side of the subject ; it will profit a child but little to know about bones, for example, if after all he lets his shoulders droop and his spine become unnaturally curved. Pupils should study their own bodies as much as possible. They should find out by actual examination how many bones they have in the arm, hand (not wrist), leg, foot (not ankle), ribs, etc. They should study heart beats, pulse in wrist, neck and temple ; weight and height ; chest measure and expansion in inches ; motion of the different joints ; the wonderful motion of the hand and arm ; of the head upon the backbone ; of the whole trunk upon the hip joints. The sight and hearing of pupils may be tested roughly, also sense of touch. The microscope and apparatus in the 8th Grade are free to the teachers of the 5th."

(b) Cleve  
land, Ohio.  
Tables V.  
and VII.

TABLE V.

## GRADE SCHOOL COURSE IN PHYSIOLOGY AND HYGIENE. CLEVELAND, OHIO.

GRADE I.	GRADE II.	GRADE III.	GRADE IV.	GRADE V.	GRADE VI.	GRADE VII.	GRADE VIII.
<p><b>PARTS OF THE HUMAN BODY.</b> Position, number, beauty, use, special adaptation, care.</p> <p><b>THE SKIN.</b> Use, appearance, structure, care.</p> <p><b>THE SPECIAL SENSE ORGANS.</b> Their uses taught objectively—what is learnt by touch, sight, smell, taste, sound.</p> <p><b>FOOD AND DRINK.</b> Simple lessons on what food is. etc. Care of teeth.</p>	<p><b>PARTS OF THE HUMAN BODY.</b> Amplification of Grade I. Relation of parts to each other, and to the purpose of life.</p> <p><b>BONES AND MUSCLES.</b> Taught objectively in their relations to habits of sitting, standing, etc.</p> <p><b>THE SPECIAL SENSE ORGANS.</b> Amplification of Grade I. Main points of structure. Purpose of lessons to the training of senses to greater acuteness.</p> <p><b>FOOD AND DRINK.</b> Mechanical aspects of Grade I. General introduction to growth and nutrition. Why food is cooked. Table setting and table manners.</p>	<p><b>BONES AND MUSCLES.</b> Find bones, discuss shape and reasons. Food for bones. Bone growth and habits of posture. Exercise and rest.</p> <p><b>THE SPECIAL SENSE ORGANS.</b> Pleasure derived from senses. Simple tests of sight, hearing, taste, etc.</p> <p><b>FOOD AND DRINK.</b> Solid and liquid food. Outline of digestive process. Care of teeth. Meals and Manners, etc.</p> <p><b>BREATHING.</b> Mechanical aspects. The lungs and their work. Pure and foul air. Value of exercise. Ventilation of bedrooms.</p>	<p><b>BONES AND MUSCLES.</b> Composition, growth, repair, uses, motion and locomotion. Joint structure.</p> <p><b>THE SKIN.</b> Construction, uses, baths.</p> <p><b>FOOD AND DRINK.</b> Digestive process. Manner, time, quantity, frequency of eating. Influences of alcohol and tobacco.</p> <p><b>CIRCULATION AND RESPIRATION.</b> Work of heart and blood vessels. Respiration. Air and its impurities and purification.</p>	<p><b>ORGANS OF MOTION.</b> Study bone structures. "Passive" strength. Motion. "Active" strength of muscles.</p> <p><b>ORGANS OF REPAIR.</b> Introduction to study of metabolism in body.</p> <p><b>THE BLOOD.</b> Composition. Microscopic appearance. Absorption by lacteals.</p> <p><b>THE LUNGS.</b> Structure. Use. Deep and shallow breathing. Pure air.</p> <p><b>THE SKIN.</b> Study of hair, nails, etc.</p> <p><b>ORGANS OF PERCEPTION.</b> Study of tongue, nose, eye, etc.</p>	<p><b>PHYSIOLOGICAL EXPERIMENTS.</b> To show why bones are hollow. To show animal and mineral parts of bones. Study of fresh bone. Study of fresh muscle. Study of muscle action on sheep's leg and in own bodies.</p> <p>Experiment to show action of diaphragm in respiration.</p> <p>Card models illustrating action of intercostal muscles.</p> <p>Review digestion.</p> <p>Study absorption.</p> <p>The heart and its functions.</p> <p>The nervous system. Location of chief centres, etc.</p>	<p><b>PHYSIOLOGY AND PHYSICS.</b> Blending of life and matter. Physical &amp; chemical changes. Experiments.</p> <p><b>PHYSICAL FORCE.</b> Experiments.</p> <p><b>THE CIRCULATION AND THE LAWS OF LIQUIDS.</b> (Pressure, capillary attraction, speed, etc.) Experiments.</p> <p><b>RESPIRATION AND ATMOSPHERIC PRESSURE.</b> (Combustion and Respiration. Physical properties of air, principle of barometer, etc.) Experiment. Dissect sheep's lungs. Ventilation.</p> <p><b>DIGESTION AND ABSORPTION.</b> Combination of physical and chemical processes. Effects of alcohol on human body.</p>	<p><b>THE EAR AND SOUND.</b> Simple Anatomy of Ear. Sound.—(Wave motion, telephone, musical pitch, velocity of sound, etc.).</p> <p><b>THE EYE AND LIGHT.</b> Simple anatomy of eye. Light.—(What it is, how it travels, velocity, etc.).</p> <p><b>GENERAL SENSIBILITY AND HEAT.</b> Nerves of Sensibility. Heat.—(What it is, how produced, etc.) Experiments.</p> <p><b>THE NERVOUS SYSTEM AND ELECTRICITY.</b> Simple anatomy of brain, spinal cord, etc. Of a nervous impulse or liberation of energy with electric discharge. Elementary study of electricity. Experiments.</p>

**TABLE VI.**  
**GRADE SCHOOLS.—OUTLINE COURSE IN ELEMENTARY PHYSIOLOGY AND HYGIENE.**  
**HYANNIS, MASSACHUSETTS.**

GRADE I.	GRADE II.	GRADE III.	GRADE IV.	GRADE V.	GRADE VI.	GRADE VII.	GRADE VIII.	GRADE IX.
<p><b>THE HOME.</b>—Shelter; parts of home; uses of each part.</p> <p><b>CLEANLINESS.</b>—How homes are kept clean; how persons are kept clean.</p> <p><b>DIRT DANGERS.</b>—What makes dirt; effects of dirt.</p> <p><b>EATING.</b>—Meals; when, what, why.</p> <p><b>SLEEPING.</b>—When, how, why.</p> <p><b>HEALTH PRESERVATION.</b>—A treasure, and how to guard it.</p>	<p><b>THE HOME.</b>—Materials and necessities; air, light, space, warmth, etc.</p> <p><b>CLEANLINESS.</b>—Of home, of person, of clothing.</p> <p><b>DIRT DANGERS.</b>—What dirt is; where it comes from.</p> <p><b>EATING.</b>—Manners, methods.</p> <p><b>PLAYING.</b>—When, where, why.</p> <p><b>HEALTH PRESERVATION.</b>—Mother Nature and her laws.</p>	<p><b>THE HOME.</b>—Choice, aspect, soil, surroundings, comforts, etc.</p> <p><b>CLEANLINESS.</b>—Of home, of person, of clothing.</p> <p><b>EATING.</b>—Foods, Classes, and varieties; for different ages; regularity and variety.</p> <p><b>SLEEPING (rest).</b>—Other resting periods.</p> <p><b>HEALTH PRESERVATION.</b>—Five laws of health; importance and examples of each.</p>	<p><b>CLEANLINESS.</b></p> <ol style="list-style-type: none"> <li>1. Of person.</li> <li>2. Of clothing.</li> <li>3. Of home.</li> <li>4. Of school-room.</li> <li>5. Of town.</li> <li>6. Of hall and chambers.</li> </ol> <p><b>CLOTHING.</b>—</p> <ol style="list-style-type: none"> <li>1. Uses and advantages—materials; clothes for various seasons; making of clothing; cleaning of clothing.</li> </ol>	<p><b>EXERCISE.</b></p> <ol style="list-style-type: none"> <li>1. Use of exercise.</li> <li>2. Kinds of exercise.</li> <li>3. Forms of exercise.</li> <li>4. Time for exercise.</li> <li>5. Amount of exercise.</li> <li>6. Place for exercise.</li> <li>7. Regularity of exercise.</li> <li>8. Variety of exercise.</li> <li>9. Dress for exercise.</li> <li>10. Effect of exercise.</li> <li>11. Results of exercise.</li> </ol> <p>Rest; public Gymnasia.</p>	<p><b>AIR.</b>—Properties of air; hot, cold, dry, damp air—causes; movement of air; sounds, odours; uses of air; pure and impure air; ventilation, temperature, sunlight; simple methods of home ventilation.</p> <p><b>BREATHING.</b>—Why, how; Organs of breathing; need of breathing; helps, hindrances.</p> <p>Review circulation and exercise.</p>	<p><b>FOOD AND BEVERAGES.</b>—Review Grade III. Composition of foods; starch and sugar, fats, proteins; examine milk, cheese, butter.</p> <p><b>BEVERAGES.</b>—Water, properties, sources, impurities, purification; tea, coffee, cocoa, alcohol.</p> <p>Organs of eating; digestion, steps of; hygiene of eating; risks to food; food protection, personal, public, legal.</p>	<p><b>PERSONAL HYGIENE.</b>—Review of the hygiene that directly relates to the care of the body.</p> <ol style="list-style-type: none"> <li>1. Cleanliness (Grade IV., 1-2.)</li> <li>2. Exercise (Grade V.)</li> <li>3. Breathing (Grade VI.)</li> <li>4. Hygiene of eating and drinking (Grade VII.)</li> <li>5. Good habits—(a) in sleeping—fresh air, clothing; (b) in eating—regularity, etc., etc.; (c) in work; (d) in recreation.</li> </ol>	<p><b>HEALTH OF COMMUNITY.</b>—</p> <p>Five laws of Health for towns and cities.</p> <ol style="list-style-type: none"> <li>1. Cleanliness.</li> <li>2. Wholesome food.</li> <li>3. Pure air and water.</li> <li>4. Healthy conditions for work.</li> <li>5. Recreation.</li> </ol>

(6)Cleveland  
Ohio—  
*continued.*

Interest in the study of the organs of motion is stimulated by comparisons between the motions of different animals, as horse, fish, worm, man, bird; the activity of muscles with observations on the results of use upon known substances, leads naturally to the topic of the organs of repair and the material furnished in the form of food, drink, or air. After a review of the processes of digestion, the fact that the digested matter must enter a "common carrier" which has "the right of way" over the entire body, introduces the subject of the blood, and to some teaching on absorption by the lacteals and lymphatics. This and the remaining subjects for this Grade (the lungs, skin and organs of perception) are but lightly treated, as they are repeated in far more detail in Grade VI. Here digestion is reviewed, and absorption is taught more fully. The structure and functions of the heart and the circulation of the blood occupy a great portion of the allotted time, but the concluding lessons are devoted to a preliminary study of the brain, spinal cord, and great sympathetic nervous system, especially to their great importance as instruments of mind and centres of nervous force. Prior to this period most illustrative material is found in observations made by the children, but at this stage teachers are urged to employ simple experimental illustrations, especially "during the winter months, when there is less to observe out of doors." (A few specimens of such illustrations may prove suggestive.)

"To illustrate why bones are hollow: Take a sheet of foolscap paper and roll it into a cylinder about an inch in diameter, holding in shape by means of strings or rubber bands; support this cylinder in a horizontal position by placing a support under each end. Now place weights upon the middle, noting how much it sustains before breaking. Next, take the same kind of sheet of paper and fold or roll it into a solid bar: support and load as before. Notice the result.

"To show the animal part of bone: Soak a clean bone, as a rib, in strong vinegar or dilute muriatic acid until it becomes flexible. Mineral matter has disappeared.

"To show what part of a bone is mineral: Weigh a small bone accurately, then roast it for about three hours on a hot bed of coals. Remove carefully and weigh again. Animal matter has disappeared. Notice what proportion.

"Saw a bone through lengthwise. Notice the structure of ends, middle, and outside part.

"To show the structure of muscles: Take a piece of lean meat that has been boiled; pick it to pieces with needles, showing connective tissue and the larger and smaller muscular fibres. Place one of the smallest fibres under a microscope and notice the markings.

"To show the action of the flexor and extensor muscles: Procure the front leg of a sheep. Remove the connective tissues which surround the entire leg, and carefully separate the muscles from each other, loosening up the tendons to where they are attached to the bones. By pulling the different muscles, their function in life can be nicely shown. It will be seen that many muscles act together to cause the same movements: that other muscles are antagonistic.

"Have children notice the swelling of muscles when in action on their own bodies. Let them find the muscle, or set of muscles, which makes certain movements: as, extending the arm, bending the arm, extending or bending the index finger, turning the head to left or right, chewing, etc. Show the muscles as the power acting upon the bones as levers of different classes."

Further suggestions include how to make models to show the principle upon which the diaphragm acts in respiration, or to illustrate the action of the intercostal muscles. Most teachers find no difficulty in improvising or adapting many more of the same kind to meet the need for concrete demonstrations.

The method adopted in the remaining two Grades brings out well a (b)Cleveland point yet dimly perceived in this country, which is, nevertheless, susceptible Ohio—of far fuller development than is accorded to it even in this instance at *continued*. Cleveland, Ohio, viz., the valuable field afforded by hygiene and physiology, not alone for the acquirement of the theories of physics and chemistry, but for their application under most favourable and attractive circumstances. The syllabus opens as follows—

“ We do not know what life is, but the mechanism which life has woven and built around itself conforms to the same laws and principles which hold in the physical world, and cannot be well understood without some reference to physical laws. The following outline is an attempt to suggest lessons which will be a blending of the two great departments of science, physiology and physics, life and matter—and the two thus brought together become one, viz., physiology, since all matter and its laws are but subservient to the one great thing—Life.

“ As a preliminary to these lessons the teacher should place the minds of the children in the right attitude towards the work. They should know that it is the human body that forms the central figure in all these lessons, and their thoughts should be continually brought back to that fact.”

The following is the outline:—“ All the manifestations of life, whether individual or national, can be reduced ultimately to certain changes. All changes are of one of two kinds : either changes of place or of composition : the former are known as physical, the latter as chemical. The teacher will illustrate physical changes and chemical changes. Let the children classify the following changes : water evaporates ; dew forms ; coal is mined, transported, thrown upon the fire, burned ; unsupported bodies fall to the ground, trees grow, sugar dissolves in water, a match ignites by friction, gunpowder explodes, water boils, iron melts, iron rusts, grape juice ferments, apples decay, cherries ripen, blood circulates, food digests ; animals inhale air, a certain part unites with the blood, the blood repairs worn-out tissues ; animals feel, children think, sudden news quickens the pulse, etc. Physical force. Muscles exert force. What force is. Other kinds of force than muscular force, as cohesion, adhesion, gravitation, magnetism, electricity, etc. How force is measured ; units of force ; as, pounds, ounces, etc. Weigh many things on spring scales or other kind. Educate the muscular sense by having pupils estimate the weight of many things after *lifting* them.

“ By exerting force, muscles produce motion. Some kinds of motion, as uniform, accelerated, retarded, pendulum movements, etc.

“ The circulation and the laws of liquids.

“ The heart fully explained as to its shape, size, walls, cavities, valves, interior, by means of dissections of heart of ox or sheep. The circulation carefully and minutely traced through both the pulmonary and systemic circuits.

“ The circulatory system compared with the distribution of water in a city ; the heart, arteries and capillaries and veins having their analogies more or less perfectly in any city supplied by a pumping station.

“ Study, in connection with the circulation, the effect upon liquids when subjected to pressure ; also capillary attraction.

“ Respiration and atmospheric pressure. Why we breathe ; the relation of air to the blood. Show nature of oxygen and carbon dioxide. Experiment with lime water to show that breathing and burning give rise to same products. Relation of plants and animals as regards the air. Show simple experiments in atmospheric pressure. Connect the facts of the physical properties of air with the organs of breathing, showing that it is a purely physical process. Teach the mechanism of breathing ; ribs, intercostal muscles, abdominal muscles, diaphragm, trachea, bronchial tubes, air cells, and how all operate together, thus forming the respiratory apparatus.

“ Dissect lung of sheep, showing lung tissue and air tubes.



(b.) Cleveland, Ohio "Perform, if possible, the experiment with mercury and barometer tube to show the principle of the barometer.

—continued. "Ventilation. Why necessary: how performed.

"Digestion and absorption. Relation of these processes to the blood.

"Digestion is performed by a combination of physical and chemical processes, while absorption is identical with the taking up of moisture by the roots of plants. The effect of alcohol upon the body in general and in particular should receive a large measure of attention."

### *THE SUGGESTIONS FOR GRADE VIII, ARE GIVEN IN FULL.*

#### *The Ear and Sound.*

"Teach as much of the anatomy of the ear as is found in any elementary physiology.

"The ear constructed with reference to sound.

"Sound. What it is. Wave motion shown by rope. How sound is produced. Show by using tuning fork, small bell or large glass dish, that a sounding body is vibrating. Show how sound travels through the air: string telephone: experiment to prove that sound will not pass through a vacuum. Velocity of sound in air: echoes. Musical sounds: pitch, loudness.

"Having studied the ear and sound to some little extent show how the former is adapted to receive the latter: trace a sound wave from a distant bell through the air, into the ear, through its different parts until the ends of the auditory nerve are excited.

"Test the hearing of pupils.

"What knowledge is brought to us by the sense of hearing.

#### *The Eye and Light.*

"The anatomy of the eye. The eye-ball and its surroundings. Muscles to move. Why located where it is. The cornea, sclerotic coat, choroid, iris, lens, retina, aqueous and vitreous humour. Drawings of eye made. Light and what it is. Travels in straight lines (nearly) through the air. Velocity: how found. Reflection.

#### *General Sensibility and Heat.*

"Why our sense of heat should be distributed over the entire body. What heat is. Various ways of producing: by mechanical action, by combustion.

#### *The Nervous System and Electricity.*

"The anatomy of brain, spinal cord, nerves, sympathetic system, taught by use of chart. Do not go too deeply into structure of brain, a very general notion only. Show that the nerves bring all parts of the body into a sympathetic relation. A nervous impulse is a discharge or liberation of energy analogous to the electric discharges: not identical but having an analogy so near as to make the study of electricity in place in this connection: occupies time. Experiment.

"Teach paralyzing influences of alcohol and narcotics upon nervous tissues, and especially upon the brain. Discuss other physiological reasons why stimulants and narcotics should not be used: also moral aspects of drinking alcoholic stimulants."

Throughout the whole eight years teachers are incited to maintain a close connection between nature study and human physiology; applications are also required and introduced in his classes by the Physical Culture Instructor. At

the teachers' quarterly meeting when this among other subjects is discussed between the supervisors and their staff, unremitting efforts are made by the former to present suitable suggestions of how associations may be created between these subjects and daily life, either by judicious co-relation with other subjects, or by the constant diffusion of a general atmosphere of healthful habits around and among the children. Teachers are also furnished with a list of suitable books of reference: "Physiology for Little Folks," "The House I live in," and Blaisdell's "Our Bodies" for the earlier grades: Huxley and Youman's "Physiology," and Shaw's and Gifford's and Avery's "Physics" for the later.

The complete curriculum at present in force in the Grade schools of Cleveland, Ohio, is detailed, as it appears to be a good specimen of such time-tables, and brings out clearly the proportion of hours devoted each week, throughout the compulsory school life, to the various studies, mental, moral, physical, manual, and so forth, upon which the attention of the children is concentrated. Hitherto sparse attention has been given to physiology in the Cleveland Normal School, a defect to repair which no pains is spared by the Superintendent of the City Schools. Admirable and exhaustive courses of lectures to the teachers are given by the Medical Officer of Schools, Dr. R. Leigh Baker, or by other authorities, and the sincere interest exhibited in the lessons by their supervisors must prove a useful impetus to good work.

The school course at Lynn (Mass.) also shows the position assigned in the time-table to civics, elementary science, and morals and manners, as well as to hygiene. This last subject is divided into two parts: the first treats of good habits, of what the children do daily; the second takes up the study of physiology. Teachers are advised to begin by brief and simple conversations, to direct children to their own experiences and observations at home, at school and elsewhere, and to bring out the elements of healthy living: eating, drinking, working, resting, sleeping, playing, cleanliness. It is intended that children should then be led to see what parts of the body are brought into use through the actions noticed; to see why these parts are useful, how they should be cared for, and why exercise, rest, and pure air are necessary. Among the many suggestive "Notes to Teachers" the following is one of the most valuable:—"In order to impress upon the children the importance of correct living, the teacher must practise in school what she teaches. She should see that the schoolroom is kept clean, that the heat is properly regulated, that the air is kept pure by proper ventilation, that the children are not subjected to dangerous draughts, that the light is suitable, that the physical exercises, songs, and other diversions are used at the right time, so far as these things are under her control or influence. She should see that the children observe the hints on cleanliness of person or clothing, that they take proper care of themselves and their garments, etc."

(c.) Lynn,  
Mass.  
Tables VIII.  
and IX.

TABLE VII.

CLEVELAND PUBLIC GRADE SCHOOL WEEKLY TIME TABLE.

GRADES	I.		II.		III.		IV.			V.		VI.			VII.		VIII.		
	h.	m.	h.	m.	h.	m.	h.	m.		h.	m.	h.	m.		h.	m.	h.	m.	
Reading - - - -	9	10	8	50	8	45	5	35	Reading - - - -	8	15	8	15	Reading - - - -	2	5	Reading - - - -	2	10
Spelling - - - -	-	-	2	5	1	40	2	5	Spelling - - - -	1	15	1	15	Spelling - - - -	1	10	Spelling - - - -	1	-
Language									Language					Language			Language		
Constructive Work -									Constructive Work -	1	15	1	15	Grammar - - - -	8	10	Grammar - - - -	3	0
Composition - - -									Animal study (1st mth.)					Composition on General Subjects -	0	40	General Composition		40
Nature Study - - -									Plant Study (7th, 8th and 9th months) -					Special Composi- tion			Elementary Science		
Literature - - - -	2	5	2	55	2	25	1	15	Industries (8rd and 5th months) -	1	15	1	15	Elementary Science	1	20	Botany		5
History - - - - -									History with Conduct and Civics (2nd, 4th and 6th months) -					Physics			Physics		
Industries - - - -									German - - - - -	8	20	8	20	Botany			Astronomy		
Conduct and Mo als -									Literature & Composi- tion - - - - -	2	5	2	5	Astronomy			Luer Literature -	1	5
Geography - - - -							8	20	Physiology & Hygiene	0	40	0	40	Luer Literature -	1	20	Luer Literature -	1	5
Physiology and Hygiene	0	25	0	25	0	25	0	25	Geography - - - -	8	55	8	55	German - - - - -	2	40	German - - - - -	2	40
German - - - - -	6	40	6	40	6	40	6	40	Physiology & Hygiene	0	40	0	40	Physiology & Physics -	0	40	Physiology & Physics -	0	40
Arithmetic - - - -	2	30	2	35	3	45	6	10	Geography - - - -	8	55	8	55	History - - - - -	2	40	History - - - - -	2	40
Manual Training - -	0	40	1	0	1	0	0	45	Arithmetic - - - -	8	55	8	55	Arithmetic - - - -	4	25	Arithmetic - - - -	5	0
Drawing - - - - -	1	0	1	25	1	0	1	5	Manual Training - -	1	0	1	0	Manual Training . -	1	0	Manual Training . -	1	40
Penmanship - - - -	1	30	2	5	2	5	1	30	Drawing - - - - -	1	10	1	10	Drawing - - - - -	1	10	Penmanship, Book - keeping, and Manual Training - - - - -	1	40
Music - - - - -	1	0	1	15	1	0	1	5	Penmanship - - - -	1	10	1	10	Penmanship - - - -	1	10	Drawing - - - - -	1	15
Physical Culture - -	0	50	0	50	0	50	0	50	Music - - - - -	1	10	1	10	Music - - - - -	1	10	Music - - - - -	1	15
Recesses - - - - -	0	25	1	40	1	40	1	40	Physical Culture - -	0	50	0	50	Physical Culture - -	0	50	Physical Culture - -	0	50
									Recesses - - - - -	1	40	1	40	Recesses - - - - -	1	40	Recesses - - - - -	1	40

TABLE VIII.

## LYNN GRADE SCHOOL CURRICULUM.

I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.
Reading.	Reading.	Reading.	Reading.	Reading.	Reading.	Reading.	Reading.	Reading.
Spelling.	Spelling.	Spelling.	Spelling.	Spelling.	Spelling.	Spelling.	Spelling.	Spelling.
Vertical writing.	Vertical writing.	Vertical writing.	Vertical writing.	Vertical writing.	Vertical writing.	Vertical writing.	Vertical writing.	Vertical writing.
Arithmetic.	Arithmetic.	Arithmetic.	Arithmetic.	Arithmetic.	Arithmetic.	Arithmetic.	Arithmetic.	Arithmetic.
Hygiene and physiology.	Hygiene and physiology.	Hygiene and physiology.	Hygiene and physiology.	Hygiene and physiology.	Hygiene and physiology.	Hygiene and physiology.	Hygiene and physiology.	Hygiene and physiology.
Manners and morals.	Manners and morals.	Manners and morals.	Manners and morals.	Manners and morals.	Manners and morals.	Manners and morals.	Manners and morals.	Manners and morals.
Language.	Language.	Geography.	Geography.	Geography.	Geography.	Geography.	Geography.	Geography.
History stories.	History stories.	Language.	Language.	Language and grammar.	Language and grammar.	Language and grammar.	Language and grammar.	Language and grammar.
Observation lessons on place and position.	Observation lessons on place and position.	History stories.	History stories.	History (American narratives).	History (American narratives).	History of the United States.	History of the United States.	History of the United States.
Observation lessons on natural and physical phenomena.	Observation lessons on natural and physical phenomena.	Observation lessons on place and position.	Observation lessons on place and position.	Observation lessons on natural and physical phenomena.	Observation lessons on natural and physical phenomena.	Civics.	Civics.	Civics.
Observation lessons on people and occupations.	Observation lessons on people and occupations.	Observation lessons on natural and physical phenomena.	Observation lessons on natural and physical phenomena.	Elementary science.	Elementary science.	Elementary science.	Elementary science.	Elementary science.
		Observation lessons on people and occupations.	Observation lessons on people and occupations.					

TABLE IX.

LYNN GRADE SCHOOL—COURSE IN HYGIENE AND PHYSIOLOGY.

Grades I. and II.	III. and IV.	V.	VI.	VII.	VIII.
<p>Simple talks on topics treated in detail in subsequent Grades</p> <p>Teachers are directed to lead the children to notice what they do daily, and to train them to healthy living, by giving them correct general notions on this point as far as they can comprehend.</p>	<p><b>HOME.</b>—Its people, and what they do.</p> <p><b>EATING.</b>—The meals.</p> <p><b>FOOD.</b>—Various kinds.</p> <p><b>HOW TO EAT.</b>—Manners at table.</p> <p><b>SLEEPING</b> —When; how much.</p> <p><b>WORKING.</b>—At home; at school; with hands and head; why.</p> <p><b>PLAYING.</b>—Why; how.</p> <p><b>RESTING.</b>—When; why.</p> <p><b>CLEANLINESS.</b>—Of person; of clothing; of rooms.</p> <p><b>BAD HABITS.</b></p> <p><i>Note.</i>—Children should be led to see what parts of the body are brought into use through the service and exercise noticed; to see why these parts are useful; how we should care for them; how to avoid injury and properly to exercise them. Children are trained to see that <i>exercise, rest, and good air</i> are always necessary. Teachers must attend to the use of daily breathing and physical exercises in the school.</p>	<p>Extend work of Grade IV, and emphasize its importance.</p> <p><b>FOODS.</b>—Their necessity; kinds; quantity; adaptation to special purposes; preparation; cautions, etc.</p>	<p><b>DIGESTION.</b>—Organs and processes with effects of drinking and smoking habits. Hindrances to digestion; cautions.</p> <p><b>ABSORPTION AND CIRCULATION.</b>—Organs and processes; hygiene of; cautions.</p>	<p><b>RESPIRATION.</b>—Organs; processes; hygiene of.</p> <p><b>NERVOUS SYSTEM.</b>—Growth; hygiene; exercise; cautions.</p> <p>In Grades VII. and should be given in</p>	<p><b>SKELETON AND MUSCULAR SYSTEM.</b>—Structures; uses; hygiene; repair; cautions.</p> <p><b>SPECIAL SENSES.</b>—Light; smell; taste; hearing; touch.</p> <p>VIII. suggestions cases of accidents.</p>

The lessons are illustrated at first by using the pupils themselves, the school buildings, or common objects easily obtainable. Charts and experiments are employed in the higher grades, but it is not usual to make use of fresh animal tissues or organs, as it is at Cleveland. Advantage is taken of opportunities offered for correlation with the "Observational Lessons" on natural and physical phenomena, and on people and occupations, as well as with the Nature Work and Elementary Science later on. This inter-relating method is turned to account also in connection with the history, geography and civics taken in the upper grades. The details of all courses are left to the discretion of his staff, by Mr. O. Bruce, the Superintendent of the Lynn Schools, so that the personal equation of the teacher may find expression, and the special needs or interests of the class be consulted. Two demands he makes, and expects to have met; the one, that each lesson be well prepared and presented, in order to arouse, direct and maintain a wholesome interest among the children—the other, that his staff and their school houses shall be living object lessons of hygienic practice to the town.

(c) Lynn,  
Mass.—  
continued.

Similar good methods and terms of advice to teachers are found under other Boards and Superintendents. The Massachusetts Board of Education, *et c.*, in its published "Course of Studies for Elementary Schools" suggests the following as a method of teaching physiology and hygiene to children which has been tested and proved successful by experience:—

(d) Massa-  
chusetts.

#### *Section I. The Whole Body.*

**Position.** Teach the pupils to observe their own and others' positions while sitting, standing and walking. Teach them to desire and to strive to be erect. The lessons on height and weight should be to this end. **Height.** Each pupil should know his height. Mark the height of a pupil on an unused blackboard or door jamb: record the date, the height, and weight, beside the mark. Do the same for three or four pupils. Repeat the measurement at regular intervals. Encourage other children to have the same done at home by their parents or by older children. Have children compare their growth during different intervals. All the lessons should tend to producing and retaining correct posture and carriage. **Weight.** Do the same as for height. The practice of measuring height and weight should be continued through the period of growth.

#### *The External Parts of the Body.*

Pupils should touch and name the parts in regular and irregular order. **Care of parts.** Each child should be taught to take proper care of his hair, eyes, nose, mouth, teeth, hands, feet and nails. Cleanliness of the body, and the clothing should be insisted upon daily before the school exercises are begun.

#### *The Senses.*

Teach by simple experiments what each sense is, the parts that are prominent in structure and delicate in sensibility, the uses of the important parts, the knowledge gained by each alone, and the care of each sense. Avoid in experiments all sources of error, such as learning through touch what ought to be known by hearing.

In Section II. which comprises the next three classes, attention is directed to the limbs and structure of the body, the following extract indicating the method advised :—

*Section II. The Limbs and Walls.*

Skin, muscle, tendon, blood, blood vessels, nerves, fat, bones, joints, ligaments, cartilage.

Sources of knowledge. The body. At home—fur, raw and cooked beef, leg of a fowl, veal, lamb. At the market—sides and cuts of beef, mutton and pork, bones. At school—shank of beef, bones, pictures, diagrams, books.

What to teach. The organ : its chief characteristics and its name ; its position and uses ; how it should be cared for ; the effects upon it of alcohol and narcotics.

Method. 1. Find what is known. 2. Teach pupils to observe the organ ; to observe its uses ; to learn its care from experience, home training, from knowledge of use, from reading. 3. Contribution of facts. Selection and arrangement of facts by pupils. 4. Oral and written descriptions, drawings with and without objects, according to outline. 5. Reading of selected articles. Suggestions. Observations of corresponding parts in other animals. (Teach to put a piece of sticking plaster on a wound ; to cleanse and bandage a cut ; to assist one who is weak.)

The remainder of the course is devoted to the consideration of food, air, clothing, removal of waste, exercise and rest, the necessary illustrations being gathered by the pupils and added to by the teacher ; the nutritive, digestive, circulatory, respiratory, motory and nervous systems being considered and studied in Section III. by the higher grades. Teachers are exhorted to avoid technicalities as far as possible with the younger pupils, to make use of numerous simple experiments, and to let rules for the proper care and use of the different organs, systems or functions of the body be repeated and re-enforced. Special attention to the interdependence of vital processes is advocated, and the ideal of a strong, wholesome and unabused body as best fitted for successful and happy living is kept constantly and conspicuously in the foreground. In consequence of the law which requires special instruction in schools as to the effect of alcoholic drinks, stimulants and narcotics on the human system, these subjects appear in each section of the course, but the teachers are cautioned to deal only with the more serious consequences, just enough to attain the purpose of mentioning them at all, to refrain from assertions of what is uncertain or sincerely doubted by high authority, or likely to be repudiated by the pupil when he is mature enough to judge for himself. If the children thoughtlessly incline to make merry over the weakness, or folly, or misfortune of persons visibly under the influence of alcohol, their teachers are advised to lead them to a truer and more serious attitude towards such things, dwelling on the personal effort and capacity necessary to form good habits and to avoid bad ones, and showing by illustration, that the man needs a strong and beautiful body if it is to be sound and well balanced. Special delicacy of treatment is pointed out as necessary in those unfortunate cases where children find themselves between the safe teaching of the school and the counter practices and influences of home.

(e) Washing- Good methods and wise counsels to teachers find admirable illustration at Washington, where the enthusiasm, on occasion limited elsewhere to supervisors, extends to most members of the staff. This is largely due to Mrs. I. G. Myers, who has been responsible for many years for the Normal School curriculum and has also had an intimate connection with the schools themselves.

The following extract from the "Outline of Work for 1901" speaks for itself as to the personal practice which it is assumed should accompany the teachers' precepts:—

"To the teacher—

"Study the ventilation of your own building and schoolroom. Know how to secure the best possible fresh air conditions for the children and for yourself. Test this frequently by going from the room for a minute, returning sensitive to vitiated air. Keep a fraction of the mind on temperature, to see that it is the proper one. Have a watchful care to the adjustment of shades, for the best distribution of light. Be mindful of the seating of pupils having defective sight, so that their defects may lessen by fostering care. The direct aim of the early study of physiology is the intelligent care of the body. The formation of healthful and refined habits is the end to be secured."

In Grades IV., V., VI., VII., and VIII. advantageous place is found for the elements of sanitation. The skin, nails, hair, and teeth are first studied in Grade V., then appears the following note: "Study the conditions of a healthful schoolroom: sunlight, its effect; dust, its dangers; fresh air, its value; temperature, what it should be. Let the responsibility for this care gradually pass from the teacher to the pupils, by whom in turn, it should be sustained, with intelligence and conscience." In Grade VI. sanitation comprehends "The care of the sleeping room; a kitchen sink, use, construction, care, risks from want of care, etc." In Grade VII. air and ventilation are required to be treated experimentally and "practically;" and sewer gas, its nature, effects, and dangers, is considered in connection with the city regulations for plumbing. The physiology in Grade VIII. is confined to a simple general study of the nervous system: the sanitation concerns itself with the sources of diseases, germs and their conditions of development, a study of simple disinfectants (sunlight, soap, and water, par excellence), and concludes with an introduction to municipal sanitation (sanitary dwellings, street cleaning, sewerage, garbage, contagious diseases, etc.). Appended is this suggestion: "Combine this unit with the study of city government;" the force and worth of which note is appreciated when the fact is recalled that boys of 13 or 14 constitute half the pupils who come under this instruction. No text-books are suggested for use until Grade IV., then "The Child's Health Primer" and Stowell's "Essentials of Health" are named as suitable; but long and valuable lists of reference books are appended for the teachers' use throughout the course, all of which are available at the teachers' library. Among books on general physiology, Foster's, Colton's, Tracey's, and Bertha Brown's find a place, with Ball's "Care of the Teeth," Mercier's "Nervous System and the Mind," Rosenthal's "Muscles and Nerves," and Lagrange's "Physical Exercise;" Billing's and Morrison's excellent books on Ventilation and Heating, and Prudden's "Dust and its Dangers" and "Story of the Bacteria" are also included, besides the Annual Reports of the Health Department and references to articles in current literature.

Practical methods and field trips are advocated, and unusual trouble is taken to inter-connect this with other school studies. The much talked-of principle of correlation is practised with most encouraging results in the Washington schools, though all concerned are aware that but the first steps along this right road have yet been taken.

At Philadelphia the Good Habits Talks find a place among (f) Philadelphia object lessons in the four primary grades.

In view of the well-recognised fact that eating and drinking bulk largely in a small child's mind, the conversational lessons open on articles of food and drink (bread, beef, mutton, coffee, tea, butter, cheese, rice, fruits), and from what natural objects these are obtained, followed by a similar treatment of common articles of clothing. In Grade III. the care of the human



(5) Phila-  
delphia—  
*continued.*

body, by means of cleanliness, clothing and breathing fresh air, gives occasion for much useful talk, so that by the time Grade IV. is reached (the children being from 9 to 10 years old), curiosity is aroused as to the general structure of the body and the means by which it receives sensations. During the remaining four years the physiological and hygienic aspects of the study are well balanced in treatment, as is evidenced by the written notes of the more advanced grades. By the courtesy of Miss Wright, one of the Board of Education Supervisors, I have been furnished with a large number of notes made by pupils in Grade VIII., executed without previous notice in the ordinary course of work, and handed to me without revision as they left the writers' hands. Of these, forty papers are on the nervous system; they are clear, well expressed, and, as a whole, satisfactorily accurate; the plentiful introduction of pen and ink drawings illustrate the facility attained in this mode of expression by an American child. Each paper contains a verbal sketch, illustrated, of the cerebro-spinal and sympathetic nervous systems, and highly creditable drawings of the under surface of the brain, showing the cerebrum, cerebellum and medulla oblongata; each paper concludes with the hygienic applications to be made of the knowledge gained, couched in evidently original language:—"It is the worry in many cases that causes nervous sickness." "To keep our body in health also tends to keep the nervous system in health, as the blood which nourishes the nervous system must be pure and good. . . . The nervous system can be easily abused, sitting up late at night, overtaxing the body, reading cheap novels and going to the theatre too much all tire the brain." The following extract from one of the best papers illustrates the danger, to which reference has been made as so liable to arise from well meant efforts to simplify a complex, and, as yet, incompletely understood subject; though the general tenour is excellent some of the daring assertions on the part of the pupil are inaccurate and misleading. "The use of narcotics, strong drink and opium all tend to weaken the nervous system. The alcohol gets into the blood, takes away all the healthful parts of the blood and it gets into the nerve tissue which is very watery, and the alcohol dries up the water and takes its place, and when the alcohol is once in the nerve tissue it is very hard to get out, so for this and other reasons, alcohol should be avoided by every sensible person. Opium and all other drugs should be equally avoided, the craving is very hard to get rid of and will often be inherited by the victim's innocent children. The opium has a deadening effect that is very dangerous, often resulting in death; all the patent medicines and cough cures often have a form of opium in them, and they should be avoided as a household remedy, as the effect on children especially is very dangerous."

Even more striking is another set of papers from the same school for the variety in verbal expression of identical facts and the really beautiful pen and ink drawings of the structure of the ear, including separate illustrations of its parts. The evident grasp of the theory of sound, in addition to the fitness of the human ear for the transmission of sound waves, is most apparent, and the remarks on the care of the ear are simple, rational, common sense. A third set of papers deals with the eye and also merits high praise. Sketches enter even more fully into these notes, and are used with great effect to illustrate and assist to shorten written descriptions. It is evident that the hygienic applications have been well impressed, though a number of the writers wisely omit any notes on the effects of alcohol and tobacco on the eye, which are reported by others in words similar in substance to the following extract from one paper:—

"Effect of Alcohol on the Eye.—It in a general way dulls or weakens the nerve. Alcohol is known to produce congestion of eyes. It irritates the delicate linings of the eyelids and lessens the acuteness of vision.

"Effect of Tobacco on the Eye.—Tobacco smoke irritates the eyes. It causes sharp pain of the eyeball. Smokers often have confused and feeble vision due to partial paralysis of the optic nerve."

These papers are home-work on an assigned subject which had been previously studied in class, and rank as "Compositions;" the sketches are allowed to be copied from diagrams or objects. The execution of these careful drawings has various values, in addition to the inevitable mental impression received of relation of parts, of form and of structure; accurate observation, neatness, precision, manual dexterity, reliance upon means other than verbal for expression, the employment of facility gained in another branch of study, are all called into play. The method appears in general use. I have specimens of similar, though less advanced, notes collected in the course of a visit to some schools at Providence, Rhode Island, where pencil illustration rather than verbal description is relied upon. Bone structure, the mechanism of a joint, the shape and arrangement of the teeth, the position of the organs in the thorax and abdomen are drawn; and usually six or seven written lines are considered to supply the necessary letterpress.

Good papier-maché models and anatomical charts are provided under some Boards of Education, but a majority of those teachers whose previous training or post-graduate courses enable them to approach the whole topic from its practical side, confirmed my own opinion that one illustration from life or a familiar object, one demonstration on animal tissues, such as the leg of a rabbit or the eye of an ox, is worth more as a means to convey a true conception, to arouse active interest, or to stimulate subsequent observation than the free use of costly models. The extent to which this "better" way is followed depends upon the attitude of the Supervisors or school principal, and the capacity and enthusiasm of the teacher. The same spirit which has prompted the rapid introduction of the "laboratory method" into high schools and colleges is permeating the whole world of education, with a promise of good things to come for this as for other suitable subjects. Illustrative Methods.

Special lessons upon the care of young children are not usual in the public schools, though exceptions to the rule exist in New York City, Washington, and very probably elsewhere. In respect of sensible clothing, England can learn with advantage from the United States where babies, from birth, have necks, arms, and legs completely and continuously protected. The artificial feeding of infants is chiefly in the hands of physicians, who write individual prescriptions to be "made up" at milk laboratories instead of at chemists' shops; and this custom was, in my experience, a reason frequently advanced for not giving instruction on the subject of "bottle fed" babies in schools. At Buffalo the use of tube bottles is forbidden by law. I do not know whether such enactments have been made elsewhere, but in this city the result within a comparatively short time was to reduce the rate of infantile mortality by one-half. At the New York cookery centres the girls learn how to The Care of Young Children.

sterilise and pasteurise milk ; how to modify cow's milk to meet the needs of infants at different age periods ; how much food to give and how often to feed ; what are and what are not the right shapes for feeding bottles. They also learn how to make barley water and foods suitable when the child begins to require other than milk diet. "What Baby must not have," needs to be well impressed in the poorest quarters of that city as well as in our own towns. Regular instruction is not given at Washington, but Mrs. I. G. Myers occasionally takes the elder girls alone, at one or other school, for personal instruction in nursery hygiene as well as in the wise care of their own health.

#### B.—HIGH SCHOOLS.

To confine the following remarks to the teaching of the Domestic Sciences and Arts, and Hygiene in the public high schools is to omit, for the present, reference to some excellent examples of secondary school courses supported by private endowment, *e.g.*—those at the Pratt and Lewis Institutes, which will be treated in Part II. Nevertheless, adherence to the division of educational institutions into the two groups of those maintained by State funds or from private resources will, it is hoped, enable those unfamiliar with the intricacies consequent upon this parallel dual system to assign to each its just relative proportion to the mass of good work accomplished by both.

#### Curricula.

Domestic Science is classified, almost without exception, as Manual Training under all Boards of Education into whose high schools it has been introduced. The reason for this is found substantially in the system of co-education. If the girls of a division devote so much time per week to a subject from which boys are excluded, their occupation during these "periods" must be of a character inapplicable to girls. Manual training is widely recognised as desirable for both sexes and is therefore conveniently, if not quite accurately, extended to cover cooking, sewing, laundry and table service, as well as its more legitimate subjects, work with clay, card, wood, or metal. It must always be borne in mind that a proportion of authorities maintain the "training" value of all these occupations to be equal. In large cities which support several high schools, one of these is usually set apart for the express purpose of offering special facilities in manual training to both sexes, and is so denominated ; not that all Manual Training High Schools necessarily include domestic subjects in their curricula, but they do so in many cities, and, I believe, to an annually increasing extent. At Providence (Rhode Island), at Ann Arbor (Mich.), and in the early days at Philadelphia, cookery and even sewing, appeared in the time tables of high schools before adoption into the grammar schools ; but Brookline, (Mass.), offers an illustration of the more general tendency, *viz.*, to include an introductory course in both subjects in the elementary schools, and to encourage further study and practice in the high schools.

As a rule, high schools provide a choice of courses for their students, usually from five to eight in number ; these

are described as General, Classical, Scientific, Latin-German, English preparatory, Commercial, Manual, etc. The base of most of them is very similar during the first two out of the four years of high school life, by which means differentiation or specialisation is postponed until about 16, and premature specialisation avoided at 14 years of age. Domestic Science may constitute a required subject in the General, Technical, or Manual Training courses, as it does, *e.g.*, at Brookline (Mass.), or it may be an "elective," open to all girl students, as at Ann Arbor and Muskegon. When house sanitation plays a prominent part this section of the course is occasionally thrown open to boys, as is the case at the Toledo Polytechnic School.

The scope of the whole course is often very comprehensive, as the arts are included to an extent not usual in this country (considerable time being devoted to the practice of design, clay modelling, drawing, and to some study of colour), while it would be hard to find one scheme which does not require, or include in itself, a study of general chemistry, elementary physics, and an introduction to the first principles of bacteriology; some suggestions on economic and sociological problems are also brought forward, with a view to widen the girls' horizons and to prepare them for their future positions and obligations. It is evident, therefore, that valuable opportunities await those who approach such courses in the attitude of mind anticipated by the experts responsible for their formulation. During her four years' study an intelligent girl devotes time to theoretical and experimental work in chemistry, physics and biology, usually with special reference to their practical household applications, which she at once proceeds to test in her cookery, laundry and cleaning practica. Her hands and eyes are trained in the studio, so that she may bring skilful manipulation, habitual accuracy, and an eye for form and colour to her classes in sewing, dress-making and millinery. She is called upon to make personal observations on sanitary house construction, and then to reproduce, or to originate, the plans for a healthy dwelling; here she is required to have good reasons for all her details and to be as practical in her knowledge of plumbing possibilities and risks as she is in her scheme of colour decoration for the rooms. Calculation of cost must be carried out with care and the economics of family life studied. She is trained to realise that mere provision of food and clothing does not fulfil the housewife's duty; meals at reasonable cost must furnish requisite nutriment in wholesome, varied forms, with the details of which she should be familiar; clothing must fulfil many more requirements than mere surface show—how to ensure these constitutes a part of her study. She perceives how responsible is the woman for the expenditure of a household, and gets her first glimpse by this means into the sociological problems of to-day. Time has to be found for gaining an insight into the special care essential for infants and invalids; while, most wisely, the study of literature, and, if possible, of one or two modern languages, maintains, throughout, the necessary connection with the wide world of

Scope and  
Value of  
Domestic  
Science  
Courses.

Scope and  
Value of  
Domestic  
Science  
Courses—  
*continued.*

experience, thought and culture, of which each home reflects a part.

Needless to say, the realisation by the pupils of all these ideals is not as yet contemplated in every high school; but, where the effort is made, there is already warranty of eventual attainment. At this age period, more than at that of any other, the mental attitude of teachers is quickly observed by scholars, who are impressionable in a high degree to standards of thought set up by those under whose influence they spend a third of their time. The fact that highly qualified professors of both sexes manifest an unfeigned interest in the right conduct of homes and give cordial attention to studies which bear on the scientific and artistic regulation of domestic life carries great weight with boys as well as girls in the high schools where these courses have reached their best development. It is believed that this fact impresses a wider circle than the students alone, and will bear good fruit among parents by its contribution to the dignity of home life; in any case its influence is active at the moment when the unrest of adolescence is prone to manifest itself in a contempt for familiar surroundings and in impatience with the claims of the family circle. Further, such a course serves the useful purpose of revealing their vocations to girls who are discouraged by their distaste or want of capacity for literary, artistic, or purely scientific studies, in which their companions already display a promise of future proficiency, or from their inability to reach an accepted standard in other lines of school work. The combination of scientific theory with its prompt application to familiar processes; the union of mental with manual activity; the school links constantly forged with home interests; the sense of power acquired in the performance of daily duties, hitherto complicated by the rule of thumb system, accompanied by its irritating and uncertain element of chance; all appeal with an often unsuspected force to the undeveloped Marthas of the school world, who find here an outlet for their latent capacities, and whose perpetuation—no longer “careful and troubled about many things”—through knowledge thus attained, will be of unmixed benefit to the human race.

In contrast to such comprehensive courses (details of three of which are included), it is quite possible to find high schools where the term Domestic Science is confined to practice classes in cooking or sewing, and where no direct inter-relation between scientific principles and domestic methods is worked out. Of these, that at Ann Arbor (Mich.), is an average specimen. Or there may be a sort of compromise between the educational and the utilitarian methods, of which the courses at some of the private high schools afford illustrations. Significant of the awakening appreciation of the possibilities and claims of the subject is the following extract from the 21st Annual Report of the Superintendent of Public Schools of the City of Boston, dated March, 1901; its tenour has aroused considerable hope among those in the city who have desired for some years past to see a course established in Household Economics, and who regret

that the 3,000 girls in attendance at the half dozen high schools have hitherto had no officially recognised opportunity for instruction under this head, at an age when they are able to bring to it an interest and intelligence more developed than that possessed by pupils in the grammar grades: "The next piece of legislation relative to high school studies that may suggest itself is the establishment of courses in Household and Industrial Science and Arts for girls. Whether such courses would better be provided for in a separate high school or in connection with existing high schools is a debatable question, but either method would be feasible. In former reports I have advocated the establishment of a separate high school, which should be for girls what the Mechanic Arts High School is for boys. At the same time I am persuaded that, if good courses in Household and Industrial Science and Arts were offered as 'electives' in the existing high schools, the same practical results could be secured. The addition of such 'electives' would be an easy matter if the general system of elective studies which I now advocate should be adopted." It is possible that the activity of private enterprise in this direction in Boston may in part account for the delay in providing courses similar to those so well supported in other cities. Further on in the same interesting document Superintendent Seaver points out that the choice of studies under the elective system can be scarcely too wide, as chemistry, physics, drawing etc., "do not always furnish the best training for all minds; there are always excellent pupils who would do better to omit one or other of these subjects and give the time to studies better suited to their capacities, thus leaving school with some real scholarship."

As in the grammar grades, Personal and Domestic Hygiene are most usually, if not invariably, treated as a definite school study under the title of Physiology, in which both sexes share. The subject is obligatory in only a minority of the States, but often finds a place in high schools where much attention is given to biology, of which it forms an appropriate and valuable development.

The course of Domestic Science study at the Brookline (Mass.) High School is detailed in this Report for two reasons: first, because the whole school system in that city has attained so high a level of excellence (largely due to its late superintendent, Professor Samuel Dutton, now Superintendent of the Horace Mann School, Teachers College, New York City), that if a subject appears in its school programmes, the educational value and practical possibilities of that study are, virtually, guaranteed. In the next place, its schedule demonstrates the feasibility of finding an honourable place in an undeniably liberal scheme of secondary education for subjects whose absence from the time tables of corresponding schools in this country is excused or condoned on the plea of want of time, want of educational value, or want of attraction to parents and pupils.

The educational history of the town of Brookline has been a source of satisfaction to its inhabitants for the past ten years: School Committee, Superintendent, and teachers have worked freely, and few restraints have been placed on a reasonable display

Typical  
Domestic  
Science  
Courses:—  
(a) Brook-  
line, Mass.  
Tables X  
and XI.

TABLE X.  
BROOKLINE HIGH SCHOOL, MASSACHUSETTS.—GENERAL COURSE.

Institution and Course.	Entrance Requirements.	Scope of Course.	Methods.	Length of Course.	Fees and Finance.	Equipment.			
Brookline High School. General Course. Principal— D. S. Sanford, A.M. (Yale).	A Brookline Grammar School education, or Entrance Examination.	FIRST YEAR.		The curriculum of the school is broad and flexible.  This General course is intended for those who complete their academic training in the High School.  The great range of electives allows each student to follow the lines of his individual capabilities.	Four years.	None for residents in Brookline.  Public Funds.  \$100 per annum for students non-resident in Brookline.	The school buildings are spacious and modern.  The school furniture and appliances are all of the most recent and approved kinds.		
		Hrs. per wk.						Hrs. per wk.	
		English Composition	- - - 1					Latin (elective)	- - - 4
		English Literature (half year)	- - - 5					French (elective)	- - - 4
		Ancient History (half year)	- - - 5					Bookkeeping (elective)	- - - 4
		Mathematics (Algebra, Geometry)	- - - 4					Manual Training (elective)	- - - 4
		Art	- - - 2					Domestic Science (elective)	- - - 4
		Zoology and Botany	- - - 4						
		SECOND YEAR.						Hrs. per wk.	
		English	- - - 2					Physiology or Physical Geography (elective)	- - - 4
		Medieval History	- - - 3					French (elective)	- - - 4
		Art	- - - 2					German (elective)	- - - 5
		Mathematics (elective)	- - - 3					Manual Training (elective)	- - - 4
		Latin (elective)	- - - 4					Domestic Science (elective)	- - - 4
		THIRD YEAR.						Hrs. per week.	
		English Literature	- - - 3					French (elective)	- - - 4
		Modern History	- - - 3					German (elective)	- - - 4
		Physics	- - - 4					Mechanical Drawing (elective)	- - - 4
		Art (elective)	- - - 2					Manual Training (elective)	- - - 4
		Mathematics (elective)	- - - 3					Domestic Science (elective)	- - - 4
Latin (elective)	- - - 6								
FOURTH YEAR.		Hrs. per wk.							
English Composition	- - - 2	Latin (elective)	- - - 4						
English Literature	- - - 3	French (elective)	- - - 3						
Chemistry	- - - 4	German (elective)	- - - 5						
Political Science	- - - 3	Manual Training (elective)	- - - 4						
Art (elective)	- - - 2	Domestic Science (elective)	- - - 4						
Mathematics (elective)	- - - 3	History of Art (elective)	- - - 1						

of individuality and inventiveness. Nature study has been introduced, manual training and the domestic arts have been developed and made more educational; new school buildings have been erected with modern appliances for comfort and sanitation, and the old ones have been enlarged and improved. Free kindergartens, increased provision for public health and hygiene, improved tenement houses, the exclusion of children from work in mills and shops, with additional public support of such "culture forces" as libraries, museums, music, lectures, etc., these, and other social developments, have all supplemented and supported school influences. The High school is a source of special pride to the community, and it is earnestly desired that its curriculum should be a good example of the avowed aim of those responsible for its initiation, viz., not so much the acquisition of knowledge as the development of power and the building of character. "While knowledge is not the *end* it is still recognised as a powerful *means*, and if only partial success has been attained it is rather because of the incompleteness of its adoption and application than of any fault in the aim."

The curriculum of this school is broad and flexible; certain subjects are required, others are elective; there are four courses of study in all. The "constants" occurring in each, although in varying proportions, are English, history, mathematics, the natural sciences, art, and physical training. Three courses, the *classical*, *sub-classical*, and *technical*, furnish a good preparation for all who wish to enter college, scientific or technical schools, and candidates select these according to the requirements of the institution which they expect to enter; the *general* course, in which there is a greater range of "electives," provides for those who complete their education in the high school. Manual training and domestic science and art, for boys and girls respectively, appear in each year of the technical and general courses; they are obligatory in the technical, and elective in the general course; zoology, physics, chemistry and physiology are also "elective" subjects.

The work in Domestic Science is largely an application of other sciences to daily life; the ultimate object of its promoters is, while training the pupil in scientific method and in an appreciation of economic values, to give the home its legitimate position among our social institutions, to arouse interest in the familiar processes and environment of home life, and to show that home making is a worthy occupation for the most gifted.

The food problem, as approached by the cook and as exemplified in the kitchen, is selected for the first year's work, because experience shows the average girl of 14 or 15 to be more interested in this department of the subject than in any other; but, as a knowledge of general chemistry is essential to an even superficial understanding of every-day processes, the second year is devoted to this subject and its applications. The third year is concerned chiefly with a study of the house itself, its construction, its sanitary arrangements and their care, its furnishing and decoration. An excellent opportunity is given, and improved, for correlating the work of this year with that of the Art

(a) Brook-  
line, Mass  
—continued.



TABLE XI.

## BROOKLINE HIGH SCHOOL, MASS.--SCHEDULE OF DOMESTIC SCIENCE COURSE.

Institution and Course.	Entrance Requirements.	Scope of Course.	Methods.	Length of Course.	Fees and Finance.	Equipment.
The High School, Brookline, (Mass.) Domestic Science. Miss Alice Smith.	Graduates from Primary and Grammar Schools approved by the Principal.  Admission: examination required of Candidates outside Brookline.	<p>1st Year. General Subject—Food and its preparation (Practical Cooking), in connection with simple chemistry and physics.</p> <p>2nd Year. (a) General Chemistry. (b) Household Applications (analysis of food stuffs and of cleaning materials).</p> <p>3rd Year. General Subject—The House. Situation and surroundings. Domestic Architecture. Modern American Houses. House Sanitation. Furnishing and Decoration.</p> <p>4th Year. General Subjects— (a) Household Biology (Bacteriology of air, water, milk.) (b) Sociological and Economic problems of the home (study of division of income, etc.), also a few lessons on Emergency work and Home Nursing.</p> <p>Art, Physics, and Biology are "obligatory," Zoology and Physiology are "elective" subjects for students of Domestic Science.</p>	<p>Aim. The development of power and the building of character; to train the pupil to appreciate the dignity of home life, and to arouse interest in familiar processes.</p> <p>The work in Domestic Science is largely an application of other sciences to daily life.</p> <p>So far as possible the work is carried out practically by each individual. Special attention is paid to the interrelation in this course of such subjects as physics and economics; the director of drawing is careful also to correlate the art work with household requirements.</p> <p>"Field work" comprises visits to well-planned houses, steam laundries, chocolate and other factories, shops, marketing, etc.</p>	4 years; forms part of the general and technical courses.	None for Residents.  Public Funds.  \$5 per annum for Students non-resident in Brookline.	<p>The General Laboratories are used for all purposes except cooking.</p> <p>The School is a modern model building, and the kitchen, while simply equipped, contains all that is required for individual work by 20 to 30 pupils in a class.</p>

department. Other of the topics, such as ventilation and heating, involve principles of physics, and here also the effort is made to apply work already done in that department, and to bring to students without that training the knowledge of some of its elementary principles. The fourth year is largely given to the applications of biology to every-day life. As this comprehends an elementary study of bacteriology, the theory of disease causation is naturally introduced, and the practice includes some simple home nursing and emergency work. A short subsequent course in invalid cookery gives opportunity for a review of the principles learned in the first year. The latter part of this, the last year, is spent in the discussion of problems of home making rather than of housekeeping, many of which are looked at from the economic and social as well as from the domestic standpoint. For example, the following selected topics belong both to Political Economy and to Domestic Science—the consumption of wealth; food, in its relation to labour power; the housing of the poor and its relation to good citizenship; municipal sanitary regulations; expenditure *versus* saving; domestic service (as a part of the general labour problem); the work of superintending a home compared with other economic occupations; child labour, etc. Evidence of the thoughtful inter-relation of studies, for which this school is notable, is also apparent in the following selection from some of the topics suggested for theme work in the English department—the life and work of Count Rumford; the influence of Pasteur on modern science; yeast fermentation in its relation to bread-making; the manufacture of flour; experiments with albumen, dust, bacteria and butter-making; the Brookline water supply; the system of ventilation in the Brookline High School; an ideal room. This method serves at least three ends; facility of verbal expression is acquired in respect of subjects studied chiefly in the laboratory or by observation; girls are stimulated to study the history and development of existing domestic customs; and intelligent application of principles acquired in one department is demanded in another. Physiology, chemistry, physics and economics are also closely affiliated by cross-work reference throughout the course. Miss Smith, who is in charge of the present promising class, spares no pains to secure the co-operation of her colleagues in order to maintain continuity in theory and practice, and finds an ample reward for her efforts in the increasing interests and greater womanliness of those who include Domestic Science in their studies. Throughout the course visits to well-planned houses, steam laundries, chocolate works and other factories connected with food and clothing processes, are made whenever practicable or desirable, in order to broaden the outlook of the students and to impress on their minds the points under discussion.

I subjoin a concise synopsis of the ground covered and a few suggestions of the methods adopted in the courses in chemistry, physics, geology and art; the course in general household cookery is a somewhat extended treatment of the grade school syllabus.

(a) Brookline, Mass—*continued.* The General Chemistry includes: A study of the air and its gases. Chemistry of respiration. Water: its composition, distillation, solvent power. Hard and soft water. Hydrogen. Acids, bases, salts. The halogens and their compounds. Sulphur and phosphorus. Carbon and the chemistry of combustion. Fuels and illuminants. Dyeing of cloth. Starch, sugar, albumen, fats. Chemistry of fermentation and of digestion. Study of the metals. Action of acids and alkalies upon the common metals and their compounds. Simple qualitative analysis.

To this succeeds the "Household Applications" previously mentioned.

"The General Physics Course is governed by three permanent aims:— (1) that which it has in common with the general chemistry, viz., to develop in the pupils steady, persistent, logical thinking; (2) to make them fairly intelligent in reference to their own scientific environment; (3) to teach them to apply the elements of algebra and geometry to the problems of daily life. Incidentally it is anticipated that the sense of appreciation will be aroused for all that modern science has done and is doing for the comfort and convenience of the race." As the average manual offers few opportunities for any original independent thinking, and contains so little of anything like a practical application of physics to the phenomena of daily life, the head of the department substitutes special notes of his own—still in manuscript form—in which students are told as little as possible directly, but are given, practically, a series of original exercises in mechanics, optics and electricity, to work out by the aid of a set of simple apparatus, their mathematical instincts and their own brains; the intention is that these shall then be applied to the affairs of daily life in continuous sequence, suggested by questions, problems and references. This thoroughly practical aim takes the form, for instance, in hydraulics, of directing attention to the water-meter, the simple motor, and the turbine, rather than to the lifting pump, the ram and the breast wheel, as the average man is more likely to see and use the former than the latter series. In optics again, the camera, the opera-glass, and the spy-glass are dealt with more fully than the telescope and the compound microscope, for the same reason. Throughout, continual reference is made to the current literature of the day and to the features of Boston and its vicinity. The work in physics is distributed somewhat as follows:—September, October, November—mechanics, including hydrostatics and pneumatics. December, January, February—optics. March, April, May—electricity. June—review. Towards the close of the school year special topics are suggested for more exhaustive treatment than is possible in the regular classroom work. Each pupil is expected to choose one or more of such topics and to present an illustrated paper upon the subject selected, at the end of the year. Among the topics recently suggested may be mentioned the following:—mechanics of the clock; the bicycle; the sewing-machine. Consumption of gas, water and electricity in the household. Testing a water-meter. The fire-alarm system of Brookline. School-room ventilation. The long-distance telephone. The gas-engine. The horse-power of an electric motor.

These courses, each of which extends over an entire year, are required of the Sub-classical, the Scientific and the Manual training pupils. The time is equally divided between laboratory and lecture-room work, to both of which two periods per week must be devoted beside the usual preparation. Complete notes are kept by the pupils of the laboratory and lecture work, which are inspected from time to time by the instructor.

The course in Zoology is planned on lines of equal practical value. Observation of living animals and a study of their external anatomy, expressed by drawings and oral or written descriptions; constant use of the simple microscope and occasional use of the compound; field trips, study of text and reference books, investigation of special topics, the making of collections, represent the method of study. All the work is carried on in well-lit, airy rooms; the physics laboratory, 40 feet by 23, deserves special mention for its well thought out arrangements and equipment.

The same spirit can be traced throughout the Art work, under the direction of Miss Irene Weir, who bases her method upon the facts that

the principles of art form the basis of good taste, and good taste concerns itself with every act and duty of daily life. In a recent paper on this subject she expressed her view as follows:—"From the economic standpoint alone the most important object which any course of art training can attain is to establish in the mind of the child principles of good taste; from the standpoint of the child's own well-being, the power to do a thing well, which is art, requires the full and complete training of hand and eye and a concentration of brain energy scarcely excelled by any other mental process. The average child is not going to become either painter or architect, but will work in some sort of industrial occupation, or help in the production of marketable goods, or dress in good or bad taste, and make and have a home where order and beauty prevail, or where disorder and inartistic confusion reign. These things, therefore, are of primary value which tend to the improvement of the home, the comfort, well-being and harmony of the family, the order, security and beauty of the city, and finally, the best and happiest life of the individual; and in good taste is found the broad foundation stone upon which these things rest." So her students are first trained to comprehend, and then required to apply, the principles of art in form, colour, design and composition to "homely" objects and ends, in the highest significance of the word.

The part of the Domestic Science Course at present least developed as regards practical work, is that concerned with House Sanitation, though time is freely spent on "field trips." After all, this method offers by far the best practice, especially as a course of physics is obligatory the previous year; pupils are thus prepared to make their observations on building construction, pipes, water supply, and sanitary fittings, with an intelligence based on a practical, though elementary, knowledge of the subject. Their art training should have already developed some ideas as to house plans and room decoration. About one-fourth of the whole time is devoted directly to the study of Domestic Science during the four years' course; zoology or physiology, physics, chemistry, and art absorb a full third; the remaining hours are devoted to English literature and composition, history, mathematics, and one modern language, though, in the general course, book-keeping is also an elective subject.

The four years' course of study in Domestic Science is confined (b) Providence (R.I.)  
 to one of the three High schools in Providence (Rhode Island),  
 viz., that devoted to manual training, where it is carried on  
 under the direction of Miss Abby L. Marlatt. At present this  
 training is available only for 25 girls a year, at an average  
 age of 15 years. Here, again, marked attention is given to the  
 correlation of subjects; e.g. in the Household Arts Course,  
 suitable and original designs must be prepared for the dress and  
 hat, the making of which forms part of the sewing practice; in  
 the study of house construction, the plan and elevation of a  
 simple dwelling are demanded of the student, subsequent  
 schemes in colour for its internal decoration being duly carried  
 out. In mathematics, problems are given for the calculation of the  
 cubic capacity of various shaped rooms, of the velocity of enter-  
 ing and out-going air in different systems of ventilation, and  
 of the amount of air provided per hour per person under  
 different conditions of atmosphere and propulsion.

TABLE XII.

MANUAL TRAINING HIGH SCHOOL, PROVIDENCE, RHODE ISLAND. DOMESTIC SCIENCE COURSE.

Instruction and Course.	Length of Course.	Fees and Finance.	Methods.	Equipment.	Scope of Course.
<p>Manual Training High School, Providence, R.I.</p> <p>Domestic Science Course. Professor, Miss Abby L. Mariatt.</p>	<p>4 years of 38 weeks each.</p> <p>Average age, 15-17 years.</p> <p>Students are required to be 15 years of age on entrance.</p>	<p>None.</p> <p>Public funds.</p>	<p>Marked attention is given to the correlation of subjects. The first year's work is carefully joined on to and developed out of the previous knowledge which the scholars have acquired. Throughout the whole course the same method of linking study with study, and the unknown with the known, is carried out. The plan of setting topics for individual students to work out for themselves is largely used.</p>	<p>The cooking laboratory is furnished with well-fitted-up tables for each student. A bench fitted with conveniences for chemical work runs down one side of the room, with drawers for the necessary apparatus. There are spacious, well-equipped work rooms, and also a large reference library.</p>	<p>Physics 2 years or 57 weeks, <math>\frac{3}{4}</math> hour daily.</p> <p>General chemistry 1 year or 38 weeks, <math>\frac{3}{4}</math> hour daily.</p> <p>Chemistry of foods and Physiology of digestion 1 year or 19 weeks, <math>\frac{3}{4}</math> hour daily.</p> <p>Analytical chemistry 1 year or 19 weeks, <math>\frac{3}{4}</math> hour daily.</p> <p>Physical character of minerals 1 year or 19 weeks, <math>\frac{3}{4}</math> hour daily.</p> <p>Botany 1 year or 38 weeks, <math>\frac{3}{4}</math> hour daily.</p> <p>Psychology 1 year or 19 weeks, <math>\frac{3}{4}</math> hour daily.</p> <p>Household sanitation (house repairs and food supply) 1 year or 19 weeks, <math>\frac{3}{4}</math> hour daily.</p> <p>Science of cooking 1 year or 38 weeks, <math>4\frac{1}{2}</math> hours weekly.</p> <p>Sewing 2 years 100 hours in all.</p> <p>Millinery 2 years 70 hours in all.</p> <p>Dressmaking 2 years or 19 weeks, <math>4\frac{1}{2}</math> hours weekly.</p> <p>Carpentry 1 year 60 hours in all.</p> <p>Advanced carpentry 1 year or 19 weeks, <math>4\frac{1}{2}</math> hours weekly.</p> <p>Modelling 1 year 45 hours in all.</p> <p>Drawing and design 4 years or 152 weeks, <math>\frac{3}{4}</math> hour daily.</p>

A free hand is given to the singularly capable instructor, who has deservedly gained the confidence of the principal, and who is responsible for the four years' course of study in Domestic Science detailed in Appendix B, which is noteworthy on several accounts. In the first place actual manual work is practised in three out of the four years; elementary and advanced carpentry in the first and last years; basket-weaving, modelling in clay and wood, and wood-carving in the first, second, and fourth. Book-keeping, elementary rhetoric, trigonometry, the elements of psychology, and the science of photography appear as academic subjects in conjunction with mathematics, geometry, physical geography, and German. General chemistry, physics, botany (which includes elementary bacteriology), and civil government, are carried on in direct relation with the Domestic Science work, and the Art course is well graduated to the same end. That the elements of psychology should be included in a course for girls of this age (15 to 19) is justified by Professor Huxley's strongly expressed conviction that by this means only can a properly proportioned introduction be given to a study of the laws of Nature which underlie all the processes of life.\*

(b) Providence  
(R.I.)—  
*continued.*

It is found that the introduction of some practical Emergency and First-aid work appeals strongly to girls on coming to the High school, so this is introduced in their first year; but the more responsible study of home nursing and the use of domestic disinfectants is delayed till the conclusion of the course (the fourth year), when it is illustrated practically by demonstrations at the Rhode Island Hospital, to which Miss Marlatt conducts her class. Reference to the schedule of the course will show that the year's work in physics precedes, while that in general practical chemistry runs parallel with, the practical cookery course. In any case it is believed that this arrangement is the best, but here it is of special service as Miss Marlatt is also Professor of Chemistry. Hitherto, the girls have come with no previous preparation in practice, as cooking is only to be introduced into the grade schools of Providence this autumn (1902). The cooking laboratory is furnished with single tables for each student, which are provided with Bunsen burners and stands,

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\* Readers will be familiar with the plan of his "Introductory" Science Primer, wherein he pointed out that "a definite order obtains among mental phenomena just as among material phenomena. . . . Moreover there is a connection of cause and effect between certain material phenomena and certain mental phenomena. . . . All the phenomena of nature are either material or immaterial, physical or mental; and there is no science except such as consists in the knowledge of one or other of these groups of natural objects and of the relations which obtain between them." (Introductory Science Primer, pp. 93, 94. Macmillan, 1880.) So in his own masterly way, even in this elementary outline of the vast field of science, he leads his young readers from an observation of material objects (mineral bodies and living bodies) to the conception of immaterial objects as perceptible in mental phenomena; and, though his great gift for expressing the complexities of scientific principles in most simple words is given to but few, this should not condone the omission of an integral part from a great whole, or discourage those who desire to present it in suitable form to intelligent students.

(b) Provi-  
dence  
(R.I.)—  
*continued.*

drawers to contain the necessary utensils, a sliding seat, and hooks at the side upon which the pans are hung; coal and gas ranges as well as Aladdin ovens are provided, and glazed cupboards contain the china and glass. A bench fitted with the conveniences for chemical work runs the whole length of one side of the room (this enables problems to be dealt with on the spot as they arise in cooking practice); the drawers beneath provide accommodation for necessary apparatus. A small museum contains specimens of food stuffs in the various phases of manufacture and other objects of practical interest, which include a complete set of very beautifully mounted common household pests, such as the red ant, cockroach, clothes moth, bug, etc. A good reference library for the use of the girls also finds a place.

In the third year the study of food analysis and digestion is dealt with at length, and creates a demand for the fourth year course in analytical chemistry and bacteriology. In this senior year the course also deals with the hygienic and sanitary problems illustrated in home and public life; the sanitation of soils, the study of house plans, of plumbing, of heat and ventilation; with considerations of a sanitary food supply, and of the risks from food adulteration, or from insects injurious to food; a study of moulds and bacteria then leads on to the causes of disease and rules for hygienic care of the sick as well as of the sound. This work, though in part experimental, is largely done by means of home study of assigned topics; the details of her "topic" are worked out by each pupil from observation, experiments or reference books. Miss Marlatt thus aims to foster habits of independent study and independent thought.

Miss Bowen, a graduate of Pratt Institute, who is responsible for the sewing, has her difficulties increased by the fact that the girls come to her with little or no knowledge of needlework. Time, therefore, only permits, as a rule, of the practice of each stitch on small samples of material in the first year; application, in the form of a completed article, is compulsorily limited to the making of one blouse, for which the pupils are allowed to use a simple pattern of Butterick's; and of a "raffia" hat, braided, sewn, shaped and trimmed by themselves. It will be observed that for three out of the four years as much time is given to modelling in clay or wood, or to carpentry, as to the use of the needle. In the second year a simple cotton dress is made. All the available time in the third year is devoted to dressmaking, but "advanced" wood-carving and carpentry absorb two-thirds of the whole period in the fourth year, leaving but one-third for "advanced" dressmaking. I account for this under two heads; (1) the conviction that variety in manual occupations is of much value in its development of dexterity and consequent reduction of merely mechanical repetition; (2) the, to me, apparent fact that young people in the United States are quicker in perception and performance than their contemporaries in England, and are more usually disposed to "give their minds" to what they are called upon to do. Much care is given to a clear comprehension throughout of the "reason why," and attention is called to the

keeping of accurate notes, which are illustrated with usually excellent drawings. The needlework classes are carried on in a spacious, well-lighted room, which measures 28 by 32 by 14 feet, and accommodates 45 pupils. The furniture is easily adjustable. 10 hand-sewing machines are provided, 5 of which are single thread Singer's. Each girl has a large and a small box stored in a numbered locker in which to keep her work materials and any article in the process of completion, as, for instance, hats in the millinery course. Large hanging cupboards are provided for skirts. There is no better evidence of the genuine interest aroused by the course than the emulation which exists among the students to complete not only a simple dress during the fourth year, but a more elaborate muslin gown in which to attend the graduating ceremony—a function of great importance in the life of an American student of either sex. The custom of making her own dress for this great occasion is habitual in High Schools and Technical Institutes among girls who attend sewing courses; and even in the grade schools of cities where the subject is taught through several years I found a similar ambition present among the little “graduates,” though, as yet, rarely realised.

The daily school session is from 9 a.m. to 3 p.m. with a half-hour recess for lunch, which is served in the building. These hours are divided into “periods” of 45 minutes; all “periods” in manual work are double that length. No Domestic Science, as such, is taken the first year, but  $1\frac{1}{2}$  hours is devoted to Manual Training or Household Art on alternate days in this, as in each year of the course. Domestic Science claims  $1\frac{1}{2}$  hours on alternate days throughout the remaining 3 years, and to art work 45 minutes is assigned daily for the whole period. Thus a liberal half of the school life is left free for academic studies.

Miss Marlatt subjects the schedule of this course to constant revision in the light of her growing experience; meanwhile it embodies some of the best, if not the best, High school work accomplished on these lines in the United States.

It is the intention of those who have the interest of the school most deeply at heart, to frame all the work of the Hackley <sup>(c) Hackley.</sup> Manual Training School on a similar educational basis—to present all the studies in the way which shall best mould and shape character and so further the all-round development of the pupils, while the ideal of good health is kept prominently in view. When domestic subjects were introduced into the High school five years ago, parents as well as children were unfamiliar with any branches of manual training. It was felt that to make the desired favourable impression, sufficient time must be devoted to them, not merely to ensure their presentation on the above mentioned educational basis (which the initiators considered the only right way), but to be assured of enough practical results to interest and please the public generally. It is a still popular idea to regard this work largely from the standpoint of utility, and ignorantly to taboo educational value of work which does not make some practical showing. The growing interest of the public at Muskegon is evinced by the increased attendance on

Table XIII.



TABLE XIII.

MUSKEGON, MICHIGAN, HACKLEY MANUAL HIGH SCHOOL—SCHEDULE OF DOMESTIC SCIENCE AND ART COURSE.

Institution and Course.	Entrance Requirements.	Scope of Course.	Methods.	Length of Course.	Fees and Finance.	Equipment.
Hackley Manual Training High School, Muskegon, Michigan.  Domestic Science and Art.  Miss A. M. Thomas.	Graduates from Primary and Grammar Schools.	<p><b>SHORT COURSE.</b>—</p> <ul style="list-style-type: none"> <li>Cooking</li> <li>Sewing</li> <li>Laundry</li> <li>Home Sanitation</li> <li>Emergencies and Home Nursing</li> <li>Drawing</li> <li>Gymnastics</li> </ul> <p>Two double High School periods of 45 minutes each per week, for six months.</p> <p>Two single periods per week for one year.</p>	<p>Aims—(1) To give a thorough understanding of the principles of each subject; (2) To demonstrate the necessity of a scientific basis for woman's work as well as man's; (3) To present the work on the lines of true education, to mould character, and further all-round development.</p> <p>Accuracy in measurement, careful manipulation, neatness, good methods, system in execution, are all carefully considered in the manual work, also the "time" element as well as the quality of results.</p> <p>Pupils work individually.</p> <p>Table service and elementary dressmaking enter into both courses.</p>	<p>Short Course, two years.</p> <p>Long Course, four years, to be extended to five years.</p> <p>Two years' Manual Training required to entitle pupils to a High School Diploma.</p> <p>The "Long Course" entitles to a Manual Training High School Diploma plus the ordinary High School Diploma.</p>	<p>None.</p> <p>Public Funds.</p>	<p>Sufficient, and suitable for individual work.</p>
		<p><b>LONG COURSE.</b>—</p> <ul style="list-style-type: none"> <li>Domestic Science</li> <li>Domestic Arts</li> <li>Drawing</li> <li>Gymnastics</li> <li>Light Bench Work</li> <li>Wood Carving</li> </ul> <p>Two double periods per week for three years.</p> <p>Two single periods per week for three years.</p> <p>Other High School studies bearing on Course—</p> <p><b>FIRST YEAR.</b>—(a) Physiology; special attention paid to hygiene, digestion, and assimilation; Bacteriology, the germ theory; (b) Physical Geography.</p> <p><b>SECOND YEAR.</b>—(a) Biology; cellular theory; microscope work; study of lower forms of life, advancing to the vertebrates; Specimens—cray fish, fresh-water mussels, turtles, fish, birds, rabbits and cat; (b) Botany—seeds; foods, oils, and starches; grains, plants; roots, stems, leaves, flower, and fruit; families. Bacteria and fungi.</p> <p><b>THIRD YEAR.</b>—Chemistry; course in elementary chemistry; some simple organic work is given; experiments and study of fermentation; soap making, etc.</p> <p><b>FOURTH YEAR.</b>—Physics. A course in Physics as laid out by Carhart and Chute's Elementary Text Book, adapted to suit the needs of the class; this includes the chapter on Heat, together with various original experiments.</p>				

visiting and exhibition days, and by hearty parental expressions of appreciation. The figures showing the increase in the numbers of those who elect the long course in Manual Training, which are quoted later, are sufficient evidence that so far the experiment has met with success. A general system of "electives" has lately been arranged, which enables any pupil following a General Language, or other course, to substitute manual training subjects for certain literary studies in the third and fourth high school years; two hours of manual training work then count as equivalent to one hour of academic training. In such instances the pupils are allowed to select the branches of manual training they prefer; hitherto emergencies, home sanitation, home nursing, table service and laundry in Domestic Science, and elementary and advanced dressmaking in Domestic Art have been the popular subjects. Sometimes the girls choose light bench work and wood carving in the boys' department, and, occasionally, turning. (c) Hackley  
—continued.

The Domestic Science work has been divided into two courses, termed the Long Course and the Short Course. The length of each lesson in cookery, sewing, or laundry, is two high school "periods" of 45 minutes each; for lessons in home sanitation, emergencies and nursing, and drawing and gymnastics, one such period. The Short Course consists of two lessons per week for an entire year. One half year is devoted to cookery and the other half to sewing; this division is not based entirely upon psychological reasons, but is to a certain extent necessary in a school of this size. Theoretically it may seem better to give an entire year to each subject, but practically it is found to be impossible with the average teachers and average equipment. The experiment has been tried of giving one lesson per week in each subject during the entire year, or two per week on each subject for half a year, and the latter is found to be far better. The Short Course also includes two lessons per week in drawing and two lessons per week in gymnastics. Two years of the Short Course manual training is always required for a pupil to be entitled to a High School Diploma, and, in almost all courses, three years is required for graduation.

The Long Course is four double periods per week, for the first three years at least; two in Domestic Science, two in Domestic Art, three single periods in drawing and two single periods in gymnastics. This course is designed for those who have a special liking and aptitude for manual training branches, and endeavours to cover the ground thoroughly. The pupil who completes this course receives, upon graduation, not only the High School Diploma, but a Manual Training School Diploma as well. The work was laid out when the High School course covered four years; last year this was extended to five; probably the same amount of Domestic Science work will now be extended over this longer period, and less time will be devoted to it during the last two years. Up to the year 1900 the Long Course classes were not very large, about 10 per cent. only of any entering class of girls chose this study, but, in 1901, it was elected by 72 new pupils

(c.) Hackley out of 95; in July, 1901, only the natural "shrinkage" was reported, a strong testimony to the growth of interest in the subject.

—continued.

Reference to the schedule will show the efforts made to bring a knowledge of the principles of the Special Sciences to bear upon the subjects which involve practical application of these principles. Miss Thomas hopes that much closer correlation will gradually be effected; meantime, the training as detailed in the following outlines should have a strong influence towards the elevation to a new dignity of those branches of manual labour with which the woman in the home comes most directly in contact.

**COOKERY.**—First year: short course. First half year: long course; two lessons per week for one half year. This comprises a course in elementary cooking of a strictly economical character along lines slightly in advance of those followed in grade schools. It opens with a brief study of the chemical elements of combustion illustrated by experiments; the kinds of fuel and their comparative costs, based upon the locality, etc. The foods cooked are taken up with regard to the food principle which they represent; and their comparative food and market value considered; the effect of heat and the chemical and physical changes which occur are carefully noted; the use of each in the body, their digestion and assimilation. In this manner the foods are classified. The value of combining different foods to make a complete one is also studied. These food principles, taken in their natural sequence, are illustrated by the cookery of vegetables and cereals; eggs in various ways; soups; stewed, broiled, and roasted meats; fish, both fresh and dry; the use of "left-overs," the commercial and food value of legumes, and their importance as substitutes for meats. The utility of economy of food material, of time, of labour, and of fuel in its preparation, is brought before the pupil, as is accuracy of measurement, careful manipulation, neatness, method and system in execution.

**COOKERY.**—Second year: short course. First year, second half: long course; two lessons per week for one half year.

The preparation of batters and doughs; the different methods of making them light, and the comparative value of each, illustrate the uses of soda and sour milk, soda and cream of tartar, and various kinds of baking powders; next in order comes the study of the yeast plant, its growth and requirements; experiments with yeast, with tests of the different temperatures to which it can be submitted, and the conditions most suitable to its growth. This is followed by lessons in practical bread making from the different varieties of flour, and discussions on the nutritive value and digestibility of the different breads. The preparation of a few inexpensive cakes and sweet dishes concludes these lessons.

**COOKERY.**—Second year, first quarter: long course; two lessons per week.

This course is pursued by pupils who wish to acquire a more technical knowledge of cookery, and consists in lessons in jelly making, canning, pickling, and preserving; the preparation of salads and desserts (sweets), and other made dishes.

**LAUNDRY.**—Third year: long or short course; two lessons per week for one quarter.

This course is planned to give the student an intelligent understanding of the general principles on which cleaning processes are based. In addition to the practical laundering of cottons, linens, woollens, coloured materials, stiff starched and fine articles of clothing, attention is paid to the care of plumbing and the ventilation in a room used for laundry purposes, and to the value of all materials used with a view to the best varieties and their most economical use. The removal of stains by neutralisation and natural bleaching processes; the advantages of the use of soft water; the composition of soap, the harm which results from the use of a strongly alkaline quality, or of a too large quantity; and the risks

which accompany the application of inferior blueings, are each shown by experiment. The setting and restoring of colours in the laundry, and the cleaning of embroideries and fine laces are also discussed; and, in all practical work, the time element as well as the quality of results obtained is considered. (c.) Hackley  
—continued.

**TABLE SERVICE.**—Third year: short course: fourteen lessons, balance of quarter employed in canning and pickling. Long course; one quarter of two lessons per week.

The classes who pursue this work take up: (1) The consideration of various menus, the food value of the dishes, and the comparative cost and nutrition of each; the combination of various dishes to form a meal, which shall be a well balanced one, of both material and labour at the smallest expense; the importance in the variety of meals, and the avoidance of a daily routine; (2) the equipment and care of the dining-room, china closet and pantry; (3) the care of silver, glass, china and steel ware; (4) the arrangement of a table at different meals and the duties of a waitress at each. Correlated with the above mentioned work is the practical work of cooking and serving meals; pupils take the places in turn of cook, waitress, hostess and guest; (5) the arrangement and packing of simple and nutritious lunches for school children, which are now thought worth very careful consideration as a factor in growth and well-being.

**EMERGENCIES.**—Fourth year: short course. Third year: long course; four single periods per week for one quarter.

This syllabus includes lectures, recitation and practice work, review of physiology (especially circulation and the structure of the blood vessels); the treatment of wounds of varied severity; improvised bandages, compresses and tourniquets; the treatment of burns and scalds; the temporary treatment of sprains, dislocations and fractures; and the methods of utilising material at hand for improvised splints, bandages, slings, pads and stretchers; the treatment of unconscious conditions; practice in the various methods of using bandages, both emergency and roller.

**HOME NURSING.**—Third year: long course; four lessons per week for one quarter.

This embraces the usual topics: talks on the best methods of caring for patients in their own home; ventilation of rooms; precautions against draughts; the necessary care and precautions regarding nursing contagious disease, and disinfection of clothing and room; bed making; the arrangement of draw-sheets; moving of helpless patients; prevention of bed sores; preparation of fomentations and poultices; baths of various kinds.

**INVALID COOKERY.**—Third year: long course; two lessons per week for one quarter.

The various kinds of liquid diets are here discussed, and their uses in different diseases; koumiss and peptonised milk are prepared, also broths and teas; nutritious, cooling, and stimulating drinks; convalescent diet; simple and dainty "desserts" suitable for an invalid; the equipment, arrangement, and preparation of an invalid's tray are also considered.

**HOME SANITATION.**—Fourth year: long course; four single periods per week for one quarter.

Under this subject is considered the location of the house; the condition and quality of the soil and its drainage; the construction of the cellar, and the importance of sanitary conditions in cellars; the evil effects of impure air in cellars; the disposal of house refuse in country, village, and city; house drainage; the modern system of plumbing; the defects in many systems; the bad effects of sewer air, and precautions against its getting into a house; the water supply, sources of contamination, suggestions for improvement. In like manner is discussed the heating, lighting, ventilation, and general care of a house from a sanitary standpoint; also the sanitary care of food.

**DIETARIES.**—This work is planned for the fourth year. The values of foods are studied more in detail than in the other courses, and the food values of rations at a limited cost are estimated to meet the needs of persons of different ages and occupations.

**DOMESTIC ART.**—At present the Needlework course takes up the hand-sewing at the point where the pupil left it in the grade schools.

**HAND-SEWING.**—First year: short course; first half year: long course; two lessons per week.

The sewing lessons are supplemented by talks on the position of the body while sewing, and the evil results of incorrect positions; the manner of holding work, and the direction from which light should fall. Special attention is paid to practical repairing and mending, to darning of stockings and flannels, patching and piecing, together with the sewing on of buttons and the making of button-holes. Correlated with this work are short lessons on weaving and the manufacture of the different materials used, as thread, thimbles, needles, shears, cotton, silk, and wool. These are illustrated by cases of materials which show the different steps in the process.

**MACHINE-SEWING.**—Second year: short course. First year, second half: long course; two lessons per week for one half year.

Here the practical application is required of what has been learned in the previous sewing course. The use and care of machines is taught, and models, illustrative of all kinds of machine work, such as tucking, placing ruffles, embroidery, and lace insertions, are made. In this, as in all other branches of this work, the time element is considered, and the question of saving labour, when not necessarily required, is dwelt upon; thus, a pupil is discouraged from putting several ruffles where one will answer, or from making tucks in ruffles, which will be difficult to iron and cause unnecessary labour. After this preliminary work, drafting is taught by a system of simple measurements, and a white petticoat is drafted and made, during the making of which the various uses of the machine, taught in the previous lessons, are put into practice.

**MACHINE SEWING.**—Third year: short course. Second year, first half: long course; two lessons per week for a half year.

The practice of drafting by a system of measurement is continued. The uses of patterns are taught, and the changes and variations required by the average patterns on the market; the shrinking and preparation of cloth for making is practised; and a blouse is cut, fitted and made.

**ELEMENTARY DRESSMAKING.**—Fourth year: short course. Second year, second half: long course; two lessons per week for a half year.

In this course simple drafting is continued, and an unlined muslin dress is made, previously designed by the pupil.

**DRESSMAKING.**—Third year: long course; two lessons per week for one year.

A system of dressmaking by a chart is now introduced, and pupils practise how to measure, draft, cut and fit linings for and to each other; after which, a lined, boned and trimmed dress is made. A study of textiles and the material suitable for different occasions is continued throughout the course, and designs are made for all the garments.

**MILLINERY.**—This is designed to occupy part of the fourth year in the long course, but as yet (1901) no teacher has been employed for the purpose.

**DRAWING.**—Two single periods per week. First year: freehand, nature work, and still life, composition book covers, composition book illustrations. Second year: freehand composition, charcoal and water colour studies. Third year: charcoal work, historic and antique ornament, pen and ink sketches. Fourth year: clay modelling, water colour, advanced composition. Throughout all the different lines of work special attention is paid to note-taking. This gives the pupil practice in expressing facts briefly, and in logical order, and provides useful material for future reference.

(d) Toledo.

The Toledo Manual Training School was opened in the autumn of 1884 in rooms set apart for the purpose in the Central High School of the city; it is now installed in its own imposing, finely-situated building. The initial instruction was limited to classes in woodwork and drawing for boys. In 1887 the

directors realised the necessity of providing a practical course of instruction for girls also, and the Sewing and Cooking departments were established. Four courses of manual training instruction are planned for students of high school grade, which include Domestic Science and Art for young women; either of these courses may be taken in connection with any regular high school academic course of study, in order to train head and hands to work together, and thus contribute to the ideal that the academic education secured by students in the purely literary school may be put to practical use. Though the directress is thoroughly imbued with the desire that the training shall be educational, not merely technical, she has not yet achieved the introduction of such thoroughly scientific methods as those which distinguish Miss Marlatt's High School course at Providence. The Domestic Science and the Art courses are similar in the first two years; no fees are enforced, except a small sum for laboratory requirements. One and a half hours a day are devoted to manual training throughout the four years' course and are variously apportioned according to the demands of the subjects entering into the particular year's curriculum. Classes are limited to 20 in number, but, and this deserves special note, boys have the opportunity of optional attendance at the 10 lectures on House-planning and Sanitation, of which some are glad to avail themselves. The result of this attendance was shown me in a simple house plan prepared at these lectures, which was being executed by the boys in the Woodwork Department on a scale of  $\frac{1}{4}$  inch to 1 foot; the plumbing was to be carried out by the same young artisans in their metal work course, and the model will then be available for demonstration on house sanitation, being planned to permit of convenient division for this purpose. In spite of the large size of the building, the class-rooms and studios now suffer from overcrowding, and extensive additions were to be made during the summer vacation (1901).

It appeared to me that the "art" side of the domestic training is especially well thought out in this course, for which reason the following details are introduced: freehand drawing, clay modelling, and sewing, constitute the work in the first year; the freehand drawing, with the pencil as a medium, takes up the subjects of light and shade from still-life groups; clay modelling covers work in simple ornament and plaster of paris casting. The work in sewing consists in the drafting, fitting, and making of linen undergarments, the making of blouses, dressing jackets, or plain gowns. In the second year, freehand drawing is continued, with charcoal as a medium, working from still-life groups, the ornament, and the mask. Considerable time is devoted to the study of design.

In the third year the student is given the choice between a Domestic Science or a Domestic Art course. In the Domestic Science work, the freehand drawing is continued with the aim of developing the student's idea of taste for the beautiful in the home. The clay modelling is omitted, and the subjects of

(d) Toledo—  
continued.

(d) Toledo—*continued.* dressmaking and fitting of garments comprise the year's work. If the Art course be elected, freehand drawing is continued, and the subjects of millinery and art needlework receive very practical attention. The autumn and spring terms are usually devoted to millinery work, while the winter term is occupied in the study of decorative art needlework, which consists of work in drawn linen and silk embroidery. The fourth year of the Art course is devoted to the study of freehand drawing, and water-colour from still life and nature; clay modelling is continued by study from life, and the making of glue and wax moulds for plaster casting is included.

The needlework room is well proportioned and abundantly supplied with presses, sewing machines, dress stands, and other conveniences. The teacher works in close collaboration with the director of the art classes, so that as students are led on to the use of colour and the selection and graduation of shades, application of this knowledge is required in the production of simple designs for patterns of materials, hats and dresses, on a good bold scale. In the dressmaking course individual attention is freely given, and pupils are not required to keep abreast of each other. They usually make three dresses of different materials and styles in the year; Storey's system of dress-cutting being employed. In the session devoted to plain needlework, a corset cover, petticoat of more or less elaboration, full drawers, dressing jacket, and dainty nightdress apparently represent the work accomplished.

(The equipment for a typical High School Course in Dress-making will be found in Appendix C.)

The practice is individual throughout the Domestic Science work. Knowledge is tested by revisions, periodical demonstrations by two students to the rest of the class, and occasional written "quizzes" by the teacher. The study of household economics, the chemistry of cooking, and the care of the home form a very important branch of the work in this second year of the course, and are based upon a study of elementary biology; it is hoped that physiology will be introduced very shortly. The cooking laboratory is a spacious room on the fourth floor of the building, in all ways satisfactory except as regards light, for the windows are very low. The cooking tables accommodate groups of four; they are of the prevalent type, provided with drawers, the basins and pans in most frequent use finding places upon the shelves beneath. The sink accommodation is ample, and a large coal range is provided in addition to the gas rings fitted at each end of the tables. It still happens that some girls first enter the course quite disposed to despise it and to resent the time expended upon it, but subsequent genuine interest is almost invariably developed, and the voluntary opinion is often expressed that this class has proved the most attractive in the year's work. The keen and growing appreciation by the boys of the crumbs of sanitation they are allowed to gather from the full meal supplied for the girls, promises two

results ; first, that a more complete training in the subject will, if possible, be organised for those who desire it ; second, that the girls become at once more alive to the advantages of the course.

In illustration of a method but little followed, brief reference <sup>(e)</sup> Ann Arbor. is made to the Ann Arbor High School, where Domestic Science is practically confined to the narrow limits assigned to it in many Grade schools. At Ann Arbor, sewing is taken in the fourth, fifth, and sixth grammar grades, and cooking in the seventh and eighth, where both subjects are classed as "manual work," which is meantime actually carried on by the boys during the parallel five years in the form of card, knife, and subsequently bench work. A short time ago voluntary classes were formed in the High School, in bench work for boys and in cooking for girls ; these are planned to build on the foundation that has thus been laid, and to continue the work so far as the facilities of the school and the needs of the pupils may indicate to be wise. The work is "elective," but, once entered upon, must be continued through the term, unless a re-classification is granted. The cooking equipment is sufficient for a class of 24, but the accommodation provided in a cramped, dark, questionably ventilated basement room does not offer attractions to young girls of 16 or 17, especially as the adjacent manual training room for boys is in every way superior. Opportunity is given in the third year of each of the six alternative courses of study to lay a scientific foundation in Household Economics by the inclusion of biology, physics and chemistry in each curriculum, but there were no evident indications that the indispensable correlation is demonstrated. A conveniently-arranged and well-lighted biological laboratory is provided for individual work ; its equipment includes compound and dissecting microscopes, paraffin heater, tank for aquatic plants, air-tight chests for preserving specimens, and a good provision of glass ware, chemical reagents, etc. The physical and chemical laboratories are in every respect up-to-date, and secure to each pupil the advantages of actual experimentation, so that the "willing mind" alone is required to organise a satisfactory course in Domestic Science here as elsewhere.

The detailed accounts of these selected High school courses <sup>Summary.</sup> will have indicated their usual scope : plain household cooking, housewifery (which includes the chemistry of cleaning, the purchase of household commodities, the intelligent calculation of nutritive food values, the arrangement of family meals, the plan, structure, and sanitation of a dwelling-house), needlework, dressmaking, millinery, a short course in laundry work, some knowledge of home nursing, the preparation of invalid food, and last, but by no means least, an introduction to the science of economics, in order that, as women, these girls may be fit for the responsibility of intelligent, just expenditure of the family income. Housewifery may be, and is often, subdivided, so that sanitation assumes its rightful position of a distinct and important subject ; but, as in the grammar grades, personal hygiene (the structure and care of the body) does not enter into these Household or Domestic Science or Art courses. It must be sought



under the shelter of biology or physiology, where, as in the more elementary schools, it is studied together by the mixed classes and well nigh without exception, by the laboratory method.

Physiology  
and Hygiene  
Courses.

Physiology and hygiene are *obligatory* in the High schools of very few States; it is their value, as fit developments of, and conclusions to, a course in biology which usually accounts for their presence; the opportunities afforded, by hygiene especially, as a field for the application of observations in economics and civics, as well as for the theories and principles acquired in the study of chemistry and physics, also gives them a position in some of the leading High schools, which is of good omen for their more general adoption eventually. It suffices to mention New York City, Cleveland (Ohio), and Detroit, (Mich.), to support the statement that an honourable place is found by the highest educational authorities for these studies in their High schools. They may appear as "elective" in the second year of two out of the six courses (modern languages and English) as at the Detroit Central High School; or in the last year of four out of the six courses (Business, Scientific (three in number), Latin-English, German,) as at Cleveland, or they may be obligatory for all first year students as in the Peter Cooper High School, New York City. The time allotted to their study, and their position with respect to the other sciences is also variable. The time may be daily periods for five months or bi-weekly periods for one year (nine months). At the Cleveland High schools physics must, and biology may, be taken the previous year; civics and chemistry run concurrently with physiology when "elected;" the preceding course in biology is of special excellence and completeness. At Detroit, botany, and usually zoology, precede physiology, to which chemistry, physics, and economics succeed. In New York City three periods of 50 minutes a week are assigned to botany and zoology during the year and two such weekly periods are allotted to physiology. Here physics and chemistry again succeed the biological course. Without exception, individual laboratory work plays a prominent part in the method pursued. In consequence of my visit to the United States taking place in the late spring and early summer, most laboratory work in physiology was concluded for the year, but I was fortunate in finding some still in progress at the Central High School, Detroit. Here a student of physiology gives one or two hours respectively on alternate days to botany and physiology. Latin, rhetoric, algebra, and history constitute the companion studies which may complete a typical weekly programme, though this depends on the special course elected. Professor Louis Murbach is responsible for the biology at this school, and has the advantage of a spacious, well-lit, well-equipped laboratory for his classes in botany, zoology, and physiology. Here he is able to demonstrate his conviction (well expressed in an article on "Physiology in the High School," published in *The Physician and the Surgeon*, December, 1900), "that schools should institute exact mental discipline, therefore, when instruction is given in physiology, it should not, and need not, be mere teaching to avoid bad habits,

(1) Detroit,  
Table XIV.

to shun disease, or to acquire a (dangerous) smattering of medical (*a*)Detroit—knowledge, it should take its place as a part of natural science; *continued.* for, if properly taught, it inculcates scientific methods of investigation, and is of real value in mental development." Professor Murbach illustrates in his class-room "what is generally known as the strength of the laboratory method, which lies in the student's contact with the material studied, and his independence, forced, if necessary, in getting his knowledge from the material, in its classification, and in building up principles therefrom." Questions are set which the pupil must answer from experiment or specimen; "all text books whose head-lines embody the conclusions of their experiments are strictly banished, otherwise the chief aim of biological studies and their value in science training is defeated." Necessary information is gained through discussion of experimental and observational work, and consultation of indicated authorities in the excellent library. A strong point of this practical course lies in the inexpensive equipment with which the excellent results are accomplished. "When the course was initiated," writes Professor Murbach "one alcohol lamp, six test tubes, a microscope, a skeleton, and some reagents constituted the stock in trade; at its existing state of evolution the following is found sufficient: a compound microscope, dissecting lenses, one for each student, a skeleton, a thermometer, a lactometer, retort stands, forceps, needles, Bunsen burners or alcohol lamps, test tubes, porcelain crucible, evaporating dishes, glass and rubber tubing, glass and porcelain dishes, models of eye, ear, and heart, gelatine for culture, and reagents such as nitric acid, ammonia, caustic potash, copper sulphate, formaline, pepsin, pancreatin, rennin, peptone, and beef extract." With his other attainments Professor Murbach combines an exceptional facility for the devising of simple apparatus and the ingenious employment of "makeshifts," which he places at the disposal of science teachers less fortunately equipped than himself; of even greater value is the resourceful atmosphere he develops in his laboratory and the spirit of self-help he arouses in his students. I wish that space permitted me to give more than the following brief synopsis of this course, for though its scope can be indicated, it is in the method that the training lies, with its subsequent influence on action in the form of good habits, for continued emphasis is laid upon hygienic application along the wholesome lines of sound common sense.

"The organs of the body actually studied in the laboratory are the following: the kinds of bones in the body—long, short, flat, correlated with their functions, kinds of joints, places of attachment of muscles; the lever functions of long bones, with some simple problems of lifting weights, support of the body's weight in walking; the heart, from models and specimens; the circulation as seen in a frog's foot or mesentery; finally, the general appearance and position of the internal organs in a freshly killed frog or guinea pig. The latter may be in form of demonstration to groups of pupils. The ear, from model and discussion; the eye from models; specimens also

TABLE XIV.

CENTRAL HIGH SCHOOL, DETROIT.—SCHEDULE OF COURSE IN HYGIENE AND PHYSIOLOGY.

Institution and Course.	Entrance Requirements.	Scope of Course.	Methods.	Length of Course.	Fees and Finance.	Equipment.
<p>Central High School, Detroit.</p> <p>Physiology and Hygiene.</p> <p>Professor Louis Murbach.</p>	<p>Primary and Grammar School Certificate.</p>	<p>Study of Air and Water.</p> <p>Study of Bacteria and Yeast.</p> <p>Study of Cells and Tissue Structure.</p> <p>Study of Food Stuffs in Foods.</p> <p>Study of Digestion.</p> <p>Study of General Physiology.</p> <p>Study of Special Senses.</p> <p>Study of Personal Hygiene.</p> <p>Study of the Origin of Diseases (immunisation, isolation, disinfection).</p> <p>Emergencies.</p> <p>The following courses in the school curriculum bear on the intelligent study of these subjects.</p> <p>1st Year Physiology.</p> <p>2nd Year { Botany.           Zoology.</p> <p>3rd Year { General Chemistry.           Elementary Bacteriology.</p> <p>4th Year Physics.</p>	<p>Laboratory Method.</p> <p>Pupil works out all data, then draws his own conclusions.</p> <p>The student comes in close contact with the material studied; the system enforces the personal classification of knowledge individually acquired, and the building up from this of principles.</p> <p>The two main objects are: (1) to familiarise the pupils with man's place and part in nature; (2) to cultivate habits of careful observation, reflection and inference.</p> <p>Each student is provided with specimens for study, and a set of directing questions to guide his observations.</p> <p>When individual study is complete, recitations are held for better understanding the underlying principles.</p>	<p>Five months.</p> <p>Two hours a day.</p> <p>Taken in second or third year of the four years course.</p>	<p>None.</p> <p>Public funds.</p>	<p>Work carried on in well equipped biological laboratory.</p> <p>The apparatus considered necessary for this course comprises — a compound microscope, dissecting lenses, thermometers and lactometers, retort stands, Bunsen burners, test tubes, porcelain crucible, evaporation dishes, glass and rubber tubing, glass and porcelain dishes; re-agents, such as nitric acid, ammonia, caustic potash, copper sulphate, formaline, pepsin, pancreatic juice, rennin, peptone, and beef extract; a skeleton, models of eye, ear, heart.</p>

are brought into the laboratory work if time permits; this study is either followed or preceded by a few experiments on skin sensation. Besides these laboratory exercises, the following subjects are included: respiration (with some experiments), circulation, excretion, bacterial origin of diseases, immunisation, isolation, disinfection, antiseptics, hygiene, emergencies, and what may be done before the physician arrives."

To those already familiar with Professor J. E. Peabody's (b.) New suggestive "Laboratory Manual for Practical Physiology York City. Table XV. Classes" it will appear self evident that the course for which he is responsible at the Peter Cooper High School, New York City, should be a model of its kind. The following remarks will be couched chiefly in his own words (recorded in an article contributed to the "Journal of Applied Microscopy," III., No. 7), as, in consequence of the short time at my disposal, I was unable to visit the school, though I received much reliable testimony as to the high character and utility of the work carried out under Professor Peabody's supervision; and have had the advantage of subsequent correspondence with, and much kind assistance from him. The principal aims of this course are these: (1) to give to each pupil some knowledge of the normal functions of the organs in his own body; (2), to make him so familiar with the structure of his organs and tissues that he will get this understanding of their function (anatomy is therefore subordinated to physiology); (3) to acquaint the pupil, so far as time allows, with the general biological principles involved in nutrition, growth, relations of animals and plants, and evolution. . . .

The number of boys and girls in each division is usually about 35. The physiological laboratory is situated in the north-east corner of the school building. Its dimensions are 21 by 27 feet, and it is lighted on two sides by large windows. The greater part of the floor room is required for the ten laboratory tables, each designed for the use of four pupils. The tables are made of white wood, the lower portion being finished with shellac. The top is soaked successively in solutions of logwood and of iron, and melted paraffin is then rubbed into the wood with a hot iron. This treatment gives a dull black finish that is not affected by acids, alcohol or stains. Unlike varnished desk-tops, these do not reflect light into the eyes of the pupils. The desks are arranged in the room so that the pupil faces the north windows when doing laboratory work. He therefore has the best possible light for the microscope and for the object he is studying. Revolving chairs are used, which can be easily raised or lowered according to the needs of each pupil. When recitations are held or class demonstrations given, the boys and girls turn their chairs to face the instructor, and since the desks in this position are on the right side of the pupil, notes can be taken easily. By this arrangement it is possible to convert the laboratory into a recitation room without any loss of time. Half of a fifty minute recitation period may be devoted to microscopic work,

(b) New  
York City  
—continued.

then the specimens may be pushed aside and the attention of the class directed to recitation. The seven teachers of biology use, in common, the apparatus and supplies belonging to the Department, a partial list of which follows: thirty-six compound microscopes, each provided with rack and pinion, fine adjustment, double nose-piece, iris diaphragm, two eye-pieces, and a two-thirds inch and a one-sixth inch objectives; magnifiers and dissecting microscopes; steam sterilizer, hot air sterilizer, and Petri dishes for bacteriological work; fourteen specially prepared wall charts, twenty-five prints of photomicrographs from each of forty-five negatives, skeletons and dissected preparations, glass ware, chemicals, reference books.

The pupil begins the study of each topic with laboratory work, considering when possible the organs and tissues of his own body. In studying the mouth cavity, for example, he writes in his note book the answers to questions found in the Laboratory Manual used by the classes. Some of the laboratory work is done at home, the written reports being discussed at the following recitation. Text-book lessons in Martin's "Human Body" supplement the facts gained by laboratory work. In the study of the different organs, continual reference is made to the structure and functions of other animals; for example, after the consideration of the bones and teeth of man and of the animals in the school museum, the classes are taken to the American Museum of Natural History to study other mammalian skeletons. Groups of eight to ten pupils gather round the different specimens, each pupil answering in his note book the questions, of which a specimen is given below. The facts gained from this observation are discussed at the museum, and the boys and girls hand in at the next recitation a written account of some of the animals studied.

#### Comparative study of the Mammalian Skeleton.

##### A.—Spinal cord.

1. How many vertebræ are found in the neck (cervical) region?
2. How many vertebræ bear ribs (dorsal vertebræ)?
3. How many vertebræ in the lumbar regions?
4. Can you determine how many vertebræ have united to form the sacrum?
5. How many vertebræ in the tail (caudal vertebræ)?
6. In what region of the spinal column are curves noticeable? How do they differ from the curves in the human skeleton?
7. Are spinous processes specially developed in any region? Can you suggest any reason for this?

"Repeated demonstrations from the wall charts by the pupils help to fix in their minds the relative position in the human body of the various organs of digestion, circulation and excretion which they are studying. Considerable microscopic work is done during the laboratory periods. Some of the photomicrographs are then distributed and the discussion of the pictures serves to make clearer to the students the structures they have been examining."

The outline of the course opens with some introductory lessons on the chemistry of air, of the human body, and a study

of acid and alkaline reactions; the study of living substances (protoplasm) follows,—then that of foods and of digestion. To this succeeds lessons on the blood, skeleton, muscles, heart and circulation, respiration, excretion and the nervous system (from which the special senses are omitted), while a few concluding hours are given to a study of yeasts and bacteria. (b) New York City  
—continued.

A general idea of the method of study may be gained from the following specimen extract from the syllabus :—

“ Study of respiration.

(1) Laboratory work.

- (a) Drawing of lungs, wind-pipe, and larynx of calf.
- (b) Demonstration of action of lungs from model.

(2) Text-book.

- (a) Structure and function of (a) lungs, (b) diaphragm, (c) larynx.

(3) Applications.

- (a) Principles underlying ventilation.
- (b) Relation of clothing to respiration.
- (c) Hygienic habits of breathing.”

Laboratory work first; the consultation of text-books next; hygienic applications to daily habits and the details of community life in conclusion : these are the main lines for work and guidance, and this is the method of which the sound value is testified to equally in Detroit as in this New York City High School by the visible interest of the girls and lads, the results on conduct, the evidence afforded of mental discipline, and by the manual dexterity acquired.

Among the most practical parts of the whole course are the eight lessons devoted to the study of bacteria.

Culture dishes of nutrient gelatine are exposed to the air, others are exposed to the city water, while a certain number of the dishes are kept closed. After several days the dishes are distributed among the pupils, and the colonies of mould and bacteria are studied and figures made. Home work on the growth of bacteria in milk is one of the applications of the subject to everyday life. After experiments in methods of sterilization, the boys and girls are asked such questions as the following :—

1. From all your experiments, state (a) what conditions seem to favour the growth of bacteria ; (b) what conditions seem to hinder the growth of bacteria ?
2. Why should fruits be cooked before canning ?
3. Why are foods kept in the refrigerator in summer time ?
4. Why should the prohibition against spitting in public places be rigidly enforced ?
5. Why should sweeping be done as far as possible without raising a dust ?
6. Why should the teeth be brushed often ?
7. Why should the refuse be removed from the streets every morning early, especially in summer time ?
8. Why should wounds be carefully cleansed and dressed at once ?
9. In what ways do bacteria prove to be of benefit to man ?
10. In what ways do bacteria prove to be “ man’s invisible foe ?”

A course in general biology is to be put into operation next year, which will combine much of the work now done in the separate courses in botany, zoology, and physiology.

Five periods a week are to be devoted to this subject, the main outlines of which are planned as follows: "Introductory experiments in chemistry and physics will give the pupils some first hand knowledge of chemical elements and compounds, the process of oxidation, and the principles of capillary attraction and evaporation. The remainder of the first half year will be devoted to the study of botany, emphasis being laid on the physiological functions carried on in seeds, seedlings, roots, stems, leaves, flowers and fruits. In the second half year the basis of the work is to be the physiology of the human body. Each function will, however, be considered from the comparative standpoint. For example, in studying the subject of respiration the following topics will be considered in addition to those now included:—

"1. Study of (a) skin of earthworm; (b) gills of fishes; (c) lungs of frogs, reptiles, birds and mammals.

"2. Comparison of respiration in animals living (a) in water, (b) in moist places; (c) in the air."

This proposal meets with my entire approval, for it is by thus placing man in his relation to less highly developed forms of life that a most desirable admiration for the marvellous beauty of the human body is aroused, and the equally essential senses of self-respect and personal dignity are developed. The value of such High school courses as these at Detroit and New York, followed by lads and girls of 15 to 17 years of age, appears to me to be incalculable in its future influence for good on the homes of a great city and a great nation, and no visitor to the class-rooms could fail to be impressed with the unaffected and practical interest of the young people. Placed, as the subject is, in its natural setting as a part of the great study of life in its many manifestations, and turned to account as it also is as a field for the application of the laws of natural and moral science (physics chemistry, psychology, economics, civics), no opening is afforded for morbid introspective employment of the physiological facts acquired in the laboratory. A thoroughly wholesome tone pervades the class-rooms, and the most noticeable influence on the personality of the students is stated to be a more intelligent recognition of the needs of the body, and a greater disposition to give the necessary attention to its right performance of vital functions.

How "time" can be legitimately found for this invaluable study by both sexes, during high school life is apparent from the particulars of the five alternative courses at the Peter Cooper High School.\*

#### C.—COLLEGES.

Before entering upon a review of the College Courses in Household Science and Hygiene, it seems advisable to refer somewhat fully to the history and aims of these institutions.

History and  
Develop-  
ment.

In his exhaustive paper on the "American College" (No. 5 *Monographs on Education in the United States*, edited by Dr. N. Murray Butler), Professor Andrew Fleming West opens his subject by telling his readers that the American College has no exact counterpart in the educational system of any other

\* See Table XV.

**TABLE XV.**  
**COURSES OF STUDY FOR THE HIGH SCHOOLS OF MANHATTAN AND THE BRONX, NEW YORK CITY.**

Classical.	College and Normal Preparatory.	Scientific.	Modern Language	Commercial.	
<b>FIRST YEAR.</b> Biology English History Latin Mathematics Physiology	<b>FIRST YEAR.</b> Biology English History Latin Mathematics Physiology  <b>SECOND YEAR.</b> English French or German History Latin Mathematics  <b>THIRD YEAR.</b> English French or German Physics Latin Mathematics  <b>FOURTH YEAR.</b> English Latin  Electives : Astronomy Biology Chemistry French or German History Mathematics Physiography	<b>FIRST YEAR.</b> Biology English History French or German or Spanish or Latin Mathematics Physiography  <b>SECOND YEAR.</b> English French or German or Spanish or Latin History Physiography or Chemistry Mathematics  <b>THIRD YEAR.</b> English French or German or Spanish or Latin Physics Civics and Economics Mathematics  <b>FOURTH YEAR.</b> English French or German or Spanish or Latin  Electives : Astronomy Biology Chemistry History Mathematics Physiography	<b>FIRST YEAR.</b> Biology English History French Mathematics Physiology  <b>SECOND YEAR.</b> English French History German Mathematics  <b>THIRD YEAR.</b> English French German Physics Mathematics  <b>FOURTH YEAR.</b> English German History Chemistry Mathematics	<b>FIRST YEAR.</b> Biology English History French or German or Spanish Mathematics Physiology  <b>SECOND YEAR.</b> English Modern Language History Book-keeping & Commercial Arithmetic Mathematics  <b>THIRD YEAR.</b> English Modern Language or Physics Book-keeping & Commercial Arithmetic Stenography and Typewriting  <b>FOURTH YEAR.</b> English Modern Language or Chemistry or History English Composition Stenography and Typewriting Commercial Law and History of Commerce	<b>NOTE.</b> Physical training, two periods a week, is prescribed for all pupils; but half the time allotted to physical training in the third and fourth years may be given to elocution.



History and  
Development  
—continued.

country. "The elements which compose it are derived, it is true, from European systems, and in particular from Great Britain; but the form under which these elements have been finally compounded is a form suggested, and almost compelled, by the needs of our national life . . . notably different from the old world schools." He then traces the history and progress of this important factor in the national system of free education, concluding this portion of his paper as follows: "Still, in order to understand the precise nature and unique influence of the college in American education, it is not necessary here to trace step by step the story of its development, for in its various forms of present organisation it reveals not only the normal type which has been evolved, but also survivals of past stages of development, instances of variation and even of degeneration from the type, and interesting present experiments, which may to some extent foreshadow the future."

On a later page Professor West draws attention to the fact that "the American College, as contrasted with European schools, is a composite thing—partly secondary and partly higher in its organisation. It consists regularly of a four-year course of study leading to the Bachelor's degree. Up to the close of the Civil War (1861-1865), it was mainly an institution of secondary education, with some anticipations of university studies toward the end of the course. But even these embryonic university studies were usually taught as rounding out the course of disciplinary education, rather than as subjects of free investigation. Boys entered college when they were 15 or 16 years of age. The average age of graduation did not exceed 20 years . . . With but few and unimportant exceptions, the four-year course consisted of prescribed studies. They were English literature and rhetoric, Latin, Greek, mathematics, natural philosophy, and political economy, and often a little psychology and metaphysics. Perhaps some ancient or general history was added. French and German were sometimes taught, but not to an important degree. At graduation the student received the degree of Bachelor of Arts, and then entered on the study of law, medicine, or theology at some professional school, or went into business or into teaching in the primary or secondary schools. Such was, in barest outline, the scheme of college education a generation ago. At the present time things are very different. With the vast growth of the country in wealth and population since the Civil War there has come a manifold development. The old four-year course, consisting entirely of a single set of prescribed studies leading to the one degree of Bachelor of Arts, has grown and branched in many ways. It has been modified from below, from above and from within. The better preparation now given in thousands of schools has enabled colleges to ask for somewhat higher entrance requirements, and, what is more important, to exact them with greater firmness. The age of entrance has increased, until at the older and stronger colleges the average is now about 18½ years. A four-year course leading to a Bachelor's degree remains, although in some quarters the increasing age of the

students is creating a tendency to shorten the course to three years, in order that young men may not be kept back too long from entering upon their professional studies . . . The four-year course, however, no longer leads solely to the degree of Bachelor of Arts, nor has this old degree itself remained unmodified."

"With the foundation of schools of science which aimed to give a modern form of liberal education based mainly on the physical and natural sciences, and yet only too often gave, under this name, a technological course, or a somewhat incongruous mixture of technical and liberal studies, the degree of Bachelor of Science came into use as a college degree. . . . Still other degrees of lesser importance also came into vogue and obtained a footing here and there to mark the completion of a four years' college course. . . . The organisation of such courses was naturally embarrassed by grave difficulties which are as yet only partially overcome. . . . The present drift, however, of opinion and action in colleges which offer more than one Bachelor's degree is more reassuring than it was some twenty years ago. There is a noticeable tendency, growing stronger each year, to draw a sharp line between liberal and technical education, and to retain undergraduate college education in liberal studies as the best foundation for technical studies, thus elevating the latter to a professional dignity comparable with law, medicine, and divinity . . . and if this happy result can be considered assured, then the undergraduate college course, the sole guarantee of American liberal culture, will have a good chance to organise itself in accordance with its own high ideals, however imperfectly it may have realised these ideals in the past. Another hopeful tendency which is gradually gathering strength is to give the various Bachelor's degrees more definite significance by making them stand for distinct types of liberal or semi-liberal education. . . . Three such types are now slowly evolving out of the mass of studies with increasing logical consistency. . . . First comes the historical academic course, attempting to realise the idea of a general liberal education, and consisting of the classical and modern literatures, mathematics and science, with historical, political and philosophical studies added, and leading to the Bachelor of Arts degree. The second is the course which aims to represent a strictly modern culture, predominantly scientific in character, and culminating in the degree of Bachelor of Science. As this course originated in the demand for knowledge of the applied sciences in the arts and industries of modern life, the ideal of a purely modern liberal culture, predominantly scientific was not easy to maintain. . . . Conscious of this difficulty, many schools of science have been giving larger place in the curriculum to some of the more available humanistic studies. Fuller courses in French and German have been provided for, and the study of English has been insisted upon with sharper emphasis. Economics, modern history, and even the elements of philosophy, have found a place. . . . The college of to-day provides a four years' course, consisting generally of a mixture of prescribed and elective studies in widely varying proportions . . . and, at the

Methods of  
Instruction.

end of the course, there is a multiform instead of a uniform Bachelor's degree; or, in some instances, a "simple Bachelor's degree of multiform meaning," while the average age of the students has increased at least two years."

In Section VII, which deals with Modes of Instruction, Professor Fleming West records that "Instruction is still mainly conducted by recitation and lecture, the recitation finding its chief place in the earlier, and the lecture in the later, part of the course." But other forms of instruction are included . . . "In all except the elementary courses in science, the laboratory plays a most important part, and even in the lectures in the introductory courses in physics, chemistry or biology, full experimental illustration is the rule. Then, too, the library serves as a sort of laboratory for the humanistic studies. Students are encouraged to learn the use of the college library as auxiliary to the regular exercises of the curriculum. Certain books are appointed as collateral reading, and the written examination at the end of the term often takes account of this outside reading." The combination of these three methods seems to exercise a stimulating effect on the eager students, and acts, I was told, as a spur to the indolent; it also offers just what is desirable in the treatment of Household Science with advanced students.

Form of  
Govern-  
ment.

"The form of government is simple. A college corporation, legally considered, consists of a body of men who have obtained the charter and who hold and administer the property. Where a particular State has established a college or even a university, which regularly includes a college, the members of the corporation are commonly styled regents, and are appointed by the State to hold office for a limited term of years. But most colleges have been established as private corporations. In this case the title is vested in a board of trustees, sometimes composed of members who hold office for life, or else composed of these associated with others who are elected for a term of years. . . . The president and professors usually hold office for life. In some places provision is beginning to be made for the retirement of professors on pensions as they grow old. Instructors and sometimes assistant professors are appointed for a limited time, such appointments being subject to renewal or promotion. In the larger colleges the president is assisted in his administrative work by one or more deans. By immemorial tradition the president and faculty are charged with the conduct of the entire instruction and discipline. They have the power to admit and dismiss students. The conferring of degrees belongs to the corporation, but this power is almost invariably exercised in accordance with recommendations made by the faculty. . . . In State colleges the income is derived from taxation, in others from endowments, often supplemented by annual subscriptions for special purposes. . . . State colleges receive few private gifts. But the private colleges are cut off from dependence on the State, and have to rely on these (private gifts). This stream of private liberality flows almost unceasingly. . . . The expenses of individual students vary greatly. In some places there is no

Sources of  
Income.

Students'  
Expenses.

charge for tuition; in others they must pay as much as \$100 or \$150. In little country colleges the total cost for a year often falls within \$300; in the larger old eastern colleges, drawing patronage from all parts of the land, the student who must pay all his bills, and receives no aid in the form of a scholarship, can hardly get along with less than \$600 or \$700, exclusive of his expenses in the summer vacation. . . . Moreover, many colleges possess scholarships which are open to able students who need temporary pecuniary help. The young American of narrow means, if he be of fair ability and industry, can almost always manage to find his way through college."

According to the last available Report of the United States Commissioner of Education (1899-1900), there are now 480 Universities and Colleges (excluding those for women only); though it must be borne in mind that a considerable number of these are independent of State endowment or control. About 72.5 per cent. of the total number are co-educational; in fourteen over 1,000 students are enrolled.

Of the State universities, or colleges, as they are variously described, about thirty have already initiated courses in Household Science, the subject being based upon a course of study which qualifies for a Bachelor of Science degree; and as many more have introduced some more or less organised form of this work into their curricula. The Household Science department is usually housed in the college of agriculture, but its students follow general courses in science, art, literature, languages, and so forth, with the students in the other colleges. The idea that domestic subjects have any claims to associate on terms of equality with the studies carried on by college undergraduates savours of suspicious novelty and questionable stability to English minds, so that the statement that their claims to post-graduate study have sufficed to gain them honourable recognition in universities of such standing as Columbia and Chicago will be suggestive of a degree of unconventionality, possible only in a new world untrammelled by age-long traditions. That the movement is not merely an evanescent outcome of a passing fad, or the product of inexperienced or unbalanced womanhood is indicated by the fact that, without exception, it has received the cordial, active support of the other faculties in colleges where it has been inaugurated. Professors of chemistry, biology, geology, art, architecture, psychology, economics and sociology, voluntarily devote time, ability, and influence to further the initiation and success of these courses, not in one, but in all the universities where the subject has been introduced.

Its claims for consideration and for organisation as a college study have been briefly recorded by Miss Isabel Bevier, Professor of Household Science at the Illinois State University, in an address given a few months ago; and no woman is better qualified to "state a case," for, under her highly qualified organisation, what promises to be a model university course is being gradually evolved. Before transcribing her remarks I would remind my readers of Professor Fleming West's opinion quoted above, that a sharper line is being drawn annually in college science courses between liberal and technical education, and that liberal studies are emphasised in undergraduate college education as the best foundation for technical studies, in

Province  
and History  
of Courses  
in House-  
hold Science  
—continued.

order to elevate the latter to a high standard of professional dignity. Bearing this in mind it becomes conceivable, and to some thinkers apparent, that to institute a university course in Household Science does not threaten to lower the college in which it is pursued to the humbler footing of a cooking school; on the contrary, it raises the whole complex question of the right nutrition of the human race to its legitimate status in the kingdom of science. Miss Bevier was invited to answer the inquiry, "What do you mean by Household Science, and what is its province in a State University?" The following extracts embody the gist of her reply: . . . "It has been said that Household Science includes the study of the agents, the materials, and the phenomena of the household. One needs to pause a moment and repeat the words to appreciate the largeness of the subject—the agents, heat, light, sound, electricity, colour; the materials, the air we breathe, the food we eat, the water we drink, the houses we live in—who will complete the list? It is well to remember that principles are universal, while their applications are special and peculiar. The general laws of heat are as true for the modern range as for the steam engine. The painter, the decorator and the dyer have each a technical interest in colour, but the woman who would give beauty and personality to her home by a harmonious blending of colour cannot disregard these same principles. By Household Science we mean very largely applied science. Just at this point it seems to me is the weak spot, perhaps it were better to say the uncultivated field, in the education of woman. Our colleges for men long since recognised the value of science and its application. This fact is illustrated by the increase of our technical schools until they number over sixty, and the students in technical courses of college grade number over 20,000 young men. Women have been rather slow to recognise the close relation science sustains to the affairs of the home, and by some strange oversight provision has not been made for them to apply their science in a kingdom peculiarly their own. Is there any good reason why the girl should not apply her knowledge of chemistry to bread, and of bacteriology to the processes of fermentation? I am co-educational enough to believe, generally speaking, that the system which proves most successful in the training of boys will have a similar result with their sisters. I believe it is our privilege to profit by their experiments. They have tested successively the classical school, the manual training school, the technical school; and our universities stand to-day because men have felt that the highest development, the truest unfolding of the human spirit, was to be accomplished not by any one kind of school, but by the correlation of the best elements of each. This brings us directly to our topic—the province of Household Science in a State University. I answer:—to provide a place and an opportunity for the correlation and application of the arts and sciences to the home. I know of no one place which affords so many opportunities for the application of science. Neither do I know of a place more fateful for good or evil in the life of the individual or the nation, than the home. As the equipment and advantages of the university greatly exceed those of a single college, so are the opportunities of the Household Science department greatly multiplied. In no other institution to my knowledge can the department have the inspiration and help of expert workers in so many different lines, as well as the advantage of illustrative material of so many different kinds. The college of science can reveal to the students some of the mysteries of the laws of life. The college of liberal arts can give them a truer conception of their own place and work in the world by a study of the history and literature of other peoples and tongues. The eye can be trained to recognise beauty of colour and outline and the hand to express it, by the work of art and design. The architect and decorator can show how to construct and adorn 'the house beautiful.' A wise selection and correlation of work in these various lines, with the special work of the Household Science department, affords an unusual opportunity for that symmetrical development so greatly to be desired in educational training."

The fact that an annual increase takes place in the number of girls willing to devote four years to these courses speaks for the growing recognition of their educational equality with their social

value; for the American girl of 18 is eager to learn, she desires "culture," and would not forego its anticipated attainment for the most "useful" course in the world. Show her the possibilities and advantages of a combination of the two, and the practical side of her character welcomes the opportunity to increase her command of the tools she is called upon to wield throughout her daily life, and to thereby lighten and brighten her tale of work; her social instincts are stimulated by the increased worth and happiness she can add to human existence, and her intellectual abilities find satisfaction in the scope afforded for their profitable exercise. The innate mechanical instincts characteristic of the American of to-day furnish an "energy" for application far more conspicuous than is the case with the descendants of older civilisations.

The first college course in the subject was organised in 1875 by Miss Lou. C. Allen, in what was then described as the "Industrial" University at Champaign (Ill.), now the University of Illinois. Her object was to place instruction in household arts for young women upon a level with instruction in agriculture, horticulture, and the mechanic arts for young men. Miss Allen was made Professor of Household Science, constituted a member of the Faculty, and carried on the classes for several years. The department was only abandoned after this period of good work, because, on Miss Allen's marriage, no suitable person could be found to take her place. Some work in Domestic Science was started in the Kansas State Agricultural College the same year (1875); at first in the form of lectures only, but, later, practical work was introduced, and in 1878, Mrs. May B. Welch, the wife of the President of the Agricultural College, induced the trustees to open a definite Household Arts Department, which for some years she herself conducted. The continuity of this course has been uninterrupted: at the present time one year's study of the subject is obligatory on all female students, while a complete four-years course is open to those who desire to avail themselves of such opportunities. Thus, tentatively, the movement began; and its present phase of hopeful development is the outcome of quiet perseverance, strenuous effort, and assured conviction on the part of the college women who have pioneered its passage into the universities. To them is now accorded the well-earned encouragement of increasing support from the public, from the press, and from their male colleagues. This is accorded on the grounds of the value of a comprehensive, practical knowledge of household economics as a factor in the promotion of national efficiency, of the home happiness and stability which must underlie such efficiency, and for its recently recognised worth as a focus for the application of the sciences and arts.

Three specimen college courses have been selected for reference in this Report as typical of the leading features which distinguish those at present organised. That at the State University of Illinois is framed to prove that, as to laboratory work and methods generally, the subject is of an equal educational value with other

Typical  
Courses in  
Household  
Science.

Typical  
Courses in  
Household  
Science—  
*continued.*

branches of science and art, capable of holding its own with any course of advanced study. The second, at the Ohio State University, is an illustration of the methods followed when the course approximates more closely to that of a high class Technical Institute: and the third, at the Michigan State Agricultural College, is frankly technical in character. Did space permit, much suggestive material could be gathered from a close study of other excellent courses, those, for instance, at the State Agricultural Colleges of Colorado and Kansas, or at the State Universities of Minnesota and Missouri, all of which are conducted by women of ability and good qualifications, with the assistance of the leading professors of their respective colleges and universities.

The broad features have a certain similarity in all those of which I have secured particulars. The full course occupies four years: the scope of subjects is wide, made purposely comprehensive to introduce general culture studies: the aim is to show the foundations of science and art upon which domestic economy is well and truly laid: the method is that known as the "laboratory," which constitutes a valuable mental training in addition to its scientific value. The anticipated results are the elevation to its true dignity of home life and its constituent parts; a gradual repression of the sins against sanitation which are inimical to the perfect development of the individual and an economic tax on the community; a substantial gain to the nation at large in the increased efficiency, physical, mental, and moral, of its units.

The variety in detail is wide; a two or one year's course may be obligatory, and is almost invariably optional, for young women whose tastes or time do not allow the full four years' course to be undertaken; or short winter courses are available which aim to impart a certain amount of definite information in the limited time at the students' disposal. In these, scientific must give place to more utilitarian methods, but the worker learns better ways of doing, and forms a centre for the subsequent formation of a more enlightened "public opinion."

The scope of the full courses is usually on the following lines:—

**SCIENCES.**—Obligatory: chemistry, physics, biology, physiology, sanitation; with geology, meteorology, bacteriology and psychology as "electives."

**ARTS.**—Obligatory: drawing, design, architecture, cooking, sewing, dress cutting and fitting; with music, painting, millinery, etc., as "electives."

**GENERAL CULTURE STUDIES.**—Obligatory: English literature, history, modern languages, botany and physical culture; of which one modern language and botany would be "electives."

The laboratory method is invariably emphasised, but the actual manipulation of foods or of materials is, by some authorities reduced to a minimum, because of the belief that, with brain trained to habitual observation, accuracy and reflection, with hand skilled through brush, pencil and laboratory work to give

quick and reliable response to mental suggestion, with muscles strengthened and co-ordinated by intelligent physical culture under careful supervision, principles acquired and based upon sound reasoning can be applied with a precision and certainty which should ensure rapid success. The home life of the student should afford abundant opportunity for repeated practice, when circumstances have probably removed her from the chances of other scientific or artistic training for which she has peculiar facilities in her college days.

In respect of these courses, the Western colleges preceded those in the Eastern States, where the State authorities for higher education seem, as yet, hardly awake to the importance or possibilities of the subject. I am partly inclined to attribute this apparent inattention to its claims for recognition in State colleges, at least in New York State, Pennsylvania and Massachusetts, to the excellent courses available at the Pratt and Drexel Technical Institutes, and to other similar outside opportunities for advanced study, such as that offered at the Simmons Technical College for Women at Boston (Mass.), which meet the existing demand.

The University of Illinois is situated in the eastern central part of the (a) State State between the cities of Champaign and Urbana, 128 miles south of University Chicago; the country round is a rich and prosperous agricultural region, of Illinois. while the combined population of the cities is about 15,000. The Uni- Table XVI. versity was opened March 2, 1868, with some 50 students. During the first term the number increased to 77, all young men, but, in March, 1870, the trustees admitted women as students, and during the year 1870-71, 24 availed themselves of the privilege. Since that time they have constituted from one-sixth to one-fifth of the total number. Applicants for admission to the freshman class must be at least 16 years of age. Entrance may be made at any time, provided the candidate is competent to take up the work of the classes then in progress, but all are advised to enter in September. Admission to the freshman class of the University may be obtained in one of three ways: (a) by certificate from a fully accredited high school; (b) by examination; (c) by transfer of credits from some other college or university. Persons over 21 years of age, not candidates for a degree, may be admitted to classes, after satisfying the president and the professor in charge of the department in which such classes are taught, that they possess the requisite information and ability to pursue profitably, as special students, the chosen subjects. Such students are not matriculated; they pay the tuition fee of \$7.50 a term, in addition to the regular incidental fee of \$12.

The government of the University is vested by the trustees primarily in the President of the University, in the Faculty, in the Council of Administration and in the Deans. The President is the executive head of the University. The University is divided into 11 interdependent colleges and schools. For some years past one scholarship from each county has been awarded annually, upon competitive examination, to males throughout the State, and considerable satisfaction was experienced in the spring of 1901 when the Board of Trustees granted to the daughters of farmers a privilege similar to that previously enjoyed only by their sons. The fees for matriculation, laboratory work, etc., are very small, and a tuition fee of \$7.50 only, a term, is demanded. The University does not furnish board, but there is a dining hall in the basement of the University Hall, under university supervision, where good meals may be obtained at reasonable rates. The immediate control of this dining hall is entrusted to the skilled management of a graduate of the Boston School of Housekeeping (now incorporated in the Simmons Technical College), who ensures that the food is not only varied, but nutritious, wholesome, and proportioned to the require-



(c) State  
University  
of Illinois  
—continued.

ments of normal diets; indeed, the food provided must meet with the approval of the Professor of Household Science, Miss Isabel Bevier, whose dietary studies in connection with Professor Atwater's work have been published among the United States Food Bulletins. The charge for table board in this dining hall is fixed at \$3.50 (about 14s.) a week, for which three full meals daily, including Sunday, are supplied. "Fraternity" or "Sorority" houses are a popular form of lodging among students; in the case of girls, 9 to 14 often select a chaperon and equip one house between them; they almost invariably perform personally all domestic duties, which, however, owing to the arrangement just described, do not include cooking.

All the courses are open to all the students, though it is necessary that the professor in charge be satisfied concerning the fitness of the applicant to profit by his selection. A full course equals 5 "credits," each of which is the equivalent of one hour's recitation and two hours' preparation (this may be laboratory work), for 5 days in the week; this works out at about 15 to 19 hours a week. All physical training is extra, though it is accepted for "credit" by some of the professors. Students graduate with the degree of Bachelor of Arts, Science, Literature, &c., according to the line of study they elect to follow.

The course in Household Science\* is followed in the College of Agriculture, a large, well-planned building, opened in May 1901. The department occupies the entire second floor of the north wing, and is well supplied with laboratories, apparatus, and a mass of illustrative material, such as charts, specimens of various kinds of building material, and exhibits illustrating the chemical composition and products obtained in the manufacture of certain foods. The students have access also to the museum of the Architectural department, as well as the benefit of close association with the Art department. A chemical laboratory is attached to the kitchen for the immediate application of science to home problems in chemistry or bacteriology. Adjoining this is a room which will gradually acquire the appearance of a museum, consequent upon the accumulation of a large collection of specimen foods, utensils, apparatus, etc., connected with the course. One room is devoted to the study of Household Art: here are found full-sized illustrations of window decoration, of wall-papers, parqueterie flooring, etc., which afford materials for colour study in drapery and room decoration, and for the cultivation of a taste too often conspicuous by its absence among a large section of the community. A small collection of artistic tiles and sample vases, selected for grace of form as well as for beauty of workmanship, is also being made, with a view to training the mind and eyes of students who bring only the crudest ideas of art from their remote rural homes. No limit is set to reasonable and wise expenditure in the equipment of this or other minor departments essential to the completeness of the whole scheme.

The studies peculiar to the Household Science course can be taken in two years, given adequate previous preparation, but a full four years is requisite to gain the degree of Bachelor of Science. Forty female students entered the Household Science department on its initiation in September, 1900, one male student also followed it throughout, while others of his sex were so much interested that there is a prospective demand for a course in Sanitation planned to

\* See Table XVI.

meet masculine needs. Meanwhile, Miss Bevier has worked to meet the needs of two classes of students; (a) those who specialise in other lines of work, but who desire a knowledge of the general principles and facts of household science; (b) those who wish to make a speciality of household science by a comprehensive study of the affairs of the home, together with the arts and sciences whose applications are directly connected with its management and care.

Though still in its infancy, this course promises to be of great value in the opportunity it offers for combining a liberal education with a basis of pure and applied science. By the judicious correlation of the distinctive household science subjects with some of the regular courses given in other colleges of the University, excellent facilities are provided for a study of their applications to the affairs of the household, while the oneness and interdependence of all knowledge is accentuated. "Woman's education here seems to me to have swung to one extreme and to be now coming back to a more normal and sensible ideal," writes Miss Bevier, in a reply to a request on my part for further particulars of her guiding principles when she framed this course; "in my own college days we were just feeling that the one thing to do was to share the privileges enjoyed by the men: to study and do everything they did. So, in the course in trigonometry, as the men had surveying, we girls diligently walked along too, sighted, measured—the boys being gallant enough to carry the chain and various other impedimenta. I think we might have gone to the studio with much greater advantage and learned something about form and colour in those hours. If Harvard can devise a scheme, as it has done, by which their men who wish to enter a professional course after their college course, can finish the studies of the college course in three years, I believe it is entirely possible to give to girls in two years the sciences that must form the basis of any intelligent study of the home problems, together with a little application in those first years and a great deal of application in the third year. A fourth year student should then be ready and competent to do some investigation worthy of the name, while she is also at liberty to enlarge her horizon by a study of economics, education or psychology."

The required studies are household science, botany, bacteriology, zoology, physiology, chemistry, physics, mathematics, art and design, domestic architecture, elementary decoration, German and physical training; the "electives" are English, French, economics, history, psychology and education. No laundry work is included, no practice work in housewifery, no needlework or dress cutting, as it is Miss Bevier's creed that it is a study of the principles of these home industries, rather than their technical application, which belong to a university course. In botany, zoology, and physics, the general regular courses for all students are followed. In chemistry, after the first elementary and experimental course, qualitative and quantitative analysis is taken up, with the elements of organic chemistry, to which a course on household chemistry forms the conclusion. In this, analyses, planned on special lines for these students, of baking powders, vinegars, syrups, sugars, soaps, wall-papers, etc., are carried out; an examination is also made of materials used in the household; individual work is demanded throughout. In bacteriology, the general introductory course is followed, supplemented by special applications to those ferments, yeasts, moulds, etc., related to household work. Physiology is studied with the agricultural students, and is practically illustrated by demonstrations, dissections, and discussions carried out by Professor Kemp; students make their own sections of tissues,

TABLE XVI.

SCHEDULE OF HOUSEHOLD SCIENCE COURSE, STATE AGRICULTURAL COLLEGE, UNIVERSITY OF ILLINOIS.

Institution and Course.	Entrance Requirements.	Scope of Course.	Methods.	Length of Course.	Fees and Finance.	Equipment.
<p>State Agricultural College, Urbana, Illinois.</p> <p>Household Science Course.</p> <p>Professor, Miss Bevier.</p>	<p>At least 16 years of age.</p> <p>(a) By certificate from a fully accredited High School.</p> <p>(b) By examination.</p> <p>(c) By transfer of credits from some other College or University.</p> <p>Persons over 21, not candidates for a degree, may be admitted to classes after satisfying the President and the Professor in charge of the class that they possess requisite information and ability to pursue it profitably. Such students pay an extra fee.</p>	<p>The aim of the Course is to give a liberal education with a basis of pure and applied Science.</p> <p>Household Science.</p> <p>Botany, Zoology, Bacteriology, Physiology, Chemistry, Physics, Mathematics, Art and Design, Domestic Architecture, Elementary Decoration, German, Physical Training, English, French, History, Economics, Psychology, Pedagogics,</p> <p>General Courses taken with other students in the regular laboratories, supplemented by a Special Course on Household Chemistry and Domestic Bacteriology.</p> <p>Special Courses.</p> <p>General Courses.</p> <p>Elective Courses.</p>	<p>The Course is planned to deal with Household Science on the true lines of a University Course, to which belong principles rather than their application; there is consequently no practice work in housewifery, needlework or dress cutting. Laundry work, to demonstrate application of scientific principles, will shortly be added.</p> <p>All practical work is individual. Students of Botany, Zoology, and Physiology, make and mount their own sections of tissues, and become expert in microscopy.</p> <p>Books of reference are preferred to any single textbook; bibliographies bearing on the work of a given term, month, or week, are prepared by Miss Bevier for the use of her students, every facility for the necessary reading being provided in the fine library.</p>	<p>Short Course 2 years, given adequate previous preparation.</p> <p>For B.Sc. Degree, full 4 years Course requisite.</p>	<p>Small fees for matriculation and laboratory work.</p> <p>Tuition fee \$7.50 a term.</p> <p>State funds.</p> <p>Two scholarships from each county in the State awarded annually by competitive examination to a male and female student.</p>	<p>No limit placed on reasonable demands.</p> <p>The department occupies the entire second floor of one wing in the new agricultural building; it comprises laboratories, kitchen, domestic art studio, and exhibits illustrating the development of textiles and of pottery, the chemical composition and products obtained in the manufacture of certain foods, etc.</p> <p>Students also have access to the museums of the Architectural department, and of the Art department.</p>

mount and investigate them microscopically. Dean Ricker, of the Department of Architecture, has taken much interest in the preparation of a special and suitable course in house planning, sanitary construction, and history of architecture, which is usefully supplemented by his unusual collection of illustrative lantern slides and by the number of models and specimens of stones, bricks, fixtures and fittings, arranged in the architectural museum. Professor Frank Frederick, who is responsible for the art course, requires his students to devote their first term to the acquirement of facility in accurate drawing, freehand, perspective, cast outlines, etc. Lectures on colour and design, with accompanying exercises, form a portion of the course, while shading, wash and charcoal sketches and rapid drawing from life, constitute the second part of the art studies. Students are advised throughout to consult books of reference rather than to confine their reading to any single text-book; bibliographies bearing on the work of a given term, month, or week, are prepared by Miss Bevier for their use, in which references to articles in current journals and reviews find a place among those to standard authorities. Every facility for the necessary reading is provided in the Library, which is quite the most imposing building in its architectural features among the group on the extensive campus; within also it is interesting on account of its fine proportions and the beauty of its colour scheme and fresco decorations.

The class of women from which this Household Science Department draws its students is largely agricultural; the daughters of Illinois farmers constitute the greater proportion of those who come under Miss Bevier's influence and supervision; so far she finds that, though her demands necessitate very hard work on the part of her students, it is not over severe or impossible of accomplishment. The year which has elapsed since my visit has given promise of increased vitality, and the cordial co-operation of the other professors concerned has been not only sustained but strengthened.

The Ohio Agricultural and Mechanical College was established by law in (b.) Ohio 1870, but was not opened until 1873 for the reception of students. Five State University. years later the Legislature passed an Act which, amongst other changes, provided that the institution should be subsequently designated as "The Ohio State University." Table XVII. Up to this time but one appropriation had been made by the State for its support; with the reorganisation came a larger and broader view of the State's relation to public education, and since that time the Ohio State University has shared with other public educational institutions a more generous support by the State. The governing body of the Institution is a Board of Trustees, appointed by the Governor of the State and confirmed by the Senate, for terms of seven years, as provided in the law organising the University. The original endowment has been supplemented, and the objects of the University promoted, by a permanent annual grant from the United States, under an Act of 1890; by special appropriations of the General Assembly; and, in 1891, by a permanent annual grant from the State, which grant was doubled by the legislature of 1896. In accordance with the spirit of the law under which it was organised, the University aims to furnish ample facilities for education in the liberal and industrial arts, sciences and languages, and for the thorough technical and professional study of agriculture, engineering in its various departments, veterinary medicine, pharmacy and law. Through

(b) Ohio  
State  
University  
—continued.

the aid which has been received from the United States and from the State, it is enabled to offer its opportunities with a slight charge for incidental expenses, to all persons of either sex who are qualified for admission. The University has now over one hundred instructors, and 38 departments of study. Six of its 30 courses are offered by the College of Agriculture and Domestic Science and lead to the degrees of Bachelor of Science in Agriculture, Bachelor of Science in Horticulture and Forestry, and Bachelor of Science in Domestic Science. There are two free scholarships from each of the 88 counties of the State, in Agriculture, Domestic Science, and Veterinary Science.

The former President of the University, Dr. James Canfield, now librarian of the Columbia University, New York City, did excellent pioneer work in his ardent advocacy of the necessity for a general teaching of hygiene and household economics; it was to him that this course owed its initiation in 1896, and through him that Miss Perla Bowman (now Mrs. W. Gibb) was selected to organise it. The results justified his choice; Miss Bowman worked unremittingly to frame such a course of study as should exemplify the connection of history, science and art with home life; her object was the production of well balanced, cultured women, endowed with the power of facing and solving home life problems. Experience showed her that at first girls must be taught to appreciate the value of life, and then only can they be stimulated to acquire the knowledge how to maintain life at its best. In accordance with her advice two courses are offered in Domestic Science; the shorter (two years) is planned for those who can give but a limited time to university training, and the longer (four years) is of a more exhaustive character; it requires a more advanced standing for entrance, and leads to the degree of Bachelor of Science in Domestic Science. A certificate of attendance is given for the two years' course, which includes the same practical work as does the four years', but demands fewer allied subjects and less general culture. Experience shows that this short course appeals especially to country girls who have had the equivalent of two years' high school work. The minimum time spent in class-room work is 15 hours a week; this represents at least 30 hours' work, exclusive of 4 hours a week physical training during the whole two years, for each "credit" hour presupposes 2 hours actual work. From 50 to 60 students have completed this course, their ages varying from 18 to 21 years. The complete four years' Domestic Science curriculum includes domestic art, botany, zoology, chemistry, physiology, bacteriology, drawing (freehand, architectural, and plan drawing), horticulture, psychology, economics, physical culture, history, and English literature; French and German are optional. The actual work in Domestic Economy absorbs a little less than one-third of a student's time. It consists of sound and advanced training in cookery, under first-class instructors, with great stress laid upon the comparative nutritive value of foods, the effect of cooking upon their digestibility, and the construction of economical, nutritious and varied diets. The accompanying study of household economics comprises laundry work in addition to the study of much that pertains to

the planning and sanitary care of a house; disinfection, home nursing, and emergency work are also included, as well as a practical knowledge of domestic accounts. The scheme of Domestic Art embraces studies and practice in colour schemes and all forms of household decoration; there is constant practice, under competent instruction, of plain sewing, dressmaking and millinery, with much drafting and cutting of patterns; while attention is consistently directed to the production and manufacture of materials, equally with their choice and treatment; the study of line, form, colour and texture runs parallel with the whole practical course. The schedule (Table XVII.) shows the scope, plan and aim of the whole scheme.

(b) Ohio  
State  
University  
—continued.

The subject of bacteriology is first taken up generally, in its relation to man and his immediate surroundings, students are taught to make nutrient media, and to work reliably with the microscope: in the laboratory they learn the isolation of pure cultures, how to distinguish the various bacteria met with in food and water, and the mechanical examination of water, milk and air. Food adulteration is somewhat fully treated by Professor Weber, who gained his experience as State Inspector and Food Analyst, and who has an extensive and most interesting collection of specimens of artificial and adulterated foods. Professor Kellermann endeavours through the method he pursues in his course on botany to train students to exercise their reflective powers, and to employ individual effort, rather than to rely on their teacher or text book; he seems to possess the gift of stimulating them to work out their own applications, economic and artistic, and spoke to me of good thesis work done by his Domestic Science students, especially in connection with fungi and moulds; in fact he had selected the writer of one of these to act as his assistant for the year. Professor Gordy, then in charge of the department of Psychology and Pedagogy, took special interest in his share in the promotion of the course, from his firm conviction of the paramount influence of the home upon national life and character; and I learnt from him with interest that their introduction to these subjects seems to open up a new world to many of the students.

The marriage of Miss Bowman at the completion of the first four years of the course, which necessitated the election of a successor, may probably somewhat influence the methods; but the foundation for future development seemed firmly laid. The majority of students who have hitherto entered this department come from quite rural districts; they are often ignorant of conventions too common for their existence to be recognised among a town population, though quickly attracting attention if omitted from the conduct of daily life, so the course had to be planned to develop social refinements and amenities, as well as to impart a knowledge of scientific and artistic principles, and to afford opportunity for the acquirement of manual dexterity. I was furnished with many instances of the good work already accomplished; that increased contentment with home life which apparently accompanies ability to modify its conditions, and the development of a new spirit in the pursuit of philanthropic ends, were two forms reported to be especially evident. At the date of my visit (June, 1901), all the Domestic Science graduates had either married or returned to home life, with the exception of one who had gained a Fellowship in botany in the university over the heads of several candidates from the College of Science.

The character of the work done, and the progress made, have been tested up to the present by the professor in charge of each department, at intervals left to his discretion, but the graduation thesis of each student must be accepted by the general Faculty, and the time for the final examination is fixed by the executive clerk, usually at the end of the term. Miss Bowman employed the

TABLE XVII.

STATE UNIVERSITY OF OHIO. COLLEGE OF DOMESTIC SCIENCE AND AGRICULTURE.—SCHEDULE OF DOMESTIC SCIENCE COURSE.

Institution and Course.	Entrance Requirements.	Scope of Course.	Methods.	Length of Course.	Fees and Finance.	Equipment.
State University, Ohio.	At least 16 years of age.	Agricultural Chemistry - - - 5 terms, 10 hrs. per wk.	The course aims to supplement the work of other departments. The study of languages, arts and sciences is combined with a practical consideration of the economic problems which are linked with sanitation and hygiene, and are also directly connected with home life.	(1) Four years, each divided into three terms leading to the degree of B.Sc. in Domestic Economy.	No fees, except certain nominal fees for laboratory work.	The Science and Biological Laboratories are somewhat limited for the large numbers, but two new buildings are on the point of erection.
Agricultural and Domestic Science College.	1. By certificate from preparatory department of college or normal school.	Botany - - - - - 3 " 10 "				
President, Rev. W. Oxley Thompson, D.D., LL.D.	2. By examination.	Zoology and Bacteriology - - - 3 " 6 "				
Domestic Science Courses—	3. By graduation certificates from certain High schools approved by the University.	Physiology - - - - - 3 " 6 "				
(1) four years;		Chemical Physiology - - - - - 1 " 6 "				
(2) two years.		Hygiene and Physical Training - - 6 " 4 "				
This course offers the same practical work, as (1) but fewer allied subjects are studied and less general culture is demanded.		Domestic Economy - - - - - 9 " 8 "				
		Political Economy - - - - - 2 " 6 "				
		Horticulture <sup>2</sup> - - - - - 3 " 4 "				
		Drawing—				
		Freehand - - - - - 3 " 5 "				
		Mechanical - - - - - 1 " 4 "				
		Architectural - - - - - 2 " 4 "				
	House Designing - - - - - 1 " 4 "					
	English Composition - - - - - 3 " 5 "					
	English Literature - - - - - 3 " 4 "					
	U. S. Political History - - - - - 2 " 6 "					
	Theory of Education - - - - - 3 " 6 "					
	French or German - - - - - 6 " 8 "					
	Thesis - - - - - 3 " 4 "					
			The Laboratory method is employed wherever permissible.	(2) Two years course, leading to certificate of attendance.	State funds.	There is a Spacious Cooking Laboratory and Dining Hall, in which the arrangements aim at duplicating home conditions while they suggest better arrangements.

usual method of giving oral or written "quizzes" to her students at varying intervals.

(b) Ohio  
State  
University

The following "quiz" in bacteriology was furnished me as a typical example, and serves to indicate the lines followed :—

1. What can you say of the importance of food preservation?
2. Why in the study of food preservation should we consider bacteria? Will any other agent cause food to spoil?
3. Classify bacteria as regards appearance. How do micro-organisms reproduce?
4. Give a definition for yeast; for a ferment; for a mould. What are the fungi?
5. Are fermentation and putrefaction synonymous terms? Are bacteria animals or plants? Support your statement.
6. Give the six divisions of bacteria, as distinguished by their varying properties.
7. What do you understand by anaerobic and aerobic bacteria? What kinds of substances would furnish the best food for each class?
8. What elements are needed by bacteria? What conditions particularly affect germ life?
9. What are spores? How do they develop? What may be said concerning the rapidity of germ multiplication?
10. How may fermentation be checked?
11. How is this principle of excess of bacterial produce being harmful to the germ applied in inoculation?
12. Name the principal organised and unorganised ferments.
13. In what class of substances may yeast fermentation take place?
14. Give the names of the active agents, and the successive steps in the reduction of cellulose to cane sugar in a plant.
15. Do the same, giving reactions, in reduction of starch to grape sugar in the body.
16. Give the reaction when sugar is fermented by yeast; lactic acid is changed to butyric acid; when stearine is acted upon by steapsin and changed to glycerine and stearic acid. Give reaction when lactose is attacked by lactic acid ferment.
17. On what mediums are ferments most active? How does this answer affect the keeping properties of sour fruits?
18. What is meant by amylolytic ferment? What is meant by proteolytic ferment? Name the principal ones of each class.
19. Suppose that a green pear hangs on a tree; trace the chemical changes which would occur during its ripening and decay, if it were unmolested.
20. Name the different methods by which foods have been preserved.
21. To what man are we particularly indebted for our knowledge of food preservation? What is the difference between pasteurisation and sterilisation?
22. What is the action of a rich syrup in preserving food?
23. What is the active principle in jelly making? Why do not over ripe or over cooked fruits make good jelly?
24. How do you explain the preservatives of vinegar, salt, bright hot sun, smoke, cold, heat, antiseptic substances?
25. What are the most common preservatives used?
26. Do you recommend their use? If not, why?
27. What can you say of the relative food and money values of canned and fresh foods?
28. What are the arguments in favour of home canning and preserving?
29. What do you know of the food laws with regard to canned or preserved fruits?

An evidence of the interest excited among the students by this study is found in the fact that, among the subjects selected for their graduation theses last year were :—The Edible Fungi of Ohio, the Study of Mould in Preserving, and the Bacteriological Examination of Water.



The department is situated in Hayes Hall where there is a spacious cooking laboratory with a dining-room adjoining, each fitted with good appliances, \$1,000 having been recently expended to make the department thoroughly efficient. The aim of the equipment is to duplicate home conditions, while, at the same time, suggesting better arrangements. To this end great care and attention has been expended on the dining-room, its furnishing, use, maintenance, and so forth. The science laboratory accommodation has been latterly somewhat cramped, owing to the rapid increase of numbers, which has resulted in overcrowded classes, but the erection of two new buildings, Physics and Law, will shortly relieve this congestion. Individual practice work is the rule throughout the course, except that the dissections in the general physiology course are carried out by the professors. This is in part due to the specially crowded conditions of these classes. Physiology is *required* in *all* the agricultural, veterinary, horticultural, and domestic economy courses; it is *elective* in all arts and science courses.

Dr. Thompson, who succeeded Dr. Canfield as President of the University, anticipates still further developments in the near future. It was proposed some months ago, and the resolution was at once adopted by three out of the six Faculties, that a course in public sanitation be organised, open to students of both sexes, to meet a growing demand for opportunities of study on the part of general students who desire to secure a sounder acquaintance with the questions of sanitary reform, and to equip themselves to play a more intelligent part in philanthropic undertakings. President Thompson is in full sympathy with the proposal, and expressed the hope that this year may see the resolution adopted by the remaining Faculties.

(c) Michigan  
State  
Agricultural  
College.

The courses in Domestic Science and the Domestic Arts at the Michigan Agricultural College may be taken as typical of the best offered in a high grade Technical college. A broad, general education in English, mathematics and science is provided for its students, in addition to which, it gives a thorough technical training in agriculture and related sciences to students in the agricultural course; in shop work and mechanical engineering to students in the mechanical courses; and in cookery and domestic economy to students in the women's course. Wherever possible the laboratory method is followed.

There are four full courses. Three of these—the agricultural course and the four years' mechanical course for men and the domestic economy course for women—require four years for graduation; and one—the mechanical course for men not qualified to pass the examinations for entrance to the four years' mechanical course—requires five years. Each full course leads to the degree of Bachelor of Science. Besides these the college offers seven special short courses of from four to eight weeks, in dairy husbandry, creamery, cheese making, live stock husbandry, fruit culture, floriculture and winter vegetable gardening, and sugar production.

The aim in the long courses is to take the student from the high school, or from the end of the 8th grade school year, and to carry him or her through four years of general and technical training, making science the main feature of the college work, and applying it to practical use at the earliest possible moment along the lines of technical training essential to each course. General culture studies are introduced to develop "poise," self control and patriotism, and to enlarge and dignify life in all its aspects. In the special winter courses the object is to impart in the shortest possible time a certain amount of definite information; they are designed chiefly for adults. General culture is not attempted, but efforts are concentrated on the teaching of methods of procedure which can be applied at once to bread-winning. The women's course is designed to give a thorough practical education with special reference to home-making.

(c) Michigan  
State  
Agricultural  
College—  
*continued.*

Its duration is four years, and it embraces the following subjects: English, mathematics, literature, history, modern languages, botany, chemistry, physics, physiology, entomology, drawing, graphic art, history of art, cooking, domestic science, sewing, cutting and fitting, laundry, physical culture, music, painting, millinery, floriculture, fruit culture, bacteriology; zoology, history, economics and political science, geology, meteorology, physics, and psychology are "electives." The course is considered suitable also for young women who desire to prepare for teaching technical or advanced courses in high and other schools. Candidates for admission must not be less than 15 years of age, and entrance examinations in elementary subjects are required. Candidates over 18 years of age may be admitted without examination, provided that they make arrangements to pass the entrance examination within one year. The average expenses per annum are \$136. The college owns four handsome dormitories, one for women and three for men; lodging can also be had in the neighbouring town of Lansing. Board at the college is in the hands of the Students' Club Boarding Association, and is managed by the students. There are six clubs, and each club fixes its own rate of living. The cost varies from \$2 to \$2.60 per week for young men, and from \$1.60 to \$2.10 per week for young women. An independent boarding club is run for young men at an expense of about \$1.50 per week.

In the Domestic Science course the common facts are correlated in their bearing on household matters; the various occupations and methods necessary to conduct the home in comfort and health are discussed, and stress is laid on practical demonstration. Considerable time is devoted to laboratory work in general, advanced and invalid cookery; a waitress's course, and lectures on household economy are included. The opportunities for practice work are unusually extensive. Students are encouraged to act as waitresses in the large dining-room of the women's building until they acquire the necessary proficiency to direct the serving of dinners of several courses, while those specially interested in catering for large numbers of persons are permitted to make use of the facilities provided by the kitchen attached to the women's dormitory. The kitchen laboratory provides accommodation for the work of 20 students at one time; four tables are subdivided into five compartments, each of which is provided with the usual fittings: conveniences for cooking by electricity, as well as by other mediums, are installed; a private dining-room and the necessary offices are attached. The large laundry

(c) Michigan  
State  
Agricultural  
College—  
*continued.*

is furnished with a dryer, wringer, ironing tables, and 18 porcelain-lined stationary tubs, each of which has hot and cold water laid on. The equipment bears evidence throughout of the study of a wise economy in strength and time.

The Domestic Science students have also two courses in household bacteriology: the object of the first is to open various subjects to an examination which should yield a better understanding of the questions involved. The function of yeast in bread making, a careful survey of milk and its products with a view to a comprehensive knowledge of their bacteriological and hygienic significance, the fermentations which occur in vinegar and canned foods, are leading features of the course. Food preservation in its various forms is also studied from the bacteriological side. A second course is planned to permit of a more detailed and careful study of the various features of hygienic work: it includes a study of the causal agents of the more common infectious diseases, as well as of the action and mode of application of antiseptics; while further consideration is devoted to the hygiene of water, milk, and soil, and some practical aspects of sewerage and drainage, light and ventilation are dwelt upon and studied. Three hours a week are devoted to human physiology and anatomy by the agricultural and women students during two terms: part of this time is spent in actual dissection and in the study of the histology of the tissues; these lessons are supplemented by lectures covering the principles of hygiene and sanitary science, and of the restriction and prevention of disease: the department is well equipped with microscopes and dissecting apparatus. The course in Domestic Art is carried on in a specially fitted, well equipped and well lit apartment: it includes sewing in all its branches, dressmaking, art needlework, and millinery; courses in modelling and manual training in woodwork also find a place. Drawing is introduced at an early stage, as it has proved to be a most excellent means of developing and sharpening the faculty of observation, especially where this has been previously neglected. Some of the numerous mediums employed in graphic arts are next studied, such as charcoal drawing, black and white work, pen and ink work, oil and water colour. A series of lectures on the history of art, (considered under the three heads of architecture, sculpture, and painting), conclude the year's work. The study of economics and political science is elective; in this course, the training of citizens, industrial reforms, and problems of population, receive careful examination, and are correlated with the study of hygiene.

The short Household Economic course, which is confined to one year, comprises sanitary science, emergencies and home-nursing, household accounts, and the principles of everyday art applied to the furnishings of a house and the treatment of floors, walls and ceilings. A special course of laboratory exercises and lectures in domestic physics is provided for all women students in their second year; it includes determinations as to the specific heat of various substances, the heat of vaporisation and liquefaction, tests of various forms of thermometers, and a series of comparative tests as to the efficiency and economy of gasoline, kerosene, alcohol, and electric heaters, for household use; a previous study of elementary and general physics is imperative.

The Household Science courses in the State universities of Colorado, Iowa, Kansas, Minnesota, Missouri, Nebraska, Utah, and twelve or fourteen similar institutions in other States exemplify variations of the three above detailed. In each case the health and well-being of the nation appears to have been the root cause for the initiation of the course. The proper care of humanity is recognised as a study possessing dignity and worth, and though the interdependence of mind and soul upon physical conditions is appreciated by but a minority of either the students or the public from which they are drawn, yet the heaven is at work which assigns a high place among the sciences of the day to Household Economics, and which also recognises that, by means of this instruction young women are trained to be more healthful, more economic, broader and more appreciative home makers. Influenced as are the details in each college course by the mental attitude of the organiser, by the needs of the students, the sources from which they are drawn, and by the special characteristics of the college (that is to say whether university, technical or utilitarian methods be pursued), there is one broad guiding principle to be traced throughout, viz., that institutions for the higher education of women must offer training adequate for the responsibilities of life, as most women *ought* to meet them, and sooner or later must meet them; a training which shall be broad, which shall supplement established principles, which shall send women to their work cultivated in the fullest significance of the term, and prepared to make life fuller, brighter and better for all with whom they come in contact. For which reasons the very variety presented is, in my opinion, advantageous; the scientific course offered at the University of Illinois, the more utilitarian methods pursued at the University of Ohio, the purely technical training at the Michigan Agricultural College, are each creating, or responding to, the demands of different sections of the community. The last course, which was first established, met and meets the needs of its clientèle; the desire to co-ordinate the science and art of home making with other work of a university grade is realised with some completeness in the newly organised course at Urbana; the cruder conditions of public opinion did not permit of this when the sister course at Columbus was inaugurated but four years previously. It is the opinion of the best informed that it is the highest type which will prevail and gradually draw the others up to its level; if this be the case it will be largely due to the unremitting efforts and example of certain members of the Association of College Alumnae, to whom great credit is due.

In college life, as during the period of elementary education, the advantages of a study of personal hygiene, and to a certain extent also of domestic sanitation, are shared by the two sexes; though, in this case, the motive is other than that of a desire to promote a distaste for the use of stimulants and narcotics. Emphasis is laid in most, if not in all, college courses, upon the absolute necessity of maintaining (or, if necessary, of developing) sound health, by means of a judicious regulation of the hours

Reference  
to Courses  
in House-  
hold Science  
in various  
State  
Universities.

Courses in  
Hygiene.

Courses in  
Hygiene  
—continued.

devoted to study, recreation, exercise and rest. The great educational advantages to be derived from a good physical development and a highly trained muscular system are presented to each year's freshmen; and the custom of requiring a definite amount of physical culture from all students, preceded by a carefully conducted physical examination, seems quite the general college rule. This examination is repeated annually and the results recorded; the measurements are outlined on specially prepared charts, and are accompanied by other desirable data bearing upon family and personal history, habits (such as condition of the digestive organs, hours of sleep, etc.), the standard of the sense organs as to sight, hearing, and so forth; naturally these charts are accessible only to the professor in charge of the gymnasium, and to the individual whom they concern. The examination and records are framed, in part, to arouse an intelligent interest among the students in the improvement of their own physique and to stimulate them to a careful performance of any remedial exercises recommended; in part to facilitate the accumulation of reliable statistical material, upon which, in due time, necessary reforms can be based. It is realised, however, that an intelligent being should be possessed of good "reasons for the faith that is in him," and for the practice which should spring from that faith; consequently lectures on personal hygiene, given by the professor of physical culture, constitute an integral part of these gymnastic courses (to which more detailed reference is made in my Report to the Council of The Sanitary Institute on the "Teaching of Hygiene in the schools and colleges of the United States of America"). By both these means, theory, as given by lectures, and practice, as carried out in the gymnasium, the attention of the greater part of the college population is directed to the right care and development of the body, to its dependence on good habits and environment for the fulfilment of its functions, and to the duty laid upon each to cultivate symmetry, mental and physical, for personal advancement and for the welfare of the community. If safeguarded by discretion and pursued with perseverance and accuracy the results should be far reaching, for this method of introducing the subject extends to every student on the register, not merely to those following this or that course. It is true, the instruction on personal hygiene is theoretical, in the sense that it is given in pure lecture form; but the young people are called upon to make their own observations and applications, not in the more or less artificial atmosphere of the gymnasium, but in the conduct of their daily life, which, in the case of some colleges, is subjected to advisory suggestion on the part of their instructor. This may be the survival of the "strong paternal anxiety and oversight" exercised formerly over students by college Faculties, to which Professor Fleming West refers in his previously quoted monograph.

At present, a more definite course in general hygiene is not usually available for college students, though signs of a growing demand are perceptible. This made itself felt six years since at Michigan State University, at Chicago University, and in one or

two other instances. To the general course in Sanitary Science at Chicago University reference will be made in Part II. of the Report; particulars of that at the Michigan State University are here detailed.

The University is a part of the public educational system, (a) Michigan State University. Table XVIII. governed by a Board of Regents, who are popularly elected for terms of eight years' service. There are seven departments, each with its own special Faculty. The only fees are for matriculation, incidental expenses, and diplomas. Courses on hygiene, physiological chemistry and bacteriology are provided for medical students; but until the course on Hygiene and Household Economics was initiated by Dr. Eliza Mosher (Dean of Women) in the Department of Literature, Science, and the Arts, only these specialised and extensive courses were offered. This general course receives a satisfactory amount of support from the students, about one-third of the attendance consisting of young men; the total number is considerably influenced by the hour appointed for the lectures, as the subject is "elective" and must give way in the time schedule to those which are obligatory or imperative. Up till last year the lectures were illustrated only by demonstration, but Dr. Eliza Mosher anticipated the early appointment of an assistant professor, who would conduct and superintend individual practical work in a suitably equipped laboratory. The first term is devoted to a study of (a) Personal Hygiene; this includes the structure of the body; the phenomena of nutrition; the influences which favour or retard body metabolism; foods and their adulteration; and to (b) Household Economics, into which enter house construction, furnishing, decoration and cleansing. The second half of the course deals with (c) Domestic, and (d) Municipal hygiene. Under (c) a study is made of the chemical constituents, nutritive values and comparative costs of foods, together with practice in the consideration of dietaries for the sick, as well as for the sound; in (d) school sanitation finds a place. Personal observation showed the unquestionable interest aroused by this course, carried on, as it is, by a woman of strong personality and wide experience; one, too, who is able to completely dissociate her subject from its pathological aspect, and to present it from the standpoint of perfect, not defective, physical development. A perceptible effect on the opinions and habits of the young people is reported as the course continues to exercise its good influence. At the conclusion of each year Dr. Mosher conducts an examination of her students by means of written papers and *viva voce* "quizzes."

I was unfortunately unable to visit the State University of Indiana, at Bloomington, where a valuable and suggestive short pioneer course in hygiene is given to women, each spring, by Dr. Rebecca Rogers George; the keynote of the whole is stated to be the elevation of home life, and of all its contributing factors, to a more scientific and higher moral basis. The ten lectures concern themselves with the following topics:—

- (a) The chemistry of food stuffs, their proper proportions and combinations.

TABLE XVIII.

SCHEDULE OF COURSE IN HYGIENE.—STATE UNIVERSITY OF MICHIGAN.

Institution and Course.	Entrance Requirements.	Scope of Course.	Methods.	Length of Course.	Fees and Finance.	Equipment.
Michigan State University. Ann Arbor, Michigan.	High school certificate or its equivalent.	Personal Hygiene { Structure of body. Phenomenon of nutrition. Metabolism.	The practical work in this course is limited to demonstration, but the contemplated appointment of an assistant professor will coincide with the introduction of individual practice, such as accompanies the supplementary courses.	One year.	Only for matriculation, incidental expenses and diplomas.	The classes are held in an ordinary Lecture Theatre.
Hygiene and Household Economics. Dr. Eliza Mosher.	Written entrance examination.	Household economics, foods. { Nutritive value, cost, dietaries, adulteration.		Two classes weekly.	State funds.	An ample supply of diagrams and models for demonstration is provided.
Mixed class, about one-third male students.	The course is open to all students at the university.	House construction, furnishing, decoration, cleansing.  Municipal hygiene—which includes school sanitation.  The above can be supplemented by courses in Chemistry—general and analytical, Physics—General Biology and Bacteriology.	The ingenious and skillful employment of clay as an illustrative material was of interest in this course: cells, bones, organs, postures of the body, plumbing details, were rapidly moulded by the demonstrator and exhibited, attached to glass-covered blackboards. A specially mounted skeleton—with springs—and models of the internal organs made in thin silk, assist to a marked degree in the illustration of Dr. Mosher's lectures.			

- (b) The physiology of digestion.
- (c) The channels and means for promoting elimination from the body.
- (d) Respiration and ventilation.
- (e) The anatomy and physiology of the reproductive organs and their purpose in the scheme of creation.
- (f) The pathology of the female reproductive organs, with such means of relief as lie within the reach of all.
- (g) The social relation of the sexes.
- (h) The profession of motherhood.

This course is "elective," but each girl who takes it and passes a successful examination is given a "credit," as for any other course.

Dr. Rebecca George writes, that "believing the present system of education tends towards the production of teachers rather than of home-makers, these lectures have been given for the past four years to offset, in a way, present educational tendencies, and to impress upon girls the dignity of household science and the sacredness of wifehood and motherhood." The results thus far have been most gratifying; "eager interest without a sign of vulgar curiosity has been the rule during each of the four years' work, and not a few have testified to the value of the knowledge so obtained two and three years after their student life has closed." Few can dispute that, through the judicious introduction by skilled hands of such suitable preparation for the highest duties to which girls are called lies the right road of escape from much needless, costly suffering among women, much ignorant maiming of child life, many saddened homes, much social evil. The transmission of the highest manifestation of life, in so perfect a form as may be, lies at the root of all hygiene; and at the right time, in the right way, it should surely be assigned a dignified and carefully safe-guarded position in the study of the right conduct of life. (See "Training of the Young in Laws of Sex," Hon. and Rev. Canon Lyttelton; Longman, Green & Co.)

#### D.—NORMAL SCHOOLS.

Normal courses of training in domestic subjects are almost invariably post-graduate; they are followed, to a great extent, in private Technical Institutes, to a small degree in those State Universities in which Household Economics have been adopted on educational lines; in the future it is probable that the proportion of students in each class of institution will be fairly balanced, since the college courses are now making rapid growth in quality and quantity.

The excellent two years' course at the State Normal School at Framingham (Mass.), holds an almost unique position, and the history of its development is not without interest. It originated in the establishment in Boston of a department for the study of household arts, under the name of Boston Normal School of Cookery, by the late Mrs. Mary Hemenway, in 1887. Its graduates so easily found positions as teachers in public and private schools, as well as in public and philanthropic institutions, that its usefulness was rapidly proved. In June, 1898, the trustees of the Mary Hemenway estate offered the school to the State Board of Education, with the very generous proposal that, if the offer were accepted, Mr. Augustus Hemenway, her son, would thoroughly furnish and equip such a department, as a memorial of his mother, in which project he was joined by his

Framingham State Normal School Course in Household Arts. Table XIX.



Framing-  
ham State  
Normal  
School  
Course in  
Household  
Arts—  
*continued.*

sisters, Mrs. Louis Cabot and Mrs. Wm. E. C. Eustis. The Board was quick to appreciate the worth of such a gift, together with its far-reaching beneficence. The Normal School at Framingham was selected as that best fitted to receive it, on account of its proximity to Boston, its two boarding halls, which attract students from a distance, and the many grammar schools in the town, from which pupils could be drawn for its practice school; for the object always in view has been to provide for the adequate training of teachers of the various household arts, especially of cookery in its different forms. Existing arrangements enable any pupil who graduates from the regular Normal course to take the course in Household Arts in one year; or any graduate of the two years course in Household Arts can take the Normal course in one year; thus the usual term of training is, in either case, lengthened by one year; those students who qualify in Household Arts only complete the course in two years.

The wise aim of the instruction in all branches is to teach the students intelligent, thoughtful self-reliance; for, to those responsible for the instruction given, it appears obvious that the equipment of actual knowledge which a student takes with her from any school such as this can be but limited; therefore, they feel that judicious training in accurate thinking and working must be the main object of the teacher, if the student is to reap the highest benefit from her stay in the school. The courses in chemistry are particularly well adapted to give this training, since a large part of the two years of study is spent in actual work in laboratories, where the student discovers for herself the absolute dependence of results on the character of her work and on the methods she has employed; as disciplinary work alone the value of such study cannot be overrated, but it also has a direct and permanent practical value in the Household Arts. These courses form a progressive series, and are intended to prepare the students in a systematic way for an intelligent comprehension of the underlying principles of cookery, of laundry work, of dyeing, of cleaning, etc., as well as of those involved in the management of foods, fires, fuels, illuminants, ventilation, and the like.

Considerable time during the first year is devoted to the study of general chemistry, in which the fundamental principles of the science are taught by means of experimental lectures, 60 in number, and by class-room recitations. In connection with this course, the student has 120 hours of practical work in the laboratory. Systematic and extended instruction in qualitative analysis is given in the second half of the first year, so that by the end of this year students are prepared to begin the more exact discipline of quantitative work. The work in quantitative analysis consists of a brief course in volumetric analysis and in gravimetric analysis; both of these courses include class-room as well as laboratory work. An elementary course is given, in conclusion, in organic chemistry; this deals with the structure of carbon compounds, and with the interactions between the different classes of those compounds which are most frequently used. Not so much time is given to physics as to some other studies, yet it has a definite place in the curriculum.

The instruction consists of lectures, recitations, and demonstrations upon the fundamental principles of matter and energy,

mechanics, hydraulics, and the elementary forces—heat, light, and electricity. To biology, as to physics, only so much time is allotted as is believed to be absolutely required to furnish a sound basis for physiology, hygiene, and bacteriology; the course consists of lectures, recitations, and laboratory work.

The beginner is introduced to the use of the microscope, and learns to examine plant and animal bodies, and to resolve them into elementary organs, tissues, and cells. Constant practice in drawing is required, and such subjects are dealt with as the structure of living things; the elementary living stuff (cytoplasm); first principles of nutrition, digestion, foods, and feeding; the sources of starch, sugar, etc.; and the interdependence and interrelation of the organic and inorganic world.

The chief interest of the class in the study of physiology centres naturally in nutrition and related subjects. Somewhat more than half the time is therefore devoted to such questions, while the remaining heads are treated in less detail.

Some time is given to the quantitative side of metabolism. This becomes a very practical matter, as it throws light upon the value of the different food stuffs, the extent to which one may replace another, and the relation of the diet to tissue building, muscular work and heat production; finally, the usefulness of the condiments, stimulants and mineral matter in the food is discussed. The concluding lectures deal with the central nervous system, the sense organs and the principles of personal hygiene. Miss Clark, who is responsible for this course, emphasises throughout the hygienic aspect of physiology; she attaches comparatively little value to the use of models or diagrams, but prefers to rely on fresh specimens; the use of the microscope also is required to a moderate degree only, in order to stimulate careful observation of natural objects with the naked eye, and to prepare students for good work in schools where equipment is perhaps compulsorily limited; the cultivation of great facility with black-board illustration is very carefully encouraged. The text books in use are "Physiology for High Schools," by Macy Norria, Blaisdell's Series of Physiology Manuals, and Thorntson's "Human Physiology." The ordinary Normal student receives three lessons a week for twelve weeks, the Domestic Art student has the advantage of two weekly lessons for one year.

Bacteriology and the study of micro-organisms, and of fermentation, especially of yeasts, constitute a prominent feature in the final year. The students learn how to make their own culture media, how to examine milk, water, air, ice, dust, etc., and how to test the efficiency of filters, sterilizers, and germicides.

The Course is arranged as follows:—

- Bacteriology and micro-organisms of fermentation.
- Classification of micro-organisms.
- General biology of bacteria.
- General physiology of bacteria.
- Bacteriology of water and ice.
- Bacteriology of air.
- Bacteriology of earth and dust.
- Bacteriology of drainage.
- Bacteriology of milk.
- Bacteria concerned in vinegar making.
- Bacteria concerned in lactic acid production
- Bacteria concerned in dairying.
- Bacteria concerned in nitrification.
- Testing of domestic filters.
- Testing of disinfectants for household use.
- Bacteriology of food preservation.

TABLE XIX.

## STATE NORMAL SCHOOL, FRAMINGHAM NORMAL COLLEGE.—SCHEDULE OF HOUSEHOLD ARTS COURSE.

Institution and Course.	Entrance Requirements.	Scope of Course.	Methods.	Length of Course.	Fees and Finance.	Equipment.
State Normal School, Framingham, (Massachusetts) offers four courses— (1) A general two years course. (2) A three years' course. (3) A special one year course for experienced teachers and college graduates. (4) A two years' course in Household Arts to provide for adequate training of teachers of various household arts, especially cookery in its different forms. Principal, Henry Whittemore. Professor of Household Arts, Miss L. Nicholas.	Candidates must be sixteen and must— (1) Present certificate of good moral character. (2) Certificate of a good High School education. (3) Pass a written examination which embraces one paper upon the following group of Sciences—Physical Geography, Physiology and Hygiene, Physics, Chemistry, Botany.	Physics (Elementary). Chemistry General - - - - 133 hrs. Qualitative - - - 114 " Quantitative - - - 342 " Organic - - - - 19 " Biology - - - - 57 " Bacteriology - - - 60 " Physiology - - - 152 " Food and Dietetics - - 38 " Laundry - - - - 30 " Teachers' Conference - 76 " Practice School - - 456 " Psychology - - - 57 " Art of Study - - - 57 " Art Training - - - 114 " Singing - - - - 76 " Gymnastics - - - 228 " French - - - - 57 " "Field work" consists of conducted visits to markets, shops, factories, farms, houses, etc.	The whole intention of the Course is to excite thought and to demand the exercise of individual mental powers. It is realised that the student's actual knowledge must still be extremely limited after such a course; the teacher's main object, therefore, is to teach self-reliance, and the habit of accurate thought and work. The Courses in Chemistry are framed to lead the pupil to discover the absolute dependence of results on the character of her work, and the methods she employs; these courses also prepare a student systematically for a comprehension of the principles underlying cookery, laundry work, dyeing and cleaning, and of those involved in the management of foods, fuels, illuminants, etc. The Courses in Biology, Bacteriology, and Physiology, demand careful practical work, introduce the use of the microscope, and require constant practice in drawing. Students learn how to examine milk, water, air, ice, dust; how to test the efficiency of filters, sterilisers, and germicides; great attention is paid to the preparation of dietaries, according to markets, means, age, etc.	Two years, but any pupil who graduates from the regular Normal Course can take the Household Arts Course in one year; or any graduate of the Household Arts Course can take the Normal Course in one year.	Free to inhabitants of Massachusetts, but an annual charge of \$50 is made to those from other States. State Endowment. Free text books; charge made for stationery only.	All rooms light, large, airy, except laundry, which is temporarily located in the basement. The entire equipment for Household Arts Course is the gift of the Hemenway family. The memorial kitchen is magnificent, containing many unusual refinements and conveniences—a specimen of nearly perfect workmanship. The Science laboratories are well equipped for individual work. The Domestic Art Students are required to wear white in the kitchen, and blue overalls in the Laundry.

Bacteriology of Pasteurising.  
Bacteriology of canning.  
Bacteriology of pickling, etc.  
Yeast, general biology and physiology.  
Yeast, cause of fermentation of bread and drinks.  
Yeast, compressed.  
Yeast, wild.  
Yeast, fungi related to.  
Moulds, general biology.  
Moulds, structure and physiology.  
Moulds, fermentations caused by.  
Moulds in relation to food substances.  
General phenomena of putrefaction and decay.  
Relation of bacteria to infectious disease.  
Epidemics, etc.

The subjects which have thus far been described have had to deal with the scientific side of the subject; their practical application finds a place pre-eminently in the Household Arts laboratory. The work is arranged to be educational as well as technical, and therefore includes both the theoretical and practical aspects of the subjects.

To illustrate the character of this instruction, the following outline of courses in the Principles and Practice of Cookery and Laundry work is given :

The practical work of cookery is presented in four courses on the following lines :—

- (1). Household or plain cookery.
- (2). Advanced cookery, including preserving, canning, and the making of jellies, jams, and marmalades.
- (3). High-class cookery.
- (4). Special cookery for those very ill (therapeutic cookery), and its application for hospital nurses in training schools.

In the first course the five "food principles" or "nutrients" are carefully considered, viz., water, mineral matter, carbohydrates, proteids or albuminous fluids, and fats. The principles of the science and art of cookery are developed by general rules and formulæ, so far as practicable, and special attention is given to their application by individual practice. The subjects of the course are developed as follows :—

**FUELS.**—Principles of combustion, conditions for sustaining ; use and costs of the ordinary fuels.

Construction of both gas and coal ranges, with practice in the use of such apparatus, and in the building, regulation, and care of coal fires. Principles and experimental work relating to the Aladdin oven. The chafing dish.

**FOOD-STUFFS.**—Introductory. General composition of the human body. Classification of nutrients needed, and a study of the different food-stuffs as the source of supply.

**MILK AS A TYPE.**—Experiments to illustrate its constituents and properties.

**WATER.**—Considered as a cooking medium, with experiments. Thermometers are standardized, and used in the boiling of water and the cookery of starch, sugar, albumen and fats.

**MINERAL MATTER.**—The various salts of food materials.

**CARBOHYDRATES.**—Sources : (a) Starch—composition ; experiments ; cooking temperature. Practical application to cookery of starchy food-stuffs, as corn, flour, rice, tapioca, sago, macaroni, etc. ; the cooking of such starchy foods as grains, vegetables ; the use of cornflour and flour in the

making of sauces and thickening of soups. (b) Sugars—compositions the cooking of cane sugar; the use of thermometer; the degrees of heat required for different results, as in soft and hard caramel (for colouring soups and sauces); also for soft and hard sweets, as in French cream candies or fondant and glacé fruits. Practical tests for the same. Practical applications, including the preparation of dishes containing starch, sugar and fruits in various combinations, are then made.

**PROTEIDS or albuminous foods.** Albumen—sources; type, white of egg. This subject is studied and experimentally developed by the same general methods as the cookery of starch, and the principles of its cookery are applied to the making of various dishes, as soft and hard cooked eggs; poached and baked; combined with milk in other forms, as in creamy eggs, and soft and baked custards of different kinds; the combination of milk, starchy and albuminous food materials in dishes for breakfast, luncheon or dessert; the cookery of albumen, as applied to the cooking of fish, poultry and meat; methods of their cookery; objective points; heat transferred. In connection with meat cookery, the albuminoids are considered.

**ALBUMINOIDS.**—Sources; gelatine, prepared in the form of food stocks, brown and white.

**PRINCIPLES AND RULES FOR CLEARING STOCK**—Soups: stock and vegetable; milk and cream. Gelatine dishes: commercial gelatine, kinds, costs and uses; plain jellies; jellies with egg or egg and cream in different combinations, as used in the making of wholesome puddings.

**FATS.**—Sources; constitution; effects of heat; use and importance of the dietary.

**BATTER AND DOUGH MIXTURES.**—(1) Expansion by air and moisture; as effected by heat, to make porous. (2) The application of these principles to the preparation of popovers and Yorkshire pudding, wheat and gluten wafers, cream and sponge cake. (3) Expansion of batters and doughs by use of chemicals, as cream of tartar and soda, or other acids, or acid salts with the alkaline salt, soda, in combination. Objective points: principles and properties; experiments; application to the preparation of breakfast bread-stuffs, gingerbread desserts and cake. (4) Baking powders: general composition of standard powders; chemical reactions and products, with applied principles of chemistry; formulae, with practical applications to the preparation of bread-stuffs, cakes and sweets.

**FERMENTATION.**—Fermentation by yeast, and its application to the preparation of bread, rolls, and biscuit, also for breakfast muffins and gems. Experimental work with flour of different kinds.

**FROZEN DISHES.**—Principles; general rules; sherbets; ice-creams (1) plain; (2) fancy, with simple and richer combinations.

**PRACTICAL LAUNDRY WORK.**—The course consists in the examination of fabrics, as cotton, linen, woollen, and silk; effect of hot and cold water.

**THE USE OF CHEMICALS** as cleansing agents; namely—soaps, washing-powders, soda, ammonia, and borax.

**REMOVAL OF STAINS,** as fruit, tea and coffee, iron-rust, etc.

**HOUSEHOLD LINEN.**—Preparation for the laundry; cleansing, drying, and starching, hot and cold processes; folding, ironing; special: embroideries and laces; blueings: kinds, composition (tests with experiments), and use.

In addition to the foregoing outline of instruction, the pupils are trained in the preparation of dietaries at given prices for varying numbers of persons, how to judge of meats and how to buy them, by visits to meat shops, where the butcher cuts up the meat before the class, at the same time giving practical instruction. Students are also required to visit grocery establishments and meat markets, and to make themselves

familiar with the supply and demand of staples and their prices. Each pupil, by conference with the superintendent of the boarding halls, learns how to prepare the *ménu* for a large family, according to market supplies and prices. She is also expected to take her turn in presiding at the dinner table in one or other of the boarding halls, and to carve the joints. As the boarding halls offer ample facilities for demonstration of the science of Household Arts in daily living, the pupils, though not required to do household work in the ordinary sense of the term, are expected to qualify themselves as future teachers of Household Arts or as superintendents in institutions by availing themselves of all such opportunities for practical work as the Principal can from time to time provide for them.

Sanitary science, including home sanitation, is carefully studied during the second year, during which a course in the study of psychology, conducted by the Principal, Mr. H. Whittemore, is included in the curriculum. A course of practical instruction is also given in home and school emergencies, and in the detection and recognition of common school diseases, especially those which are considered contagious. The practice classes consist of girls in the eighth and ninth grades of the Framingham schools, who come for weekly lessons to the Normal school. These pupils are divided into a number of classes, under the care of, and taught by, the Household Arts department students. Each senior has charge of one class during a whole year, and has thus ample opportunity to make a practical application of her own acquirements and to learn how to instruct others. The junior students are required to act as assistants to the seniors when they are teaching; and to aid in the instruction and general management; in this way they have a year's observation to prepare them for the more responsible work of teaching in the senior year.

That the intention of the course to excite thought and to demand the exercise of individual mental powers is fulfilled is quite evident to the observer; and it is easily credible that considerable development of character follows upon such training; special stress was laid, in the course of conversation, upon the noticeably broadening influence it exercises on the temperament of the majority of the students. No doubt this is partly due to the excellent aims and good influence of Mr. Whittemore, a liberal-minded and experienced man, who has held the position of Principal of the Normal School since the department of Household Arts was taken over by the State in 1898. A pleasantly refined and cultivated home atmosphere is perceptible in his own house, where students eagerly avail themselves of boarding vacancies.

All the rooms, residential and scholastic, are light and large, except the laundry, which, on the occasion of my visit, was improvised in the basement of the Principal's house; thanks to the ingenuity exercised, the work was adequately carried on; but, by now it has doubtless been transferred to suitable quarters. The Hemenway Memorial kitchen is planned on a princely scale, replete with unusual conveniences, and actually adorned

by the fine specimens of plumber's work which enter into the equipment. The pipes for hot and cold water for heating purposes and for gas are all in bright metal, in every case "exposed"; fortunately, in the dry, clear air of New England, they need polishing but twice a year, and are rapidly dusted at daily intervals. Each cooking table is fitted for eight students, but in actual practice four is the usual number by whom they are used. Drawers contain the usual fittings, including, in this instance, a spatula and rubber moulds for candies; the pans are chiefly steel agate ware; there are the usual shelves with kneading and pastry boards, and, of course, sliding seats. Four stoves are fitted for coal, wood, gas and gasoline respectively. The glazed earthenware sinks have hinged drainers which can be closed, flush with the wall, when not in use. Two Aladdin ovens are employed in the baking of bread and cakes or in the preparation of soups. There is a large Pasteuriser for milk and an incubator for bacteriological tests, an "Eddy" ice box, a Chamberlen steam cooker, and an ample provision of glazed cupboards and drawers, all in perfect order. The very spacious room has one end fitted for the children's practice lessons, the other is set apart for the use of the normal students; there is also abundant space for a dining table and lecturer's desk. No expense was spared in any particular in the equipment of this memorial kitchen, and the workmanship is so good that, at the time of my visit, not a cent had been spent on repairs of any kind during the three and a half years the kitchen had been in use. The necessity for equipping a kitchen on simpler lines, as a useful adjunct to a complete training, will be realised by practical teachers, and I believe this has now been provided.

The students are required to dress in white for kitchen work, large blue overalls being worn in the laundry. The personal equation of each student is closely studied throughout the course, and although the staff usually arrange monthly tests of various kinds to ascertain progress, actually more importance is attached to daily observation of conduct. An instance of this was given to me by Miss Nicholas, directress of the course, where failure to graduate was due, not to technical shortcomings, but to faults of disposition, which, in the opinion of the professors, rendered this student unfit for the teaching profession. Her attention had been privately, tactfully, and repeatedly drawn to certain shortcomings, but as either the will or the power to amend or control were absent, the sense of responsibility towards her future pupils left no alternative to those who were entrusted with the issue of the desired certificate but to refuse to confer it.

Thirty-two normal students were taking this course in 1901, twenty-two of whom were entered in 1900; a smaller number is considered preferable in order that careful individual attention may be bestowed and the thoughtful observation of character be carried on, to which reference has just been made. Twelve is considered a satisfactory number for each year's entering class, but the excellence of the course brings its own penalty in the eager demand for admission.

The following paragraph from the "School Circular and Report" seems to me a fair statement of the value and of the high estimate formed of its graduates, whose services are in immediate request.

"Many of the alumnae of the school are employed in the Boston public schools, others are instructors in Normal and High schools, at the Armour and Drexel Institutes, superintendents at the Johns Hopkins and other hospitals and asylums, or else in training schools from Boston to Kansas, Denver and California. All over the country they are scattered, wherever education has sufficiently advanced to recognise that Household Arts is scientific. Such women have graduated from something more than cooking classes, or from schools in Domestic Science. They have won diplomas from the point of view of education, rather than from that of self-support. They have taken the word arts as the resultant term in the application of science to industry. They have gone forth to teach and direct, until in time it will be realised that proficiency in Household Arts is to be examined, rated, and certificated as is now literature and mathematics."

As I have said, four courses are open to candidates for admission to this Normal school: a general two years' course; a three years' course for those who wish to broaden the work offered in the regular course; a special course in one year for experienced teachers and college graduates; and this two years' course in Household Arts. All the requirements for admission to the Normal school in regard to examinations, written and oral, tuition, testimonials, and other regulations are enforced equally in this department (Household Arts); the written examination consists of papers upon certain groups of study.

The science group includes and requires an elementary knowledge (1) of physical geography, *i.e.*, the mastery of the elements of this subject as presented in the study of geography in a good Grammar school, (2) physiology and hygiene, the chief elementary facts of anatomy, the general functions of the various organs, the more obvious rules of health, and the more striking effects of alcoholic drinks, narcotics and stimulants upon those addicted to their use, (3) physics, chemistry and botany, the elementary principles of these subjects so far as they may be presented in the courses usually devoted to them in High schools.

Candidates for admission must be 16 years of age, and must present certificates of good moral character and of the equivalent of a good High school education. To persons who live in Massachusetts tuition is free, but to those from other States an annual charge of \$50 is made. Text-books and reference books are furnished free; the only expense is for stationery and such books as drawing books, that are destroyed in use. From time to time pupils are advised to buy some book which is thought by the teacher to be indispensable as a part of their outfit for the work in the schoolroom, upon which they are soon to enter; all such books are furnished at cost price.

The Normal school, with its surrounding residences for students, is beautifully situated on a wooded hillside, surrounded by a considerable amount of land used for various forms of recreation and commanding a view over rolling wood-clad hills, broken by the vast reservoir from which the Boston water supply is drawn. The copses round provide materials for nature study under most favourable conditions, while golf, tennis and basket ball are enjoyed in the ample grounds. There are two



boarding halls, Crocker Hall and Normal Hall, which are made as homelike as possible. They are thoroughly warmed by hot water, lighted by electricity, and furnished with the best sanitary and lavatory arrangements of hot and cold water. Each hall has two rooms set apart for the use of the students, one as a reception room for friends who call, the other for their sole use. The students' rooms have each a piano; and there is also a small library. The cost of board is \$80 (£16) per term, \$160 (£32) a year; this is inclusive. In cases of illness or other unavoidable absence, the expense of board is shared between the State and the boarder. These rates are made on the basis that two students occupy one room; an extra charge is made when a student has a room to herself.

Provision is made for a physical examination of all candidates for admission to Normal schools in the State of Massachusetts, and a student may be subjected to a re-examination at any time during the course should his or her physical condition suggest the need; the same precaution in the interests of all concerned is to be found to an increasing extent elsewhere, though the praiseworthy custom is not yet generally adopted. All students, unless specially excused, are required to devote a specified period to exercise in the gymnasium throughout the entire course, for which purpose a suitable costume must be worn; attention is also paid to the out-door life of the students, each of whom is expected to take a certain amount of out-door exercise daily. Special arrangements are made for the lunches of day students; hot soup, cocoa, rolls and fruit are supplied at cost price in a pleasantly fitted room. Everywhere there is evidence that the honest efforts are made to give the most favourable conditions, opportunities and assistance to students who desire to equip themselves to become teachers; the rest may be truthfully said in the words of the school catalogue, "to rest with the student herself."

Sewing and  
Cooking  
Courses.

Occasionally courses in sewing and cooking form a part of the manual training courses which enter into the curriculum of, I believe, the majority of State Normal schools; of these I may cite that at Worcester (Mass.), as an example; the results are stated to have been satisfactory, although but one lesson a week is given in each subject. For this two reasons are advanced: (1) that the nature of the work admits of home practice, which is consistently encouraged, so that the actual time of study is much extended; (2) that as these household arts are studied in the senior year the maturity of the pupils is a probable factor in their interest and progress, in spite of the limited number of lessons. Whether, with the more general introduction of needlework into the Grade schools, instruction in methods of teaching sewing will enter into the training of all women teachers, or whether the subject will continue to be assigned to specialists, does not yet appear. I incline to the latter opinion, because needlework is more generally classed as manual training than as an ordinary school subject. With the exception of physiology, hygiene and some emergency work, therefore, the Normal student in the United States must

seek her domestic science training (outside New England) at a State University (where even a four years' college course will scarcely give time to combine it with other studies if general teaching be her ambition), or in the form of a post-graduate course, either at one of these colleges or at a Technical Institute of high standing.

The emphasis laid of recent years upon the study of psychology by Normal students, with special reference to child life, together with the obligatory requirements as to the teaching of physiology in grade schools to which detailed reference has been made, have indirectly acted as a stimulus to the study of hygiene—the sciences depending one upon the other for application and practice. Consequently, in those States to which my observations were confined, I gathered the impression that this important subject is likely, by degrees, to assume its rightful position in the equipment of teachers. The attention devoted to biology and physical culture is contributing to the same end, whether Normal students resort to State Universities or to their special schools for the necessary training. A marked feature in the ten State Normal schools in Massachusetts is the care centred, not only on the physical well-being of the pupils, but on the instruction by which they will be enabled to deal practically with questions of hygiene, as they present themselves in daily life. For instance, in addition to the entrance requirement which demands a medical certificate of good health, no pupil is allowed to remain whose physical condition is considered unequal to the exactions of the work. Efforts are made to counteract any tendency to overwork, over-excitement or hurry; careful oversight is exercised, and in numerous cases individual advice is given. Thus in addition to the theoretical instruction in the conditions essential to a healthful life, students are trained and assisted to realise these by personal practice.

The position, construction, lighting, heating, ventilation and equipment of many Normal schools can be described only by one word—magnificent. That at Salem, for example, stands in a splendid position on an open, elevated spot, from which its numerous lofty windows command views over a wide expanse of country and an arm of the Massachusetts Bay. This new building was completed in 1896; it has three stories and a basement; its frontage of 180 feet is balanced by two wings, each 140 feet, running from north to south. The interior finish throughout is of oak, and the wide, handsome corridors are adorned by many good pictures and other artistic decorations provided by the State, by past and present students and teachers, or by the generosity of private individuals. Model schools (for 300 children), gymnasium, lunch and dressing-rooms, library, class, and assembly-rooms, offices and laboratories, all gave me an invigorating sensation of light, air, space and fitness. Two years spent in such environment must exercise beneficial effects on the 225 students and, thanks to the influence of the staff, these should "action" in good habits.

Physiology  
and Hygiene  
Courses.

(a.) Salem,  
Mass.  
Table XX.

(a) Salem,  
Mass.—  
*continued.*

The third floor is devoted chiefly to the various departments of science—physics, chemistry (elementary and advanced), botany, geography, mineralogy, zoology, etc. All students must devote three 40-minute periods a week to zoology and physiology in their second year; to botany two weekly periods are assigned during the first year. Here, as elsewhere, it is found of great advantage to lay this preliminary foundation in practical biology; the dissection and comparison of the various forms of animal life contribute to a so much better understanding of human physiology. Fifteen students carry on individual laboratory work at the same time. Each has separate equipment, which includes both compound and dissecting microscopes. Specimens of the lower orders of life, such as hydras, star-fish, clams, fish-frogs, etc., are furnished to each student, and at the close of the 20 weeks' work in zoology, which is the threshold of the course in human physiology, a dissection of a cat is made for each section (*i.e.* 15 students) of the class. There is a liberal supply of Auzeau models; and the Auzeau life-sized mannikin is taken repeatedly to pieces for demonstration purposes throughout the physiology course. The "recitation" method is largely employed for the theoretical work: topics for study are allotted to groups of students, and then discussed. Miss Alice Warren, Professor of Biology and Physiology, is unquestionably successful in her power of eliciting individual opinions, impressions and proposed applications; "to help practice" is a prominent object in her theoretical instruction. Martin's "Human Body" (advanced edition) and Colton's "Experimental Physiology" are recommended text-books; but the free consultation of authorities, to be found in the excellent library, is encouraged here as in most other institutions for higher education. The students have access also to the Peabody Academy of Science, one of the finest collections of its kind in the country.

As many living forms as possible are kept in the class-room. By this means, those who are to become teachers are instructed as to what creatures may be provided, and how they should be cared for. In the spring, opportunities are given for the pupils to become familiar with the common birds and their songs, as one aim of the course is to prepare the students so to instruct children, as to foster in them a greater love and sympathy for animals, a consciousness of what we owe to them, and an increasing interest in observing their habits, their uses and their intelligence; in no better way can they be brought into a close relation with out-door life. The course in physiology is conducted throughout as a continuation of the previous biological work.

The course is intended to fit teachers to secure and preserve a sound body for themselves, through an intelligent appreciation of the structure, arrangement and function of the different systems and organs, and to enable them to train children under their care to form habits which will conduce to a healthy, free action of their own bodies. For this purpose special stress is

TABLE XX.

THE STATE NORMAL SCHOOL—SALEM, MASSACHUSETTS.

Institution and Course.	Entrance Requirements.	Scope of Course.	Methods.	Length of Course.	Fees and Finance.	Equipment.
<p>State Normal School, Salem, Massachusetts.</p> <p>General Course.</p> <p>Principal, Walter P. Beckwith, A.M., Ph.D.</p> <p>Professor of Physiology and Biology.</p> <p>Miss Alice Warren.</p>	<p>Candidates must be 16, and must—</p> <p>(1) Present certificates of good moral character.</p> <p>(2) Certificate of a good High School education.</p> <p>(3) Pass a written examination, which embraces one paper upon one of the following groups of sciences:— Physical geography, physiology and hygiene, physics, chemistry, or botany.</p>	<p>SCIENCE COURSE.—Physics, 20 weeks of junior year. Botany, 40 weeks of junior year. Chemistry, 20 weeks of junior year. Biology, 20 weeks of senior year. Hygiene and Physiology } 20 weeks of senior year.</p> <p>Two 40-minute periods of laboratory work in one or other subject per week.</p> <p>The course includes in addition— Literature, and rhetoric; geometry; algebra; mineralogy; geography; music; gymnastics; reading; penmanship; drawing.</p> <p>Also— Psychology; pedagogy; language; grammar; arithmetic. } in the senior year.</p>	<p>The laboratory method where possible.</p> <p>In every department, practical, individual observations are carried out, advancing from simple to complex, and connected with theoretical study.</p> <p>The science students carry out their work in groups of 15.</p> <p>In Biology, each student has a separate equipment and specimen.</p> <p>The course is arranged to give in the first year, work which does most to broaden the students' knowledge of subjects, leaving the application chiefly to the review of grammar school subjects in the second year. Special stress is laid upon the needs of children and the formation of good habits.</p>	<p>2 years of 40 weeks each. Except in cases of students believed capable of good work, who, from inadequate or previous lack of thorough training, cannot complete the course in this period. Their work is rearranged upon the basis of taking an extra term or year, as the case requires.</p>	<p>No fees.</p> <p>Public funds.</p> <p>Non-residents of Massachusetts. \$100 a year. (£20)</p>	<p>The chemical and physical laboratories are excellently equipped, and provide for individual work. The equipment includes a human skeleton, a life-sized Auzesmannikin, appliances for botany, biology, and physiology, fifteen dissecting microscopes, and equipment for individual work in zoology and botany.</p>

Physiology and Hygiene Courses.

laid on hygiene. The subjects of food, clothing, bathing and rest are considered, as well as the effect of muscular action upon the organism as a whole and upon the special organs. At intervals the pupils prepare lessons suitable for the grammar and primary grades, and conduct them in class. Miss Warren requires constant examples of application to the needs of children and to the formation of good habits; and she told me she is already, after five or six years, able to perceive results which prove that her efforts are productive of good. Graduates from her classes, now employed in primary or grammar schools, are noticeable for the hygienic influence and practice they have brought with them to their work. In conjunction with other members of the staff, Miss Warren exerts herself to secure, so far as possible, correlation between the various branches of study, and to adhere throughout to true pedagogical lines. At Salem, as at Framingham, I was impressed with the pains taken to form a just estimate of the personal fitness of each student for the selected vocation; in both colleges, a similar sentiment obtains, viz., that intellectual acquirements constitute but a part of the capacity to act as a teacher, for which each certificate granted acts as a guarantee.

Hyannis, Mass. Very similar methods for the study of physiology and hygiene are employed at the State Normal School at Hyannis, (Mass.), where these subjects are included in the science group both of the two and the four years' course; the good provision of biological, physical, and chemical laboratories permits of eminently satisfactory work. The natural science course includes geology and geography in addition to chemistry, physics, biology, and hygiene, and is supplemented by a study of psychology, pedagogy, school organisation, and methods of teaching English, mathematics, drawing, and vocal music.

Six months in the first year are devoted to chemistry and physics respectively; zoology precedes physiology in a similar way in the second year; four hours a week, of which two hours are laboratory work, are devoted in turn to each of these subjects. The laboratory equipment includes a drawer with instruments for each student, also a glazed stone-ware sink and a bunsen and batswing gas burner; eight or nine compound microscopes are provided. Each student makes any models he desires to employ in practical work for himself as part of the manual training. Nearly all specimens are worked at individually. The Professor of Biology and Mathematics, Miss Bertha M. Brown, a graduate of the Massachusetts Institute of Technology, is unusually interested in the hygienic treatment of physiology in schools of all grades, and encourages a very free introduction of experimental and practical illustrations by her students in the Elementary Hygiene which they teach in the Practice School.\* The outline of each lesson is submitted to her before it is given, and the proposed method of handling the topic is discussed. Six weeks' observation work, and fifteen weeks of teaching are required of each student in the regular two-year course. She told me that most gratifying results follow the methods she has adopted with her students as regards influence on the character of the young people, the perception by them of personal possibilities and responsibilities in respect of health promotion, and the awakening of a desire on their part to impart such hygienic information to their own little pupils, as shall in turn arouse the children's interest, and stimulate them to right action.

\* See Table VI., p. 59 above.

I was informed on reliable authority that the Boards of Attitude Education in some of the most prominent cities are no longer satisfied with proofs of a theoretical acquaintance with hygiene from the members of their teaching staff, but hold them severally responsible for the maintenance of wholesome conditions in their class-rooms, require of them intelligent co-operation with the medical inspectors in safeguarding the health of the children, and call upon them to inculcate good habits in those committed to their daily charge; when with these duties is combined that of the definite instruction of their pupils in hygiene and physiology, it is readily conceivable that facilities must be afforded to Normal students for a thorough practical grounding in these subjects. Hence the few theoretical lectures on School Hygiene hitherto provided in most Normal schools no longer suffice to meet the demands on teachers which arise from this broader conception of the significance of that hard worked, much-misunderstood word Education. I received repeated assurances that the admirable courses and methods for training teachers in hygiene and physiology which I visited and observed in different centres in Massachusetts and Ohio, were not confined to certain favoured cities, but may be truthfully considered typical of a perceptible movement towards the general introduction of similar practical teaching into all Normal colleges. For this indication of progress various reasons are advanced; perhaps the two of most weight are: (1) that the training is rendered compulsory by that wider view of the scope of school education to which I have just referred; and (2) a keener realisation of the fact that the State owes it to her children that they shall grow up to maturity sound and well developed in body as well as in mind. Besides these I may also mention the gradual development of a more intimate popular interest in school conditions, evidenced by the attractive and valuable co-operation which exists in some cities between parents and teachers; the perception by authorities that precious time and money are lost when, owing to the teacher being ignorant or hampered in the exercise of his discretion, children carry on their studies under insanitary conditions; and a growing appreciation of the educational advantages offered to pupils of all ages by the study of practical hygiene which constitute it one of the most, if not the most, generally valuable subject in the time-table.

The profound belief in education which permeates the great American people must be witnessed to be realised. It is to education that they look to weld their many millions into one coherent whole, of which the units shall be sturdy, resourceful, well-balanced citizens, to whose hands the honour and prestige of a great nation can be safely confided. In this ambition to be in the forefront of the world's nations may be found, in my opinion, one powerful motive for the initiation of the whole movement recorded in these pages. The well-being of a nation hinges on the physical, mental, and moral status of its people; while to each state and city is entrusted the responsibility of protecting its inhabitants from moral or physical ills, and of developing

Boards of  
Education  
towards  
Training  
Teachers  
Hygiene

Congress  
to Pass

their mental powers. It is a commonplace to add that, unless State efforts be aided and supplemented by individual support, they are futile. Authorities recognise, therefore, that in educational institutions for all ages, provision must be made to train children in an intelligent and practical knowledge of health rules, to be applied in private and in public duties, *i.e.*, in every relation of life. It will have been noted that the obligation to acquire an elementary knowledge of personal and public hygiene is at present laid upon both sexes in all State schools and in most State colleges, while for girls the opportunities of gaining a useful working knowledge of domestic science promise to become abundant. But what seem to me of equal, if not of greater, promise in this connection, are the educationally organised courses in the public High schools and the recognition of the social and national importance of Household Economics by its installation among other subjects of university rank in State universities. By the High school courses the young people are imbued at a most impressionable age with a conception, hitherto often absent, of the dignity and worth of Home, and will, it is believed learn to appreciate its claims; they are intelligently familiarised with the world in which they must shortly play a part of greater or less influence, and their scientific, artistic, literary and manual training studies are usefully and attractively associated with daily duties and social interests. By means of the college courses it is anticipated that, in addition to the general advantages just enumerated, the resources of modern science and art will in future be more utilised for the improvement of home life; trained intelligences will be brought to bear upon vexed domestic problems, upon diet, expenditure, and service, so that in years to come a complete and harmonious system will be evolved from the present faulty and discordant methods. It has been well said by Dr. Mary E. Green, late President of the National Household Economic Association, that "Household Economics once properly understood by the women of the country will make possible to each individual the health, happiness and development which are his due." The United States now offers to its women of all ages, free of charge, the opportunities essential to the gaining of this understanding.

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## PART II.

## PRIVATE INSTITUTIONS.

Side by side with the State system of education in the United States there exists a parallel system of schools and of institutions for higher education; these are supported entirely from private sources (fees and endowments), unrestricted by State legal regulations. The governors or directors of these private institutions are thus independent of any popular or outside control; free to initiate new departures and at liberty to test original theories by practical experiment. As a rule, this power and independence are not abused; the standard of instruction is such that graduates from private High Schools or Colleges take equal rank with those under State control; while it suffices to mention the names of Columbia University or of some of the best-known Technical Schools, such as Pratt, Drexel, Armour or Lewis, to indicate the leading position occupied by institutions which owe their existence to the lavish generosity of individuals. The vast sums with which many of these private schools and colleges are endowed enable them, indeed, to set a desirable standard in respect of buildings, equipment, and staff; the freedom to express many new ideas in practice serves as an outlet for the rapid flow of original conceptions characteristic of the present stage of national development; and, though it may be permitted to question the immediate result to the juvenile subjects of some few scholastic experiments, the cause of education will probably derive eventual benefit from efforts which are invariably well intentioned, though occasionally eccentric in expression. This is not the place in which to attempt to detail the causes which have led to the gradual growth of this dual system of schools in the United States, it must suffice to say that both are complete throughout, from Kindergarten, Primary and Grammar Grades to High School, Technical Institute, College and University. In a large number of instances, the curriculum of the private Grade and High schools is identical with that sanctioned by the official Boards of Education in the various States and cities; but, as has been stated, certain others are prominent in the public eye on account of the originality of their practice and the suggestiveness or efficiency of their methods. Deviations from accepted canons are less obvious in private Colleges; on the contrary, these and the great Technical Schools often "set the pace" for State-aided institutions by the high standard they attain in systems tested by experience.

The several grades of these private institutions and their recognition and treatment of the various subjects upon which I was commissioned to inquire will now be dealt with in practically the



year. The fourth, fifth, and sixth years of transition are not well provided for either by family or by social life in the United States." It is upon the training and development of this social instinct in childhood, upon the provision of suitable educational opportunities during this transition period, that great stress has been laid throughout their school programmes by two of the leading educationalists of recent years. By written and spoken word, Dr. John Dewey and the late Colonel Francis W. Parker have asserted their conviction that all school work should connect on the social side with the life without; and that this connection can be fitly and profitably made by means of suitable occupations carried on throughout the period of school life. "By occupation," writes Dr. Dewey, "is not meant any kind of 'busy work' or exercises that may be given to a child to keep him out of mischief or idleness when seated at his desk. By occupation I mean a mode of activity on the part of the child which reproduces or runs parallel to some form of work carried on in social life."\* In the Chicago University Elementary School these occupations are represented by the workshop with wood and tools, by cooking and sewing and by textile work. To those to whom this conception is unfamiliar, a careful perusal of Dr. Dewey's book "The School and Society," and of his article on the "Psychology of Occupation" in the "Elementary School Record" will result in a better comprehension of his thesis. The limits of space forbid more than the most concise references to Dr. Dewey's writings, or to Colonel Parker's ideals and methods. Careful abstracts of a year's work in the schools where the views and methods of these leaders of educational thought are subjected to the test of practice, are furnished in Tables XXI. and XXII. They are included in this portion of my Report as affording the best illustrations I can offer of the means by which the domestic, equally with other sciences and arts, may be educationally employed to make schools for our children of all ages a "genuine form of active community life, instead of places set apart to learn lessons."

Domestic  
Science and  
Arts at the  
University of Chicago  
Experimental  
Schools.

Dr. Dewey's opinion, shared, I believe, by the late Colonel Parker, must be borne in mind while studying these school programmes, viz., that "those subjects and that material develop the young intelligence of the child which (1) forge social links between school and home; (2) can be acquired largely in the first instance through the exercise of the bodily activities; (3) are so interwoven with family life as to appeal to the limited, familiar experience of a young child; and (4) demand thought, yet by their simplicity permit that thought to function in actions, habitual or suitably acquired at the special period of life at which the lesson requires them." Dr. Dewey also maintains that the educational material should stimulate efforts directed to

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\* "Psychology of Occupations." The Elementary School Record. A series of nine Monographs, published by the University of Chicago Press. 'The School and Society,' John Dewey, University of Chicago Press.

the acquirement of technique, even though at considerable personal cost, and that each subject must possess inherent continuity in itself, adapting it for progressive development, consistent with the several periods of child growth. Further, both authorities agree that veritable correlation of each subject with the whole school programme is an essential qualification, not "through devices of instruction which the teacher employs in tying together things in themselves disconnected," but through wise selection, by which real, organic continuity of subject matter is ensured.

Elementary School  
Record XXI.

In the University Elementary School at Chicago, therefore, the Domestic Sciences and Arts appear throughout among the Occupations for all groups included in the Time-Table, from which it is Dr. Dewey's object to secure the absence of mere mechanical routine repetition, and to ensure the presence of conscious, intelligent action and habits of reflection.

\* "Occupations, so considered," he writes, "furnish the ideal occasions for both sense-training and discipline in thought. The weakness of ordinary lessons in observation, calculated to train the senses, is that they have no outlet beyond themselves, and hence no necessary motive. Now, in the natural life of the individual and the race there is always a reason for sense-observation. There is always some need, coming from an end to be reached, that makes one look about to discover and discriminate whatever will assist it. . . . The same principle applies in normal *thinking*. It also does not occur for its own sake, nor end in itself. It arises from the need of meeting some difficulty; in reflecting upon the best way of overcoming it; and thus leads to planning, to projecting mentally, the result to be reached, and deciding upon the steps necessary and their serial order. This concrete logic of action long precedes the logic of pure speculation or abstract investigation, and through the mental habits that it forms is the best of preparations for the latter. . . . Now, there can be no doubt that occupation work possesses a strong interest for the child. A glance at any school where such work is carried on will give sufficient evidence of this fact. Outside of the school, a large portion of the children's plays are simply more or less miniature and haphazard attempts at reproducing social occupations. There are certain reasons for believing that the type of interest which springs up along with these occupations is of a thoroughly healthy, permanent, and really educative sort; and that by giving a larger place to occupations we should secure an excellent, perhaps the very best, way of making an appeal to the child's spontaneous interest, and yet have, at the same time, some guarantee that we are not dealing with what is merely pleasure-giving, exciting, or transient. In the first place every interest grows out of some instinct or some habit that in turn is finally based upon an original instinct. It does not follow that all instincts are of equal value, or that we do not inherit many instincts which need transformation, rather than satisfaction, in order to be useful in life. But the instincts which find their conscious outlet and expression in occupation are bound to be of an exceedingly fundamental and permanent type. The activities of life are of necessity directed to bringing the materials and forces of nature under the control of our purposes;

\* "The Psychology of Occupations," Elementary School Record, University of Chicago Press.

of making them tributary to ends of life. Men have had to work in (a) Elementary School order to live. In and through their work they have mastered nature, they have protected and enriched the conditions of their own life, they have been awakened to the sense of their own powers, have been led to invent, to plan and to rejoice in the acquisition of skill. In a rough way, all occupations may be classified as gathering about man's fundamental relation to the world in which he lives; through getting food to maintain life; securing clothing and shelter to protect and ornament it; and thus, finally, to provide a permanent home in which all the higher and more spiritual interests may centre. It is hardly unreasonable to suppose that interests which have such a history behind them must be of the worthy sort. However, these interests as they develop in the child not only recapitulate past important activities of the race, but reproduce those of the child's present environment. He continually sees his elders engaged in such pursuits. He daily has to do with things which are the results of just such occupations. He comes in contact with facts that have no meaning except in reference to them. Take these things out of the present social life and see how little would remain—and this not only on the material side, but as regards intellectual, æsthetic and moral activities, for these are largely and necessarily bound up with occupations. The child's instinctive interests in this direction are, therefore, constantly reinforced by what he sees, feels and hears going on around him. Suggestions along this line are continually coming to him; motives are awakened; his energies are stirred to action; it is not unreasonable to suppose that interests which are touched so constantly, and on so many sides, belong to the worthy and enduring type."

In other passages of his writings Dr. Dewey advances further arguments in support of these methods and subjects pursued in his school, and throws more light upon the educational value of the Domestic Arts for young children. He points out that it is natural to young children to begin with the home and occupations of the home, to proceed next to the study of occupations outside the home, that is, to the larger social industries, after which they are prepared to study the historic development of industry and invention, so learning the steps of progress and development.\* "There are," he writes, "distinct phases of child growth to which the periods of organised school work should correspond." The first, from four to eight years of age, is characterised by that directness of social and personal interest (upon which, as has been stated, Dr. W. T. Harris lays much stress) as well as by directness and promptness of relationship between impressions, ideas and actions. The demand for a motor outlet for expression is urgent and immediate. During this period the constructive work should therefore combine activities which include an immediate appeal to the child as an outlet for his energy, while leading up in an orderly way to a result ahead; habits of working for ends may thus be formed, while present occupations are gradually recognised to be a sequence of steps, which permit the accomplishment of something beyond. In the second period, which extends from eight or nine years old to eleven

\* "General Introduction to Groups V. and VI." *The Elementary School Record*, p.49.

(a) Elementary School  
—continued

or twelve, the aim should be to recognise and respond to the change which comes over the child from his growing sense of the possibility of more permanent and objective results and of the necessity for the control of agencies for the skill necessary to reach such results. The mere play of activity no longer satisfies. Hence the recognition of rules of action . . . and of the value of mastering special processes so as to give skill in their use. . . . There is a conscious demand in the tenth year for 'something hard' to do, something which will test and call out power, efficiency. The third period comes when the child has a sufficient acquaintance of a fairly direct sort with various forms of reality and modes of activity; when he has sufficiently mastered the methods, the tools of thought, inquiry and activity appropriate to various phases of experience, to be able profitably to specialise upon distinct studies and arts for technical and intellectual aims. This interest in technique, in acquiring skill, demands a sufficient background of actual experience; the introduction of technique must come in connection with ends that arise within the child's own experience, that are present to him as desired ends, and hence as motives to effort." . . . \* "Hitherto the school has been so set apart, so isolated from the ordinary conditions and motives of life, that the place where children are sent for discipline is the one place where it is most difficult to get experience—'the mother of all discipline worth the name.' The world in which most of us live is a world in which everyone has a calling and occupation, something to do. Some are managers, some subordinates. But the great thing for one as for the other is that each shall have had the education which enables him to see within his daily work all there is in it of large and human significance. . . . All the media necessary to furnish the growth of the child should centre in the school. Learning certainly, but living primarily, and learning through and in relation to this living. When we take the life of the child centred and organised in this way we do not find that he is first of all a listening being; quite the contrary. Still, in the ordinary schoolroom all is made for listening. The attitude of listening means, comparatively speaking, passivity, absorption; there are certain ready-made materials of which the child is to take in as much as possible in the least possible time. There is very little place in the traditional schoolroom for the child to work. . . . The difference that appears when occupations are made the articulating centres of school life is not easy to describe in words; it is a difference in motive, of spirit and atmosphere. As one enters a busy kitchen in which a group of children are actively engaged in the preparation of food, the psychological difference, the change from more or less passive and inert reciprocity and restraint to one of buoyant and outgoing energy is so obvious as fairly to strike one in the face. Within this organisation is found the principle of school discipline and order. . . . The

\* "The School and Society." Lecture I.

moment children act they individualise themselves; they cease to be a mass, and become the intensely distinctive beings that we are acquainted with out of school. This is the change which is gradually coming into our educational systems, and is shifting the centre of gravity. Now the child is more and more becoming the sun about which the appliances of education revolve: the centre about which they are organised. . . . The child is already intensely active, and the question of education is the question of taking hold of his activities, of giving them direction.”

(a) Elementary School  
—continue:

\* Dr. Dewey considers that the active impulses available in the school may be roughly classified under four heads: (1) The social instinct, shown in conversation; (2) the constructive impulse, shown by the child's impulse first, to “make believe,” afterwards to construct objects; (3) the instinct of investigation, which seems to grow out of both the former, and leads to the enquiry as to the “why” of things; (4) the expressive impulse, which is the combined outcome of the communicative and constructive instincts. That home interests and domestic occupations afford exercises for the expression and satisfaction of each of these is evident to careful students of Table XXI.

Of the educational worth of these instincts Dr. Dewey writes as follows†:—“A question often asked is: if you begin with the child's ideas, impulses and interests, all so crude, so random and scattering, so little refined or spiritualised, how is he going to get the necessary culture and information? If there were no way open to us except to excite and indulge these impulses of the child, the question might well be asked. We should either have to ignore and repress the activities, or else to humour them. But if we have organisation of equipment and of materials, there is another path open to us. We can direct the child's activities, giving them exercise along certain lines, and can thus lead up to the goal which logically stands at the end of the paths followed. ‘If wishes were horses, beggars would ride.’ Since they are not, since really to satisfy an impulse or interest means to work it out, and working it out involves running up against obstacles, becoming acquainted with materials, exercising ingenuity, patience, persistence, alertness, it of necessity involves discipline—ordering of power—and supplies knowledge. Take the example of the little child who wants to make a box. If he stops short with the imagination or wish, he certainly will not get discipline. But when he attempts to realise his impulse, it is a question of making his idea definite, making it into a plan, of taking the right kind of wood, measuring the parts needed, giving them the necessary proportions, etc. There is involved the preparation of materials, the sawing, planing, the sand papering, making all the edges and corners fit. Knowledge of tools and processes is inevitable. If the child realizes his instinct and makes the box, there is plenty of opportunity to gain discipline and perseverance, to exercise effort in overcoming obstacles, and to attain as well a great deal of information.

“So undoubtedly the little child who thinks he would like to cook has little idea of what it means or costs, or what it requires. It is simply a desire to ‘mess around,’ perhaps to imitate the activities of older

\* “The School and Society.” Lecture III.

† “The School and Society.” Lecture II.

(a) Elementary School  
—continued.

people. And it is doubtless possible to let ourselves down to that level and simply humour that interest. But here, too, if the impulse is exercised, utilised, it runs up against the actual world of hard conditions, to which it must accommodate itself; and there again come in the factors of discipline and knowledge. One of the children became impatient recently at having to work things out by a long method of experimentation, and said: 'Why do we bother with this? Let's follow a recipe in a cook-book.' The teacher asked the children where the recipe came from, and the conversation showed that if they simply followed this they would not understand the reasons for what they were doing. They were then quite willing to go on with the experimental work. To follow that work will, indeed, give an illustration of just the point in question. Their occupation that day happened to be the cooking of eggs, as making a transition from the cooking of vegetables to that of meats. In order to get a basis of comparison, they first summarised the constituent food elements in the vegetables, and made a preliminary comparison with those found in meat. Thus they found that the woody fibre or cellulose in vegetables corresponded to the connective tissue in meat, giving the element of form and structure. They found that starch and starchy products were characteristic of the vegetables, that mineral salts were found in both alike, and that there was fat in both—a small quantity in vegetable food and a large amount in animal. They were prepared then to take up the study of albumen as the characteristic feature of animal food, corresponding to starch in the vegetables, and were ready to consider the conditions requisite for the proper treatment of albumen, the eggs serving as the material of experiment. They experimented first by taking water at various temperatures, finding out when it was scalding, simmering, and boiling hot, and ascertained the effect of the various degrees of temperature on the white of the egg. That worked out, they were prepared not simply to cook eggs, but to understand the principle involved in the cooking of eggs. I do not wish to lose sight of the universal in the particular incident. For the child to desire to cook an egg, and accordingly to drop it in water for three minutes, and take it out when he is told, is not educative. But for the child to realize his own impulse by recognising the facts, materials, and conditions involved, and then to regulate his impulse through that recognition, is educative. This is the difference upon which I wish to insist between exciting or indulging an interest and realizing it through its direction."

A suggestive and, to my mind, extremely interesting statement was made to me when visiting Chicago, viz., that, in practice, the work in Domestic Science, as carried on in the University Elementary School, has been found to be one of the many valuable means employed for bringing the home and school life of the child into closer relationship. Cooking, sewing, and the study of textiles are included under this head, special attention being given to correlating these with as many other lines of work in the school as possible. Science, history and art, for instance, are studied, not as isolated subjects, but as the natural outgrowth of dealing with every-day materials and processes, such as those with which a child is familiar in home life. In cooking, *e.g.*, connection is made with botany through the plants from which food materials are obtained; with chemistry and physics, through the analytical work done with foods and through the innumerable phenomena which continually present themselves in the study of nature; with physiology, by the action of food in the body and by practical work in the preparation of meat, through

TABLE XXI.  
UNIVERSITY OF CHICAGO, ELEMENTARY SCHOOL. (CO-EDUCATIONAL THROUGHOUT.)  
EXTRACTED AND TABULATED FROM "THE ELEMENTARY SCHOOL RECORD," 1900-1901. PUBLISHED BY "THE UNIVERSITY OF CHICAGO PRESS."

GROUPS I and II. (see pp. 139-141 &c.)	GROUP III. (see pp. 12-21 &c.)	GROUP IV. (see pp. 21-30 &c.)	GROUP V. (see pp. 49-59 &c.)	GROUP VI. (see pp. 49-52, 59-65 &c.)	GROUP VII. (see pp. 86-90 &c.)	GROUP VIII. (see pp. 91-97 &c.)	GROUP IX. (see pp. 111-118 &c.)	GROUP X. (see pp. 119-124 &c.)
<p><b>SUB-PRIMARY (KINDERGARTEN) DEPARTMENT.</b> Average age, 4-6; No. in class, 24; 3 divisions and 3 teachers.</p> <p style="text-align: center;"><b>AUTUMN AND WINTER.</b></p> <p>1. The different members of the family and their daily interests:—</p> <p>(a) Father. His occupation. (b) Mother. Her duties in the home. (c) Brother and sister. Their daily interests. (d) Baby. Care given to it. Its playthings, etc.</p> <p><b>AUTUMN.</b>—Typical grain farm. <b>BREAD.</b>—Comes from wheat. Window box farm planted. Wheat on stalk, threshed, ground and sifted; then stored, ordered, transported, sold, measured, cooked. Bulls planted to ornament farm. Farmhouse built with blocks. Dairy farm treated in same manner.</p> <p><b>KNOWLEDGE ACQUIRED BY WORK DONE.</b>—Counting up to 50, principle of fractions, dry measure, value of coins; constructing and planning to scale (fence for window farm, farm buildings); making of harrow, flail, envelopes (for seeds), sand, model of a farm with reservoir, tracks for sheep, cheese, butter, cooking of flaked wheat (lunch for group prepared once a week).</p> <p><b>MUSIC.</b>—Songs; Christmas song composed. <b>ART.</b>—Illustrations of farm in clay, chalk and water colour.</p> <p style="text-align: center;"><b>WINTER AND SPRING.</b></p> <p><b>COTTON-RAISING.</b>—Planting of cotton seed and observation of its development. Methods of transportation, weighing and boiling. Study of climate of places where cotton can be raised; study of cotton plant in its relation to other plants bearing cotton covered seeds. In hand work, study of methods of separating the seed from the cotton; uses of the fibre and of seed; extracting of oil from seed. Making of meal from seed cakes; dyeing and printing of cotton cloth. Making of pasteboard box to represent cars used in transportation.</p> <p><b>SEGAR PLANTATION.</b>—Growth of cane; relation to some better known plants; as corn and grass; extraction of sap. Making of molasses; refining processes. Maple sugar. Gathering of sap; boiling and making into cakes of sugar. Making of stone sledge for bringing sap from maple forest.</p> <p><b>RICE PLANTATION.</b>—Where grown. Plant, a grass similar to grains already studied. How grown; planting, transplanting, overtopping with water, etc. Processes used in getting the grain ready for market. Use of straw. Transportation. Making of implements.</p> <p><b>LUMBERING.</b>—Forests. Cutting of logs; transportation to saw-mill; sawing into boards; transportation. Uses of lumber; kinds of wood in common use; special properties of each which make it useful.</p> <p><b>QUARRYING AND MINING.</b>—Rocks and ores in native states, processes employed to get them into shape for the arts.</p> <p><b>PRACTICAL GARDENING.</b> <b>STUDY OF SOME CITY ORGANISATIONS.</b>—Fire department; mail service; water works. <b>TYPICAL SHOPS AND STORES.</b> <b>NUMBER.</b>—Incidental to hand-work or in the form of games. In cooking, sewing and shop, fractions (one-half, one-third, one-quarter) of the foot, inch, quart, pint, ounce and pound. <b>MUSIC.</b>—Composition of songs, words and melodies. On technical side, exact pitch; unconscious work in rhythm. <b>ART WORK.</b>—Representations of objects connected with history and school life, in clay, chalk, and water colour. <b>SHOP WORK.</b>—Making of selected articles used in occupations studied, such as sleds, carts, wheelbarrows, etc. In construction of the buildings scribbling upon cardboard is introduced. All putting together is by square edges. <b>COOKING.</b>—Various cereals. Study of methods of preparation, such as grinding, cracking, rolling, etc. Simple experiments to show difference in methods of mixing and cooking. Aim: experience in handling materials and utensils. <b>SEWING.</b>—Articles for use in the school, made with easy stitches, e.g., overcasting, braiding of soft fibres, and coarse weaving. <b>NOTE.</b>—The periods of hand work include constructive work play with the blocks, drawing, painting, clay or work in the sand, or any medium of expression of the work to be done. Any outdoor excursions to near-by places are taken at this time. The children serve luncheon every day; they take entire charge; set the table, serve and wait upon each other, wash and put away the dishes. <b>MENU.</b>—One table-spoonful of a prepared cereal, served with cream and sugar, and a biscuit and small glass of milk, or a cup of cocoa on cold days. Cost for 24 children and 3 teachers, \$5 (about £1) per month.</p>	<p>Average age, 6 years; No. in class, 17; 2 divisions. <b>SCOPE.</b>—The study of existing social occupations, intended to embody the sense of use and method of work which coincide with the children's phase of development. The study of natural objects, processes and relations placed in a human setting.</p> <p style="text-align: center;"><b>AUTUMN.</b></p> <p><b>PRIMITIVE LIFE.</b>—The hunting period. (Camping out and picnics used for gaining experiences.) Tree and cave homes, primitive huts, food, combinations for hunting and defence, leadership, the bow and arrow and its results, use of stones for weapons, etc.; preparation of food, improvement of clothing and shelter, making of clay pottery (coloured and ornamented), primitive spindle. <b>NUMBER.</b>—In connection with cooking; ratio, addition and subtraction. <b>MUSIC.</b>—Ear training and composition. Songs. <b>ART.</b>—Illustrations of primitive life in charcoal and colour. <b>HAND WORK.</b>—Brush huts, rafts, "potter's wheel," primitive spindle. <b>TEXTILE WORK.</b>—Raw wool cleaned, carded, spun by hand. <b>COOKING.</b>—As in Group III. <b>SEWING.</b>—Work bags, etc.</p> <p style="text-align: center;"><b>WINTER AND SPRING.—SEMI-AGRICULTURAL.</b></p> <p><b>OCCUPATION.</b>—Nomadic hunting tribe, village life from seed time to harvest; raising, harvesting and storing grains. <b>SOCIAL ORGAN.</b>—Brought out in choice of location, division of land and food, etc. Clans and tribes; communism of food, weapons and land; beginnings of exchange, of division of labour, time-telling, seasons. <b>GEOGRAPHICAL HABITAT.</b>—Mountains or hilly country, forests, fertile valleys and plains, river systems, distribution of soil. <b>METAL WORKING.</b> Dramatic working out of division of labour and of commerce. Differentiation of occupation subsequent to discovery and use of metals. <b>OCCUPATION.</b>—Mining, smelting and moulding or charcoal burning, cutting, casting. <b>SOCIAL ORGANISATION.</b>—Formation of division of labour and of commerce. <b>SHELTER.</b>—Stone huts, modern frame and roof, log huts. <b>FOOD.</b>—Storing and carrying of grains, grinding. <b>AGRICULTURAL.</b> <b>OCCUPATION.</b>—Cattle raising for food and as source of wool, preparing of grains for food, mining, smelting and working of metals. Shop, flail, ploughs, grinding-stones. <b>SOCIAL ORGANISATION.</b>—Settlement in villages, beginning of councils in settlement of public affairs, festivals, harvest and planting of grain. Making hoes, rake, harrow. <b>GEOGRAPHICAL.</b>—Plains, river courses and formation of soil in more detail. <b>SOCIAL ORGANISATION WORKED OUT THROUGH DRAMATISATION.</b>—Nomadic hunting tribes, semi-agricultural, pastoral. <b>AGRICULTURAL.</b>—Sneeling out of doors, potter, spinner and weaver, potter's wheel, spindles and distaff. <b>SCIENCE AND GEOGRAPHY.</b>—General or typical geography, related study of plants, animals, minerals and metals; life histories of plants, insects, animals, etc. <b>NUMBER.</b>—Work of Group III, amplified, symbols used. <b>MUSIC.</b>—Composing of songs and melodies, conscious rhythm work. <b>ART.</b>—As in Group III. <b>SHOP WORK.</b>—In wood; making of houses, tools, etc., for social occupations. <b>COOKING.</b>—Cereals: fresh and dried fruits. <b>SEWING.</b>—Skins, furs and their treatment; making of work bags and wash cloths woven of coarse cotton on simple looms.</p>	<p>Average age, 7-7½; No. in class, 14; 2 divisions. <b>SCOPE AND METHOD.</b> Historical development of inventions and occupations; i.e., things are treated not merely in a human setting, but the needs to make life which call them forth and the way in which they react upon the make-up of society are emphasized. A reconstruction of primitive life through experimental work with different materials.</p> <p style="text-align: center;"><b>AUTUMN.</b></p> <p><b>PRIMITIVE LIFE.</b>—The hunting period. (Camping out and picnics used for gaining experiences.) Tree and cave homes, primitive huts, food, combinations for hunting and defence, leadership, the bow and arrow and its results, use of stones for weapons, etc.; preparation of food, improvement of clothing and shelter, making of clay pottery (coloured and ornamented), primitive spindle. <b>NUMBER.</b>—In connection with cooking; ratio, addition and subtraction. <b>MUSIC.</b>—Ear training and composition. Songs. <b>ART.</b>—Illustrations of primitive life in charcoal and colour. <b>HAND WORK.</b>—Brush huts, rafts, "potter's wheel," primitive spindle. <b>TEXTILE WORK.</b>—Raw wool cleaned, carded, spun by hand. <b>COOKING.</b>—As in Group III. <b>SEWING.</b>—Work bags, etc.</p> <p style="text-align: center;"><b>WINTER AND SPRING.—SEMI-AGRICULTURAL.</b></p> <p><b>OCCUPATION.</b>—Nomadic hunting tribe, village life from seed time to harvest; raising, harvesting and storing grains. <b>SOCIAL ORGAN.</b>—Brought out in choice of location, division of land and food, etc. Clans and tribes; communism of food, weapons and land; beginnings of exchange, of division of labour, time-telling, seasons. <b>GEOGRAPHICAL HABITAT.</b>—Mountains or hilly country, forests, fertile valleys and plains, river systems, distribution of soil. <b>METAL WORKING.</b> Dramatic working out of division of labour and of commerce. Differentiation of occupation subsequent to discovery and use of metals. <b>OCCUPATION.</b>—Mining, smelting and moulding or charcoal burning, cutting, casting. <b>SOCIAL ORGANISATION.</b>—Formation of division of labour and of commerce. <b>SHELTER.</b>—Stone huts, modern frame and roof, log huts. <b>FOOD.</b>—Storing and carrying of grains, grinding. <b>AGRICULTURAL.</b> <b>OCCUPATION.</b>—Cattle raising for food and as source of wool, preparing of grains for food, mining, smelting and working of metals. Shop, flail, ploughs, grinding-stones. <b>SOCIAL ORGANISATION.</b>—Settlement in villages, beginning of councils in settlement of public affairs, festivals, harvest and planting of grain. Making hoes, rake, harrow. <b>GEOGRAPHICAL.</b>—Plains, river courses and formation of soil in more detail. <b>SOCIAL ORGANISATION WORKED OUT THROUGH DRAMATISATION.</b>—Nomadic hunting tribes, semi-agricultural, pastoral. <b>AGRICULTURAL.</b>—Sneeling out of doors, potter, spinner and weaver, potter's wheel, spindles and distaff. <b>SCIENCE AND GEOGRAPHY.</b>—General or typical geography, related study of plants, animals, minerals and metals; life histories of plants, insects, animals, etc. <b>NUMBER.</b>—Work of Group III, amplified, symbols used. <b>MUSIC.</b>—Composing of songs and melodies, conscious rhythm work. <b>ART.</b>—As in Group III. <b>SHOP WORK.</b>—In wood; making of houses, tools, etc., for social occupations. <b>COOKING.</b>—Cereals: fresh and dried fruits. <b>SEWING.</b>—Skins, furs and their treatment; making of work bags and wash cloths woven of coarse cotton on simple looms.</p>	<p>Average age, 7½-8; No. in class, 17; 2 divisions. <b>METHOD.</b>—Study of tribal life leading up to study of settled peoples, and the relations of the parts of the world to each other through explorations and commerce.</p> <p style="text-align: center;"><b>AUTUMN.</b></p> <p><b>AMERICAN INDIANS.</b>—Log house of the Troquois made, furnished with the proper (self-made) articles; dugouts (ft. long, 8 in. wide) made; Indian headdress and moccasins; Indian legends read to the children, written on blackboard by teacher, copied by class; initiative composition; Indian exhibit at museum visited; study of physical type, form and arrangement of clothing, houses and home life, occupations, customs of war and peace, methods of hunting, etc., in connection with the locality occupied by each tribe. Tribal organisation. <b>GEOGRAPHY.</b>—Relief map used to show the habitations of the tribes; the Rocky and Appalachian Mountain ranges; St. Lawrence and Mississippi river systems. Atlantic and Pacific Oceans named and located. <b>SCIENCE.</b>—Special study of infla, relation to cave animals. Horn burnt and compared with burnt elk horn. Beaver studied. Formation of bed of Mississippi and the Great Lakes; sinking of land; erosion; formation of rocks. <b>NUMBER.</b>—In connection with making of cocoa and cooking of cereals. <b>MUSIC.</b>—Ear training; composition of songs (by the class). <b>ART.</b>—Clay modelling. <b>HAND WORK.</b>—Objects in connection with Indian life; corn converted into hominy with the aid of wood ashes; rabbit skin tanned. <b>TEXTILE WORK.</b>—Indian mat designed and spun; Indian baskets woven. <b>COOKING.</b>—Study of vegetables; constituents and methods of cooking; potato separated into water, starch, and cellulose, from previous knowledge of effect of heat and water upon starch and cellulose; children give directions for cooking. Tomato juice compared with vinegar, treated with milk; soda used to prevent curdling; tomato bisque soup made. Methods of cooking onions, celery and string beans; reasons why. Beets and carrots found to contain sugar. Types of vegetables studied, arranged systematically, rules for cooking given. The weekly lunch prepared, each child cooking a portion, the responsibility for the whole taken in turn by one child. <b>SEWING.</b></p> <p style="text-align: center;"><b>WINTER AND SPRING.</b></p> <p><b>HISTORY.</b>—Discoverers and explorers; short account of Henry of Portugal. Discoveries and voyages of Columbus, Magellan, Captain Cook, Livingstone and Nansen. An account given of the lives of these explorers, of the motives which led to their voyages, of the routes, of the countries visited by them, with special reference to their position, general physiography, resources and inhabitants. <b>SCIENCE AND GEOGRAPHY.</b>—The large physical forces and processes related to the evolution of the globe, and present physiographical structure as related to navigation and commerce; the general climatic and soil conditions, such as zones, ocean currents, trade winds, typical general conditions producing arid and fertile soil. The main idea is the geographical, including the adaptation of life to climate, soil, etc., and the way in which the large physical forces have been utilised in navigation. The object is (1) to get hold of the instinct for romance and adventure; (2) to bring paths of travel into geography; (3) to give, in some degree, the culture and civilisation. Method, construction, story telling, experiments. <b>PRACTICAL GARDENING.</b> <b>NUMBER.</b>—Work taken from carpentry, cooking, sewing, and science formulated in distinct problems involving multiplication and subtraction, and measurement of surfaces. <b>MUSIC.</b>—Composition of songs; further development of rhythm; naming notes on the keyboard; lines and spaces on the staff. <b>ART.</b>—Representation; objects connected with History. Materials; clay, coloured chalk, charcoal, and water colours for designing. Aim: self-expression and visual training. <b>SHOP WORK.</b>—Emphasis upon construction rather than on technique or finish; first principles of machines; use of joints, half-lap and timber splicing joints; knife for whittling, and use of materials, lumber, reeds, cane, bamboo; making such articles as are required in History and Science. <b>SEWING.</b>—Study of typical forms of pockets found in eggs, milk and meat, as affected by heat, acid and water. <b>SEWING.</b> <b>READING AND WRITING.</b>—Special emphasis put upon the reading of their own records and stories. "Robinson Crusoe"</p>	<p>Average age, 8-8½ (Number in group not stated). <b>AUTUMN.</b> <b>LOCAL HISTORY AND GEOGRAPHY.</b>—Study of the North-west, particularly Chicago. French explorations; Fort Dearborn and the log cabin age, development of the City of Chicago; stories of the lives of Joliet, La Salle, and Touhy, routes traced on the map; readings from "Pioneer History," brief written accounts read and copied. The great lines of travel from the Atlantic through the St. Lawrence and Great Lakes to the Mississippi found; where forts would be located; how they became villages and towns. Routes, and forts commanding them, planned either for purpose of holding territory or reaching the fur trade of the West. Fort Dearborn massacre; rebuilding of the fort; village life (local historic characters); growth of City of Chicago; its modern history and importance. <b>GENERAL GEOGRAPHY.</b>—Starts from all the land masses in the same latitude as Chicago around the globe; zones; continents with their sizes, climates and adjoining oceans. <b>SCIENCE.</b>—Study of beaver. <b>NUMBER.</b>—Calculating the total number of halves, quarters, and thirds, of cupsful in cooking; other calculations worked out in actual cooking practice; similar problems done as blackboard work in separate period. <b>MUSIC.</b>—As before. The writing of harmonies begun. <b>ART.</b>—Modelling of group in clay in connection with history; making of plaster casts of clay models. <b>HAND WORK.</b>—Towel racks. Christmas gifts "Prairie schooner" (to illustrate early mode of transit from the East to Chicago). <b>TEXTILE WORK.</b>—Development of the loom and weaving. Early Egyptian floor mat woven; Indian loom; mat designed, spun and woven. <b>COOKING.</b>—Vegetables, as in Group V. <b>SEWING.</b>—Dish cloths, etc., for cooking. Equipment of work baskets. <b>AMERICAN HISTORY AND GEOGRAPHY.</b>—Virginia as a typical southern colony; the struggle for existence; John Smith. Military government under Dale; organisation. Representative government and the beginning of prosperity, Virginia as a royal colony; navigation laws; Bacon's rebellion, Virginia's "neighbours." Expansion westwards; the Ohio Company. Virginia's part in the French and Indian war; Washington. New England. Comparison with Virginia as to time of settlement; reasons for coming, character of colonists, government, etc. Physiographical conditions, social life, etc. Pilgrims and Puritans. Commercial relations at home and abroad. Industries developed; their difficulties, and new colonies as offshoots from Massachusetts Bay. The union of colonies for defence. The Revolution; Massachusetts' part. Geography includes the early grants and subdivisions of these to the time of the Revolution; physiography of each colony from the geographical side. <b>SCIENCE.</b>—Experimental work based on colonial industries. Metallurgy: pewter, lead, copper, tin and iron. Relation of plants and animals. Practical gardening, study of plant societies, indoor work and experimental work in plant relations. <b>NUMBER.</b>—The work of the year before carried on in the same way, but further division and ratio introduced in connection with map drawing. Surface measurements of parallelograms and triangles; school accounts. <b>MUSIC.</b>—Composition of song, rhythmic incidents introduced (quarter, eighth, half and whole notes). <b>ART.</b>—Composition in clay, object drawing, memory work, construction, ground plan and superstructure of early pioneer houses of Puritans and Dutch. Representation, buildings, figure posing, landscape. Materials: coloured chalk, charcoal, clay. <b>SHOP WORK.</b>—First principles of house construction; gable, roof and simple problems in strength of material (wood). The work is carried on in connection with History, upon such articles as the loom, machine for paper-making, and a typical pioneer colonial house. <b>COOKING.</b>—(1) Study of milk products. (2) Study of meats. <b>SEWING.</b>—As in autumn. <b>READING AND WRITING.</b>—Reference reading in connection with History. Special emphasis placed upon acquiring facility in writing. Writing on unruled paper. Attention given to form and rapidly.</p>	<p>Average age, 9-10; No. in group, 16; 2 divisions. <b>AUTUMN.</b> <b>HISTORY.</b>—Study of the growth of unity among the different colonies, the consequent independence of England and the social and political development which followed. <b>GEOGRAPHY.</b>—In connection with History. Causes of conditions of soil in different parts of the States. <b>SCIENCE.</b>—Experimental work in connection with Cooking. <b>NUMBER.</b>—Keeping the accounts of the school. <b>MUSIC.</b>—As in Group VI. <b>ART.</b>—Illustrating in bas-relief the scenes and characters taken from History. <b>HAND WORK.</b>—Looms and shuttles. <b>TEXTILES.</b>—Weaving of blankets. <b>COOKING.</b>—Study of vegetables in more complete way than in Group VI. <b>SEWING.</b>—Design for sofa pillows; making of kitchen aprons and towels; weaving of baskets. <b>WINTER AND SPRING.</b> <b>HISTORY.</b>—Revolutionary Period. Commerce and products exchanged between the colonies and eastern world. Review of navigation laws and results in forcing colonists to develop the industries. Direct causes of the Revolution. Events directly preceding the Revolution. Formation and work of Congress. Campaigns in north, middle and southern sections, and their outcome. The campaign in the Mississippi valley; the Declaration of Independence; the formation of the Union; treaty terms. Group VII. Extension of territory: Louisiana; Florida; Texas; California; New Mexico, etc. (Fremont, Lewis and Clark, the opening up of the West, the discovery of gold); Washington and Oregon; Alaska; Puerto Rico; Hawaii. Inventions and improvements: railroads, transcontinental lines, products, transportation; steamboats, the principal navigable rivers: Canals: Erie, Welland, Sault Ste. Marie, Drainage, Nicaragua; redemption of debts by frigatation. <b>GEOGRAPHY.</b>—The relative position of the colonies in reference to each other. The location of important rivers, cities, etc. The position of the great divisions of land and water brought out in tracing the routes of trade. <b>SCIENCE.</b>—Experimental work in connection with cooking; analyses of cereals and vegetables; study of milk with reference to physiology of digestion. Study of the development and general respiratory processes of a vertebrate in connection with (a) the study of foods and (b) the location of the continents of the world. Discovery and settlement of Australia. England and France. Age of chivalry. (Boys' Froissart, Morte d'Arthur). <b>GEOGRAPHY.</b>—The relative position of all continents, oceans and important islands; the countries of Europe, North and South America, and important ones in Asia and Africa. The relief and contour of the continents: principal rivers. <b>SCIENCE.</b>—Elementary Physics (experimental). Utilization of muscular energy; its measurement in forms of lever, arm, crowbar, balance. Laws of simple machines in determination of units of work: pulley, wheel, and axle, crane and derrick; relation of friction to work accomplished by any machine. Plans of machines. General Physiology. Practical gardening. <b>MUSIC.</b>—Ear training and song composition. General chorus work; part singing. Voice production, breathing, enunciation. French song. Technical work founded on the pupils' own composition. <b>ART.</b>—Bas-relief in clay and plaster. Early American architecture; building from books and drawing from them; out-of-door work when the weather permits; clay-work illustrating History; sketching in clay. <b>SHOP WORK.</b>—Looms and shuttles; warping apparatus. <b>TEXTILES.</b>—Colonial industries connected with History. Evolution of cotton spinning; cotton gin. Study of flat spinning and weaving. <b>COOKING.</b>—Practice and theory in greater detail. <b>SEWING.</b>—Useful articles. <b>READING AND WRITING.</b>—"Alice through the Looking-Glass." <b>FRENCH.</b>—Conversation: simple stories. Conversation about stories found in "Livro d'Enfants," and "Paul Henry"; questions and answers in French: pictures of animals, birds, fruits, families, cities, villages, market, picnic, farm, parts of the house, kitchen and cooking. <b>NOTE.</b>—Groups V, VI, VII, study 15-20 hours a week, 9-12; latter half, 1-2 p.m. This time is subdivided as follows (with variations):— History and Science 6 hours per week. Study time " " " " " " Constructive work 3 " " " " Number work 1 " " " " Music 1 " " " " Art 1 " " " " Physical exercises 2 " " " "</p>	<p>Average age, 10-11; No. in group, 16; 2 divisions. <b>AUTUMN.</b> <b>HISTORY.</b>—13th century: Europe and the East, through the travels of Marco Polo. The discoveries and explorations of the 15th and 16th centuries. Prince Henry the navigator. Life of Columbus. <b>GEOGRAPHY.</b>—Included in History. <b>SCIENCE.</b>—Practical experiments in electricity. <b>NUMBER.</b>—Balancing the school budget. Study of decimals. Problems. <b>MUSIC.</b>—Ear training; song composition. <b>ART.</b>—Studies in proportion, perspective, composition and figure posing. Work in black and white, clay modelling, and water colours on rice paper. <b>HAND WORK.</b>—Preparation of apparatus and materials. <b>TEXTILES.</b>—Weaving of miniature Indian blankets. <b>COOKING.</b>—Prepared foods. Composition of muscle. <b>SEWING.</b>—Dish cloths, towels, polishing cloths; canvas mats; designs for sofa pillows. <b>FRENCH.</b>—As in VII. <b>LATIN.</b>—Syntax—carried on through study of simple stories; dictation; memory work. <b>WINTER AND SPRING.</b> <b>HISTORY.</b>—Period of exploration and settlements. The development of commerce by the Dutch; formation of great companies, their powers and history. English explorers: review of the Cabots, Smith, etc., and their discoveries, with first settlements; trip of Sir Francis Drake; his results; Hudson's discoveries and the claims of the British in Canada. Great English trading companies: East India Company and its gradual usurpation of power in India; Hudson Bay Company and its possessions. British possessions in Africa. Discovery and settlement of Australia. England and France. Age of chivalry. (Boys' Froissart, Morte d'Arthur). <b>GEOGRAPHY.</b>—The relative position of all continents, oceans and important islands; the countries of Europe, North and South America, and important ones in Asia and Africa. The relief and contour of the continents: principal rivers. <b>SCIENCE.</b>—Elementary Physics (experimental). Utilization of muscular energy; its measurement in forms of lever, arm, crowbar, balance. Laws of simple machines in determination of units of work: pulley, wheel, and axle, crane and derrick; relation of friction to work accomplished by any machine. Plans of machines. General Physiology. Practical gardening. <b>MUSIC.</b>—Ear training and song composition. General chorus work; part singing. Voice production, breathing, enunciation. French song. Technical work founded on the pupils' own composition. <b>ART.</b>—Bas-relief in clay and plaster. Building from books and drawing from them; out-of-door work when the weather permits; clay-work illustrating History; sketching in clay. <b>SHOP WORK.</b>—Looms and shuttles; warping apparatus. <b>TEXTILES.</b>—Colonial industries connected with History. Evolution of cotton spinning; cotton gin. Study of flat spinning and weaving. <b>COOKING.</b>—Practice and theory in greater detail. <b>SEWING.</b>—Useful articles. <b>READING AND WRITING.</b>—"Alice through the Looking-Glass." <b>FRENCH.</b>—Conversation: simple stories. 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America; its minerals. <b>HAND WORK.</b>—Drawers for library catalogue; carved music bench, folding screen, pinhole cameras. <b>TEXTILES.</b>—History of the invention of machines used in manufacture of cloth. <b>NUMBER.</b>—Connected with the study of Physics. Logarithms. Simple trigonometry. Study of proportion. <b>MUSIC.</b>—As in Group VIII. <b>ART.</b>—Visits to Art Museum, study of pictures, reproduction of one from memory. Illustrations of "Miles Standish." <b>COOKING.</b>—As in Group VIII. <b>SEWING.</b>—Canvas cushions, shoe bags, mats, linen d'oyles hem-stitched. <b>FRENCH.</b>—As in Group VIII. <b>LATIN.</b>—Latin stories told (new words illustrated by action, pictures or similar English words), questions on stories asked and answered in Latin. Noun, pronoun, verb, cases and declensions. Analysis. <b>WINTER AND SPRING.</b> <b>HISTORY.</b>—Plymouth and Massachusetts Bay colonies. Industries; fishing, agriculture, milling, salt-making, shipbuilding. Extension of territory: Louisiana; Florida; Texas; California; New Mexico, etc. (Fremont, Lewis and Clark, the opening up of the West, the discovery of gold); Washington and Oregon; Alaska; Puerto Rico; Hawaii. Inventions and improvements: railroads, transcontinental lines, products, transportation; steamboats, the principal navigable rivers: Canals: Erie, Welland, Sault Ste. Marie, Drainage, Nicaragua; redemption of debts by frigatation. <b>GEOGRAPHY.</b>—The relative position of the colonies in reference to each other. The location of important rivers, cities, etc. The position of the great divisions of land and water brought out in tracing the routes of trade. <b>SCIENCE.</b>—Experimental work in connection with cooking; analyses of cereals and vegetables; study of milk with reference to physiology of digestion. Study of the development and general respiratory processes of a vertebrate in connection with (a) the study of foods and (b) the location of the continents of the world. 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Study time " " " " " " Constructive work 3 " " " " Number work 1 " " " " Music 1 " " " " Art 1 " " " " Physical exercises 2 " " " "</p>	<p>Average age, 13; No. in class, 10. <b>HISTORY.</b>—Same subjects as in IX, viz., Settlement of Virginia and plantation of Plymouth, but taken more comprehensively. Method adopted that of referring the children to passages of selected books, and directing and testing their knowledge by means of set questions and essays, and the drawing up of outlines. <b>GEOGRAPHY.</b>—In connection with History. <b>SCIENCE.</b>—Experiments on light in connection with the use of the camera, the meaning of the laws of focusing, the laws of perspective, and the use of such instruments as the microscope, telescope, magic lantern, and the primitive methods of signalling by means of mirrors. Practical photography. <b>MATHEMATICS.</b>—In connection with Science. <b>MUSIC.</b>—Voice culture and song singing; composition and notation. <b>ART.</b>—Illustrations of "Miles Standish." <b>COOKING.</b>—As in Groups VII and VIII. <b>SEWING.</b>—Simple trigonometry. Study of proportion. <b>MUSIC.</b>—As in Group VIII. <b>ART.</b>—Visits to Art Museum, study of pictures, reproduction of one from memory. Illustrations of "Miles Standish." <b>COOKING.</b>—As in Group VIII. <b>SEWING.</b>—Canvas cushions, shoe bags, mats, linen d'oyles hem-stitched. <b>FRENCH.</b>—As in Group VIII. <b>LATIN.</b>—Latin stories told (new words illustrated by action, pictures or similar English words), questions on stories asked and answered in Latin. Noun, pronoun, verb, cases and declensions. Analysis. <b>WINTER AND SPRING.</b> <b>HISTORY.</b>—Plymouth and Massachusetts Bay colonies. Industries; fishing, agriculture, milling, salt-making, shipbuilding. 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Study time " " " " " " Constructive work 3 " " " " Number work 1 " " " " Music 1 " " " " Art 1 " " " " Physical exercises 2 " " " "</p>

which some knowledge is gained of muscle form and bone structure; with history, in the development from primitive to modern methods of obtaining and preparing food; with shopwork, in the demand for various articles made in the shop and used in the kitchen, such as towel-racks, rolling-pins, wooden spoons, etc.; while number work plays an important part in the weights and measures used. Sewing is connected with the Fine Arts in the drawing and colouring of designs and in all colour combinations; with history, in the making of clothing and other articles typical of the various periods; with shopwork, in the making of shop aprons in the sewing-room and of spool-racks and yarn-winders in the shop; with cooking, in the making of aprons and holders, the hemming of towels and other household articles; and with number work, through the continual use of ruler and tape measure, in calculating the amount and cost of materials needed, measuring, and verifying bills of goods purchased. The textile work connects with botany in the study of the producing plants; with geology, in the study of soils with reference to the various productions; with geography, in the locating of the plant and animal-raising districts and the factories and mills; with history, in the development of the textile industry and its influence on the people; with physics, in the various properties of the different materials and in the implements and machines used in their production; with chemistry, in the preparation and dyeing of the textiles; with shopwork, in the construction of distaff, spindles, and looms; and with sewing, in the work with the finished products.

The preparation of the class lunch at this school, whether by children in the Kindergarten or in older "Groups," affords practical illustration of the possibility of realising many of Dr. Dewey's views without departing from methods accepted by convention, yet lending to them an educational value and a vivid interest too often absent from such homely items in the routine of daily life. These simple luncheons are served each morning. Each class takes it in turn to render this social service, the various members preparing the food, setting the table, and then waiting on their companions during the meal. Social links are by this means forged between school and home interests; the bodily activities are exercised. The work appeals to the limited and familiar experience of the young cooks and servers, and, while demanding thought, is yet of sufficient simplicity to function in habitual or suitably acquired actions. Efforts to acquire technique are stimulated by the interest aroused; the suitable correlation with other school work links life with learning, and gives dignity to manual exercise. As the lunch frequently consists of some form of cereal served with cream or fruit the children are interested in finding out as much as possible about each kind of grain used. They plant seeds and observe their mode of growth and development; they talk about the harvesting of the ripe grain (specimens of which are shown) and the development of the various methods from primitive

(a) Elementary School  
—continued.



(a) Elementary School  
continued.

to modern ways, considerable attention being given to pictures and other representations of methods, implements, and machines employed. The uses of the various parts of the plants are then discussed, with the necessary processes through which they must pass before they are ready for market; as the cleaning and rolling, cracking or grinding of wheat, which are usually learned by a visit to the mills. Then there is an examination of each kind of grain by means of the microscope, which shows its parts. To discover the nature of these parts and the effect on them of water, heat, etc., some simple experiments are used. For example, in wheat, the grain is crushed in a mortar and sifted through cheese-cloth, thus separating the coarse outer covering; this is then examined, treated with cold water and with hot, and boiled, the effect being carefully noted in each case. The fine part of the grain, which passed through the sieve, is tested in the same way, and its action compared with that of starch similarly treated, from which the inference is drawn that starch is present in the grain. The work with this fine part of the grain shows the presence of a sticky, glue-like substance, which stretches and catches the air when in a moist state. The names *bran*, *starch*, and *gluten* are given to these parts; pictures of the grain are drawn representing them; and sentences are written which tell what has been found out with regard to them. The amount of water necessary in cooking one cereal is used as a standard; and the amount required for the others is found by balancing them with this standard and using a proportionate amount of water. Thus, the children find out that in cooking flaked corn it is necessary to use equal amounts of cereal and water, while corn-meal is five times as heavy, and, therefore, requires five times as much water. In making out a table, as the children do, for use in the cooking of all cereals, the necessity arises for the continual use of the balance and weights, and of the measuring cup (divided into quarters and thirds), all of which give familiarity with weights and measures, and with fractional parts in their various combinations. In the simple cooking of cereals the children also learn the properties of water, its simmering and boiling points, the meaning and use of steam and of dry heat, with their varying applications to suit different materials and conditions. Familiarity with certain materials and conditions are thus acquired, while the natural impulse of the child is exercised and utilised, while both knowledge and discipline result. Throughout the whole course the same general plan is followed; the children find out *by experiment* the nature and composition of the materials used and the treatment to which they must be subjected to render them most nutritious and palatable. The work in the kitchen, being correlated with that of the other departments of the school, is supplemented and emphasized by directing the attention along the same lines in these departments. It is hoped in time to make a greater number of connections, and to improve

the work, which was still in the experimental stage at the time of my visit (May, 1901), in many details.

The second experimental school I visited where Domestic Science is linked with home and social interests is now known as the University of Chicago School of Education, at that time under the directorship of the late Colonel F. W. Parker. While Dr. John Dewey approaches this question of the right education of the young in the spirit of a philosopher, the late Colonel Parker arrived at his conclusions animated rather by the inspiration of a prophet. His whole nature was imbued to an unusual degree with so intense a love for and sympathy with child nature that, in the opinion of some careful and skilled observers, there existed a risk lest sentiment should be allowed to obscure or to replace reason in the translation of his theories into practice. His school programme was the tentative outcome of years of enthusiastic earnestness devoted to its evolution, in which he received the cordial co-operation of his "Faculty." Weekly meetings were the rule (lasting from two to three hours), in which some contribution was expected or permitted from each member of the staff towards the solution of problems forced upon their notice by their daily work in teaching and training. Character building (or citizenship) was to Colonel Parker the end and aim of education; to gain this "everything must be brought in (to the curriculum) which will concentrate and expand ideas and develop right habits." Education he believed to be "the all-sided growth of the individual, physical, mental, and moral. Community life is the ideal of education, because it is the only ideal great enough to provide for this all-sided development of the individual." "The ideal school is the ideal community. . . . it is the education of complete living." "Community life is that state of society in which every individual member orders his conduct with reference to the good of the whole; the whole being so constituted as to necessitate the highest development of its members." Consequently "the citizen must know something of the world in which he lives, and this knowledge comes best from actual contact." This being his creed, Colonel Parker framed his school programme with the view of giving actual personal experience to each child of what has contributed to the existing phase of civilisation. This conception of the scope of school education really involves a never-ending correlated study of man, his environment, and his works. In practice Colonel Parker attached much importance to the observation of a selected subject in its entire environment, and took great exception to conventional isolation and classification. His whole scheme was further planned in deference to the requirements of body and brain at the various periods of growth; so far as at present known. To find and arrange subject matter for the mental nutrition of each pupil, and for all grades of pupils, was a problem still imperfectly solved at the time of his death, but good ground had been broken. Life in his school was organised on a basis of (1) work, doing things for which the pupils felt a social need; e.g.,

(b) School of Education. Table XXII.

gardening, cooking, working in wood or metal, clay modelling, sewing, weaving, printing, etc.; (2) a study of human activities in the outside world, to help the children to interpret their own experiences; (3) the study of Nature. The domestic sciences and arts found a place in the Kindergarten course because home activities, the common life of the children, furnish opportunities for work and service suited to their years, and constitute a desirable addition to play and games. These subjects appeared in the Primary grades because Colonel Parker believed (a) in the value of the primitive industries and arts in the early education of children; and (b) in the importance of simple work in school economics, sanitation and hygiene for the establishment of an ideal of the conditions essential to good health in a community. Home economics took its place in the Grammar grades as an integral part of the study of Nature, and of Man as its highest manifestation. In each case the subjects were found to lend themselves as a means for the employment of thought and reason, for the application of scientific principles, and for the culture of the social instincts. This method of introducing the study of economics deserves consideration, associating, as it does, the conception of the value of health and time, as well as of money, with the facts and duties of daily life.

Possible application of foregoing methods in England.

It would be unjust to convey the impression that either of these educationalists believe themselves to have realised their ideal in practice; it would be equally inaccurate to give the impression that I advocate the wholesale adoption of principles and methods so admittedly tentative and experimental as those just referred to; but I am of opinion that these conceptions, wisely modified, could be introduced into the kindergarten and primary classes of many English schools. The educational attractions and advantages attached to the employment, as part of school work, of familiar, homely occupations for quite young children has been hitherto very generally overlooked; their ethical, sociological and economic values for seniors when progressively developed is certainly not yet recognised. A careful study of these School Programmes will reveal that their contents are selected, handled, and developed so as to forge social links between school and home, while experience proves that they foster an intelligent participation in communal life; two points where, admittedly, our educational methods have hitherto proved unsuccessful. Acquaintance with subjects bearing on domestic life is largely acquired through the exercise of the bodily activities; these subjects appeal to the child's limited experience; they demand thought and permit its expression in action; it is also believed that they arouse an interest so strong that it will cheerfully overcome obstacles and perseveringly face drudgery and difficulties to achieve realisation; wherein lies their strong claim as formers of character and factors in the growth of a true communal spirit. Essential to their profitable introduction are (1) space, as individual participation

in each occupation is essential, for which reason classes must be small; (2) time, otherwise informing by the teacher has to replace thought and reflection by the child; (3) elasticity of syllabus and confidence in the teacher by those in authority, to permit of thoroughly intelligent "doing." In the future, when these advantages are secured in our schools, teachers can profitably devote some attention to these methods of providing for children what Froebel called "the education of complete living."

There are, relatively, few private Primary and Grammar Schools, though they are found in large cities, such as New York or Detroit, but I had no opportunity of studying their attitude towards the teaching of Domestic Science. Private educational enterprise or endowment more usually finds its outlet in the provision of institutions for higher education from the High School upwards.

Few Private Primary and Grammar Schools.

**B.—HIGH SCHOOLS.**

Private High Schools exist mainly in wealthy localities, for considerable capital and a large clientèle are necessary to compete in equipment and efficiency of staff with those State-aided by Boards of Education. The growing prejudice in favour of class distinction is frequently compelled to give place to the superior advantages offered by the public High School or to the obstacle of a high scale of fees. It is of special interest to note the belief in Hygiene and Home Science as suitable studies in these private High Schools, where the curriculum is independent of all outside control, except that exercised by college entrance requirements or the whims of parents. This belief promotes the formation of an intelligent public opinion among the more wealthy members of the community; for, although the first introduction of these subjects is stated to be often unpalatable to the parents, the result to their children is so speedily apparent as to invariably overcome previous objections.

Typical Domestic Science Courses

Notable among the High Schools supported by endowment and fees is that attached to the Pratt Institute, Brooklyn, of which the superintendence is entrusted to Dr. Luther Gülick, whose views on education repay careful study, and so far stand well the tests of practice to which they are subjected by their author. Expressed in the briefest terms, Dr. Gülick considers that two of the fundamental conditions to be met by a secondary school are (1) the needs of the individual for the development of a fairly rounded character and personality; (2) the demands of society upon the individual. "The individual must be developed as an individual with reference to his personality. He must also be so trained as to fit into the existing world, to take his place in the present social régime . . . Health, character, a strong, constructive, sympathetic view of life, and the ability to do something that the world wants done, these deserve prominence as objects in school life." These views and the methods by which they seek to find expression harmonise with the idea of the founder of the Institute, viz., that boys and girls

(a) Pratt Institute High School, Brooklyn, N.Y. Table XXIII.

(a) Pratt  
Institute  
High  
School—  
*continued.*

should be placed under conditions which favour all-round development, and that school education should consist in the patient, systematic, and constant training of body and mind. To this end manual and physical training, art training and laboratory work are given equal rank and standing with the academic studies; health, power, and a wholesome, earnest attitude towards work being essential to the realisation of the ideas of both founder and director. A second aim is to help each pupil to discover his gifts and to start him in their effective development; while, with the object of encouraging all who can to continue their work at college, it is endeavoured to frame a scheme such as shall enable those who desire to do so to meet college entrance requirements. The accompanying diagrammatic illustration of the studies and occupations pursued during this four years High School course shows how these requirements are met; though naturally it is impossible to indicate by means of any figure the atmosphere of social claims and interests which surrounds the young people, or the methods employed to temper, while seeking to develop, the individuality of each boy and girl. The school is open to all children of fourteen, who, in Dr. Gütlick's judgment, are ready, physically, mentally, and morally, to profit by the work, without interfering with the progress of others. The greatest sympathy is felt for those in feeble health, but the amount of work, both physical and mental, is planned for the best development of the normal child, and would be excessive for the delicate. A standard of normal height, weight, and health must be therefore conformed to.

The school day is divided into six periods of fifty minutes each; one-half of the time is given to academic work in languages and the humanities, in mathematics, and in science; the other half is devoted to music, art, and manual training, laboratory practice and gymnastics. The manual training, to which six periods a week are devoted throughout the curriculum, comprises, in the first year, bench-work in wood and wood-carving for boys and girls alike; in the second year it consists, for boys, of wood-turning, pattern making and moulding, ; for girls, of sewing, drafting, cutting and making garments, some study of materials being also included. In the third year, boys take forging and the elements of decorative iron-work; while the girls study form, line, colour, and texture, and the outline and proportions of the human figure. They also practice costume designing (sketching hats, draperies, and gowns, half life size), and devote some time to millinery. In the fourth year the boys attend the machine shop, learning bench-work and the use of machine tools; and the girls are instructed in domestic science, which comprises cookery, emergencies and home nursing. No pains are spared to teach accuracy, economy, patience, judgment, and perseverance throughout the whole course. It is maintained by Pratt Institute teachers that after a year's "drill" in wood-work, needlework *may* be so taught as to veritably merit the designation of manual training. Their system of instruction is framed "to

TABLE XXIII.  
PRATT INSTITUTE HIGH SCHOOL

Four years' course showing proportion of total course given to each subject.

<p>Gymnasium 8.8%</p>	<p>Chemistry 3.1%</p>	<p>Physics 3.7%</p>
<p>Latin, German or French 12.7%</p>	<p>Biology 1.6%</p>	<p>Physiology 1.6%</p>
<p>Drawing 12.7%</p>	<p>Music (including Chorus) 8.6%</p>	
<p>Manual Training. 18.9%</p> <p>Boys take woodwork, forging and machine shop.</p> <p>Girls take woodwork, sewing, cutting, draughting, dressmaking, millinery, cookery.</p>		<p>Mathematics 6.3%</p>
<p>Higher Mathematics or another language. 6.3%</p>		<p>English 11.8%</p>
<p>History 7.0%</p>		

(a.) Pratt  
Institute  
High  
School —  
*continued.*

train the eye to recognise, the hand to produce, correct lines and angles, as in matching stripes, turning hems, sewing seams, slanting stitches, cutting gores from an oblong, drafting and machine sewing. In dressmaking comes the additional study of beautiful form, colour, and texture in relation to clothing of the body and some knowledge of the intimate connection between the laws of beauty and the laws of health. Millinery methods are considered to develop lightness of touch and skilful handling of materials, and may be employed in training the imagination to picture the desired result." So far as my observations extended, these aims are kept very steadily in view during the two years occupied with the study of plain needlework, dressmaking, and millinery; indeed, the primarily educational purpose of the manual and art training in this High School is very evident throughout. Dr. Gulick believes that there should be no division between the work of the artist and that of the artisan, therefore a close connection is maintained between the studio, the "shop," and the sewing-room. The girls especially are unquestionably much interested by this development of the educative and culture side of a pursuit, often treated with contempt at their age on account of its utilitarian aspect being over emphasised.

I was fortunate in securing very full particulars concerning the year's training in Domestic Science; and the following details are couched chiefly in the words of Mrs. Chambers, who was the director of all the cooking classes and courses given in the Pratt Institute at the time of my visit. An earnest student of the best educational methods, she agrees with many other teachers in their belief that the educational value of cooking as a school subject lies as much in its mind as in its manual training properties. "In Pratt Institute an attempt is made to teach cookery scientifically, the main object of the course is the development of the student through the subject taught. While constantly stimulated to apply her knowledge of chemistry, physics and biology, the lesson is so planned that these applications are suggested by the work, not by the instructor. For instance, at the beginning of a lesson the student may perform under direction certain simple experiments to illustrate the effect of the addition of salt or of soda on the solvent properties of water, or of an acid on cellulose, etc. She may then be asked to cook various classes of vegetables, sweet juiced, strong juiced, etc., or the problem of cooking a cabbage may be given, a vegetable with both strong juices and tough cellulose, entire freedom in treatment of the water being allowed; but each student must subsequently support the method she has pursued by sound reasons, while results are compared and conclusions deduced by the whole class." In the course of an interesting article on her methods in the Pratt Institute Monthly for March, 1900, Mrs. Chambers threw light on how she stimulated her students' powers of reflection and association:—

They are encouraged, for instance, "to trace the probable history of cooking, from broiling directly over the coals to the skilful application of heat in oven or braising pan; from the crude combination of meal and wetting of water and milk, as in 'johnny-cake,' to the

beating in of air, as in 'gems,' or the addition of egg, as in 'pop-over.' (a) Pratt  
 They are led on to observe the advantages which follow the substitution of some leavening agent for the prolonged labour of beating, as in griddle-cake or crumpet; or the variety gained by the addition of a little shortening, and the use of a utensil calculated to give a large extent of crisp surface, as in 'waffles.' They are called upon to note the well-defined relation which is traceable in all the various flour mixtures, and are made observant of the dependence for successful results upon the use of a definite proportion of wetting, dry material and leaven. A student who has found the key to this can form her own combinations by the exercise of thought, independently of the cookery-book, confident that by uniting materials in right proportions, and by exposing them for the right time to the right temperature, something good and wholesome will result. Has too much flour been added to the gem-batter? Well, change it to waffles, to biscuit, to raised muffins. When the subject is taught on this basis the student is given the recipes for various batters and doughs, but not in order, for she is to assort and classify them, and to discover the relation. Then let her take the cookery-book and study some other branch, such as soups, or sauces, or puddings, and trace the connection, the evolution for herself. A white sauce, made of milk, thickened with flour and enriched by butter, may be developed into a soufflé, which also is made of milk, thickened with flour and enriched by butter, but is further enriched by the yolks of eggs, and is flavoured and baked. White sauce may, by other additions which are governed in character by the result desired, lead to American ice-cream, thence to pistachio bisque, or to a frozen plum-pudding. Each one is free to trace his own combinations, and each has the joy of the investigator, the discoverer, the creator of order out of disorder." Mrs. Chambers encourages the making of graphic representations to illustrate these relations and proportions, a method found very stimulating to children. For instance, in the Cake lesson, in which the cup-cake can be used as a suitable foundation, the several varieties made by subtraction, addition, or substitution can be illustrated by a simple diagram. The accompanying illustration\* is here reproduced by kind permission of Mrs. Chambers. No. 1 represents the cup-cake, with the varieties made by subtraction, resulting in plainer cakes of the same type; No. 2 (raisin, currant, fig, date, citron, nut, chocolate, and spice cakes), the varieties made by addition, resulting in richer cakes, more or less divergent from the type; and No. 3 (gold, silver, and coffee cake), those made by substitution, which gives apparently totally different types of cake, resembling neither one another nor the original batter, yet possessing an easily traced relationship. The plan once mastered, the children are called upon, as a "time exercise," to write out in detail the ingredients needed for a nut-cake, or any other variety, using for a basis a fraction, as three-eighths, of a cup of flour. If correct they are allowed to make a small specimen. . . . "Out of more than thirty children in the last Saturday (mixed) morning class only two or three failed in the first attempt, and none in the second. They may then be given a number of simple recipes, and asked to make a graphic representation for themselves. Much originality and ingenuity have been shown in this work."

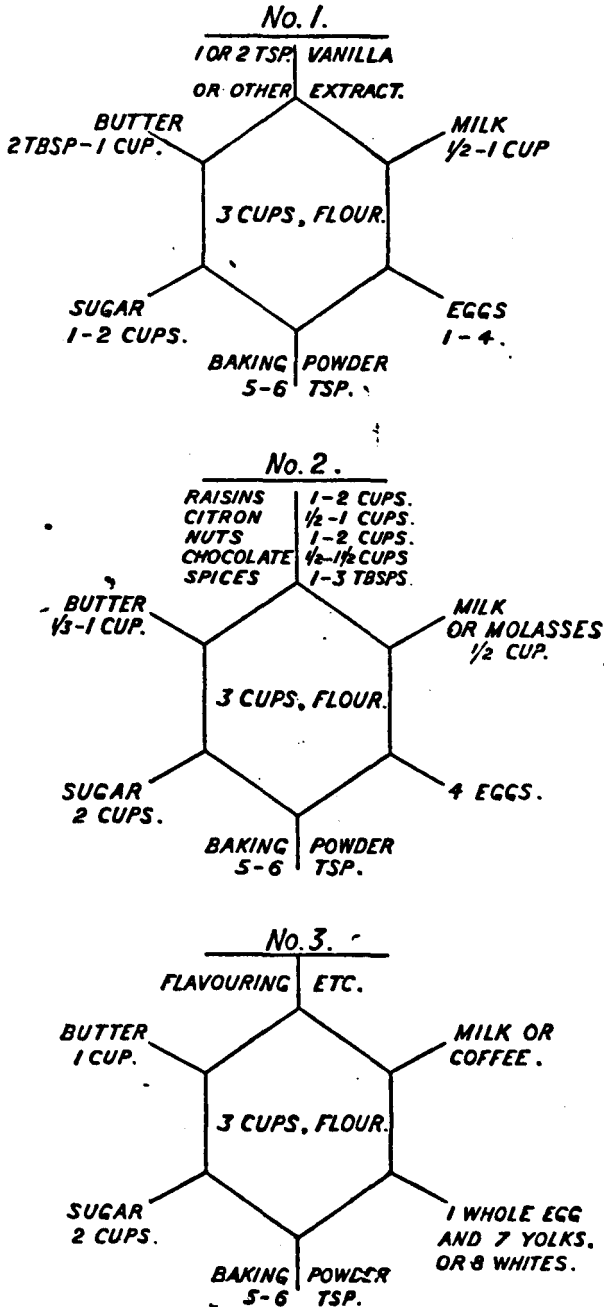
In conjunction with this pupils are encouraged to note, from the beginning, the properties of the various materials used; whether soluble or insoluble, how affected by heat, how by acids, etc. This leads to a classification of foods, and eventually into the separation of the five-food principles—protein, fat, carbo-hydrates, water and salt. Instruction is given in the right proportion of nutrients to meet the needs of the body, simple dietetic rules are formulated, and students

\* See Fig. V.



FIG. V.  
"CAKE" DIAGRAM.

Reproduced by kind permission from "The Pratt Institute Monthly."  
March 1900.



are enabled to estimate correctly which food principle is in excess, which is lacking, in each new recipe, and what other dishes should be used with it in order to complete a well-balanced meal."

(a) Pratt  
Institute.  
High School  
—continued.

The High School girls have the advantage over the Saturday class, to which the last part of the above extract refers, in that the cookery they practise is based upon the knowledge they have previously gained in elementary biology, physiology, physics and chemistry. Miss Edith Greer, Directress of the Domestic Science Department, and Mrs. Chambers told me that the girls are delighted with the opportunities offered for the application of their other studies. The scientific method of treatment first arouses "sheer amazement" by the field of interest it opens up; and this feeling is rapidly succeeded by a satisfactory enthusiasm. "The High School girl finds a new interest in both kitchen and laboratory when she applies her knowledge of the expansion of gases to the rising or falling of her cup-cake, and when she is led to reason out the best way of cooking vegetables from her knowledge of the degree of solubility of mineral salts." The High School cooking classes consist of from twenty to thirty girls; last year (1901) they were conducted by Mrs. Chambers herself, without assistance; she confessed that to superintend the practical work of so large a class, which came to her without previous training, taxed all her capacity. No outside work was expected or required of the pupils, but well kept, systematic note-books were insisted upon, to assist in the development of methodical, scientific habits. The arrangement of this High School course differs in some respects from that in general use; but the Directress was true to her conviction that the allowance of time for somewhat experimental work by the pupil, demanding observation and concentration of attention, is more profitable than the rapid and correct execution of a given number of dishes, so carefully superintended that failure, with all the valuable lessons it covers, is impossible.

The course opened with the cooking of eggs in various ways, so that the pupil might gain, through her own experience, information as to the behaviour of albumen under a variety of conditions, of which the final application was carried on, without the teacher's assistance, in the manufacture of different dishes. For example, a recipe was given for "water custard"; observation showed that the egg and water must be combined in a definite proportion to ensure right consistency; that the use of sugar as a condiment to suit individual tastes must be regulated with judgment; that without care in the application of heat at a certain temperature, failure was inevitable. The next lesson, which included the making of egg lemonade, drew attention to another characteristic of albumen, that it is coagulated by acid as well as by heat. Subsequent lessons continued the study somewhat as follows: No. 3, stuffed egg, seasoned and pounded; practical point, albumen is toughened by high temperatures; No. 4, eggs cooked by pouring boiling water upon them and allowing them to stand (a) 8 minutes, (b) 20 minutes. Examina-

(a) Pratt  
Institute  
High School  
—continued.

tion showed that the yolk coagulated at a lower temperature than the white. No. 5; the making of meringue; observation demonstrated that the white of egg will hold air when beaten, whereas the yolk will not become tenacious by this means. A series of experiments was subsequently introduced to ascertain more exactly the solubility of albumen and the exact temperature at which the various changes occur in the yolk and white; after which the girls were given some attractive recipes with eggs to carry out by themselves, which demanded intelligent application of the principles just learned. Gelatine was next taken, studied by similar methods, and the results compared with the knowledge of albumen gained in previous lessons; the double application derived from intimate acquaintance with the properties of both substances was then demanded, for example, in the cooking of fish. The girls would be asked to solve the problem of boiling this successfully, knowing that the albumen is soluble in cold water, the gelatinous fibres in hot. Later on in the course they would be asked what substances are needed to supply the nutrients lacking in fish, and required to combine these substances in a soup, a sauce, or a pudding, to accompany the fish, adding condiments to enhance or to supplement flavour. Thus as the work advanced the knowledge gained would be constantly used for the purpose of acquiring further information, always to be tested by practice, the pupils being encouraged to discuss and to try various methods of procedure, after preliminary observations and experiments; these being made in test tubes with very small quantities of material. Space does not permit me to indicate in detail the interesting and thorough manner in which the structure and properties of meat were similarly studied. Carbohydrates were subjected to the same method of observation, while in the case of sugar the attention directed to how far cooking changes might be carried, introduced the causes and control of fermentation. Lessons on fats followed; illustrations of the power of combination, emulsification, decomposition, under certain conditions, etc., being found in dishes, such as velvet cream, clotted cream, toasted bacon, etc. Water and its qualities were considered before vegetables and their cooking, in order that advantage might be taken of the opportunities offered in the cooking of vegetables to apply the lessons learned as to the effect of the use of hard or soft water in kitchen processes. Salts were left for the latter part of the course, because it was considered that their intelligent study demanded some acquaintance with chemistry, and the girls, who had meanwhile been continuing their general biology and chemistry courses, should have become competent at this stage to detect the presence of phosphates in wheat, potash in potatoes, etc., and were expected to be intelligently interested in their preservation in the chief salt-containing foods. A study of the general nutrition of the body and its metabolism, and of well-balanced diets, was carried on concurrently, so that the end of the year's work found these girls of seventeen and eighteen intelligently trained and genuinely

interested in the food question, upon which the well-being of families so largely depends. Reports from mothers "are constantly received" expressing their surprise at the appetite created for practical work at home by this course in the High School. There seems to be a steadily increasing recognition on the part of the parents that the school can fitly provide a part of that education which used to be more generally furnished by home life; and they readily admit that a decided impulse towards a higher estimate of household skill is given indirectly by their own increasing realisation of the value of these subjects as a profession, when properly studied. A wise emphasis is laid in this particular course upon nursery hygiene. The question of accommodation and equipment for this work presents no difficulties in this case, for though the High School is in a separate building from the Institute, the laboratories and workshops of the Technical Department are open to, and used by, the High School students.

An interesting departure was that initiated, some three years ago, in the Girls' Classical School at Indianapolis, of which the principal is Mrs. May Wright Sewall, president of the International Council of Women. In some respects this school is unique; the courses of study are planned on somewhat broader and even more flexible lines than are usual in High Schools; among the advantages are to be included opportunities for individual instruction consequent upon small classes, the intimate acquaintance formed by the principal with all her pupils, and the facilities offered to weak and backward students. Careful supervision and direction extends even to the uniform dress worn by the girls, which is suitably simple and thoroughly healthful. A commodious two-storey addition has been made to the building for the special accommodation of the Household Science Department, the organisation of which was entrusted to a graduate of the Drexel Institute, Philadelphia. Its establishment was entirely the result of Mrs. M. Wright Sewall's own initiative; not at all in response to, indeed rather contrary to, existing public opinion. Her object in taking the step was to give to "well-born and well-bred girls, whose circumstances in life relieve them from the necessities of household work, a respect for labour, a comprehension of the skilled work demanded by domestic duties and an insight into the degree to which applied science may lighten daily household claims, turning drudgery into delight." Evidently the danger of a contempt arising on the part of the well-to-do for hand labour is not confined to one nation or to one hemisphere; so, as her own pupils are drawn chiefly from wealthy homes, Mrs. Sewall wisely set herself to direct their attention to the hygienic, economic and æsthetic claims and possibilities of household science, in order effectually to counteract this regrettable tendency. Practice classes in cooking, one hour per week, are open to all school pupils, but the full course of study covers two years, and, in common with many other subjects, is "elective." This complete two-year course

(b) Girls' Classical School, Indianapolis.

(b) Girls' Classical School, Indianapolis

—continued.

of study includes two lessons a week of one hour each, one of which is devoted to theory and one to practice. During the first two years of its existence about twenty-five per cent. of those eligible to elect the subject took the work; these pupils showed much enthusiasm and apparently real pleasure and profit were derived from the course. The work of the department is carried on in the new, admirably equipped kitchen and workrooms; it is related, so far as is possible, with that of the other departments in the school, particularly with that carried on in physical culture, drawing and natural science; the educational and disciplinary values are specially emphasised. During the first year the work was limited to that of the kitchen and dining room; the instruction covered the subjects of foods, marketing, cooking, the cleansing and care of utensils, and the serving of meals. Subsequently systematic instruction was introduced in laundry work; in the care of bedrooms; in house ventilation, heating and general sanitation; in the simple principles of nursing; in the care of the sick and emergencies; in plain sewing, dressmaking and millinery. Pupils are required to carry out practically only that for which they have already learnt good reason exists; and, under their teacher's guidance, they endeavour to demonstrate the utility of the facts and laws previously presented in theory. As has been stated, the course is elective, but permission to elect it is regarded as a recognition of good standing in other classes and is esteemed a privilege. The charges to pupils in regular attendance are reduced to the lowest amount that will cover the cost of the materials used and of the expensive equipment provided for conducting the work, viz., \$10 (£2) per year.

An "applied science" course for students of Household Economics is still in its infancy, but is reported to promise well for the future. It covers two years; during the first of these there is one three-hour lesson per week in cookery, one hour's theoretical lecture, and three periods of laboratory work in chemistry, physics, and physiology; in the second year there are two lessons in theory and only two periods of laboratory work in chemistry and physiology; this course entails really hard work on its students. Mrs. Sewall tells me that, by its means, she hopes to impress on her girls that "skill is important, but of even more importance to them than skill, is a consciousness of the fact that the principles inculcated in this work are fundamental; and that their right comprehension materially affects the attitude of the mind towards the work of women, and particularly towards domestic interests."

To that proportion of the general public who may be interested in household science, opportunity is also given to increase their scientific knowledge of home subjects and their skill in house-keeping and home-making by means of adult classes. For these, courses of lectures on physiology, hygiene, house sanitation, nursing, emergencies, marketing, food values, table service, etc., are pro-

vided. Classes are organised, limited to ten students, for those who wish to supplement the theory thus obtained by practice in cooking; those who desire laboratory instruction may join the school classes in applied science. In general outline the subject matter presented to the regular school classes and to these classes of adults is identical, but the treatment is modified in detail, condensed or expanded, to suit the age, understanding, and present attainments of those in attendance.

In order to emphasise the evident tendency to direct the attention of all social grades to this important subject of Household Science, I propose to refer, very briefly, to another excellent illustration of the success which attends the introduction of the subject into schools where extra expense accompanies its pursuit. The Home and Day School at Detroit was opened in 1876 by the Rev. James D. Liggett and his daughters; it is now installed in an imposing building situated in the pleasantest part of the city, and is attended by upwards of three hundred boys and girls of varying ages. The school comprises four departments, Kindergarten, Primary, Intermediate, and Academic or High; the first three are co-educational; about thirty girls find accommodation as boarders. The new department of Domestic Science was opened in September, 1900, when classes were organised in sewing and cooking. Sewing is taught in four grades, which include the three years in the Intermediate department and the first year in the Academic. Two periods a week are given to the work, of which the aim is to give manual training, and to set high standards for fine work. The course in the first year covers simple stitches carried out by hand; from these the girls pass on to machine work and make underwear and blouses, for which they take their own measurements and draft their own patterns. The objects of the work done in the Domestic Science kitchen are threefold:—(1) to acquire skill in preparation of foods; (2) to study the nutritive value of food; (3) to study the chemical composition of foods. The kitchen is a large, bright room, with complete equipment for sixteen individual workers. The tables provide a drawer for each student, containing all necessary utensils, and a gas-burner, over which most of the cooking is done; a sink with hot and cold water is fitted to each table; a coal range contains the oven which is used in common by all; while a full dining-room equipment gives opportunity for serving a dinner or luncheon at the end of each term, to demonstrate the knowledge and skill acquired during that time. The course is to extend through four years in the Academic department, and is planned along good lines. Simple cooking in the first year leads to food analysis, and later on to chemical and bacteriological examination of foods. Students throughout give two periods a week to the work, which is optional; at the time of my visit it had been elected by one-third of the girls. A very promising foundation for this course is laid by previous studies; elementary science (chemistry, physics, geology,

(c) Home and Day School, Detroit.

meteorology, &c.) is introduced in connection with nature study (which enters largely into the time-table of the lower grades), and is subsequently differentiated into distinct subjects; all the studies included in the curriculum are entrusted to really competent teachers. I must not omit mention of a practice which also undoubtedly contributes to the efficiency of the teaching carried on in this school, namely, the frequent meetings held by the large staff of teachers, with the express object of maintaining an intelligent correlation between the subject or subjects for which each is responsible with other studies conducted by his or her colleagues.

(7) Boston  
High School.  
Appendix D.

I was interested to learn that useful work in the form of courses in lessons in Household Science is done in Boston High Schools by Miss S. Maria Elliott. These, though chiefly theoretical in character, in consequence of the conditions under which they are admitted to a place in the school programmes, have served a very good purpose; they have aroused interest among the pupils and their parents, they have attracted the attention of the authorities to a satisfactory extent, and have awakened a desire for more practical knowledge among the pupils. Miss Maria Elliott is herself well versed in both the theory and practice of her subject, and is further skilled in its presentation from the standpoint of experience. The syllabus of three of her courses is included to illustrate the scope and selection of subjects which her experience has shown her to be both serviceable and attractive, where but a limited time is allowed for such studies and where attendance is optional. Miss Elliott's pioneer efforts in this direction have throughout received substantial support from the Association of College Alumnae, to whose initiative Boston owes so much of its educational and sanitary reform and progress; while they have so far assisted to form public opinion that the City Board of Education had under contemplation, at the time of my visit, the provision of a practical High School course in the subject of Household Economics. In this may be found a further example of the fact to which reference was made in the early pages of this Report, that private enterprise has almost invariably paved the way for the adoption of every branch of Domestic Science into the curriculum of State-aided schools.

Hygiene and  
Physiology  
Courses.  
Horace  
Mann  
School, New  
York City.

With reference to the teaching of hygiene and physiology in private schools, space will permit me to refer only to the excellent methods employed in the Horace Mann School. This can be done in part by extracts from the "Teachers College Record" for March, 1900, and January, 1901. This school is attached to Teachers College, Columbia University, N.Y., for the purposes of practice and observation. It comprises three departments, a kindergarten, an elementary and a secondary school, and is now housed in magnificent new buildings designed to be in all respects models of their kind. Hygiene and physiology are associated with nature study in the two lower departments and with biology

in the High school. In describing the course in nature study, Horace Mann Professor Francis E. Lloyd writes as follows: "In general, we conclude, that the aim of nature study is to prepare the individual for life by training his mental power of observation and of generalisation, by deepening and rationalising his emotional life, and by increasing his social worth." . . . . . "Nature study at first must find its material in the immediate environment of the child, and as the mental grasp strengthens and the mental horizon broadens, new sources are made available. We believe that this is an important principle, for in this way the home and the school life can be woven together in the life of the child." . . . . . After drawing attention to the special correlation with other studies emphasised in each grade, Prof. Lloyd concludes: "In the eighth grade a serious attempt has been made to introduce a course embodying the essentials of physiology, meaning thereby not merely the study of the human body, but strictly the essentials of both animal and plant physiology. This is done because we believe that such a course is of much more value educationally, bringing out, as it should do, the essential unity of animal and plant physiology than the usual course in physiology and hygiene. That idea of physiology which makes it for the most part the study of the two hundred odd bones in the human frame, leads us to believe that it is time to begin on a new tack. It must not be thought, however, that the course is not aiming at the human aspect of the study, for it is of profound importance that students should have accurate information concerning the workings of their own bodies. Furthermore, there could hardly be a better preparation for the work in biology, soon to follow in the High School, than the training given in such a course." . . . . .

I learnt on enquiry that the simplest principles of hygiene are introduced throughout the grades, not alone in connection with the study of animal and plant life, but successfully also in connection with elementary science; for the elder children the principles of diffusion, solution and chemical change are directly applied in human physiology.

The "Teachers College Record" for January, 1901, discusses in detail the High School Course in Biology, which is made the medium for a more advanced study of physiology and hygiene. Again, a few extracts will best serve to indicate the general lines by which pupils are led on from the physiology of the lower to that of the higher forms of life. "The importance of interpreting the activities of the human body from the comparative standpoint seems sufficient reason for advocating the consideration of the fundamental principles of physiological action in connection with the study of elementary zoology. Experience has convinced the writers that there is no more profitable study for secondary pupils than the physiological side of animals. No other phase of zoological study

Horace Mann School,  
N.Y.C.  
—continued.



arouses a deeper interest and appreciation or is more spontaneously applied by them in connection with their own life activities. It is scarcely necessary to offer a stronger reason for including such study in an elementary course." . . . "The principles of physiology should be introduced with the first animal which is studied morphologically, and each principle as introduced should receive concrete application. The study can easily and quickly be made comparative, as successive types of animals are taken up; and, finally, such specific and comparative studies may be made to lead to a direct application of the principles of comparative physiology to the activities of the human body." . . .

Four periods a week, of forty-five minutes each, are given to this subject. The first half of the year is devoted to the zoological part of the course, followed by botany in the second half. It was desired to extend this time, and to do so would add materially to the value of the whole course. This interconnection of hygiene with nature study, chemistry, physics, and biology seems to me essentially the right method; the influence of heredity, environment and nutrition upon the highest as well as upon lower forms of life is emphasised; human physiology is robbed of any subjective aspect; concrete applications for the theories of science and art suggest themselves naturally; and while the time-table is impregnated with an atmosphere of hygiene it is not burdened with an additional, isolated subject. To those who are in agreement with me I strongly recommend a careful study of the two publications from which the above extracts are made, and from which I offer one more quotation before quitting the subject. Professor Lloyd has been detailing and supporting his outline scheme in botany; he concludes his arguments as follows—"There is a further point of importance in that the very natural and essential facts about the subject of sexual reproduction may be made a part of the knowledge of young students. Such knowledge, it is believed, helps to lift them to a normal conception of a question which is in the young mind very frequently befogged and distorted to the pronounced detriment of the moral nature."

The above selection of examples of the adoption of Domestic Science and Hygiene as an integral part of their programme by private schools of high standing could be much increased; but it will, I hope, suffice to show the strong conviction of the importance of the subject held by independent persons, and the possibility of finding time for the study where there is first "a willing mind."

#### C.—INSTITUTIONS FOR TRAINING TEACHERS IN DOMESTIC SCIENCE.

Training of Teachers in Household Science and Art.—  
(a) The Oread Institute.  
Table XXIV.

Teachers of Household Science obtain their training chiefly at Technical Institutes, which usually comprise many other departments, though at least one Normal course is offered at an institute devoted entirely to this subject. Considerable attention has been attracted to the Oread Institute, by its publications as well as by the generosity of its present owner. It was originally founded and built

TABLE XXIV.

THE OREAD NORMAL INSTITUTE OF DOMESTIC SCIENCE, WORCESTER, MASSACHUSETTS.

Institution and Course.	Entrance Requirements.	Scope of Course.	Methods.	Length of Course.	Fees and Finances.	Equipment.
Oread Normal Institute, Worcester, Mass.  Domestic Science, Normal Course.  Principal, Miss Harriet A. Higbee.	(1). Good health. (2). Maturity. Candidates from 23 to 35 years of age preferred. (3). Academic training, i.e., the full course in a good high school, or its equivalent. A knowledge of the following subjects is desirable:— Elementary Physics. Physiology. Chemistry. Mathematics. English and American History.	History of Foods, 9 lectures, 1 hour each. Cookery, 40 weeks, 3 hours daily. Sewing, 40 weeks, 2 hours per week. House Economics, 40 weeks, 2 hours per week. Marketing, 40 weeks, 2 hours per week. Laundry, 20 weeks, 4 hours per week. Sanitation, 20 weeks, 1 hour per week. Practical house work, 40 weeks, 2 hours daily. Chemistry, 40 weeks, 3 hours per week. Physics, 40 weeks, 1 hour per week. Physiology, 40 weeks, 1 hour per week. History of Foods, 9 lectures, 1 hour each. Emergencies, 15 lectures, 1 hour each. Bacteriology, 12 lectures, 1 hour each. Feeding of Infants, 12 lectures, 1 hour each. Elocution, 40 weeks, 2 hours per week. Pedagogy, 20 weeks, 2 hours per week. Psychology, 20 weeks, 2 hours per week. English Composition, 40 weeks, 1 hour per week. Physical Training, 40 weeks, 3 hours per week. Manual Training, } Art and Nature Study } To be included this year (1902)	Much stress laid on individual work. Practice work in teaching is secured by extra classes for children and adults, as well as in outside schools. The scope of the work shows a desirable comprehensive-ness, but the time is too limited to permit of thorough-ness.	1 year of 10 months.  Normal students work from 8.30 a.m. to 5.45 p.m., and must also devote five evenings a week to study, from 7.30 to 9 p.m.	\$200. (about £40.)  Free scholarships were given by the chief promoter of the Institute, Mr. Henry D. Perky, to 29 out of the 40 students who took the course last year.	All modern apparatus for gymnasium, laboratory, and experimental work; illustrations for lectures and general instruction in all branches of household economy. The kitchen laboratory, science laboratory, and gymnasium are situated above each other on the three floors of a large circular tower, 40 feet in diameter.

(a) The  
Oread  
Institute—  
*continued.*

at Worcester by Hon. Eli Thayer, a graduate of Brown University, and was opened by him in 1848 as the first institution of higher education for women in Massachusetts; it was continued as a school until the early eighties. The property was subsequently bought by Mr. Henry D. Perky, the philanthropic manufacturer of the "Shredded Wheat" preparations, who converted it into the existing Oread Institute of Domestic Science. Of the forty students who took the course during the past year twenty-nine had the advantage of free scholarships; the fee to those who pay for their training is \$200 (£40); the number of applicants for the course was stated to be 600. The building has been thoroughly remodelled, and is now supplied with the latest systems of drainage and water supply. It is heated by steam, lit by electricity, and is furnished with all modern apparatus for gymnastic, laboratory, and experimental work, as well as for general instruction in all branches of household economy. No expense has been spared in the provision of equipment; the great kitchen laboratory, science laboratory, and gymnasium are situated above each other on the three floors of one of the two circular towers, 40 feet in diameter, which form a distinctive feature of the building. The kitchen is open to visitors, a special gallery being provided for their accommodation, in order that the students may not be conscious of interruption. As the attempt is made to cover in one year the course of study usually spread over at least two, more generally three, it is essential that the students be in a condition to acquire a considerable body of knowledge under pressure. In view of this necessity, the requirements for admission to the school lay stress on—(1) good health, to enable the student to stand a *régime* of industrious application and very hard work; (2) maturity, which is so largely an individual matter that a minimum age limit is not rigidly fixed, but in general candidates between twenty-two and thirty-five years of age are preferred; (3) academic training. The full course in a High School, or its equivalent, is deemed an adequate academic preparation; the faculty, however, judge each application on its merits, not according to an arbitrary standard. Some acquaintance with the following subjects is held desirable: elementary physics, chemistry and physiology; mathematics, including arithmetic, geometry, and algebra; English and American history. The regular school year consists of two terms of twenty weeks each. Two training courses are offered—the Domestic Course and the Normal Course—each extending over a similar period of time. The first includes general care of the house, general cooking, laundry work, a short course on marketing and lectures on the history and chemistry of foods, infants' and invalid cookery and emergency work, but omits the science and special lecture work included in the second.

The Normal students are at work from 8.30 a.m. to 5.45 p.m., and are further required to devote five evenings a week to study—from 7.30 to 9 p.m. In addition to this, each girl is responsible

for the arrangement of her own bedroom, and groups of girls are appointed to attend to the service of meals. Only three-quarters of an hour are allotted to air and exercise, though each student must, in addition, spend a quarter of an hour in the open air before going to bed. It is reported that the practical house-work, as well as that in the kitchen and laundry, are better carried out than the laboratory practice, though this is much appreciated. Much stress is laid on individual work in all studies. Practice work in teaching is obtained by means of the special classes offered to adults and children, as well as by those given in the schools of Worcester. Each student has also to give a specimen lecture and a practical lesson in each science before her companions, her subject being assigned to her.

The comprehensive syllabus shows a just appreciation of the scope of training desirable; but, in spite of the long hours devoted by the students to their studies, the crowded curriculum must nullify its own object, too much being demanded in the limited time. The Principal is so much interested in the organisation of this work, of which she desires to promote the practical utility, that it is to be hoped the period of Normal training, at least, will shortly be doubled in length. The physical and mental strain to which the young women are subjected, and to which their appearance, to my eyes, bore witness, is not the only matter for regret. To lower the prestige of a subject by entrusting it to insufficiently-equipped teachers is a matter of real moment where public opinion is still in process of formation. It is in this connection that I foresee that the desirable time extension will be made, for the exceedingly high standard attained by the graduates in Household Science at Teachers College, Columbia University, or at the Pratt and Drexel Institutes, necessitates that other Normal courses, in the interests of their future diplômées, must follow in the steps of those at these prominent institutions.

The work of the Oread Institute is not confined to its two groups of resident students; special classes for clubs, teachers, house-keepers, domestics and cooks, are offered in afternoons or evenings as most convenient; twelve weekly lessons in classes of fifteen each being given for fees of \$5 (£1) and \$3 (12s. 6d.) respectively. A kindergarten department has also been formed in connection with the Institute, where mothers may send their children from four years of age "to be instructed in the A B C of proper food while they are also learning the A B C of language." The children are taught, through games, to set and clear a table, wash dishes, sweep a room, make a bed, &c.; a weekly fee of 75 cents (about 3s.) is charged. A class for older children, from 10 to 12, is given on Saturdays, at a fee of 25 cents (about 1s.) per lesson. Courses for private individuals are also offered in sewing and home dressmaking.

The Normal course at the Boston Cooking School, which extends (6) Boston from the first Monday in January to the last Friday in June (a six-months' course of two sessions daily, even Saturday afternoon School.

(b) Boston  
Cooking  
School—  
*continued.*

being occasionally claimed) is another illustration of a short training, though it is by no means so ambitious as that just described at the Oread Institute, practice being confined to the kitchen and laundry. The course includes instruction in all branches of cookery and laundry work, with lectures and examinations in marketing, the physiology of digestion, hygiene, chemistry, bacteriology, psychology, and pedagogy. Special attention is given to the arrangement of lessons in cookery adapted to public school and hospital work, which include plans for kitchen equipment and the purchase of utensils and supplies. The Normal students are admitted to all demonstrations, and lectures given at the School, and when sufficiently advanced are required to give demonstrations before their companions, who subsequently test and criticise the dishes. Diplomas are awarded to those who pass the required examinations and satisfactorily meet the requirements of the course. A High school education is the essential qualification for admission, though more advanced studies are advantageous, especially previous attendance at a Normal School. I was told that several college graduates were taking the course in 1901. There is a steadily increasing demand, at good salaries, for qualified women, and graduates are helped to secure positions at hospitals and institutions, either for teaching or for supervision, in Grade schools and elsewhere. Grade school teachers follow this course occasionally to take a diploma in cooking. The Principal also told me that, owing to the number of good openings offered, several women previously engaged in office work have saved enough money to support themselves while they took the course, with subsequent satisfactory pecuniary results. The tuition fees are \$125 (about £26), payable one half in advance, the balance at the middle of the term. Board and lodging may be obtained near the school at the Y.W.C.A., the boarding-house for students, or in private families, at rates varying from \$5 (£1) to \$9 (£1 15s.) per week, according to accommodation. Each pupil must be provided with light washing dresses, full-belted white aprons, sleeves and caps to be worn at the school. The number in the class is limited, and averages thirty, sub-divided into three divisions, each under a teacher; the students are drawn from all parts of the States and Canada. There is no laboratory for chemistry or bacteriology; the demonstrator in cooking brings her own microscope when required for the study of food stuffs. Each student has twenty practice lessons in Public School work, and the examinations are conducted by outside examiners. The premises are large and airy, three kitchens being provided for the accommodation of the normal students and of the ladies who attend private classes. The whole organisation is the outgrowth of Miss Maria Parloa's energy and enterprise; but its well-wishers now desire to see the course extended and the accommodation amplified to meet the modern requirements in this class of training.

An interesting four years' normal course in Household Economics is that provided at the Lake Erie College for Women, which is situated at Painesville, thirty miles east of Cleveland and three miles south of Lake Erie. Founded some forty years ago by private enterprise, most of the contributions to its funds have come from citizens of Painesville and Northern Ohio; the College buildings are beautifully situated in well-wooded grounds of over twenty acres. Frequent additions to the original accommodation have proved necessary, and Science Hall, in which are located the lecture rooms and laboratories for physics, chemistry, biology, botany, and physiology, dates only from 1897. The College offers three parallel courses which lead to the degrees of Bachelor of Arts, Bachelor of Science, and Bachelor of Literature. Each of these extends through four college years of thirty-five weeks each, and consists of specified studies for the first two years, with certain required studies and a definite amount of elective work in the last two. Entering students may present, in place of examinations, certificates from accredited schools, with the understanding that scholarship after entrance must be satisfactory; to this end the work of the first term is probationary. The charge for board, room, and tuition for the College year is \$250 (about £50). The tuition fee of \$75 (£15) must always be paid in advance, and is not subject to return or deduction; no deduction is made for board either, except in case of serious illness or other necessity; there are small extra charges made for use of laboratories, coaching, laundry work, and extra cleaning of students' rooms. The fact that the College is worked on what is known as the Mount Holyoke\* plan is probably answerable in part for the moderate fees, as the institution is by no means wealthy.

(c) Lake Erie  
College for  
Women.  
Table XXV.

The original idea has been considerably modified at Mount Holyoke, but Lake Erie College holds true to its standard. All students are required to do a certain amount of daily domestic work, for, with the exception of certain rough kitchen processes, no service is provided. Each girl must attend to her own bedroom, and the other household duties are shared, each student taking thirty-five minutes daily for twelve weeks at a time. The service of the three daily meals devolves upon the girls; breakfast is at 6.45, lunch at 11.30, and dinner at 5.30. (I confess the question presented itself to my mind whether hygienic requirements were being

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\*The Mount Holyoke plan, referred to above, recognises the cultural as well as the economical value of housework, and is so designated because the Women's College at Mount Holyoke was founded with the object of its illustration. The students were called upon to participate in the daily domestic work, except cooking and scrubbing, in order that, while deriving the intellectual stimulus, and the broad scholarship, which tradition associates with men's collegiate studies, a high ideal of home life should be developed and maintained with its mutual helpfulness and its self restraint. The conception attempted to combine in practice the home ideal of dignified and systematic household service with the life of a scholar.

TABLE XXV.

LAKE ERIE COLLEGE, PAINESVILLE, OHIO.—SCHEDULE OF NORMAL COURSE IN HOME ECONOMICS.

Institution and Course.	Entrance Requirements.	Scope of Course.	Methods.	Length of Course.	Fees and Finance.	Equipment.
<p>Lake Erie College for Women, Painesville, Ohio. President, Mary Evans, A.M., Litt. D.D.</p> <p>Normal Course in Home Economics leading to Degree of B.Sc. and Teacher's Diploma.</p> <p>Professor of Physiology, Luetta P. Bentley. Professor of Home Economics, Chemistry, Biology, Edna D. Day.</p> <p>Professor of Household Art, Mary Keffer.</p>	<p>The first term probationary.</p> <p>English, History, Mathematics, as for other College Courses.</p> <p>German, French, Latin; two years' study of two languages.</p> <p>Physics, Chemistry, { one year of each</p> <p>Physiology, six months.</p>	<p>Obligatory Subjects for all Students— Hygiene. Voice Culture. Physical Training. Short Course in Home Economics.</p> <p>Home Economics</p> <p>First Year. German or French, Mathematics, English, Bible, Hygiene, Physiology, Botany.</p> <p>Second Year. French or German, Art, Design and Decoration, Biology (including Bacteriology), Physiology, Chemistry, Home Economics.</p> <p>Third Year. Home Economics, Chemistry, History, Bible, Psychology, Logic, Economics.</p> <p>Fourth Year. Home Economics, Industrial History, Sociology, Ethics, Pedagogy.</p>	<p>The teaching aims specially to provide women with a scientific training to enable them to fulfil their responsibilities with regard to the home and to society.</p> <p>The scientific course is thorough and practical and is carried out under competent professors.</p> <p>The complete service of the meals for this large establishment, together with a large part of the household work, is so organized as to provide the students with practice in Domestic Economy.</p>	<p>Four college years of 35 weeks each.</p>	<p>\$250 a year (about £50), an endowment of over \$60,000, but one hundred thousand dollars still needed.</p>	<p>Large Science Hall with wings, containing laboratories for Physics, Chemistry, Biology, Botany, Physiology, and Cooking; also a small but valuable anatomical museum.</p> <p>A large and rich collection of charts, medals, specimens and prepared substances arranged by the Massachusetts Institute of Technology for illustrating the subject of Food.</p> <p>A good departmental library, which includes the most recent books and periodicals.</p>

considered when I learned that no refreshment of any description (c) Lake Erie College—*continued.* was provided for these young people between this early evening meal and the next morning's breakfast, although study for two or three hours was carried on before retiring to bed.) The setting of the tables and washing up of all utensils used for 130 people at each meal entails no small labour, but is carried on in most systematic fashion. Ten girls are appointed weekly to lay the tables for meals and to serve the food, which is brought to the dining hall by lifts. Another ten wash up, working in pairs; the silver, glass, and small china are collected on each table, then little wagons, mounted on wheels, are run from one to another, carrying bowls of soapy water, cloths, etc., and the washing up is done on the spot. The residue of bread and butter, broken meat, etc., is also collected on to wheeled wagons and sorted; those portions suitable for subsequent use being set aside in a convenient pantry. Batches of students are told off in regular order to attend to the sitting rooms, corridors, and staircases, which are very extensive. The Principal, Miss Evans, considers that the active interest maintained in these daily life processes conduces to the development of the social spirit, and prevents the girls acquiring a contempt for household duties, while it affords excellent training in methodical habits and in ready adaptability to circumstances. A strong religious atmosphere pervades the college. The average number of students is somewhat over a hundred, who, with their twenty-three professors, are all resident. Systematic work in physical training is carried on under a specially trained teacher (unless students are excused upon examination), who most wisely includes base-ball, basket ball, and tennis under this designation; and conducts all her classes in the open air whenever the weather permits.

In the four years Normal course in Home Economics\*, students entered for the degree of Bachelor of Science take prescribed courses as "electives" in this and related subjects, and receive at their graduation, in addition to their degree, a Teacher's Diploma in Home Economics; thus they combine the liberal training of a college course with special training along one line. Their first year's chemistry deals with non-metals, and includes a certain amount of qualitative analysis, to which three laboratory periods of two hours each and one lecture period weekly are devoted. An introduction to organic chemistry follows in the first quarter of the second year; the remaining twenty-four weeks are devoted to special work, of which the distinguishing feature is applications to food and physiology; this course also includes a study of air, water and food principles from the standpoint of sanitary and physiological chemistry. A course in general bacteriology, in which cell structure is carefully studied, forms an introduction to botany, which in this instance consists of a laboratory study of typical forms, beginning with rusts, moulds and mosses, leading on to flowering plants. The laboratories in the new Science building give every opportunity for

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\* See Table XXV.



(c) Lake Erie  
College—  
*continued.*

the pursuit of both these studies ; further assistance being afforded by the excellent departmental reference library, the large collection of slides for microscope and lantern, the herbarium, rich in local species, and the fresh material for study easily available in adjacent woods. General biology and a short course on anthropology are also open to seniors.

The immediate study of Home Economics comprises the following courses :—

(1) *Household Sanitation.*—(The house, its location, construction and care ; to be preceded or accompanied by courses in physics, chemistry, bacteriology and art.) Time required, four hours a week for twelve weeks.

(2) *Chemistry of Foods and Cooking.*—(Qualitative and quantitative analysis of foods ; detection of food adulterations, principles of cooking illustrated by laboratory work. To be preceded by general chemistry and physiology.) Time required, six hours a week for twenty-four weeks.

(3) *Dietaries, Theoretical and Practical.*—(Planning of meals for the college family with careful estimate of cost.)

(4) *Supervision of Domestic Work.*

(5) *Home Economics.*—(A review and unifying of all previous work relating to the home, expenditure, values, the relation of the home to society.) To be preceded by a course in Economics.

(6) *Methods of Teaching Home Economics.*—To be preceded by a course of Pedagogy.

The equipment for the practice of cookery was somewhat limited at the time of my visit, though the kitchen had been well fitted up and supplied with sets of the Pratt Institute Food Analyses, charts, and sets of block models. From the first a certain number of students had shown great interest in this course, and it was anticipated that considerable impetus would be given to the practical work in this department by the new teacher of cooking, to whose charge it was to be entrusted that autumn.

A short course in Elementary Home Economics is arranged for general students. This is confined to an introduction to the study of sanitation, food, principles of cooking, and dietaries ; no preparation in the sciences is required, and only so much of the scientific basis is given as is necessary for the understanding of practical methods. The course is not included in college work, but is sufficiently in request to show that, to an increasing degree, educated women desire to gain an insight into the subjects upon which the right ordering of daily life is based.

All students *must* attend the lectures upon hygiene and the classes in voice culture. The science work required of all also includes physiology and one year's work in physics or chemistry for the classical and scientific courses ; physiology and six months' work in physics or chemistry for the literary course. The obligatory courses in hygiene and physiology are conducted by Miss Luetta Bentley, who is profoundly and unusually interested in her subjects. The elementary courses deal with the principal

bodily functions and care of the health; they are illustrated by dissections of an Auzoux dissectible mannikin, and by models of the eye, ear, heart, larynx and head; four hours a week for twelve weeks are required in each year; no practical work is carried out by the students. The course in advanced physiology is elective; it is devoted to a microscopic study of the tissues and to detailed study of the special functions in relation to health and disease; it covers the same length of time as the elementary. The fourth year course in hygiene and physiology is again obligatory on all graduating students; this is concerned with embryology, the subject being gradually developed from plants, through fishes, birds, and mammals to human beings. With the assistance of a collection of special models and specimens, prepared and voluntarily contributed by leading medical men in Cleveland, Miss Bentley is enabled to introduce the young women in her class to a right understanding of the responsibilities of motherhood and the wise care of infant life. The results of her tactful, discreet, and sound methods of handling this subject during the past few years are stated to be already perceptible beyond the college walls; meanwhile she is the recipient of many grateful letters from graduates who have subsequently married and who realise their deep obligations to her teaching. It is largely owing to Miss Bentley's enthusiasm and energy that the general equipment of this department has reached its present complete condition; valuable charts and engravings, skeletons and anatomical preparations and histological specimens constitute a small museum. The wide-reaching influences for good of such a course, conducted on such a method, are incalculable, though, worthy as it is of imitation, one is compelled to recognise that few individuals combine the technical knowledge, enthusiasm, discretion and skill which distinguish Miss Bentley, and contribute to her admirable success. It is her ideal that all the science work carried on in the college shall be brought to bear in its application on the study of hygiene; and she is fortunate in having as a colleague Miss Edna Day (a graduate of Michigan University, the recently appointed professor of chemistry, biology, and home economics in Lake Erie College), whose interest and training well qualify her to further develop the Normal Household Science course.

When writing in Part I. of the hygiene and physical culture courses obligatory in most colleges, no reference was made to the sources from which the professors of these subjects are drawn. This Report would be incomplete were no allusion made to one of the most prominent of these—the Boston Normal School of Gymnastics. Mrs. Hemenway, in addition to her pioneer work in the establishment of the first public school kitchen in the United States and the inauguration of the first Normal school for teachers of Household Arts, also, in 1889, founded the Boston Normal School of Gymnastics. The promotion of true womanliness was her life-long object, and she looked for its attainment by two means—*i. e.*, by the

Training of  
Teachers in  
Physical  
Culture and  
Hygiene.—  
Boston  
Normal  
School of  
Gymnastics.  
Table XXVI.

Boston  
Normal  
School of  
Gymnastics  
—*continued.*

intelligent study of the household arts, and the perfect development of physique by a well-planned course in physical training, based upon the knowledge and practice of hygiene. Mrs. Hemenway was aided in her work by Miss Homans, at present Principal of this Normal School of Physical Training, who has been its prime organiser for a quarter of a century. Opportunities are here offered to men and women to prepare themselves to conduct gymnasia or to direct physical training according to sound methods. To this end thorough instruction is provided, not only in gymnastics, games and dancing, but also in those principles of physiology, psychology, and the hygiene of the human body, upon which physical training must always depend. A High School certificate or its equivalent is required of entering students, as well as proof of a sound elementary acquaintance with physics and chemistry. The courses of instruction include a pursuance of both these subjects, in addition to practical physiology and histology; the theory of gymnastics; corrective gymnastics and massage; gymnastic games; dancing, swimming, emergency work; psychology, educational theory, and practice lessons with Grammar School and High School children, as well as with private classes and instruction to shop women in the evening. The names of the instructors answer for the admirable character of the training; they are drawn chiefly from the professors at Harvard University and the Massachusetts Institute of Technology. The courses in physics and chemistry are given in the ample laboratories of the latter building; the work in both branches of study has special reference to preparation for the study of physiology and gymnastics. Instruction in histology and physiology is given by means of lectures, recitations, demonstrations, and, in histology, by laboratory work on the part of the student. The course is planned so as to give a clear conception of the methods and results of physiological investigation, and is made to bear directly upon the subject of personal hygiene in its widest sense. To this end, thirty hours are devoted to conferences, in which there is the fullest possible discussion, on the part of students and instructor, of the conditions of healthy life. Among the topics considered in this part of the work are the relations of heredity and environment to health; the effects of use and disuse of organs; the physiological effects of muscular exercises; clothing, bathing, and the prevention of colds and other inflammatory processes; feeding, fatigue, rest, and sleep. During the entire period the amount of didactic teaching is reduced to the minimum; and the students are, above all, encouraged to work out for themselves the applications of physiology to the healthy life of the organism.

Much thought has been devoted by Dr. Theodore Hough (Massachusetts Institute of Technology) to this eminently practical course in physiology and hygiene; he considers it advisable to include a little elementary bacteriology; to this only from fifteen to twenty hours can be given, but it is very carefully done, great pains being taken with the drawings and microscopic work; by this means the cellular

TABLE XXVI.

BOSTON NORMAL SCHOOL OF GYMNASTICS.

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TWO YEARS' COURSE OF INSTRUCTION FOR NORMAL STUDENTS.

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Physics with demonstrations	- - - - -	30 hours
Chemistry with laboratory work	- - - - -	45 hours
Histology and Physiology and Hygiene with laboratory work		195 hours
Kinesiology and Theory of Gymnastics	- - - - -	100 hours
Descriptive and topographical Anatomy	- - - - -	86 hours
Symptomatology	- - - - -	25 hours
Theory of Gymnastics and Art of Teaching	- - - - -	70 hours
Psychology and Pedagogy	- - - - -	40 hours
Pedagogy and Art of Education	- - - - -	30 hours
Lectures on spinal curvature	- - - - -	12 hours
Lectures and practical exercises in Applied Anthropometry (in sections)		
Corrective gymnastics and massage	- - - - -	95 hours
Instruction in gymnastic games	- - - - -	30 hours
Instruction in dancing	- - - - -	30 hours
Æsthetic dancing	- - - - -	30 hours
Swimming (in sections)	- - - - -	12 hours
Athletics (lectures and illustrations)	- - - - -	10 hours
Instruction in fencing (elective)	- - - - -	
Emergencies, with practical instruction in bandaging	- - - - -	15 hours
Daily instruction in gymnastics	- - - - -	
Daily review in gymnastics and instruction in teaching	- - - - -	
Teaching classes of children	- - - - -	85 hours

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Boston  
Normal  
School of  
Gymnastics  
—*continued.*

structure of the simple tissues of the body can be more intelligently studied (epithelium, connective tissue, muscle and nerve cells); embryology he approaches from the general philosophical standpoint, which he believes to have real pedagogical value. In his opinion not less than five hours a week for a year must be devoted to the study of anatomy, physiology and hygiene, practical and theoretical, if the student is to teach the subject subsequently in Grammar and High Schools. Like many other scientific men, he deplors the limitations hitherto imposed by the state legislation as to the teaching of these subjects, one regrettable result of which has been the unwillingness of experts to write text books, which the law requires to be submitted to a lay committee prior to acceptance; but his consciousness of the loss to the rising generation which results from this attitude has prompted him and his colleague, Professor Sedgwick, to consider the preparation of a manual, which should be at once reliable and acceptable; there is evidence also of a movement to secure desirable modification of existing legislation on the teaching of hygiene and physiology.

Much attention is directed in this course to the science of movements and to corrective gymnastics, the object of which is to impress the avoidance of harmful exercises and the use of preventive measures. The etiology, development, and pathology of lateral curvature of the spine are dealt with so far as is necessary to a practical understanding of the subject; special stress is laid upon the examination and detection of this condition as found in children of school age, with illustrations of the practical methods of recording such changes. The question of treatment is taken up through a consideration of the principles underlying the conditions which demand attention and of the range of application of the different means which may be employed. In the clinics of the Children's Hospital, and in the school itself, the students acquire considerable experience in the gymnastic treatment of various deformities, as well as in the practical application of massage. The brief course in Symptomatology is intended to convey to the minds of the students an estimate of the general appearance of the more common diseases. Two reasons are advanced in support of such instruction, first, that it enables the students in their future work as teachers to detect conditions of doubtful health in applicants for gymnastic training, and to warn them to consult a physician before undertaking the work; second, that it fits them to comprehend more intelligently the information given by physicians regarding patients whom they may advise to take gymnastic training.

A most careful physical examination is always made previous to the admission of candidates; expert advice is at once taken on any doubtful point, free of expense to the would-be student. The physical training is undoubtedly severe, but great consideration is shown, while students are expected to co-operate with their instructors by the exercise of discretion and by the conduct of their daily life along healthy lines. The æsthetic dancing which enters into the curriculum of the second year is a form of applied gymnastics, in which the power of co-ordination and the sense of rhythm

are especially trained. The movements are more complicated, less localised, less sharply defined than are formal gymnastics; they are continuous, rhythmical, of constantly varying character, and involve blended but partial action of a great number of joints and muscles, rather than powerful, complete action of a few. The practical results obtained are grace and ease of movement and bearing, together with a considerable amount of endurance. It seemed to me that they constitute a valuable addition to the more ordinary course of training, for they develop a graceful control of muscular power, charming to the beholder and refining to the possessor.

The school itself contains rooms of unusual proportions. In addition to the gymnasium proper, which has an area of 4,000 square feet, there are lecture-rooms, an anthropometric-room, a library, a gymnasium for corrective work, etc. Shower baths and ample dressing-room accommodation are provided, while, thanks to the well-selected aspect, all the rooms are well lighted and flooded with sunshine. The equipment of the school includes forty microscopes, mounted and disarticulated skeletons, preparations of joints, a life-size Auzoux model of the human body, and a large number of anatomical charts, etc., besides a complete set of anthropometric instruments. The library contains about 1,000 volumes, brought chiefly from Europe; these are largely professional in character and include, in addition to the purely technical matter, standard works on psychology, metaphysics, sociology, natural science, and education.

The personal interest taken by the staff in their work for this school impressed me to a marked degree; no pains seemed spared to adequately prepare the students for their work, and the thoroughness of the training struck me forcibly. Miss Homans does not consider the experimental stage of the training to be yet passed; she would like the two years to become a four years' course, though compelled to await the realisation of her ambitious ideal until subsequent remuneration is calculated upon a scale which would compensate for the investment this prolongation would involve. She quotes insufficient opportunity for practice in teaching and the difficulty of raising the standard of admission, as the existing prominent defects, together with the pressure of study which necessitates a great deal of home work. The individual development and mental growth of each student is carefully studied; Miss Homans deals personally in a private interview with any pupil with whom she, or any member of the staff, has cause to be dissatisfied. Students are required to be careful of their personal appearance, and at all times to be neat in their dress, in the belief that professionals cannot be too careful on these points. Black serge is used for the gymnastic costume, a red tie distinguishes the junior class, while the seniors wear orange. One hundred graduates are now earning from \$800 (about £160) to \$2,000 (about £400) a year, and only those who for family reasons, such as marriage, do not desire to make use of their certificate remain unemployed. All applications

Boston  
Normal  
School of  
Gymnastics  
—continued.

pass through Miss Homans' hands, and she has devised a system of promotion, which gives advancement to experience, backed by sound knowledge. All graduates can, indeed are advised to, return periodically for further exercise and study—and they avail themselves fully of the privilege; they are in such demand, that unusual advantages are in most cases afforded them to visit Boston for this purpose. The male students are generally members of the medical profession, who have made a speciality of bodily deformity. The cost of training is about £170, inclusive of board and lodging. The tuition fees and incidentals average £18 to £20 a year.

#### D.—TECHNICAL INSTITUTES.

There is no more striking illustration of the growing national faith in the importance of affording to young people adequate opportunities for industrial as well as for purely intellectual training than is found in the Technical Institutes of the United States. This faith is certainly known by its works: from east to west, from north to south, it has found expression in the erection and endowment of numberless such schools. Of these, the intention is invariably excellent; and of the greater number it may be also truthfully said that they are handsome specimens of architecture, usually the pride of the city to which they belong. Their spacious lecture halls and laboratories are equipped with the latest and best appliances; the staff of professors is selected from the most highly qualified and experienced teachers available for the funds at the disposal of the Committee; and their students are imbued with an *esprit de corps* which at the same time stimulates study by the desire it fosters to maintain the prestige of the institute, and develops a healthy spirit of corporate life. It is hard to resist the temptation to enlarge upon the good work carried on in the teaching of Household Science (General and Normal courses) and Hygiene in a considerable number of these Institutes. The increased attention which hygiene claims is clearly observable in the emphasis laid on a study of the sanitary aspects and applications of such subjects as architecture, engineering, bacteriology, and physiology—the last two are frequently obligatory—upon all science students; and I was surprised to find courses on sanitation and personal hygiene required even of those who had selected classical or literary studies. For instance, at the well-known Bradley Institute at Peoria, Illinois, courses in physiology, bacteriology, and hygiene, based upon biology, chemistry, or physics, are taken by the science group in its fifth year; while sanitation, food work, or dietary studies, based upon the same fundamental sciences, are required of the classics, literature, and general groups in their sixth year.

It appears to be quite usual to arrange courses of study in these Institutes so that a student may enter at the end of a Grade School course and continue in attendance for six years. This ensures time for the acquirement, first, of a broad and practical general

Typical  
Courses in  
Domestic  
Science  
(General and  
Normal  
Courses)  
and in  
Hygiene.

(a) Bradley  
Institute,  
Peoria.

education, corresponding to a general High School course; and subsequently of the special preparation essential to the selected trade or profession. A limited amount of specialisation is allowed in the third and fourth year, but it is in the last two that the special work is carried forward with energy, usually with a considerable amount of freedom. Thus it comes about that the students' courses in the subjects of this Report become annually more prolonged and thorough. A further illustration in this connection may be drawn from the Bradley Institute. The required study of physiology comprehends not only the structure and functions of the body, but time is afforded for a careful microscopic study of the tissues, as well as for carrying out some of the more simple physiological experiments. The course in bacteriology and hygiene is sufficiently prolonged to carry the student on from a general introduction to these subjects, through the cultivation and systematic study of the common non-pathogenic organisms and their effects, to the more distinctively hygienic aspects of bacteriology, such as the examination of water, air, soil, milk; in conclusion, some problems of public health are discussed. Again, the sanitary science course includes, besides personal and general domestic hygiene, a study of the details of sanitary house construction, of building materials and of house decoration; practical treatment is pursued in this course as far as possible, extending even to visits to furniture stores, and to the selection of suitable articles.

Typical examples of Technical Institutes which offer General and Normal courses in Domestic Science may be found in the Pratt Institute, Brooklyn, N.Y.; the Drexel Institute, Philadelphia; and the Mechanics' Institute, Rochester. Perhaps in respect of equipment, the Eastman building, at the latter school, might take first place, though its Normal courses have not been conducted for a sufficient time, or under such conditions, as to place its graduates as yet in the front rank attained so justly by those of Pratt and Drexel.

The handsome technological school opened in 1900, at (6) Eastman Rochester, New York, is the outcome of the munificence of Mr. George Eastman, who gave \$200,000 for the purpose, supplemented by princely donations from Mrs. Henry Bevier and others. The Institute previously carried on its educational work in detached buildings, poorly adapted for the purpose. Space, light, ventilation, and heat have now been provided without stint; the large rooms, wide halls, and abundant provision of apartments for officers, teachers, and caretakers, covering a large area. As far as practicable, the building has been divided between industrial and fine arts and domestic science, the latter department having been established in the south end. On the first floor, for the Department of Domestic Science, is found a large demonstration room used for lectures and instruction to large audiences. Close to this demonstration room is the first group



(b) Eastman  
Mechanics'  
Institute,  
Rochester,  
N.Y.—  
*continued.*

of Domestic Science rooms, those devoted to cookery; a small dining-room and butler's pantry which belong to this suite are used by Normal students for planning and serving the luncheons and dinners required as part of their training. Beyond the group of Normal class-rooms are three large kitchens, each with pantry and other adjuncts, used for day and evening classes. These constitute one of the most interesting series of rooms to be found in the building. The second floor is arranged on a similar plan. On the south side is a series of six large rooms used by the Department of Dressmaking; they are exceptionally well arranged, and have abundance of light both from the side and from skylights in the roof. A very attractive room is devoted to the study of art history; and an office for the head of the Department completes the suite. Close at hand are the millinery class-room and teachers' room, while continuing around to the rear are the first, second, and third grade sewing rooms in the order named. The laundry is placed in the basement; the equipment includes nine porcelain tubs, an immense boiler, a dryer, and other essentials.\*

The branches of study offered in these departments of Domestic Science and Art are cookery, home science, laundry work, a house-keeper's course, a course in general and household chemistry, drawing, sewing, dressmaking, millinery, and physical culture. These are arranged to meet the requirements of several classes of pupils.

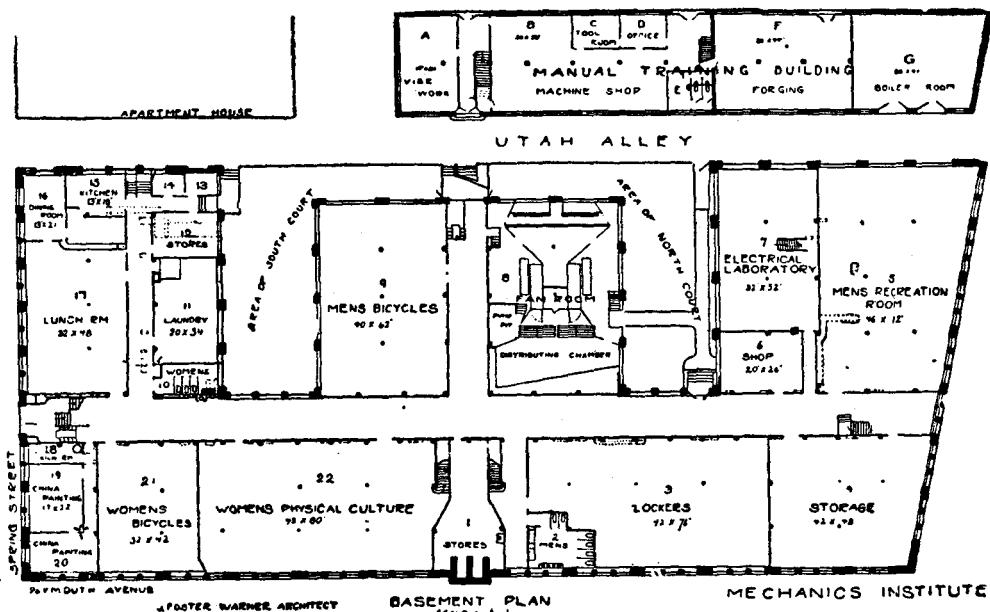
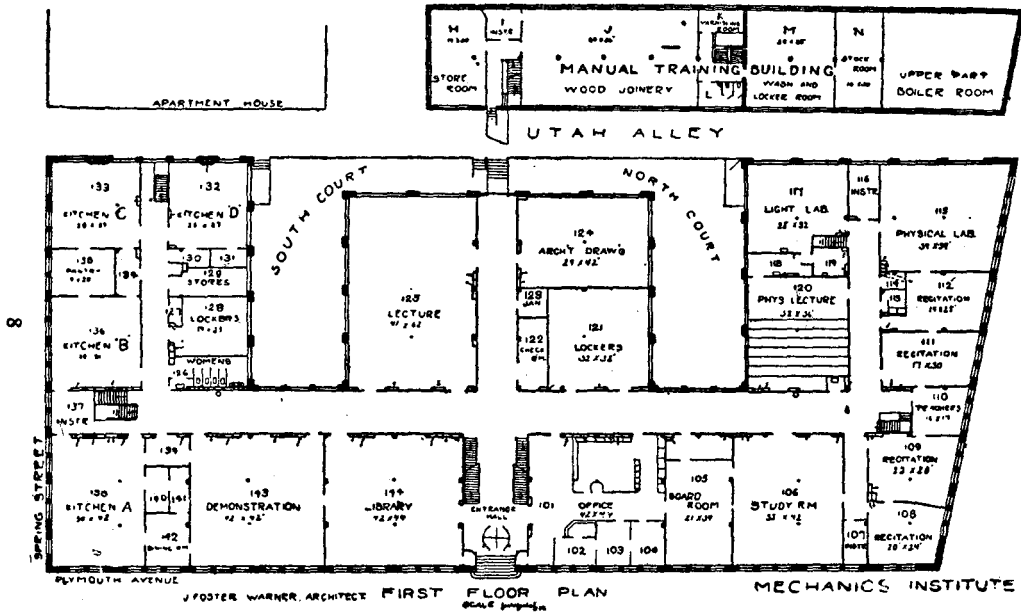
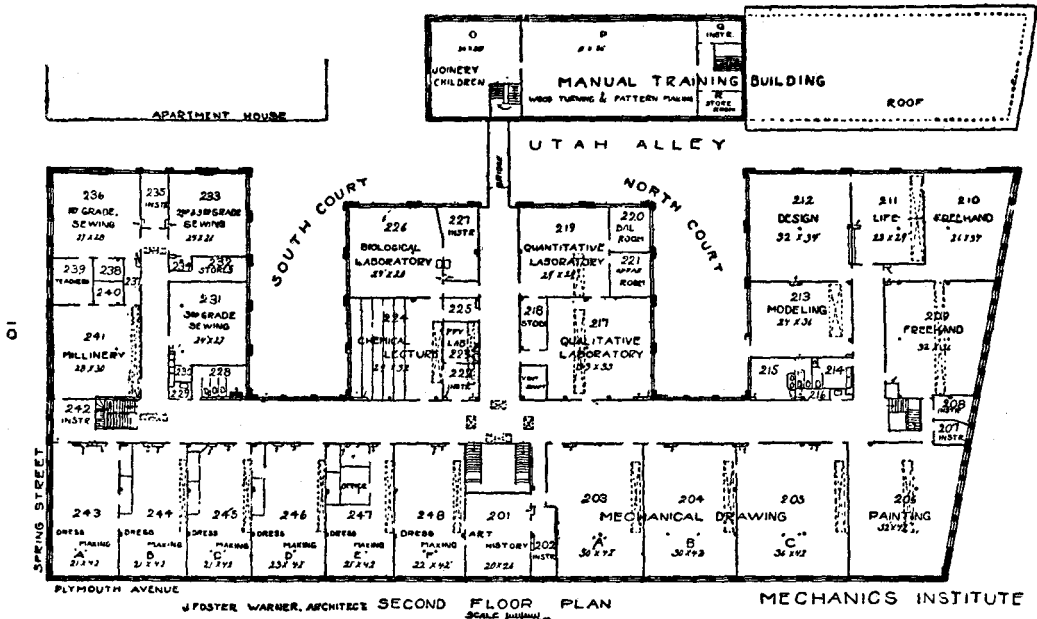
(1) *General Courses*, which afford practical instruction in all the subjects that pertain to the daily routine of home work. A pupil may enter for a single term or for a year, taking up for special study one or more subjects in which she is particularly interested. There are three terms of three months each in day and evening classes. The first, second, or third grade work in any subject may be taken up at the beginning of either autumn, winter, or spring term.

(2) *Certificate Courses*, *i.e.*, separate courses in cookery, home science, laundry work, needlework or dressmaking, so carefully systematised and graded that a student may specialise in a particular branch and become fitted to take it up as a means of livelihood. Courses of twelve lessons each in advanced, invalid and fancy cooking are also offered to meet the needs of professional students, such as physicians and nurses, or confectioners, respectively. Certificates are granted to those who complete any of these courses satisfactorily and pass the required examinations.

(3) *Normal Courses*, which give such special training as shall fit young women to become teachers of the various branches included in the domestic arts and sciences. For admission, at least a High School education or its equivalent is required. The course may be completed in two years of five days a week. To those who satisfactorily complete the full Normal course of two years the diploma of the Institute is awarded. The Board of Education is

\* See Fig. VI.

FIG VI.



Eastman's Buildings. Mechanics' Institute, Rochester, New York.

authorised to employ graduates of this Normal course to teach domestic science and art in the city schools; for which reason it is satisfactory to add that it includes an excellent course in public hygiene. This deals with contagious diseases, disinfection, food inspection and protection, and last, but by no means least, school hygiene. In the Normal training in Domestic Art special attention is given to the theory of colour, colour combinations, and a study of colour schemes from textiles and natural objects; study of light and shade from drapery; and of line and pose from the works of great masters. House furnishing and house sanitation are included in this course, while physiology, hygiene, and physical culture must be studied by students of either group of Domestic subjects.

The tuition fees vary from \$3 to \$27 per term, according to the course; in all cases they are reduced for evening classes.

I have selected as a detailed example of a six years' Technical (c) Lewis Institute course in Domestic Economy for general students that carried on under Miss L. C. Hunt at the Lewis Institute, Chicago. Table XXVII. The Institute owes its existence to the late Allen C. Lewis, who left a large part of his estate (\$550,000) for its support and provided for its organisation. The estate was so efficiently managed, that when handed over to trustees in 1895, eighteen years after Mr. Lewis's death, it amounted to \$1,000,000 (£200,000).

The work of the Department of Science and Literature is arranged in three divisions:—(1) Preparatory; covering what is usually done in the first two years in a High School. (2) Academic; covering the work of the last two High School years. (3) Collegiate; corresponding to the first two years of a college course. Each candidate for admission is required to furnish a testimonial of honourable dismissal from the school last attended; he must also refer to two persons, preferably his teachers or employers, from whom information about him may be obtained. Candidates from Chicago Grammar Schools and other schools of equal rank, who have completed satisfactorily the work of the eighth grade, may be admitted without examination, upon recommendation of the principal of the school from which they come. The uniform cost of instruction for full regular work is \$20 (£4) a quarter of twelve weeks; a reduction is made for a single course of instruction and for evening classes. In the Preparatory division most of the lessons are prepared under the direction of the teacher for whom the work is being done, for which purpose the students meet their teacher in his class room, library, laboratory, or workshop; these are equipped with such appliances, in the way of books, apparatus, or tools, as will enable him to make his teaching most effective, and to furnish his students with whatever they need for the successful preparation of their lessons. In all divisions classes are limited in number to twenty-five, so that each student may receive such individual instruction as he needs, and be tested each day as to the conscientiousness with which he has prepared the work assigned. In the Preparatory Division, a "credit" signifies the successful completion of a twelve weeks' course of instruction, requiring from ten to twelve hours a week, counting time of preparation and recitation. To obtain the Preparatory certificate the student must secure twenty-one credits, of which sixteen are prescribed as follows:—English, three credits; Algebra

(c) Lewis  
Institute,  
Chicago—  
*continued.*

and Geometry, four; Latin, four; Science, two; Drawing, Shop-work or Domestic Economy, three. To follow four of the essential courses at a time means nine to twelve hours' work a day. More advanced students are trained in methods of greater self-dependence, though, thanks to the large and efficient staff secured by means of Mr. Lewis' liberal endowment, all studies are conducted under desirable supervision. Examinations are conducted by the staff, except in the case of students who are subsequently appointed under the Chicago Board of Education, when they are subjected to a further examination by that body.

The course in Domestic Economy carried on under Miss L. C. Hunt at the Lewis Institute, Chicago, covers six years. It includes the chemistry of daily life, cooking, sewing, home sanitation (this at present taught largely theoretically), and physiology. Biology, chemistry, and physics are still "elective" subjects; for the Normal course, to be shortly initiated, they will be pre-requisites; but even now they are frequently elected, as, by pursuing them, in addition to other courses in this department, a student can qualify for the B.Sc. degree, while she also prepares herself to teach domestic economy, or lays the foundation for the future professional study of medicine or nursing. The average age of the students is seventeen; about 100 were following the course at the time of my visit. In general terms, it may be stated that ten hours a week are given for one year respectively to cooking, sewing, housekeeping, and domestic economy (which includes house sanitation, and is inculcated to a large extent by "field work"). A year's work in physics and three or four years' work in chemistry are required of those who elect these subjects; the latter embraces general chemistry, qualitative and quantitative analysis and some organic chemistry; general biology absorbs a year, to which the courses in animal physiology and hygiene form a continuation; these, again, cover three terms of ten hours' work a week. In general biology each student studies the gross and microscopic anatomy of at least one representative of each of the chief groups into which plants and animals are divided, and assists in the preparation of material for microscopic study. In hygiene attention is concentrated on a study of those factors in man's structural environment which chiefly affect his physical well-being, such as disease germs, household and public sanitation, exercise, clothing, etc. Practical histology enters into the physiology course; no text-book is employed, but many reference books are at the disposal of the students, *e.g.*, Schaffer's "Histology," and Howell's "Dissection of the Dog," which is followed in the dissection of rabbits. The results from the study of biology and physiology are considered most successful; students never before interested become almost invariably genuinely absorbed in these subjects, the scope of which promotes, in addition, general culture. Sixteen is the average number in the housekeepers' or cooking course. Judging by the lessons I was able to attend, the students are called upon to do their own thinking, and it did not surprise me that they should be recorded as developing intelligence under the process.

In addition to school practice, they are required to carry out at home processes learnt by demonstration in cookery, these demonstrations being given by Miss Hunt, or her assistant, once or twice daily. The practical work is chiefly individual, though, in the case of a searching lesson on the testing of milk for colouring matters and preservatives, for the specific gravity of whey, etc., the students were divided into groups of two.

Two hours a day for three quarters, each consisting of twelve weeks, is devoted to needlework under Miss Watson, who is a good example of the transfusion of perseverance and enthusiasm from teacher to taught. Her scheme of work emphasises colour matching, beauty of form and line, grace and fitness and the evolution of textile fabrics in addition to mere stitchery in which, however, her students attain to a high degree of proficiency. It seemed almost incredible that the excellent needlework displayed upon specimen knickerbockers, aprons, night-dresses, corset covers and petticoats, each crisp, dainty and elaborate, could be the unaided performance of pupils, who, a year before, did not know how to thread a needle. Their introduction to the art began with the usual technical series of specimen stitch samplers which are preserved in books, with written descriptions appended. Among the "fine art" points which specially attracted my attention in the work of Miss Watson's students were the perfection of the button holes and gussets, and the joining of lace or embroideries so accurately that detection was literally impossible. The happy energy of the students and the artistic arrangement of the room left a vivid and pleasant impression.

The whole building is light, airy, and admirably planned for its purposes, though the Domestic Economy department needs enlargement; under its able principal, Dr. George Carman, there is every prospect of increasing utility arising from its further development. Meanwhile, it is doing excellent work by evening classes for the general public, as well as by the more complete course above detailed; the former are confined chiefly to cooking and dressmaking and are well attended by working girls and women.

An active interest in Domestic Science and Hygiene has been aroused and maintained in Brooklyn among adults by means of courses at the Institute of Arts and Sciences, which for many years has been an important factor in the social, literary, scientific, and educational life of the city. A new era in its history was inaugurated in 1887, when it was decided to make its work broader and more comprehensive by providing for its sub-division into departments representing various branches of science and art. The membership increased in proportion to the new departments formed, reaching upwards of 6,000 in 1900, when the departments numbered twenty-eight; of these Domestic Science formed one. The presidents of each department form a Council, and meet monthly. Associate members pay \$5 a year; each ticket admits one person to a day and two to an evening lecture. The Domestic

(d) Institute  
of Arts and  
Sciences,  
Brooklyn,  
N. Y.

TABLE XXVII.  
TECHNICAL INSTITUTE, LEWIS INSTITUTE, CHICAGO.  
SCHEDULE OF COURSES IN DOMESTIC SCIENCE AND DOMESTIC ART.

Institution and Course.	Entrance Requirements.	Scope of Courses.	Methods.	Length of Course.	Fees and Finance.	Equipment.
<p>Lewis Institute, Chicago.</p> <p>Domestic Economy Course.</p> <p>Directress, Miss C. L. Hunt.</p>	<p>A testimonial of honourable dismissal from the school last attended, and two good personal references.</p>	<p>Chemistry—General, Qualitative, Quantitative, Organic.</p> <p>Biology. (Botany, Zoology, El: Bacteriology).</p> <p>Physiology, including practical histology.</p> <p>Hygiene (stress is laid on elementary bacteriology, personal, domestic, and public sanitation).</p> <p>Cooking—Demonstration and practice.</p> <p>Chemistry of daily life.</p> <p>Sewing (Colour matching—Beauty of form and line—Evolution of textile fabrics).</p> <p>The "Field Work" includes visits to shops, factories, institutions.</p> <p>Day and Evening Classes.</p> <p>Short practical Courses in Cooking and Sewing (three or six months) are given to outside students of all ages.</p>	<p>The Laboratory method of teaching is applied to all subjects of study.</p> <p>No text books are employed in most subjects, but numerous reference books are at the disposal of the students.</p> <p>Students are undoubtedly called upon to do their own thinking, and the intelligence developed is emphatically recorded. They are required to carry out at home some of the processes in Cookery taught by demonstration.</p>	<p>Six years.</p> <p>9—12 hours work daily, when four courses at a time are followed.</p> <p>Work of Schools of Science and Literature is arranged in three divisions,—</p> <ol style="list-style-type: none"> <li>1. Preparatory,</li> <li>2. Academic,</li> <li>3. Collegiate</li> </ol> <p>(The Preparatory Course corresponds to 4 years in High School.)</p> <p>Full course qualifies for B.Sc. Degree.</p>	<p>\$20 a quarter of 12 weeks.</p> <p>Institute magnificently endowed.</p> <p>courses are followed with the general students in the Science Laboratories, where the equipment is all that can be desired for individual work. This is the rule also in the Domestic Economy Department</p>	<p>The building is light, airy, and well planned for its purposes, but the resources of the Domestic Economy Department have been much strained owing to the large number of students. The Chemistry, Physics, Biology, and Physiology</p>

Science Department was organised in 1893 with forty-two members, who increased in seven years to 170. Mrs. John Dunn has been president of the department since its formation, and is the only woman holding such a position in the Institute. Much attention is given to the study of practical problems in domestic science, and standing Committees have been appointed on the following subjects:—The sanitary and economic construction of dwellings; the general principles of house furnishing; the composition and value of foods; labour-saving methods and utensils; and sanitation and economy in clothing and domestic service. At present, the results to be observed among the members are improved common-sense and a feeling of responsibility for family welfare. By request of the Child Study department a special course on the feeding of children was organised in the Domestic Science Department last winter,—the first recognition by members of these two departments of the mutual assistance each can render the other by experience gained through their respective studies and enquiries. Such observational enquiries are of undoubted value, though, from the circumstances of the case, they are conducted along less fundamental lines than can be defined for more youthful students still engaged in preparation for their future callings.

The Massachusetts Institute of Technology, at Boston, affords a first-rate example of the favourable opportunities now offered to students of both sexes in the United States for studying the sanitary aspects of various professions. Facilities of an unusual character are here afforded for advanced or special work in hygiene or sanitary science. The departments which give the principal instruction in these subjects are the biological, chemical, physical, architectural, and that of sanitary engineering. In the department of biology the whole system of laboratories is well organised for work directed chiefly towards the hygienic and industrial sides of the subject. These laboratories are frequented by those who desire to fit themselves for teaching or for medical study, as well as by those whose future professions demand that their training should comprise some practical work in the biological sciences, including comparative physiology, zoology, bacteriology, and industrial and sanitary biology. Science teachers in secondary schools or Normal Colleges derive great assistance from the extensive course of laboratory work carried on in connection with the courses in comparative anatomy and embryology, as well as in comparative physiology; while among those engaged in some branches of sanitary engineering or in food-preserving industries, the course in sanitary bacteriology and fermentation is in request, owing to the facility acquired in the examination of air, ice, and water, or to the insight gained into industrial applications. Graduates or special students, *e.g.*, physicians, inspectors under Boards of Health, or superintendents of water or sewage works, are, if qualified to pursue such work with

(e) Massachusetts  
Institute of  
Technology,  
Boston—  
*continued.*

advantage, also admitted to such subjects as they select in this department, every opportunity being afforded them to equip themselves for their professional callings. The instruction in water, air, and food analysis in the chemical department consists mainly of laboratory work, supplemented by occasional lectures; special laboratories have been assigned to these courses. The usual scheme of work includes practice in the methods commonly employed in the chemical examination of air and water, of milk, and of butter. For those who wish to take a more extended course, opportunity is provided for the critical study of methods of analysis and for the investigation of a variety of sanitary problems in which chemical questions are involved. The hygienic aspects of heating and ventilation are thoroughly handled by Professor Woodbridge in the department of physics, while the architectural course includes a technical study of the same subjects in its third year, illustrated by the study of important public buildings in the city. Enumerated among the studies required of students in the sanitary engineering course are, in addition to the general, special, and sanitary biology courses referred to above, those in the principles of public health, municipal sanitation, and on air analysis. The specified object is to qualify engineers to deal intelligently with questions relating to the health of individuals and communities, and to plan intelligently works of sewerage and drainage. Frequent opportunities are given for the inspection of actual examples of sanitary engineering; the work in the class-room is also supplemented by exercises in designing, and the students attend lectures and demonstrations in sanitary science.

It will be observed that in all departments the method pursued is to supplement lectures and recitations by practical work in the field, the laboratories, and the drawing rooms; indeed, high value is set upon the educational effect of this practical work, which intentionally forms the foundation of each of the thirteen courses. Text-books are used in some subjects, but not in all. In many branches the instruction given varies considerably in available text-books; in such cases notes on the lectures and laboratory work have been printed, either privately or by the Institute, and are furnished to the students at cost price. Both oral and written examinations take place from time to time. The general examinations are held near the close of the months of January and May; after these the standing of the student in each distinct subject is reported to his parent or guardian, though these reports are based to a very large extent upon the quality of daily class work; they constitute also the grounds for admonition or advice from the Faculty in the case of the students who are not profiting sufficiently by their connection with the Institute. The degree of Bachelor of Science in the course pursued is given for the satisfactory completion of any of the regular courses of study. To be entitled to a degree the student must have attended the Institute for not less than one year next preceding



the taking of a degree, must have completed the prescribed studies and practical work of the four years, and must, in addition, pass final examinations, if required, on subjects relating particularly to his course. He must, moreover, prepare a dissertation on some subject included in his course of study, or give an account of some research made by himself, or present either an original report upon some machine, work of engineering, industrial works, mine or mineral survey, or an original design accompanied by an explanatory memoir; either thesis or design must be approved by the Faculty.

So numerous and comprehensive are the courses in Domestic Science and Domestic Art carried on in the departments for these subjects attached to the great Technical Institutes at Brooklyn, New York, and at Philadelphia, that an effort to detail them accurately could scarcely be rewarded with success, and would probably prove wearisome to the reader. The allusions throughout this Report, however, to the prestige which attaches to the graduates from the Normal courses at these two Institutes demand that the grounds should be stated upon which they are based. This I will endeavour to do; though, in justice to those who are responsible for the gradual evolution of these courses, it must be clearly understood that they recognise no finality in the existing phases of development. The curriculum of each is in a transitional, tentative stage, to be studied as offering valuable suggestion based upon experience, not criticised as a model held up as typical of perfection by its formulators. Some introductory words as to the origin and purpose of these two prominent institutes will prove of interest, and will serve as a useful explanation of their independent position in the educational world.

Pratt Institute was established in 1887, after many years of educational investigation on the part of its founder, Mr. Charles Pratt, of Brooklyn. Its objects are to promote manual and industrial education, to promote cultivation in literature, science, and art, and to foster all that makes for right living and good citizenship. Facilities are provided by which persons who wish to engage in educational, artistic, scientific, domestic, commercial, mechanical, or allied employments may lay the foundation of a thorough knowledge, theoretical and practical, or may perfect themselves in those occupations in which they are already engaged. Instruction is based upon an appreciation of the dignity as well as the value of intelligent handicraft and skilled manual labour; efforts are made to establish a system of instruction whereby habits of thrift may be inculcated, to develop those qualities which produce a spirit of self-reliance, and to teach that personal character is of greater consequence than material productions. While fees are required, there is an endeavour to make possible, by some means consistent with self-helpfulness and self-respect, the admission of every worthy applicant.

Pratt  
Institute,  
Brooklyn,  
N.Y.

Pratt  
Institute,  
Brooklyn,  
N.Y.  
—continued.

The courses have four distinct aims in view:—(1) Educational, pure and simple, as in the work of the High school; (2) Normal, such training being given in four departments, those of fine arts, domestic art, domestic science, and kindergarten; (3) Technical, *i.e.*, special training to secure practical skill in the arts, handicrafts, applied sciences, and mechanical trades; (4) Supplementary and Special, intended for the benefit of those who wish to add to school or college training special subjects conducing to the more intelligent development of domestic, social, or other interests. The endowment is so liberal that not only can the best talent and facilities for the accomplishment of its aims be secured, but the charges for tuition can be and are most moderate. The buildings are six in number; the departments of Domestic Art and Science are situated in the main building. The rooms are old-fashioned and not always convenient, the cause being an outcome of American caution. Mr. Pratt was somewhat uncertain as to the success of his original venture; he therefore had the building designed to play the double part of technical institute or of textile factory, so that, were the first a failure, the second could redeem the disaster. Fortunately, his fears were not realised; but, unfortunately, the light, air, and space so desirable for his students have been curtailed. Some considerable rebuilding is contemplated in the near future. The Institute is under the control of a Board of Trustees, with a secretary as executive officer; the heads of each department constitute the faculty; both sexes are admitted on equal footing to all classes.

The requirements for admission differ in the several departments; those for applicants to the Normal course may best be quoted from the handbook. "All applicants for normal courses for the training of teachers should be at least eighteen years of age, and should have good health, a good voice, a mature and thoughtful mind, a love for teaching as a profession, and a good general education equivalent to a four-year course in a high school of good standing." Diplomas and certificates are granted for the quality of the work done, and not for the number of years spent in study. That progress in all courses depends upon individual ability and application was again and again impressed upon me. The Diploma of the Institute is given to those students who successfully complete one of the following courses of study:—High School course, Normal Art course, Normal Domestic Science course, Normal Domestic Art course, Normal Kindergarten course. The Certificate attests the successful completion of any one of the following Day courses, which represent from one to four years' work:—

Fine Arts.—Regular art course, architecture, design, modelling, wood-carving, art metal.

Domestic Art.—Sewing, full-time course; dress-making, full-time course; millinery, full-time course; art needlework, basketry and weaving.

Science and Technology.—Steam and machine design, applied electricity.

Kindergarten.—Mothers' course.

General course in Domestic Science

Food Economics,

Library Science.

The Department of Domestic Art is under the direction of Miss Harriet S. Sackett; it offers a large choice of General and Technical courses in sewing, dress-making, and millinery, as well as the Normal course. Less familiar to English minds is the inclusion also of a course in Costume Design (which embraces an art course of two years, a study of the outlines and proportion of the human form, and of historic costume; the sketching of dresses and hats in water colour, etc.). There are also courses in art needlework (freehand drawing, design, colour, artistic needlework); in basketry and weaving; in physical training, which comprises Swedish educational gymnastics, carefully graded exercises with stationary and hand apparatus, and games. Indeed, this department includes comprehensive courses of study in those branches of the various arts which are related to healthful development and to household decoration, as well as to appropriate clothing of the body. All these courses are developed progressively, and are arranged to give either professional training, or to prepare teachers, or for use in the home. They vary in length from one term of plain sewing to two years in dress-making, or to three years in costume design, etc. The number of pupils in each class is limited, so that all may have opportunity for practical work under the direction of the teacher, in addition to the instruction given by means of lectures and recitations.

(a) Domestic  
Art Courses  
(General,  
Normal,  
Technical).  
Table  
XXVIII

The rooms of this department occupy the third floor of the main building, and are fully equipped with essential apparatus. Casts of the best examples of sculpture, photographs, coloured plates of costume, and many specimens of textile fabrics, both ancient and modern, afford excellent material for study. The Library is also an important factor in Miss Sackett's schemes of training. Books treating of domestic art and science are constantly added; material on class topics is secured for the pupils' use, and an almost unique collection of plates illustrating the historical development of costume has been made. The methods of instruction aim to instil the artistic and scientific principles underlying all good work, and to impress upon the students the value of economy, order, and accuracy. Instruction in freehand drawing, water-colour, and elementary design forms a part of all dressmaking and millinery courses, with a view to cultivate taste in dress, to impart skill in the harmonious combination of colours and textiles, and to foster selection of costumes in keeping with the individuality of the wearer. Eyes and hands are thus trained to see objects in their true proportions, and to sketch them in line

(a) Domestic  
Art Courses  
—continued.

simple light and shade and water-colour. It will be easily realisable that a considerable amount of home practice is necessarily required.

In the technical dress-making course lectures upon hygienic, artistic, and historic dress are given, pupils being expected to further inform themselves upon these subjects by the use of the library. Those who wish to become practical dressmakers have an opportunity in this class to make dresses for others in order to gain experience, and, if necessary, to defray a part of their expenses.

In the costume design course students are trained to become illustrators or designers of costume, and I learned that the fashion plates in one of the most popular women's journals have really been influenced for good through a graduate from this course having become a member of the staff. The first year is spent entirely in the Department of Fine Arts; the second and third year are divided between this and the Department of Domestic Art. The instruction embraces cast drawing from ornament and the antique, freehand, perspective, colour, life and portrait drawing, sketching from the figure, composition, design, and the history of art. Normal students are required to devote a part of their second year, and the whole of the third year of their training to special study of costume design. The system of art training employed is derived from the French, and the designs and drapery studies are alike beautiful in colour and graceful in form. Textures and patterns of various materials are copied in water-colour, while advanced students are required to design and carry out dresses which exemplify the tints, position, and relative proportion of colours found in a selected flower, moth, or butterfly. The result seemed to me to embody the quotation appearing on the walls, "Grace of form and beauty of vesture." Careful studies in crayon and water-colour of hats (full size) are insisted upon before execution in the millinery course, and appear in considerable numbers on blackboards or easels. The fact that so many of the graduates enter into trade and professional life has led to the gradual evolution of this exhaustive method of training. Eight hundred students passed through the Domestic Art Department in 1900.

The following synopsis of some of the courses affords material for comparison with those pursued in the Technical classes in this country:

I. THE FULL DAY ONE-YEAR COURSE IN SEWING is organised in September only. It is arranged for those who can devote their whole time to the work. The first half of the year is devoted to practice in the various kinds of hand and machine sewing; to learning the principles of draughting, cutting, and fitting undergarments; and to children's dress. When a student can make this range of garments satisfactorily she may take orders for work, and thus put into practice the principles already learned. By this means an increased amount of accuracy, judgment and self-reliance is gained; so that at the end of the year competent pupils may become seamstresses, work in shops, or find themselves fitted to be more useful in the home. This course is considered necessary as a preparation for the training in dress-making by those who have had but little experience in hand sewing or the making of simple garments.

*Course of Study.*—Models in housework afterward applied on bed (a) Domestic linen and table linen, aprons, patching and mending and simple Art Courses repairing, draughting and making drawers, under-bodices, skirts —*continued.* blouses and nightdresses, children's dresses, undergarments and baby clothes.

Work in the gymnasium is required in connection with this course; and a course in drawing runs concurrently, which assists the student to develop her own ideas in design and colour. A certificate is granted for the satisfactory completion of the whole. Applicants must be over fifteen years of age, and are required to present for entrance examination some article showing their hand-sewing. The fees are \$15 per term (about £3 3s.).

**II. THE SPECIAL COURSE FOR HOME USE WHICH MEETS TWICE A WEEK FOR ONE YEAR.**—This course is arranged to meet the needs of those who wish to learn hand and machine sewing and the various kinds of mending merely for home use. In learning to make garments the pupils measure and fit each other. They furnish their own materials. The course of study is as follows:—

First grade.—Exercises in basting, stitching, overcasting, hemming, gathering, and buttonholing; draughting drawers; exercises in machine sewing, cutting, and making drawers.

Second grade.—Exercises in darning on stockingette and cashmere; patching; draughting; cutting and making white petticoat; exercises in feather stitching, and making underbodie from pattern.

Third grade.—The making of dainty lingerie, including fancy muslin and flannel petticoats, bodices, nightdresses and dressing jackets.

For mothers who desire to make their children's clothes, or seamstresses who wish to become more proficient, a course is offered in the making of infants' clothes, including knitting and crocheting, children's underclothes, guimpes, and dresses. The fee is \$5 a term (about £1.).

Children's classes meet from nine to eleven o'clock on Saturday mornings, and are open to children between the ages of six and fifteen years. They cover a period of several school years, and include simple work with cord and raffia, weaving, hand-sewing, making of doll's garments, and elementary machine sewing. Such training, satisfactorily completed, prepares the student to enter the classes meeting twice a week. Tuition fees \$2 per term (about 8s.).

**III. THE FULL-DAY COURSE OF TWO YEARS IN DRESSMAKING\*** is arranged to give a thorough training in the principles of dressmaking, with as much practice in their application as the time will allow. It meets daily, except Saturdays, from 9 to 4.30 o'clock. This class is organised in September only, and continues through two school years. The mornings are given entirely to dressmaking; three afternoons a week are devoted to costume design, methods of keeping accounts, and physical training. Students also attend lectures upon the history of costume, and a further course of lectures on the history of art, by the Director of the Department of Fine Arts, is open to them. The literature of hygienic and artistic costume is brought to their notice; and they are expected to inform themselves upon these subjects, using the library of the Institute. The first year is devoted to plain dressmaking; orders may be taken after each student has made a dress for herself; in this way the students are able to defray part of their expenses.

*Course of Study.—First Year.*—Draughting, cutting, fitting and making unlined blouses and skirts; draughting blouses with chart; exercises with practice materials in cutting, fitting, and designing

\* For Course in Home Dressmaking, see Appendix E.

(a) Domestic  
Art Courses  
—continued.

skirts and lined bodices ; and in making dress trimmings and finishings ; bow making ; study of colour, form, line and texture ; house and street dresses not too elaborate in style.

Drawing, water-colour, elementary design : Practice in the use of the pencil and of water-colour. Appearance of objects, bows, gowns and drapery. Outline and proportion of the human form. Study of gowns becoming to different types of figure, and also of historic costume. Practice in designing gowns for street, home and evening wear.

*Second Year.*—Draughting and making princesse gowns and negligees ; study of contour and poise of the body ; making evening gowns ; study of woollen textiles ; draughting, cutting and making tailor-made jackets and skirts.

Applicants must be over seventeen years of age, and bring for examination a dress made by themselves from a pattern ; they must also prove their ability to do good hand and machine sewing. A written examination is given upon the method of making a simple dress.

Women who have had previous experience in dressmaking may be admitted to advanced work upon passing an examination which will prove their fitness to enter the second year class. Orders received in this class furnish the materials to carry out the schedule of work. A certificate is granted for the satisfactory completion of this course. Tuition fees, \$25 per term (about £5).

IV. THE FULL-DAY COURSE IN MILLINERY—two terms of two months each. The first part of the course is planned to develop lightness of touch in the making of bows, trimmings, and facings, and leads up gradually to the later work of designing and making an entire hat. The student provides her own materials, and is at liberty to bring from home any materials which can be utilised. This class, completes the full course in four months ; it is organised in September and February, and has been arranged for those who wish to prepare to become milliners. It meets daily, except on Saturday, from 9 to 12.30 and from 1.30 to 4 o'clock. Two afternoons a week are devoted to the course in design. There are also lectures upon hygienic, artistic, and historic dress, and instruction is given in methods of keeping accounts.

*Course of Study.*—Facing and finishing hat-brims, making bows, trimming hats, study of form, line, colour and textiles ; designing, draughting, and making frames ; making and trimming covered hats and bonnets ; making velvet hats and bonnets ; toques and evening bonnets ; making wire frames and straw hats ; lace and shirred hats and bonnets ; children's hats.

Drawing, water-colour, elementary design ; practice in the use of the pencil and of water-colour ; appearance of objects, drapery, bows, hats ; outline and proportion of the head ; study of historic costume ; designing of hats becoming to different types of face.

Applicants must bring for inspection a hat showing some skill in the trimming and making ; and they must be able to work rapidly, since the time devoted to the training is short. The class organised in September prepares students to take positions at the opening of the spring season, while the class which begins in February fits them for the autumn season. They must be over sixteen years of age and able to do good hand-sewing. Familiarity with the use of the tape measure and ability to cut accurately are requisites. Only students who prove themselves satisfactory workers are recommended to positions in work-rooms. A certificate is granted for the satisfactory completion of this course. Fees, \$25 per term of two months (about £5).

There is also a special course in millinery for home use, which extends over four terms of three months each. While not all the

details of the mechanical side of millinery are taken up in this and (a) Domestic other abridged classes, those points are selected which will be the Art Courses most helpful in the home. In order to awaken an appreciation of good form and colour as related to dress, instruction in freehand drawing, water-colour, and design as related to millinery is given as outlined above. There are also classes without drawing for those who are unable to devote so much time to the course. —*continued.*

*Course of Study.*—First grade: practice in foundation work; making bows; making and trimming hats adapted to styles in vogue.

Second grade: designing, draughting and making frames; making and trimming covered hats.

Third and fourth grades, winter season: making draped toque, evening hat, street bonnet and velvet hat. Spring season, making hat and toque of fancy straw braid over frame, also lace and chiffon hats. Children's hats may be made in any grade. Fees, \$10 per term (£2).

V. BASKETRY.—This course consists of one lesson a week for three months and teaches the methods of making baskets of various weaves and shapes in raffia, splint, reed, grasses, and other materials. The weaving and shaping are done by the eye; which is considered to give an opportunity for expression to the worker's feeling for form and design. Originality in design on the part of the student is thus encouraged, a slight difference in manipulation producing a variety in form and pattern, this lends especial charm and interest to the work and at the same time stimulates appreciation of good form. The art is practised for its value as manual training, as well as for the pleasure derived from the useful and decorative results. The fees are \$5 per term (£1). There is also a series of children's classes in simple basketry in raffia and reed; experience shows that these materials are well adapted to interest children, while they teach firmness of touch and dexterity in handling. These classes consist of children from nine to fifteen years of age, and meet on Saturday mornings from nine to eleven o'clock. Fees, \$2 per term (about 8s.).

Considerable rearrangement of the Normal Courses has taken place at the Pratt Institute since my visit in April, 1901. Experience has shown that the present professional opportunities open to women of special training usually require of them a command of more than one subject when they first undertake professional work. For instance, out of ninety-nine positions filled to-day by women who chose Domestic Science as a major subject and Domestic Art as a minor in their training, in seventy they are required to teach both cookery and sewing, in twenty-five cookery only, and in four sewing. It is therefore considered advisable that the Normal course in Domestic Art\* should consistently include work in Domestic Science, so that graduates may be efficiently prepared to teach elementary Domestic Science, in addition to being experts in Domestic Art. Consequently from the autumn of 1901 the work of the first year for Normal students in both subjects became identical, and is carried on entirely in the Domestic Science Department. At the end of this time, students are given an opportunity, if their work has been satisfactory, to choose whether they will devote their time in the second year to advanced work in Domestic Art or in Domestic Science. Those who desire and can give evidence of the necessary qualifications are then admitted to the Normal Domestic Art

\* See Table XXVIII.

course. This includes normal methods, practice teaching, physical training, advanced sewing, basketry and weaving, dress-making, millinery, art needlework, and costume design. Students are also required to write a thesis upon a subject relating to domestic art, showing a clear and thoughtful consideration of the selected subject.

(b) Domestic  
Science  
Courses  
(General,  
Normal,  
Technical)  
Table  
XXIX.

In the Department of Domestic Science the courses of study for adults are also Normal, Technical, and General, while others are provided for children of various ages.

The following are the outlines for the General and Special courses, the latter being planned for women who can devote but a few hours a week to such work; to further meet their convenience they are subdivided upon entering into three groups, (a) those who can give six hours, (b) four hours, or (c) only one hour a week, for one year.

**GENERAL COURSE** (five days a week for one year).—Chemistry, bacteriology, physiology and hygiene, sanitation, household economics; cookery, dietetics, marketing and accounts; serving, sewing, laundry work, house construction. Fee, £6 a term.

**SPECIAL COURSES**.—(1) Cookery and dietetics; (2) bacteriology, hygiene, marketing and accounts; (3) serving, laundry work, household economics, sanitation and construction. Fees, £2 to £3 a term.

There are also day and evening courses designed for mothers or for women engaged in domestic service, which deal with the preparation, composition and purchase of foods; these consist of two classes a week for two terms of three months. Cooks' courses; Sick Nursing courses; Saturday morning school girls' classes; lectures on marketing, and private lessons are also given as desired. A course for waitresses and one in laundry work are provided, and a special one-year course is given in Food Economics, intended for women already qualified for responsible positions by character and practical experience. It is the result of a demand for trained persons as managers or housekeepers for public institutions, hospitals and schools, etc., and embraces the following topics: the selection of food material with regard to quality and cost and the principles of cookery. Methods of preparation in large quantities. Physiology, hygiene, sanitation. Chemistry, bacteriology. Dietetics, household economics, accounts. Marketing and serving, including general dining-room economy.

This course affords training along all the fundamental lines of practical housework; and, so far as the time will permit, in the underlying natural sciences; only mature women of fair general training with executive ability, experience in life, skill in practical housework and possessed of physical strength and endurance are advised to take it. Six months are devoted to student work in the department and three to probationary professional service. The Institute kitchen and lunch room, serving daily between two and three hundred guests, provide necessary facilities. Dinners and luncheons are planned, prepared and served by students; hospitals, orphanages, day nurseries and school lunch-rooms are visited; and expeditions are made to public kitchens and to manufactories of kitchen and hotel furnishings.

Miss Edith Greer is director of this whole Department; and brings a trained intelligence and much enthusiasm to bear upon her responsible duties. The Department itself occupies the sixth floor of the Institute; it has large recently-remodelled and well-equipped chemical, physiological, and bacteriological laboratories and school kitchens planned for individual work; rooms thoroughly equipped for handwork and sewing; a collection of food products and a departmental library (Fig. VII.).



**TABLE XXVIII.**  
**TECHNICAL INSTITUTE. THE PRATT INSTITUTE, BROOKLYN N.Y.**  
**NORMAL COURSE IN DOMESTIC ART AND SCIENCE.**

Institution and Course.	Entrance Requirements.	Scope of Course.	Methods.	Length of Course.	Fees and Finance.	Equipment.
<p>Pratt Institute, Brooklyn, N. Y.</p> <p>Domestic Art Normal Course.</p> <p>Director, Miss Harriet S. Sackett.</p> <p>The two year "General" Course, closely conforms to this schedule.</p>	<p>At least 18 years of age. Proof of education equivalent to a four years' course in a high school of good standing, and ability to pass examinations in Physiology and Sewing.</p> <p>Great stress is laid on character and culture as essential requirements.</p> <p>For fuller details see "Entrance requirements," Normal course in Domestic Science and Art. Table XXIX.</p>	<p>Nature Study, 2 terms, 1st year.            Chemistry, 3 terms, 1st year.            Physiology, 3 terms, 1st year.            Bacteriology, 1 term, 2nd year.            Cookery, 3 terms, 1st year.            Psychology, 3 terms, 1st year.            History of Education, 1 term, 1st year.            Normal Methods, 3 terms, 2nd year.            Observation and practice teaching, 3 terms, 2nd year.            Lectures on the History of Art, 1 term, 1st year.            Lectures on Historic Costume, 1 term, 2nd year.            Design, 1 term, 1st year.            Drawing (colour and form; costume and design), 2 years.            Cord work, weaving basketry, 4 terms, 1st and 2nd years.            Sewing—Methods of treating hand-sewing, machine-sewing, drafting, garment making, study of textiles, 3 terms, 1st and 2nd years.            Dressmaking, 2 terms, 2nd year.            Millinery, 2 terms, 2nd year.            Art Needlework, 1 term, 2nd year.            Physical Training, 1st and 2nd year.</p> <p>A third year may be spent in special elective work, chiefly costume design, which qualifies graduates to become illustrators or designers of costumes.</p>	<p>The aim is to train hand and eye, to cultivate taste in harmonious colour, sense of true proportion, a knowledge of composition and design.</p> <p>The work of the first year is identical with that of the first year of the Normal Course in Domestic Science. It is taken in the regular classes of that Department and is under its direction.</p> <p>The system of Art Training is derived from the French.</p> <p>Careful crayon or water colour studies are required for all articles of millinery, or specimens of dressmaking; the former half life size; previous to this, textures and patterns of various materials are copied in water colour.</p> <p>The Vienna Taylor System has been adopted with satisfactory results.</p> <p>The student work consists of an average of twenty-five 50-minute periods of class work for five days a week, 16 hours of preparation and 2 hours of physical training throughout the course. The proportional distribution of time is—Education (Psychology, Normal Methods and Practical Teaching), 7 hours per week for 2 years. Domestic Art, 20 hours per week for 2 years. Domestic Science, 10 hours per week for 2 years.</p>	<p>Full time of student for three years. Leads to Diploma. Examinations and time spent in the course are not considered final tests; character and culture are as essential as technical requirements.</p> <p>Graduates are prepared to teach elementary Domestic Science as well as Domestic Art.</p>	<p>Private endowment.</p> <p>Fees, \$25 per term (about £5).</p> <p>3 terms a year.</p>	<p>Fully equipped rooms.</p> <p>The supply of sewing machines, dress stands, gas irons, moulding forms, etc., is very liberal.</p> <p>Splendid provision of fine casts of the best sculpture, photographs, coloured plates of costume, specimens of ancient and modern textile fabrics.</p> <p>A wealth of valuable books in the fine library, to which additions are being constantly made.</p>

(b) Domestic  
Science  
Courses  
—continued.

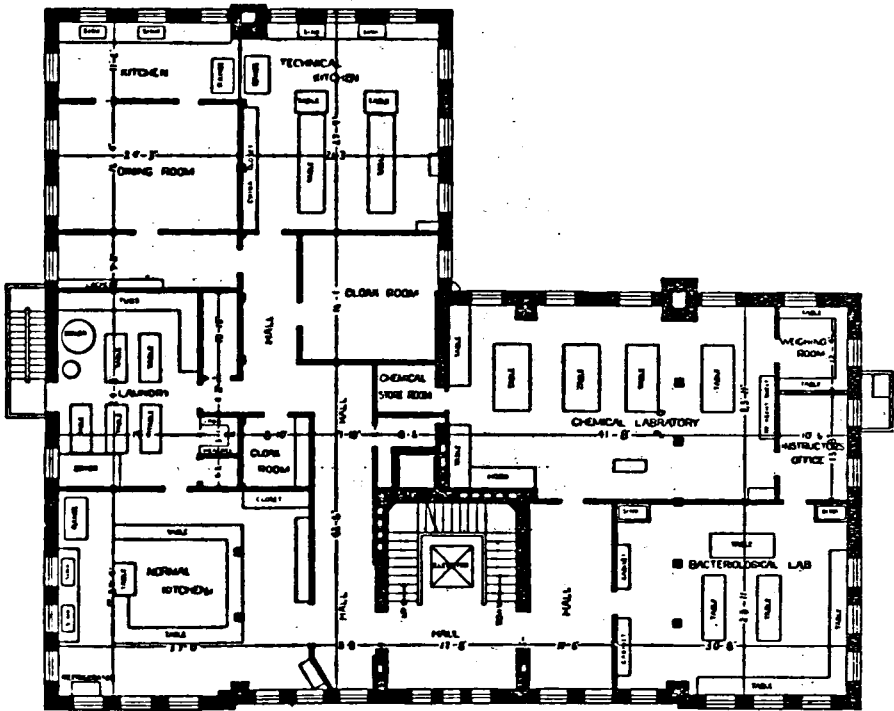
The Normal students in Domestic Science\* are prepared primarily to teach the group of subjects included under this title; and secondarily to teach elementary sewing and handwork. They must be at least eighteen years of age, and must have satisfactorily completed a High School course of four years or its equivalent. Applicants must pass the general Institute examinations, and must also give evidence of having formed good mental habits, and of being able to use with facility their knowledge of arithmetic (especially percentage and the metric system), algebra, plane geometry, elementary physiology, physics, and English. Some knowledge of sewing and cooking is expected. They are accepted only on probation, which continues until they have shown the ability and the desire to develop into cultured women of character.

The following extracts from "The Pratt Institute Monthly" for March, 1902, give in the words of its organiser a brief resumé of the objects and methods of the course: "The lines of work now embodied in the normal course are: Education for the training of the professional teacher; Science, with the natural sciences as basal to a true conception of their application in such practical work as cookery, for the training of the special teacher of domestic science; Art, including its expression in handwork, such as sewing and basketry, for the training of the special teacher of domestic art; Physical training for the physical well-being of the teacher that is to be; and for conscious development of interaction between her mind and the medium for expression, her body. . . ."

The course requires two years for its completion. The student-work consists of an average of twenty-five fifty-minute periods of class work for five days a week, sixteen hours of preparation, and two hours of physical training throughout the course. Thus the student spends seven and a half hours a day for five days a week, and one and a half hours on Saturday, in class work and preparation for the same. The proportional distribution of the time is as follows:—For all Normal students approximately seven hours a week for two years to education (psychology, normal methods, practice teaching, etc.), and two hours to physical training; for Domestic Science students, twenty hours to science and ten to hand work; for Domestic Art students, twenty hours to domestic art and ten to domestic science. Until the second year there is neither evening nor Saturday class work. The schedule is so arranged that approximately three subjects are assigned for each day. The sequence maintained in the daily work is recitation, laboratory or practical work, and field work alternating with physical training. The character of the demand made upon the student by the type of work determines the time of day and the order of rotation for each subject or phase of a subject. In the first year the educational aspect of the work is emphasised; in the second, the professional. The curriculum is strictly confined to the subjects essential for an intelligent understanding and free expression of the subjects to be used professionally by the graduates. Though the students are not introduced to many branches of knowledge with

\* See Table XXIX.

FIG. VII.



**PLAN OF THE SIXTH FLOOR OF PRATT INSTITUTE**

The offices and the Sewing, Hand-work and Lecture rooms of the Department are located on the first floor of the Main Building

Pratt Institute, Brooklyn, N.Y., Plan of Domestic Science Department.

TABLE XXIX.

TECHNICAL INSTITUTE. THE PRATT INSTITUTE, BROOKLYN, N.Y.  
NORMAL COURSE IN DOMESTIC SCIENCE AND ART.

Institution and Course.	Entrance Requirements.	Scope of Course.	Methods.	Length of Course.	Fees and Finance.	Equipment.
Pratt Institute, Brooklyn, N.Y.	At least 18 years of age.	Nature Study, 2 terms, 1st year.	In the first year the educational aspect of the work is emphasized, in the second the professional. The curriculum is considered to be strictly confined to the subjects essential for an intelligent understanding and free expression of the subjects to be used professionally by the graduates.	Two years of hard work, with the option of a third to consist of broad elective work in Domestic Science.	Liberal Endowment.	Labour saving devices are introduced as they are put on the market, and those also which conduce to wise economy of material at a small outlay for appliance.
Domestic Science and Art Normal Course.	Proof of Education equivalent to a 4 year course in a High School of good standing.	Physiology, 3 terms, 1st year.	The primary object of this course is mind training. Students must acquire the power to observe carefully, reason independently, conclude logically.	An immature student requires at least three years to obtain this training.	Fees, \$25 per term (about £5.)	Each student is required to wear a blue print dress with white cap, collar and cuffs, when engaged in cooking, and must provide herself with a regulation gymnasium dress.
Director, Miss Edith Greer.	In addition to special examinations in each department, applicants for admission to normal classes are required to pass an Institute examination upon such topics as will be a test of general intelligence and ability: some knowledge of cooking and sewing is expected.	Heat, 1 term, 2nd year.	All the Laboratory work is individual, whether in chemistry, bacteriology or cooking.		Three terms a year.	Large, recently remodelled and well equipped chemical, physiological, and bacteriological laboratories; school kitchens equipped for individual student work, and kitchen and dining-room for cooking and serving in large quantities; a collection of food products. Rooms thoroughly equipped for handwork and sewing and departmental library.
The two year "General" Course embodies the practical work of the Normal Course, but the Natural Sciences are condensed.	Graduates of Normal training schools or of collegiate institutions, or teachers, who in addition to a high school course of study or its equivalent, have had at least three years of successful experience are excused from the general Institute examinations upon giving satisfactory evidence of qualifications for the special Normal work of the department which they seek to enter.	Chemistry, 6 hours a week for 2 years.	The Chemistry Course includes:— (a) General inorganic. (b) Qualitative analysis. (c) Quantitative analysis. (d) Organic.	Leads to Diploma.	\$10 to \$20 (£2 to £4) should purchase all text books, note books, and materials required, as well as pay laboratory fees for an average amount of breakage.	NOTE.—Diplomas are granted for the quality of the work done and not for the number of years spent in study. Advancement in all courses depends upon individual ability and application.
		Cooking, 4 hours a week for 2 years.	The Course in Bacteriology is essentially non-pathogenic, but comprises a study of the lower forms of life, the changes in which they are agents, and the conditions necessary to their development.			
		Marketing, 1 term, 2nd year.	The student work consists of an average of twenty-five 50 minute periods of class work for five days a week, 18 hours of preparation and two hours of physical training throughout the course. The proportional distribution of time is:—			
		Serving, 1 term, 2nd year.	Education (Psychology, Normal Methods, and Practice Teaching, &c.) seven hours per week for two years.			
		Laundry Work, 1 term, 2nd year.	Domestic Science:— Science 20 hours per week for two years.			
		Home Economics, 1 term, 2nd year.	Handwork 10 hours per week for two years.			
		Plumbing and Heating, 1 term, 2nd year.				
		House Construction, 1 term, 2nd year.				
		Drawing and Design, 4 terms, 1st and 2nd years.				
		Kindergarten methods, 2 terms, 2nd year.				
		and use of materials, 1 term, 2nd year.				
		Sewing, 4 terms, 1st and 2nd years.				
		Manual Training, 3 terms, 1st and 2nd years.				
		Cord-work, Weaving, Basketry, 2 hours a week for 2 years.				
		Physical Training, 2 terms, 1st year.				
		Psychology, 1 term, 1st year.				
		History of Education, 2 terms.				
		Practice Teaching, 3 terms, 2nd year.				
		Normal Methods, 2 terms.				

which they are entirely unfamiliar, a new point of view and more intelligent and personal responsibility for the quality of the work are exacted by the nature of the normal training." Students find a third year of work frequently advisable to gain the diploma. The lines of elective work suggested for them during this period are as follows:—"The continuation of any subject pursued in the earlier part of the course; manual training if not already taken; the evening class for nurses and teachers in kindergarten methods and the use of kindergarten materials, the 'Education of Man'; drawing, composition, and design; sewing, dress-making, and millinery; or Latin, French, and German in the High School classes. The special subjects specified are given under the auspices of the departments in the Institute which deal with them primarily. In being thus given, apart from allied subjects, they afford general and not normal training, and are to be taken for their value to the individual and not to be used professionally."

(b) Domestic  
Science  
Courses—  
*continued*

The general chemistry in the Normal course includes (a) qualitative analysis, (b) quantitative analysis (three experiments being performed, one of which is gravimetric and one volumetric), (c) organic chemistry. In physiology, one hour's lecture with demonstrations is given by a physician once a week in the first year; in the second year the lecture is followed by two hours' laboratory work. This is ideally good, but I learned that its success depends wholly on the personality of the professor. The only branch of physics dealt with directly in the course is Heat. The bacteriology comprises a study of lower forms of life and their influence; the changes in which they are agents; and the conditions necessary to their development. Four hours a week for four months is devoted to its study, mostly under direct supervision, though students do some outside work. The course is essentially non-pathogenic, modelled on that for general students at the University of Chicago; it has been given along the same lines for three years, and is considered fairly satisfactory; the class is usually limited to six or eight. Leitz's microscopes with objectives 3 and 7 are those used; and the equipment both individual and general is essentially moderate, though sufficient. The nature study course consists at first largely of field lessons; subsequently timbers are studied, and students are called upon to apply their knowledge to furniture and house-fittings; so far their powers of observation are reported to be defective and to demand much training. The course in psychology includes an introduction to logic; the professor in charge is well fitted for this work, and has great sympathy with his students.

The History of Education and Educational Methods appears in the syllabus; but a weak point recorded in its present treatment is absence of sufficiently close study of child nature and the child mind.

Household economics are studied under three heads:—(1.) house construction, the instructors being an architect and an artist;

(b) Domestic Science Courses—continued. (2.) house plumbing, taught by a master plumber; (3.) house furnishing; which includes care of furniture; methods of house ventilation, etc., etc.; disposal of garbage and waste; purchase of supplies, coal, wood, outside food stuffs, etc.

The laundry work is planned to demand a knowledge of applied chemistry and applied bacteriology.

It is customary to require each normal student to prepare a set of bottles illustrating the percentage composition of twelve typical foods. These graphically represent the food principles present in some of the commonest articles of daily diet—meat, eggs, milk, butter, wheat, rice, apples, potatoes, etc.; the analyses are carried out with scientific accuracy, and are in request by schools and colleges where Domestic Science is taught. Their sale is a source of small profit to the Institute; but, though such work has its value, it is objected that the amount of time demanded by the preparation of twelve such analyses is a heavy tax on the time of the students.

The number in the Normal classes for cooking has varied from thirty-four to twenty; though it is considered that twenty should be the limit. At the time of my visit the kitchen was low and not very light, but thoroughly well equipped; it has since been remodelled. The cooking table forms three sides of a square; although this form in some ways minimises the steps of the teacher, it is not entirely approved. Each student has her own equipment in a numbered drawer, and all the work is individual. As has been already described, the director of these courses has thought out the fundamental principles of the art of cooking, and has a great idea of stimulating thought and application by presenting problems which demand the illustration of the underlying principles by her students. She is eminently mindful of the possibilities of cookery as a point of correlation with chemistry, physics, botany, physiology and hygiene. Knowledge acquired is, as usual in the United States, tested by members of the staff. For instance, in the cooking course, each student periodically draws a slip from a packet containing the names of different dishes; then cooks that which she draws and submits it to criticism. Again, each senior student is required to supply three questions weekly; and it has been Mrs. Chambers' habit to select three of these groups from the whole number submitted; each student must then choose one group to answer and work out during the following week; this plan is found to constitute a most satisfactory method of testing and promoting progress. The Normal students get into touch with social problems through their practice teaching in settlements, or in mission-halls connected with religious and philanthropic organisations, which increasingly demand such assistance. Here they have to face very practical difficulties in their environment, and gain useful experience along many lines. Students are not accepted for a shorter period than two years, unless so exceptionally well prepared for the work that they can satisfy very stringent conditions, which include the passing of both theoretical and practical examina-

tions and the presentation of note books recording the mental work which accompanied the past practice. Such students are not expected to use professionally the knowledge they acquire unless they remain to complete the Normal course; the opinion being wisely and strongly held that a partial course cannot prepare for intelligent and effective work.

(b) Domestic Science Courses  
—continued.

The following analysis of the subjects of this Normal course (Pratt Institute Monthly, March, 1902), is added in order to furnish as accurate and comprehensive a view as possible of its details.

Education :—

- Psychology: its principles and their application to education.
- Principles of education, the laws underlying development and their expression in educational practice.
- History of education, its relation to history as an expression of the social life and development of the race.
- Normal methods, the principles obtaining in the school-room whereby a wholesome atmosphere, self-activity of the pupil, and greatest efficiency in the special work are attained.
- Kindergarten methods and use of materials; comprehensive survey of different phases of kindergarten work (the "Mother play," stories, occupations, and games), to give insight into the life of the child.
- Practice-teaching (under supervision) in Domestic Science and Art.

Science (Natural) :—

- General chemistry, qualitative and quantitative analysis, organic and physiological chemistry, and chemistry of foods.
- Physiology, function and structure of the body under normal conditions of life, with special emphasis upon digestion and the organs of the special senses; hygiene (personal and public); emergencies and home nursing.
- Bacteriology: its principles, their significance and their application to life.
- Heat: its principles, and their significance and use in Domestic Science.
- Nature study: its principles and the methods of study involved as basal to correct scientific observation and inference.

Science (Applied) :—

- Cookery: its general principles in practice, their modification in the preparation of food for infants, invalids, and adults living under widely varying conditions.
- Dietetics: composition of the body, its waste and repair; need of food; kinds and proportions required; composition of various food materials; use of each in the body; digestibility of each; desirable combinations; best methods of cooking in order to secure greatest nutritive value at least cost; modes of meeting the needs of the individual; calculation of dietaries; comparison of the dietaries for persons of different ages and engaged in different occupations, and of those for different races; and, so far as the present state of science will permit, the solution of special dietetic problems arising in the home.
- Serving: the principles and practices underlying wholesomeness and attractiveness.
- Marketing: economical purchase and preservation of food.
- Household economics: care of the house and its furnishings; plumbing; scientific principles involved and practices conducive to the maintenance of healthful conditions.

(b) Domestic  
Science  
Courses—  
*inued.*

Construction: the sanitary and artistic expression of the principles embodied.

Art:—

Drawing: a comprehensive study of line, light and shade; colour; nature study; hand-work and sewing affording material for design and blackboard illustration; draughting in connection with sewing and construction for mechanical drawing.

Art (Applied):—

Hand-work: braiding, knotting, netting, knitting, weaving, and basketry embodying the artistic and mechanical principles of good manual work.

Sewing: hand sewing, draughting, and machine sewing, including undergarments and an unlined dress; principles of construction and execution and their appropriate expression.

A student is expected to recognise her knowledge as the fund upon which she is to draw for subject matter in her professional work, but she must acquire skill in its adaptation (in accordance with the principles instilled by her normal work, normal methods and practice teaching) to the subjects and conditions under which she finds herself at work. Evidence of power to do this, as well as to work skilfully, economically, and harmoniously under any conditions which may exist of necessity, is held to be an essential qualification for the satisfactory completion of this Normal course. In addition a thesis on a subject relating to Domestic Science, showing research and original work, is required of all Normal students before the diploma is awarded. Nevertheless, though the course is planned to develop the Normal student, and to train her along special lines of domestic science and art through wise stimulation and development, it also embodies all the principles and most of the specific exercises in general form which are adapted to other classes of students.

After the training has been completed satisfactorily, the Department interests itself in the future of those whom it has trained, but naturally it does not assume the responsibility of undertaking to procure positions for such as desire to enter professional life. However, since applications are constantly received for candidates qualified to render good service along the various lines of domestic science and art, there is usually no difficulty in placing graduates. The demand from manual training and private schools, from agricultural colleges, hospitals, institutions, and university settlements is an ever increasing one.

Six instructors are in charge of this department, and give concentrated attention to their work and its problems. Upon them, together with the director, devolve the general guidance and thought for the well-being of the students, and from them, in the main, emanate the good influences which mould their personalities. They publicly make known their desire "to permeate the lives of their students with consciousness of the fact that a choice is the expression of a "moral motive"; that action is impelled by thought and is a test of it, and that it is in action that



possibilities are discovered and realised. Thus all encouragement<sup>t</sup> is given to direction from within, and as far as possible suggestion is substituted for that from without. It is gratifying to learn how soon students begin to appreciate that they are, in the main, capable of being what they choose to be; that they gain power to see their work in the light of what it might be; for it is thus that they are led to realise more fully their potentialities, and to grow in power, in freedom, and in helpfulness." Each student comes in contact with these six instructors within the department, with at least six Institute instructors in other departments, and with one or two lecturers from other institutions or engaged in other walks in life. It is believed that in this way the best intellectual, personal and technical results are attained.

The only significant change in the faculty of the department during the past year, i.e., the appointment of a supervisor of practice-teaching, has proved even more beneficial than was anticipated. The wide experience of this lady brings in an invaluable element to the young teacher, confronted by many unexpected conditions in the public schools of the large cities and rural districts where she will work. Miss Snow was for eleven years superintendent of schools and director of the City Training School for Teachers, of Bangor, Maine, where her work attracted the attention of the educational institutions and associations of New England; indeed the University of Maine, in recognition of her service to the State, conferred upon her the degree of Master of Philosophy. The Association of Superintendents of New England elected her to its presidency in 1899, as did also the Pedagogical Society of Maine; the appointment in each instance being the first tribute of the kind shown to the work of a woman by either Association. Miss Snow teaches not only normal methods, but some physiology as well, in order that she may come in touch with the students in a study which is vitally connected with their future professional work. Since the missions in which they practice are widely scattered, and the work is in progress at all hours, on all days, among all kinds of people, and under extremely varying types of management, only a woman of exceptional abilities, experience, and broad sympathies could superintend it successfully. In the practice-classes the conditions are in many respects unfavourable; they are irregular and ungraded. As a phase of Domestic Science work they possess a certain value, but in time it is hoped that this type of work may be supplemented by experience more nearly akin to that which the student will meet in professional life. The practice-classes in sewing greatly outnumber those in cookery; it seems that some mothers find it troublesome to have a child cooking at home, while sewing can be turned to good account without serious inconvenience. Possibly the thought that sewing, as such, leads to a more acceptable professional career than cookery may not be without its influence. About 400 women and children are being instructed in these mission classes, nearly double the number taught by the Department during the previous year, as the size of the second

Domestic  
Science  
Courses —  
continued.

(b) Domestic Science Courses —*continued.* year Normal class made it possible to undertake more work of this kind. That there should now be a long waiting list for teachers seems marvellous to those who remember with what difficulty such work was secured a few years since for even a small number of Normal students. In this practice work, "the student is expected to study the class and its environment, and to aim to meet the students where they are; to direct and to stimulate them to desire and strive for what will nourish best both body and mind. This requires the exercise of insight, discrimination, mental flexibility, and a genuine desire to help where help is needed."

Health and personality are considered such influential factors in the life and success of a teacher, that much stress is laid upon them in the selection of Normal students. Otherwise inadequately prepared candidates, if promising in the above respects, are encouraged to complete the necessary preliminary training; general direction of such student work is always offered, invariably welcomed, and usually followed; as a result from eight to twelve students are each year conscientiously preparing themselves elsewhere for the Normal course offered in this Department. Meanwhile, no effort is spared to discourage girls from specialising in science and handwork in the High School, with the intention of subsequently offering such work as the equivalent of that of a similar nature in the Normal course. The feeling is strong that, though early manual training and an elementary knowledge of science are excellent and useful, they do not afford adequate professional preparation for teachers of Domestic Science; and when over emphasised prematurely, at the expense of a firm foundation in general knowledge and breadth of culture, a real loss results instead of the anticipated gain.

Each year the Department prepares what are called "food museums," for schools, consisting of blocks representing the composition of the body, and of others shewing the daily outgoing and income, in addition to the set of bottles, before described, which illustrate the percentage composition of twelve typical foods. This year the demand for the "museum" has been such, that orders could only be taken on the condition that delivery could be delayed from one to two months. This is interpreted to mean that Domestic Science is more widely taught, and that its place is becoming so assured that expensive equipment is obtained for it. To many schools the Department has sent, by request, suggestions relative to equipment and the subject matter to be taught in Domestic Science and Art courses. It cordially receives visitors who are interested in these subjects; and turns such visits to useful account by deriving from these sources fuller information as to the needs which Domestic Science workers may assist to meet. During the past ten years the curriculum for the Normal students of Domestic Science has been materially modified. Though some subjects have appeared in the course only to be crowded out by others with still more urgent claims for recognition, the effort of late years has been one of "simplification, not through

rejection, but through harmony." "It is not the intention to remain satisfied with the progress already made; therefore, there will be changes, but with continuity of life and unity in purpose underlying them." In these concluding words are to be found evidence of that spirit of earnest self-criticism, and broad-minded openness to suggestion, which appeared to me to characterise the leaders of thought and practice in Household Economics in the United States.

A quotation from a letter recently received from the Director of the Pratt Institute Course throws light upon past results and indicates probable modifications in the near future:—"For several years," she writes, "some of our plans have been very tentative, because of the transition state of education in general; but now that it is evident that such work as we are doing has entered the school system as an integral part, we feel that we should expand our work somewhat, as we propose doing next year. We are trying a new presentation of cookery with a group of ten normal students, which bids fair to be more effective in the training of teachers than any method which we have used in the past. It has always been discouragingly difficult to train a woman scientifically, and at the same time imbue her with a spirit which would make her desirous to teach cookery in conformity with science, instead of simply science through cookery. . . . It is with difficulty and through strenuous effort that we make teaching a child through the concrete interesting to the normal student." It may be anticipated, therefore, that actual cooking practice will now receive a larger measure of attention than hitherto in the Pratt Institute Normal course. The following extract from Miss Edith Greer's account of the Normal course in Domestic Science from the "Pratt Institute Monthly" for March, 1901, explains her reasons for the relatively limited time devoted up till now to this branch of Domestic Science. "Before speaking of cookery, its place and presentation in a normal course in Domestic Science, perchance it may preclude misunderstanding if the ever present question, 'Are the normal students taught to be skilful cooks?' be answered tentatively. It is the duty of the school, if it fulfil its mission, to train 'intelligent not skilful workers.' Skill, in mechanical manipulation especially, can come through repetition only and repetition does not to any great extent enforce conscious mental activity. When the hand has carried out the mandate of the head and thereby strengthened the mental impression, the act may be repeated almost automatically until muscular co-ordination becoming perfected results in skill. But inasmuch as 'he who is never given anything more to do than he can do, will never learn to do what he can,' so the mind when it has nothing further to learn from a special act, and thus is freed and strengthened for something new and more difficult, is defrauded and for ever impoverished if it be not taxed anew. Cookery, therefore, in the Normal course is, as will be surmised, considered primarily from the scientific point of view; not theoretically, however, for practical work in the school kitchen for four hours each week for two years exacts of the student material expression of the training obtained. Familiarity with processes and sufficient skill therein to ensure with experience excellent results as to the quality and flavour of cooked food, are requisites of acceptable work."

Another example of courses in the same subjects, organised under directors as zealous as Miss Greer and Miss Sackett, are those carried on at the Drexel Institute, Philadelphia, founded by Anthony J. Drexel in 1891, for the promotion of education in art, science,

Drexel Institute, Philadelphia.

Drexel Insti-  
tute, Phila-  
delphia  
—*continued.*

and industry. The chief object of the Institute is the extension and improvement of industrial education as a means of opening wider and better avenues of employment to young men and women. In accordance with the founder's desire, however, the plan of organisation has been made comprehensive; liberal means of culture for the public are also provided by means of evening classes, free lectures and concerts, the library and the museum. Mr. Drexel's gifts to the Institution amount in all to three million dollars. There are eighteen departments in Art, Science, Commerce, and Domestic Subjects, both Normal and Technical courses being available in most subjects. The exterior and much of the interior of the building are handsome and impressive; but the general plan is inconvenient, so that considerable sums of money are now compulsorily expended on re-arrangements and additions. The main entrance hall is of magnificent proportions, and sumptuous in its lavish decoration of fine marble staircases, pillars, and galleries. It is pleasant to note, on the authority of the President of the Institute, that in spite of the daily use of this handsome hall by thousands of students, no single instance has occurred of damage to its beauty. The control of the Institute is entrusted to a Board of Trustees, assisted by an Advisory Board of women, whose numbers are well represented on the various committees. The general courses are open to both sexes, on equal terms and conditions.

Mr. Drexel handed over the organisation of his great scheme at an early stage to Dr. MacAlister, the present President of the Institute, to whom much credit is due for the speedy introduction of a successful Domestic Science course. From the first, the diplômées secured excellent positions as teachers, managers of large institutions and so forth, the demand continuing to exceed the supply. This Department was soon reinforced by one in Domestic Art, which is admirably equipped, and is situated in spacious, airy, and well-lit rooms, artistic in their decoration, and well suited to their purpose. The same may be said of the Department of Domestic Science; kitchens, laundry, laboratories, dining-room, class-rooms, all give the impression of convenience and space. Under Miss Caroline Hall and Miss Burgess in the one, and under the directorship of Miss Helen Spring in the other, skilled organisation fosters the growth of sound work among the students. The Institute Library contains a large section devoted to Art subjects, and includes a collection of books on costume, ancient, mediæval, oriental, professional and hygienic; also a wide range of costly publications dealing with art needlework, tapestry, colour, textiles, dyeing and weaving. Students can secure a printed reference list containing the bibliography of these subjects admirably classified, which also offers suggestions to those anxious to follow a systematic course of reading in the various branches (e.g., references are furnished to certain books of travel which contain good, brief descriptions and illustrations of the dress of different nations)

A study of the schedules of the Normal courses in the Domestic Arts and Sciences at both the Pratt and Drexel Institutes reveals a general similarity, flavoured with the diversity to be anticipated where each is free to plan and practice as seems best in the light of experience and the needs of the community it serves. The scope of all the courses is wide; for the reason that those responsible for them share the prevalent conviction that technical work of the highest, most intelligent order is impossible unless founded upon a firm basis of theoretical principles; therefore, they maintain, the fundamental sciences and arts must find a place. Manual and physical training, in addition to the scientific methods and skilled manipulation gained in the chemical and biological laboratories, are included from the belief that the necessary co-ordination of hand, eye and brain can be more profitably acquired through suited variety of exercise than by the constant repetition of one class of operation. Obligatory attention to literature is required in order to develop a quick sympathy with varied temperaments, and a mind, not alone well balanced, because exercised in many directions, but broadened also by contact with the wise sayings of great philosophers and poets; in addition, the necessary command of a good vocabulary is another result anticipated from wide reading of classics in several languages. As such culture studies are too often overlooked in the press of daily work, especially when this is of an essentially practical nature, English literature, composition and elementary psychology are compulsory, not "elective" subjects. Experience has shown that the same need for obligation exists in the case of physical training, which is, therefore, required of all students throughout their courses; young and eager girls are prone to forget that a healthy body and a good carriage are indispensable to satisfactory study as well as to success as a teacher. The care for physical needs is further evidenced in the daily provision at these Institutes of inexpensive, nutritious and appetising lunches for students.

A comparison in detail of the Normal courses in Domestic Art\* affords further illustration of this general similarity, though somewhat more prominence is given to artistic training at the Pratt Institute, while a recognition of the assistance to be derived from acquaintance with business methods and the keeping of accurate accounts is evident in the Drexel scheme. It also appeared to me that a more practical knowledge of the chemistry of dyeing and cleaning enters into the latter course, in which the study of human physiology is rather more prolonged; in other respects the resemblance in scope, methods, and time periods allotted is such that I do not propose to detail the Normal course in Domestic Art at the Drexel Institute, though further particulars are supplied in Appendix F.† (See also Table XXX.).

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\* See Tables XXVIII. and XXX.

† Further reference to the work of the Domestic Art Department is made on p. 215.

TABLE XXX.  
DREXEL TECHNICAL INSTITUTE, PHILADELPHIA.  
NORMAL COURSE IN DOMESTIC ARTS.

Institution and Course	Entrance Requirements.	Scope of Course.	Methods.	Length of Course.	Fees and Finance.	Equipment.
Drexel Institute, Philadelphia. Domestic Arts. Normal Course. Directors— Miss Caroline A. M. Hall. Miss Caroline L. T. Burgess.	Lowest age limit, 18 years.	Sewing, Dressmaking, } 1st and 2nd yrs. { 4 hrs. per week (1st yr.) 6 hrs. per week (2nd yr.)	Lectures on the Chemistry of Textiles are included for the purpose of teaching the hygienic properties of colours. Lessons are given in language, literature and business methods to enable students to use the technical knowledge they have gained in everyday life. The course is specially designed for teachers. Parallel studies are made of the art of making garments, of the requirements of the human body and of the best methods of adapting materials and fashions to the requirements of healthy clothing.	Two years of 34 weeks each, four hours for five days a week  Diploma for full course.	\$40 (£8) per term: two terms a year.  Rich endowment by founder.	All necessary appliances and conveniences in spacious, handsome work-rooms.  Specimens of fine designs of many kinds of needlework, embroideries, lace, etc. There is also a collection of historical costumes.  A large department in the library is devoted to books bearing on the practice and history of the Domestic Arts, to which students are encouraged to resort, and in the systematic study of which they are guided.
	High School education or its equivalent.	Millinery, Drawing, History of Costume. } 1st and 2nd yrs. { 4 hrs. per week.				
	Diploma of approved institution accepted instead of examination.	Chemistry of Textiles, Dyeing and Cleaning. } 2nd yr., { 6 lectures of 1 hr. each. 4 hrs. each week practice.				
	Previous knowledge of hand and machine sewing.	Human Physiology and Hygiene } 1st yr. and half { 2 hrs. per week. 2nd yr. } Emergencies. } 2nd half yr. } 1 hr. per week.				
		Observation and Practice in Teaching. } 2nd yr. { 6 hrs. per week.				
		English Language and Literature. } 2nd yr. first half yr. } 2 hrs. per week.				
		Business Training. } 1st yr. { 2 hrs. per week.				
		Physical Training. } 2 hrs. per week.				

Turning to the Domestic Science course, it will be seen that at the Drexel Institute human physiology is supplemented by a short course in biology and bacteriology, whereas at the Pratt Institute students of both Domestic Science and Art gain this desirable introduction to physiology through their preceding nature study; they have the advantage also of a short study of that branch of physics which is concerned with heat; dexterity with their hands is developed by a definite course in manual training, while sewing also finds a place, in order, as has been said, that graduates may be competent to conduct an elementary course in a grade school should it be desired. Speaking broadly, I gained the impression that, while substantially the same in conception and scope, manual training is somewhat more emphasised at the Pratt and chemical practice at the Drexel Institute. A comparison can be also instituted as to the number of hours spent on the different subjects by the students following the respective courses at the two Institutes; for instance, at Pratt 330 hours are devoted to nature study, bacteriology and physiology, and 470 to physics (heat) and chemistry, while at Drexel 200 hours are given to biology, bacteriology, and physiology, and 500 to chemistry. The Pratt course gives 280 hours to actual cooking practice—little more than half the time expended on it at Drexel—in most other subjects the courses are of almost equal length.

Thanks to the ready courtesy of the Directors of these important Departments in both Institutes, many details have been furnished to me with which my too short visits prevented me from acquainting myself personally. Among these must be specially mentioned the series of syllabuses from the Drexel Institute included in the Appendix F., which cannot fail to interest those responsible for similar courses in Great Britain. In the Domestic Science Normal course\* at the Drexel Institute the general chemistry extends through one year; and is followed by the practice of qualitative and quantitative analysis, with two lectures and two laboratory periods a week. The course in quantitative analysis is devoted to food analysis; the laboratory work is of such a character as to furnish data for the calculation of food values as well as to detect adulterations. I learned that the following indicates the general scope of this quantitative work, to which one year is devoted:—analysis of chemically pure soils, of potable water, of milk, of butter, of cereals, of tea and baking powder. Some study of organic chemistry follows, the method employed in both courses being (a) a lecture covering the ground of the week's work; (b) immediate practice, carried on under supervision where necessary. It is evident that Miss Spring and Professor Henwood attach very considerable importance to the chemistry of foods and to dietary studies; lectures on these subjects form a course in the last term; and problems, theoretical and practical, are furnished for solution to the students. Professor Henwood has worked out and carried

\* See Table XXXI.

(a) Domestic  
Science  
Courses.—  
*continued.*

on a scheme in this subject for six years, three of which have now been on the lines he finds to result in the accomplishment of good work; graduates attend these classes as well as the Normal students. The class of sixteen works in groups of twos and threes.

During the junior year the course in anatomy and physiology covers a general study of the body and its various systems; the laboratory demonstrations have reference to the lecture topics, which embrace the subjects of physical development, physical training, personal and domestic hygiene.

Each Normal student goes through practically eight courses in cookery. Of these, however, three consist in repetitions of the first three in general cookery, to ensure a thorough grasp of principles and facility in practice. The course in advanced cookery is then taken, as well as that in invalid cookery, followed by a "lunch room" course, through which experience is gained in providing for large numbers. Individual work with small quantities is usually followed by group work in which food is prepared in sufficient amounts for a family of six or eight persons. The "lunch room" is open for the use of all students who attend the Institute. A handsomely decorated hall, resembling a high-class restaurant, was approaching completion, at the time of my visit, to replace the hitherto cramped and unsatisfactory quarters. Each portion of food must represent a certain nutritive value, and is sold at remarkably low prices; it appears to be appetising and varied. No special study is made of infant feeding in this course, in consequence of the wide divergence of opinion and practice which prevails, as well as of the increasing custom among physicians to write prescriptions for individual cases. Students are throughout referred to an excellent library of books of reference containing not only the standard works, but all the newest and best as they appear; the invaluable Food Bulletins of the United States Department of Agriculture being also available for their use.

The Laundry course comprises only twelve lessons; it appears, so far as it goes, practical, and based on scientific principles; as a subject it does not as yet rank high in the curriculum of such training courses, though here, as at the Pratt Institute and Teachers College, great stress is laid upon its importance in household training. The plan and building of a house is at present treated only theoretically; this course of lectures is open to students in several other departments besides those in the Normal and Housekeepers' courses; the synopsis of lectures appears well planned, and the appended bibliography, which includes books on house sanitation and hygiene, sites and environment, and the historical development of the dwelling, is very complete and suggestive. The course is given by Professor Prescott Hopkins of the Architectural Department of the Institute. Home nursing is practised in a well-furnished bedroom, but, unfortunately, is not taught by a trained nurse. The fees for the Normal courses are \$40 (about £8) per term; text books and stationery average \$10



**TABLE XXXI.**  
**DREXEL TECHNICAL INSTITUTE, PHILADELPHIA.**  
**NORMAL COURSE IN DOMESTIC SCIENCE.**

Institution and Course.	Entrance Requirements.	Scope of Course.	Methods.	Length of course.	Fees and Finance.	Equipment.
<p>Drexel Institute, Philadelphia.</p> <p>Domestic Science Normal Course.</p> <p>Director, Miss Helen M. Spring.</p>	<p>High School education or its equivalent.</p> <p>Diploma of approved institution accepted instead of examination.</p>	<p>Chemistry.</p> <p>General Principles } Lectures, 3 hrs. per week.</p> <p>Qualitative Analysis } 1st yr., Laboratory, 3 hrs. per week.</p> <p>Quantitative Analysis } 2nd yr. { 3 hrs. per week for 16 weeks.</p> <p>Organic Chemistry of } { 7 hrs. per week for 16 weeks.</p> <p>Food and Dietetics } { 1 hr. per week for 12 weeks.</p> <p>Food Analyses } { 9 hrs. per week for 16 weeks.</p> <p>Anatomy and Physiology, including course in Hygiene and Emergencies. } 1st yr., Lectures, 3 hrs. per week.</p> <p>Biology and Physiological Chemistry. } 2nd yr. 1½ hrs. per week.</p> <p>Bacteriology. } 2nd yr., 5 hrs. per week.</p> <p>Household Botany. } 1st and 2nd yr., { 5 hrs. per week (1st yr.)</p> <p>Cookery. } { 6 hrs. per week (2nd yr.)</p> <p>Waiting. } 2 hrs. per week for 16 weeks.</p> <p>Laundry Course. } 1st year. { 3 hrs. per week for 16 weeks.</p> <p>Marketing. } { Several lessons.</p> <p>Food Economics. } 2 hrs. per week.</p> <p>Luncheon Room Cookery. } 2nd year. { 3 hrs. per week for 16 weeks.</p> <p>Demonstrations. } { 3 hrs. per week for 16 weeks.</p> <p>Home Nursing. } { 3 hrs. per week for 16 weeks.</p> <p>Computing of Dietaries } 2 hrs. per week for 16 weeks.</p> <p>Physical Training. } 1st and 2nd yrs., 3 hrs. per week.</p> <p>Business Forms and Accounts. } 1st yr., 1 hr. per week.</p> <p>English Language and Literature. } 1st yr., 1 hr. per week for 6 weeks.</p> <p>Domestic Architecture, Teaching— } 2nd yr., 1 hr. per week for 16 weeks.</p> <p>Observation of Public School Classes. } 1st yr., 3 hrs. per week for 16 weeks.</p> <p>Practics Class—Teaching. } 1st and 2nd yr., 3 hrs. per week for 12 or 20 weeks.</p> <p>History and Institutes of Education. } 2nd yr., 1 hr. per week for 9 weeks.</p> <p>Lectures.</p> <p>Several demonstrations in Waitress Course, Laundry Course, Invalid Cookery, under Critic Teacher, 2nd year.</p>	<p>Scientific and practical; the bearing of the subject upon domestic and social improvement is constantly kept in view.</p> <p>Every subject begins with a practical study of its simpler laws, progresses by well adjusted combination of theory and practice with the object of securing so thorough a grasp of the principles as will permit of application in daily life.</p>	<p>2 years of 2 sessions, 5 days a week</p> <p>Diploma for full course.</p>	<p>\$40 per term (about 28) Deposit of \$5 (\$1) to cover breakages. Endowment of \$2,000,000.</p>	<p>Excellent chemical and physical laboratories supplied with all modern apparatus; two large school kitchens furnished with every convenience, models of sanitary arrangement; dining-room attached. A large laundry with every recent appliance.</p>

Drexel Institute, Philadelphia.

(a) Domestic  
Science  
Courses.

(about £2 2s.); board may be had near the Institute at prices ranging from \$5 to \$8 (about £1 to £1 12s. 6d.) a week. A students' boarding-house has been organised in connection with the department, the inclusive terms being \$5 (£1) a week, board only \$3.50 (14s.); the accommodation, however, is limited, and the long waiting list shows how inadequate it is to the demand. In the kitchen washing-dresses are not required, white blouses and black skirts with the usual apron, sleeves, and cap being the selected costume. The demand for the normal students on graduation is at present larger than can be met; the training received having a very high character throughout the United States. The normal practice work is obtained by means of classes for guilds, church schools, children's Saturday classes, etc., held in various quarters of the city.

In addition to the Normal courses in cookery, ten alternative courses are offered in this and other subjects connected with the household; each course occupies one term and is complete in itself. Of these, three are confined to general cookery; they are consecutive and must be taken up in regular order.

The First Course consists of instruction in the composition and dietetic value of food materials. The lessons are arranged in logical order, and each principle is illustrated by the preparation of simple dishes. The teaching is largely individual, each student preparing an entire dish; the object of the course is the preparation of food in the most digestible and appetising forms.

In the Second Course instruction and practice are given in the preparation of more complicated dishes and menus than are included in the first course.

The Third Course includes the preparation of still more elaborate and expensive dishes; lessons in marketing and carving; and practical demonstration in the cutting of meat. In each course one lesson of three hours is given weekly.

The course in Invalid Cookery is intended for professional nurses and other persons desirous of acquiring a practical knowledge of cookery suitable for the sick room. It extends throughout one term, with one lesson of two and a-half hours each week. Similar classes are arranged for medical students either in the afternoon or evening to suit their convenience. The Housekeepers' course is offered in the belief that greater skill and intelligence are needed in the management of the home, and for the purpose of providing thorough training for women who possess the requisite qualifications to fit themselves for positions as housekeepers or as matrons of public institutions. It is analogous to that on Food Economics at the Pratt Institute, and occupies a year.

It includes the general courses in cookery, courses in invalid and lunch-room cookery; a course for waitresses; laundry work; marketing; lectures on physiology and hygiene; home nursing; familiar talks on food materials and other matters relating to the household together with a study of business forms and accounts. At present the number who attend it is very limited; applicants must be twenty-five years of age and must give evidence of a good education.

Courses are also organised in Home Nursing, Laundry work and for Waitresses (six lessons of two hours each); there is a good

lecture course on Home Construction, as well as children's Saturday classes and evening classes in General Cookery; there is also a "Chafing-dish" course for men; all are open to the public; occasionally boys are included among the Waitress course students.

The syllabus of the first course in the Evening Cooking Classes is included in Appendix B (p. 312), also one in Household Science; they will be seen closely to resemble those employed for corresponding classes in this country. One lesson a week is usual in the above courses for one or two sessions; the fees charged vary from twelve shillings to £1. 5s. All materials in the cookery classes are provided by the Institute. Good reports are given of the attendance at the greater number of these numerous classes.

The General Course of Instruction in Dressmaking consists of <sup>(b) Domestic Art Courses.</sup> four grades, each occupying one term or half the academic year; <sup>(General, Normal, Technical),</sup> two lessons of two hours each being given weekly. All materials must be furnished by the students, except those supplied in the third and fourth grades for order work, when, for further practice, students are allowed to receive and execute orders. All work cut and planned in the class room must be finished at home. Instruction is also provided in accounts, business forms, and correspondence, two lessons of one hour each being given weekly during the second term. A course of lectures in the Chemistry of textiles, dyeing, and cleansing is given during the second term of each year. Throughout the Domestic Art Department, similar stress is laid upon the study of line, form, the proportions of the human figure, etc., as in the Pratt Institute; one and a-half hours a week must be devoted to such instruction and practice in the General, as well as the Technical and Normal dressmaking and millinery classes. The two terms begin in September and February respectively; students enter for one term at a time. The fees are £3 for the first grade, and £4 for each of the more advanced.

The Technical courses in Sewing, Dressmaking, and Millinery are arranged to meet the need of those who desire to train as professionals. The dressmaking students are expected to attend lectures in physiology and in hygiene with reference to dress, in addition to those in the chemistry of textiles, dyeing and cleansing, no additional fee being required; they also have the privilege of physical training in the gymnasium without extra payment. They must be at least eighteen years of age on admission, have a good knowledge of hand and machine sewing, and must present for inspection a dress made personally from patterns. Applicants are admitted only in September in each year; certificates are granted to satisfactory students who have followed the entire course. The fees are \$30 (£6) per term. In the evening classes instruction is given in hand and machine sewing, in the first, second, and third grades of the general course in dressmaking, and in millinery. The session extends through six months, from the beginning of

\* With reference to the Normal Course in Domestic Art, see above page 209.

October to the end of March; in each grade two lessons of two hours each are given weekly; the fees are 12s. 6d. for the first course, and from £1 to £1. 12s. 6d. for the more advanced.

(c) Junior  
Course in  
Domestic  
Science and  
Art.

Brief mention must be made of the junior course in Domestic Science and Art which is a non-professional course of prescribed studies for girls; it covers two years, and is designed to supply that training for the duties and responsibilities of home life which the ordinary academic education fails to give, and also to lay a broad and solid foundation for the technical work involved in direct preparation for a profession or a skilled occupation. The course is based upon the recognition of the fact that training for the practical business of life should have its due place in the education of the individual during the plastic period of life, and experience is constantly showing the soundness of this position. Of the pupils who have thus far graduated, more than three-fourths have developed aptitudes for some domestic art or science; these have subsequently taken advanced courses in chemistry, physiology and hygiene, domestic science, millinery, or dressmaking, with a view in each case to following the pursuit as a profession. "As a result of this preparatory training in a well-arranged and soundly-correlated course of study, these pupils have the advantage of entering upon the pursuit of their technical courses with good habits of thought and study, and with the ability to feel an intelligent delight in their work." The course is divided broadly into scientific work, academic work, and technical work—about one-third of the time being given to each of these branches.

The complete list of studies is as follows:—language and literature, general history, civics, current events, mathematics, elementary chemistry, physiology and hygiene, domestic science and arts (including household economics), cookery (practical instruction in the school kitchen, talks on foods), sewing, millinery; the planning, decoration, and furnishing of a house; business customs and accounts; drawing and physical training.

#### E.—WOMEN'S COLLEGES.

Courses in  
Hygiene and  
Household  
Economics.  
(a) Vassar  
College.

A course in physiology and hygiene is given at Vassar College for Women by Professor Thalberg, which is obligatory for all freshmen during their first term. It comprises lectures, recitations, and practical investigation of the principles of house sanitation; drawings and models are provided for this study. An elective course is also offered in advanced hygiene, which is open to juniors and seniors; this comprises, in addition to text-book work, the microscopic study of tissues, experiments in physiological chemistry and frequent dissections. Certain courses in biology are recommended as a good introduction to these advanced courses. In chemistry, the analysis of food is open to those who have studied quantitative analysis and organic chemistry; while in the department of economics and sociology Professor Mills, in his course on Charities and Corrections, treats of the physical and physiological, as well as of other causes of abnormality.

A course in the Elements of Hygiene, conducted by Miss E. B. Sherrard, resident health officer, is also required of all freshmen at Wellesley College for Women, and counts towards the degree of B.A. Miss Hazard, the President, believes that this course provides for health in the present and in the future by awakening and helping to educate a "physical conscience." The part of the subject presented is concerned chiefly with the proper care of the body. The course is designed to give a practical knowledge of its structure and an understanding of some of the chief causes which lead to deterioration of health and to needless loss of life. A useful outline is also given of the general principles of public hygiene. The courses in zoology and animal physiology afford opportunity for further study to any specially interested student. Instruction in domestic science, including the theory of diet and cookery, was given for some time; the resignation of the instructor, on her appointment to work in another college, brought this to a close. Since then occasional lectures on this subject have been given, and have invariably been received with much interest, but no regular course has been organised.

In the other colleges for women—Bryn Mawr and Smith, for instance—attention is devoted to physical culture, and a general supervision is exercised over the health of the girls; though Wellesley College is still the exception in the excellent work carried on by its resident health officers. These medical women endeavour perseveringly to train students to judicious care of themselves, chiefly by the adoption of a set of commonsense rules for healthful living. The results to their well-being, physical and mental, are first-rate.

Considerable interest has been aroused at Boston, and indeed over a much wider area, by the founding and endowment of the Simmons Female College, several million dollars having been bequeathed for the purpose by the late John Simmons. The college is established as an institution in which the instruction given is such as will best enable women to earn an independent livelihood. The trustees believe that the purpose and plan will interest and attract students who desire to fit themselves to become superintendents or matrons of institutions, heads of college houses, or of social settlements, private secretaries, librarians, and teachers of household arts and sciences. Provision will be made for those who desire to prepare themselves for the study of medicine and nursing, and for others who wish to become more proficient in a calling already adopted, or who need to add general training to practical skill. Thus, college graduates who wish to secure technical or professional training will have special opportunities for doing so, while encouragement will be given to that large class of women interested in educational problems, who feel not only that constructive work should accompany academic studies, but that no woman is well educated until she is thoroughly prepared to obtain an independent livelihood, whether choice or necessity may demand such self-maintenance. The plan of instruction

(b) Wellesley College.

(c) Simmons Female College, Boston.

(c) Simmons  
Female  
College,  
Boston.—  
*continued.*

provides for three classes of students. It offers a complete course of four years for such students as are able to give the requisite time for the college training, while shorter technical courses are to be provided for those who have had adequate preliminary preparation elsewhere, whether in college, or normal school, or in practical life. Properly qualified students will also be received for a partial course. There are to be Saturday and evening classes for students unable to attend the regular classes, with regard to which detailed announcements are not yet published.

The following courses in the departments of Household Economics, Secretarial work, Library training, and Science will be begun in the year 1902-3. The Corporation expects to open the department of Applied Art in the year 1903-4, and other departments in subsequent years.

A. *Household Economics.*

1. Regular course of four years in preparation for professional housekeeping and for teaching.
2. Advanced course of one or more years for college graduates and others of sufficient training.
3. Elementary course of one year.
4. Special or partial courses.

B. *Secretarial Courses.*

1. Regular course of four years preparing for professional positions and for teaching.
2. Advanced course of one or more years for college graduates.
3. Special or partial courses.

C. *Library Courses.*

1. Regular course of four years.
2. Special or partial courses.

D. *Scientific Courses.*

1. Collegiate course of four years in preparation for science teaching.
2. Advanced course of one or more years for students with previous college or normal school training.
3. Course of four years in preparation for the study of medicine.
4. Courses of one, two, or three years in preparation for admission to training schools for nurses.
5. Special or partial courses.

The regular course in Household Economics is designed for women who wish to prepare themselves for taking charge of institutions or social settlements, or for teaching the subjects of household arts and sciences. Students preparing to teach will be expected to take the theory and practice of teaching in their last year. Four years will be required for the course, unless students have had a satisfactory preparation subsequent to their High school training, such as two years in college study, a course in a Normal school, or sufficient experience in teaching, in which cases they may be admitted directly to the advanced course. The Elementary course is offered for those who desire to understand the principles underlying elementary Household Economics or to become proficient in the management of the home.

The following tentative programme indicates the number of periods a week allotted to each subject in this elementary course; the labo-

ratory and practice periods will occupy two or three hours each (c) Simmons  
lectures and recitations one hour each. Unless otherwise specified Female  
electives may be chosen from all the subjects taught in the college, College,  
which are not included in the prescribed portion of the programme. Boston.—  
continued.

	Periods per week.
Cookery - - - - -	4
Marketing and accounts - - - - -	2
Physiology and hygiene - - - - -	1
House construction, decoration and equipment - - - - -	2
Household administration and sanitation - - - - -	2
Conferences - - - - -	1
Sewing and materials or elective subjects - - - - -	3

Special and partial courses may consist of a portion of the regular course combined with any other studies offered by the college. In the Science Department are found courses preparatory to the study of medicine or of nursing; it is interesting to note that mathematics, physics, chemistry, biology and physiology, bacteriology, sanitation and cooking find a place in each of these. In fact, a series of lessons in cookery, laundry work, and household accounts will be provided for all students in this Department. Arrangements have been made with the Boston Normal School of Gymnastics whereby competent instruction in gymnastics will be given to the college students in the gymnasium of that school. Two periods of physical culture will be expected of all students each week unless excused for satisfactory reasons; in October and May outdoor exercises at the Riverside Recreation Grounds, Newton, may be substituted for the gymnasium practice; each student will be advised with regard to her physical welfare by an experienced physician, and the gymnastic training will be adapted to her needs.

The college year will be divided into two terms—October to February, February to June—each term will close with examinations in all departments. The general admission requirements are such as may be secured by a four years' course in a good High School, but the advanced work in Household Economics is open to college graduates without examination, and to others who show that they have had the requisite training. A limited number of scholarships have been established by the trustees, who have also provided other means of affording pecuniary assistance to those who are unable to meet the college charges. The fee for all regular courses is \$100 (£20) a year, payable in two instalments. For special students and for evening and Saturday courses special and reduced charges are made. The diploma of the college will be granted only to those students who have completed the full requirements of one of the regular courses. Certificates may be issued to other students, showing the list of studies successfully completed and the grades attained in each. Suitable boarding accommodation can be secured for about \$7 (£1 10s.) a week; a college "dormitory" is also provided for sixty-six students. The rooms are arranged in separate suites, each suite is intended for two students, and consists of a study, a bedroom, and a bath-room.

Under certain conditions one student will be allowed to occupy a suite; there are also a few single rooms. Ample and convenient dining-rooms are included in the "dormitory," so that students not in residence may secure table board. The cost of residence, including board, is from \$275 (£55) to \$300 (£60) per year, according to the position of the suite; this must be paid in advance, one-half at the beginning of each term. The suites are lighted with both gas and electricity, which are furnished at the expense of the student; service is not included. The "dormitory" is under the supervision of the Dean; and one or more members of the Faculty will reside in the building. At the present time a part of the instruction is given in the buildings hitherto occupied by the School of Housekeeping; while the remainder, including the larger part of the classes in the sciences and languages, is given by special arrangement in the Massachusetts Institute of Technology.

The School  
of House-  
keeping,  
Boston.

This School of Housekeeping was founded a few years since by the Women's Educational and Industrial Union of Boston. Its aim, of which there has been good promise of realisation, is a scientific study of home life, the object being "to save what is of permanent good, to discard what is useless, and to bring the whole into line with present industrial tendencies and scientific facts—social and physical. This study is not to the end that the homes of any one class may be bettered, but that the standard of living and life may be raised in all homes, in the belief that this would make for better citizenship, for a greater country, and for a healthier race." The course was first offered as one step in the re-organisation of the home on this broader social and scientific basis, and as a tangible recognition of the fact that housekeeping is a profession which demands scientific training. It was designed to meet the needs of young college women and others who wished to fit themselves to manage a household on the best economic and hygienic bases. The course consisted at first in the application of known principles and facts, scientific and economic, to the maintenance of a healthful well-ordered home; besides which it included a study of the management of the household and expenditure of the income according to business methods. The movement received the cordial support of the professors of Harvard University and the Massachusetts Institute of Technology; on its teaching staff were found the professors of sociology and physiology at Harvard (Dr. Ed. Cummings and Dr. Geo. W. Fitz) and the professors of biology and sanitary chemistry at the Institute (Dr. Wm. T. Sedgwick and Mrs. Ellen H. Richards). It is anticipated that yet greater success will attend the incorporation of the course as a department of the Simmons College. Hitherto it has covered the following general topics: (1) The home in relation to society; the home in relation to public health; the house—its construction, furnishing, management, and care. (2) The health of the individual (which embraced an exhaustive study of foods and dietaries, the hygiene of childhood and home nursing).\* Original investigation was also undertaken

\* See Appendix G.



to increase the body of exact information on household subjects, and to stimulate the thought and interest of the housekeeper.

As an illustration of the practical methods based upon scientific principles, adopted at this school, I may mention that, at the date of my visit, each member of a class of eight or ten had been called upon to plan a dietary for one week, suitable for the students in residence. This, while required to be seasonable, varied and appetising, must not exceed in cost a certain sum per head, and must contain the nutrient principles in their right proportions to meet the body's needs. A selection was made from those submitted, and each compiler, in turn, was called upon to superintend the employment of her dietary for one week, in the residence attached to the school; she became at once responsible for the purchase, cooking, service, etc., of all the articles which entered into her menu. The students meanwhile freely criticised these experimental dietaries, expressing their views as to the extent to which the various meals, etc., fulfilled the requirements; the questions raised were discussed with the professor in class; and each purveyor was expected to offer sound reasons for the faith which was in her and which had found expression in the planning of food for her companions.

#### F.—UNIVERSITIES.

The belief that all living should be governed by hygienic, ethical, and economic principles, which is the root idea in the Simmons College Household Economic course, is evidently founded on a sociological basis. This belief has also constituted the standpoint of those responsible for the courses in Household Technology and related subjects at the Chicago University, for which a place is found in the Department of Sociology and Anthropology. It will be remembered that the University of Chicago owes its existence chiefly to Mr. John D. Rockefeller, whose generous gifts for its endowment date from 1888, and amount to several million dollars. The new University opened its doors to students in October, 1892, few of its many handsome buildings being then ready for use. It includes five divisions—the Schools, College and Academies; the University Extension; the University libraries, laboratories, and museums; the University Press; the University affiliations.

Provision is made for the admission of students at the beginning of a junior college course, or at any further stage of advancement. In addition to students in regular standing, provision is made for the admission of certain classes of undergraduate students not seeking degrees—such are known as "unclassified." Those who have completed at least one year's work in a college or university of high rank may also be admitted to the College of the University under certain definite conditions. Students are admitted to a Senior College either after receiving the Junior College certificate from the University, or upon the completion of a corresponding amount of work in another institution. A Bachelor's degree is granted at the conclusion of the required amount of Junior College work.

The ordinary tuition fee is \$40 (£8) a quarter, though it is somewhat influenced by the subject selected; incidental expenses also vary from the same cause. Eight "dormitories" have been thus far erected in the quadrangle, and it is calculated that \$300 (£60) might, by the exercise of great care, cover board and tuition, with all sundries, for thirty-six weeks of annual residence; though \$400 (£80) is nearer the average.

University  
of Chicago.  
Courses in  
Household  
Technology  
and related  
subjects.  
Table  
XXXII.

TABLE XXXII.  
CHICAGO UNIVERSITY.

SCHEDULE OF SANITARY SCIENCE COURSES (HOUSEHOLD TECHNOLOGY AND RELATED SUBJECTS).

Institution and Course.	Entrance Requirements.	Scope of Course.	Methods.	Length of Course.	Fees and Finance.	Equipment.
University of Chicago. Department of Sociology and Anthropology. Sanitary Science. Professor Marion Talbot. Sociology, Professors Geo. E. Vincent, Chas. R. Henderson. Chemistry of Foods, &c., Professor Alice P. Norton. General Bacteriology, Professor E. O. Jordan. Physiological Chemistry, Prof. Albert P. Mathews.	Pre-requisites. Physiography and Geology, Physics, Chemistry, Botany (General), Biology (Sanitary) Physiology, Political Economy, English, German } Reading knowledge. French } These courses may be taken by special students who have had preparation at least to a good High School course, and, with a few exceptions, by candidates for degrees.	House Sanitation. Food Supplies and Dietsaries. The Economy of Living. Food. The Principles of Cookery. Chemistry of Foods. Evolution of the House. General Bacteriology. Household Bacteriology. Public Hygiene. Physiological Chemistry. Contemporary Society in the United States. American Cities. The Family. The Group of Industrials. Rural Communities. Urban Communities. Sanitary Science. (This work is designed only for students capable of carrying on independent investigations. The topics assigned are chemical, physiological, bacteriological, economic, or sociological according to the preferences and training of the individual students). Seminar in Sanitary Science.	The work in Sanitary Science is planned to be in correlation with the aims and methods of social philosophy. The trend of the courses is not altogether technical, but their aim is to serve as a foundation for future duties and interests as householders, owners and agents of tenements, students of social reform, administrators of schools, hospitals, prisons and kindred institutions, and practical philanthropists. Students showing requisite capacity are encouraged to pursue investigations along purely scientific lines.	Each of the six courses occupies three months, four or five classes being held weekly. An "elective" subject for M.A. degree. The length of time which may be profitably devoted to these studies depends upon the preliminary training and on the object the student has in view.	\$40 a quarter (about £8.) Largely endowed by Mr. Rockefeller.	The liberal endowment of this University enables every facility for practical work to be provided; the fine buildings having all been erected within the last ten years are replete with every modern convenience and improvement.

The special courses described as "Household Technology" are offered to meet the needs of the day and the demands of the students for some training in sanitary science. The instruction is intended to give men and women a general view of the place of the household in society, to train both sexes for the rational and scientific administration of the home as a social unit, and to prepare teachers in the subject. Supplementary courses in physics, chemistry, physiology, bacteriology, political economy, and the Study of Society are provided and required. Of course, these subjects are all elective, but they are attended by a fair and increasing number of students of both sexes. Three months is usually devoted to each sub-division, four, or perhaps five, classes a week being held. The tabulated particulars supply certain details, but a concise *resumé* of the topics included is desirable to indicate the scope assigned to the subject. Courses on Home Sanitation, Food Supplies and Diets, the Economy of living, and a "seminar" in Sanitary Science (designed for students capable of carrying on independent investigation) are conducted by Professor Marion Talbot, Dean of Women, at the University. The subject of Food, a practical course in the principles of Cookery, laboratory courses in the Chemistry of Foods and Household Bacteriology, and a theoretical course on the evolution of the house are entrusted to Professor Alice P. Norton. Professor Edwin O. Jordan undertakes courses in General Bacteriology and in Public Hygiene, studied from the standpoint of the bacteriologist; Physical Chemistry is under the charge of Professor A. P. Matthews. The sociological aspect of the subject is strongly emphasised throughout. Professor Charles R. Henderson himself takes charge of the courses on "The Family," the "Group of Industrials," and "Rural and Urban Communities"; while those on "Contemporary Society in the United States" and on "American Cities" are conducted by Professor Geo. E. Vincent. In the opinion of Professor Henderson, a knowledge of health principles is essential for everyone, and is required by him from all his students, many of whom are engaged in post-graduate work. The attention of these mature students is directed to the special study of such questions as the influence upon health of home and school, and kindred topics. In the seminar in Sanitary Science, for instance, each student is required to carry on some selected investigation, and to report upon their work. Such subjects as the use of food preservatives, the division of income in household expenses, or the comparative plumbing regulations in New York or Chicago are undertaken. The problem of domestic service is entered into fully in the "Economy of Living." The admirable conditions planned for the staff of servants in the Women's Hall of the University by Mrs. Ellen H. Richards of Boston, and Miss Sarah Wentworth, so long ago as 1893, offer an object lesson in the possibility of an eight hours' day for servants, at least in institutional life.

Professor Jordan's course in Public Hygiene proves both attractive and valuable. It deals with the application of bacteriology to the

Courses in Household Technology and related subjects—*continued.*

University of Chicago. Courses in Household Technology and related subjects — *continued.*

water supply, food supply, and sewage disposal of a city. The treatment has hitherto been by lecture and demonstration; but last autumn he proposed to include practical work, bacteriological, chemical, and microscopic, for his students. In their company he visits model farms and dairies, reservoirs, sewage works, and so forth. These expeditions arouse very marked interest among his students of both sexes.

Some prominence is assigned to hygiene in the Department of Pedagogy at this University, where the attention of students is consistently directed to related courses in biology, physiology, neurology, and social science. Dr. Dewey's lectures on the "General principles of elementary education," and Miss Camp's on the "Science of elementary education," require a previous elementary knowledge of general biology, physics, and chemistry. Miss Harmer, Director of Domestic Arts in the University Elementary School, gives two courses on the "Educational value and uses of the Domestic Arts," in which she indicates the claims and place of such work in education and their hygienic influence in the home; while Professor Locke deals with "School hygiene, sanitation, and construction." His students are referred to schools in Chicago and elsewhere for the practical solution of certain problems in heating, ventilation, and lighting; economic problems of fatigue, school diseases, faults of posture, etc., also receive practical as well as theoretical attention.

In the Department of Political Economy, Dr. Hatfield's course on Social Economics is also useful in the emphasis it lays upon the results of hygienic ignorance on the economic conditions of working men. Chicago and its vicinity afford abundant materials for the practical observation demanded of his students. This recognition of the almost imperative necessity for scientific training on the part of those who assume responsible positions, whether such positions be held as employers, paid officials, or as philanthropic and honorary workers, has been instrumental in the introduction of other classes in sociology by Professors Henderson and Vincent. In each of these the fundamental principles of hygiene are brought forward and their importance is affirmed.

I cannot resist mentioning in this connection the valuable Outline of Studies for Officers of Correctional Institutions drawn up by Professor Henderson, in fulfilment of a promise made at the National Prison Association meeting at Cleveland in 1900. The suggested course includes the elements of physiology and sanitation; a study of hygienic foods and clothing and a suitable introduction to sociology, psychology and pedagogy. It is proposed that such a curriculum should constitute a part of the training of all officials employed as prison warders, superintendents, assistants, and school teachers in reformatories and industrial schools. The outline contains an excellent bibliography arranged for each of the subjects suggested, all of which have not been enumerated above, but all of which would contribute toward approaching the inmates of such institutions in a spirit of true philanthropy, based upon a study of the human mind and body, as influenced by heredity, environment and temperament.

In the Correspondence Study Department of the University Extension division, sanitary science also finds a place. Courses in Foods and in House Sanitation are conducted by Miss Talbot and Mrs. Raycroft, which have been turned to account by students scattered throughout the States. These are elementary in character, but they serve to assist members of Women's Clubs and others who have no opportunity, or who cannot devote time, to attend a definite college course.

The last courses of study with which I propose to deal possess an unusual interest, for they find an honoured place at Teachers College, Columbia University, an institution of so unique a character that its history and aims must be briefly recorded before I pass on to my more immediate subject. Teachers College is the professional school of Columbia University for the study of education and the training of teachers. It is neither a Normal school nor a University Department of Pedagogy, but ranks as a professional school for teachers. It maintains University standards, aiming at the development of the four qualities held by its Dean to be pre-eminently desirable in a teacher; *i.e.*, general culture, professional knowledge, special knowledge and skill in teaching. Students may be of either sex, and may be engaged in, or preparing for, work in elementary, secondary, and normal schools. Opportunities for advanced study are available for specialists in various branches of school work, as well as for principals, supervisors, and superintendents of schools. The college was founded in 1888, and was the practical outcome of a noticeable discussion on "Education as a subject of University study," contained in President Barnard's reports; but it only became part of the educational system of Columbia University in 1898, when it was transferred to its present locality. It now takes academic rank with the Schools of Law, Medicine, and Applied Science. The donations towards its development have been most generous, amounting to at least \$1,250,000. In the early days of the college there was only one course, followed by every regular student; but the work offered in the several departments soon increased beyond the capacity of one individual, and sub-divisions became necessary. No department, however, undertakes work that is done adequately in other faculties of the University. This original course of study occupied two years; and from the outset a school of observation and practice was an integral part of the plan. Teachers College now offers forty-six courses in Education, among which may be mentioned those on the history and principles of education, educational administration, genetic psychology and child study, and others on the theory and practice of teaching biology, domestic art, domestic science, English, fine arts, languages, manual training, and physical training. Qualified students of Teachers College are allowed to pursue University courses in history, language and literature, natural science, mathematics, philosophy, psychology, ethics, anthropology, music, economics, and social science. Two Schools of Observation and Practice are maintained, one the Horace Mann

Teachers  
College,  
Columbia  
University,  
New  
York.

School, the other but just inaugurated, known as the Experimental School. The Horace Mann School, with its three departments, has been already mentioned. The Experimental School consists of a kindergarten and elementary school, also of special classes in sewing, cooking, and manual training.

The requirements for admission to Teachers College are as follows : to the two years' collegiate course—completion of a High school course ; if this be followed by a two years' professional course it leads to the degree of Bachelor of Science. To the two years' courses which lead to diplomas in elementary and kindergarten teaching, domestic art and domestic science, the fine arts, manual training, &c., completion of the collegiate course is the qualification for admission, or its equivalent in an approved college, or graduation from an approved normal school, or two years of technical training, or experience in teaching. To the graduate courses, college graduation, or its equivalent, qualifies for entrance. The fees for the graduate courses average \$150 (£30) ; in other courses \$100 (£20). The Faculty annually awards five fellowships of \$650 each, and seventeen scholarships of varying amounts.

The Dean of Teachers College fully maintains the convictions of its founders in his statement that a university " is true to itself when it undertakes the professional training of teachers ; for the interests of public education are as urgent and important as the interests of law, medicine or engineering." Dean Russell has also drawn desirable attention to the relation of other university studies to education. First, those " which contribute directly to the science of education, such as biology, which is concerned with vital processes ; psychology, which discloses the nature of the mind ; sociology, which deals with the inter-relations of individuals in society ; and ethics, which seeks to establish the principles of right action. Second, all studies, regardless of their immediate bearing on the science of education, may be considered as a means to inform and to develop the minds of the young."

It is the policy of Teachers College to afford every opportunity for specialisation ; but the faculty insists that the true basis of specialisation in education lies in liberal culture, accurate scholarship, and that professional knowledge which characterises the intelligent teacher. The chief problem in the educational administration of Teachers College, since it became a part of the University system, has been to devise and conduct courses of study suited to the needs of advanced students. The first step was to provide graduate courses for students who were capable of undertaking research and investigation in one special field ; to this end the course leading to the higher diploma was planned for graduate students whose interests were chiefly professional. It is intended to fit teachers of superior ability and of special academic attainments for the work of training teachers in colleges and normal schools, and for positions in the public school service requiring a high degree of professional insight and technical skill. Candidates for the higher diploma must be graduates of an approved institution of learning—a college, engineering school, a normal school, or the equivalent of one of these—and must present satisfactory evidence of a high degree of professional ability as a result of the study of education or experience in teaching. The real test of fitness, however, is the ability of the candidate to undertake research and investigation in one major and two minor subjects. The minimum period of residence is fixed at one year, but the necessity for completing some special task in line with the major subject, and of putting the results in form

for publication make it difficult for the average student to secure the diploma in the minimum time.

The Faculty is constantly engaged in the modification of courses, the raising of standards and the revision of curricula. Each year increases the confidence that progress is being made in the right direction, though it is realised with equal force that the end is not yet in sight ; a sentiment keenly experienced by Mrs. Woolman and Miss Kinné, who are respectively in charge of the Departments of Domestic Art and Domestic Science.

The courses of study pursued in these departments present many points of interest ; year by year they are developed and modified in the light of experience gained. Probably considerable changes in detail have taken place since my visit ; but the broad lines are the same, and I venture to hope that the necessarily imperfect notes I present in these pages may nevertheless serve to stimulate my readers to secure from headquarters fuller and further information on courses of such value and importance. The wide scope and sociological import of the groups of subjects described as Domestic Art or Domestic Science is evidently realised by those responsible for their selection and treatment. That this point of view receives the full support of the entire staff is again evident from the fact that students in Domestic Art are required to correlate their studies either with Domestic Science, with Fine Arts, or with Manual Training, while students in Domestic Science are advised to correlate their studies with Domestic Art or with Manual Training. The details I furnish differ apparently but little from those already supplied in regard to Technical School or certain College Courses, but in the spirit and methods is recognisable the end in view ; not the development of manual facility or even of hygienic habits, but "the meaning of the physical, social, moral, æsthetic and spiritual conditions of the home to the individual, and to society at large. The courses may be described as applied science and art, they do not offer technical training. It is felt that in a University these applied courses must have the same standing as pure science, and on these lines they are formulated, and from this point of view the Schedule of the two courses should be studied. For instance, the students of Domestic Art are required to practise, early in their training, advanced basketry and raffia work, as well as to construct a systematic series of models to cover the ground of plain needlework, not so much with the view of acquiring manual dexterity, as with the aim of thoroughly comprehending how, by such means, to draw out and build up a child's ideas ; how to substitute broad, free movements in place of fine stitching for young pupils, how to convert the subject into a general means of self-expression for all. Students are trained to observe and consider the interests, capacities and instincts of the child, and to adapt their instruction to these at various ages. In support of her methods, Mrs. Woolman points out that "early nations used the needle in many ways adapted to the use of children, in coarse weaving, in

(a) Course in Domestic Art. Table XXXIII.

(a) Course  
in Domestic  
Art—con-  
tinued.

basketry, in which rigid material was sewed together with softer fibres, such as wool and twisted bark; in mats, hats and baskets of the raffia palm fibre, in braiding, knotting, twining, netting, etc. All of these early steps in domestic art make an excellent foundation for sewing, and may be used to great advantage in the primary grades, where the awakening power of the child demands work in rapid construction and large adjustments. The articles should be simple in construction—of a character to appeal to the child's interests—and worth doing." Their practice work in the Horace Mann School affords the necessary opportunity to the students for testing their own command of this method, and for observing its influence on children. The remainder of the practical work in the Domestic Art Course follows accepted lines in the teaching of drafting and cutting of materials, dressmaking—elementary and advanced (the Vienna dressmaking system is that adopted), and millinery. At Teachers College, as in the Technical Institute courses, infinite pains are expended in the effort to cultivate a sense of what is appropriate and beautiful in design and colour and in developing the power to express this in execution. Certain Art courses are obligatory, while the Department itself provides one in Household Art and Design.\* Of this the aim is to apply general rules of art to the home, in order to foster good taste and appreciation of beauty in every-day life. It includes some consideration of healthful living and dressing; the colour effects and uses of textiles; and the principles of home decoration; training in facility to sketch and design with accuracy and rapidity; and the use of the needle in applying these principles to articles of home and ceremonial use. To further strengthen students in what seems to be fundamental to their speciality, they are advised to continue their studies along lines calculated to aid in understanding the scope and meaning of art; the result is evident in the bold and frequently artistic sketches made when they are engaged in the final stages of dressmaking and millinery. Domestic science is not ignored in this Domestic Art course; the study of foods and the processes of their production, manufacture, and cooking are obligatory subjects, while students are strongly advised to follow the course in Household Chemistry under Dr. Vulté. Practice lessons in sewing are given under supervision in the Experimental School. Here, from the first grade upwards, children are guided progressively from the practice of primitive methods of weaving and basketry, through varied phases of hand and needlework, until this evolutionary method brings them, in the High school, to a study of the existing manufacturing system and its social influences. Mrs. Woolman's interest in these sociological and industrial aspects of her subject becomes very apparent in her lectures on Textiles. This course covers a study of fabrics; the processes of their manufacture; the development of these processes, and their effect on social conditions, with the object of giving students not merely a knowledge of textiles, but of affording

\* See Appendix H.



TABLE XXXIII.  
TEACHERS COLLEGE, COLUMBIA UNIVERSITY, NEW YORK CITY.  
SCHEDULE OF DOMESTIC ART COURSE.

Institution and Course.	Entrance Requirements.	Scope of Course.	Methods.	Length of Course.	Fees and Finance.	Equipment.
<p>Teachers College, Columbia University. (The professional school of the University for the training of teachers.)  Domestic Art Course.  Directress, Professor Mary S. Woolman.</p>	<p>Evidence of completion of a satisfactory course in a secondary school, followed by at least 2 years' college study; or technical training; or experience in teaching.</p>	<p>Domestic Art. Needlework. } Textiles, study of } Drafting and making } Garments. } Principles of Dress- } making. } Household Art and } Design. } Foods. } Manual Training, } Hand work } Fine Arts (Design) } Psychology (Elements) } Education. } Application of Psychology } Principles and Methods } History of Education. } Theory and Practice of Teaching } Domestic Art. } Students are also recommended to take the following Courses. Advanced Course in Drafting, Dressmaking, and Millinery. Advanced Design and Art Interpretation in the General Course. Food Production and Household Chemistry. Theory and Practice of Teaching of Domestic Science.</p>	<p>The course aims at being both academic and technical.  It is intended to present the methods of teaching Domestic Arts in schools of all grades.</p>	<p>Two years.  Leads to Domestic Art Diploma, which is the equivalent of three years' University work.</p>	<p>Graduates \$150 (£30) Under-graduates \$100 (£20)  Books, etc. \$15 - \$30 (£3 - £6)  Total living expenses, \$300 - \$500 (£60 - £100)  Income derived from legacies and gifts administered by a Board of Trustees.</p>	<p>The most complete modern apparatus and appliances are provided throughout the spacious workrooms and studios.  A splendid library is at the service of students; with 18 special rooms to be used for study by advanced students only.</p>

Teachers College, Columbia University, New York.

them suggestions for methods of presentation in connection with their lessons in sewing. "The way things are made is of intense interest to children," writes Mrs. Woolman, "and the skilled teacher can easily make their history and manufacture a part of geography, school lessons in history, mathematics, etc." Through the right presentation of the whole subject, she anticipates also a revival of sympathy with and respect for manual labour.

In connection with this course on Textiles and that on Household Art, visits are paid to the mills, furniture stores, and museums. Lectures on the educational aspects of Domestic Art are preceded by a course in elementary psychology, given by Professor Thorndike, which includes the elements of the science, as well as the general principles which control successful teaching, so far as these can be derived from psychological laws, or from the study of school practice. Its aim is to prepare students for subsequent courses in the methods of teaching separate subjects. Professor Monroe takes the history of education, which is supplemented by Professor Woolman's course on the Theory and Practice of Teaching Domestic Art. Here the relationship of Domestic Art is considered (1) to the aims and means of education; (2) to the best methods of teaching it in public and other schools; and (3) to its correlation with other grade work. The planning and cost of courses of instruction are also considered. Students are constantly reminded that the personality of a teacher is one of the most important factors in her work; "her physical, mental, and moral influence is ever moulding her pupils, even without her effort; her teaching must, therefore, be grounded on culture; she should thoroughly understand the problems of modern education. . . . she should be inspired by a high ethical aim . . . to make the children efficient for good in the world, she must study their characteristics and interests; she must see, too, that the child's own will power is at work, and that he thinks out for himself every step in connection with the article in hand." Bearing this ideal in mind, a study of even the condensed outline of the course (Table XXXIII.) will have its own interest in showing by what means its realisation is attempted.

Miss Helen Kinné, the professor of Domestic Science, is imbued with the same true educational spirit as Mrs. Woolman, and both ladies receive an increasing amount of encouraging co-operation from other members of the faculty. The course in Domestic Science, as defined in the college "Announcement," is even more comprehensive in its allied studies than that in Domestic Art. The introductory courses in psychology and education are similar to those in the Domestic Art course, as is also the "reconmended" course in the Economic and Social History of the United States. This last deals with those special topics and phases of economic and social history which have direct and practical bearing upon the work of students in the departments of Manual Training, Domestic Science, and Domestic Art. It gives an idea of the nature and purpose of industrial growth; considers in detail the various economic and industrial conditions and problems

(b) Course in  
Science.  
Table  
XXXIV.

of the various sections of the United States at the present time; and the relation of economic and industrial forces to contemporary social conditions. A partial study is made of the economic and industrial condition of Europe in the sixteenth and seventeenth centuries, as based upon the mercantile system. The outcome of these conditions is traced in exploration and colonisation, and in the growth of economic industry in the American colonies, which culminated in the American Revolution. Attention is also directed to the industrial problems of the nation; and the contemporary social condition and problems are noted as outgrowths of economic development.

(b) Course  
in Domestic  
Science—  
*continued.*

Another course common to students of either Domestic Art or Domestic Science is that given by Dr. Vulté in Household Chemistry. To this he has given much thought, and through his courtesy I am enabled to include its synopsis.\* It is designed to include the study of the principal food products, such as sugars, starches, proteids, animal and vegetable fats, water and mineral salts. Special attention is given to the changes which take place during the operation of cooking, to the analytical tests applied to them, as well as to the chemical aspects of fermentation and putrefaction, and their prevention by chemical means, and sterilisation. The corrosive action of food constituents, acids, &c., on utensils is dealt with, as well as saponification, the action of detergents, hard and soft water, testing of milk, butter, cheese, water, &c.; the chemistry of fuels and of illuminants is also studied. Dr. Vulté does not lay stress upon expression of results in chemical equations, but aims rather that the subject should be approached and dealt with from the point of view of daily life requirements. He gives the theory in his lectures, and leaves the carrying out of experiments, in the form of problems, to his students, who work under his personal supervision. He also conducts an advanced course in the same subject; here original research is undertaken in the working out of problems which arise in the preparation of food, the use of fuels and cooking apparatus, and in laundering and other cleansing processes. It is intended only for advanced students who have a sound knowledge of elementary and organic chemistry.

The subject of Foods is taken up exhaustively in the Domestic Science course, and is studied in three courses. The first is designed to give a thorough knowledge of theory and practice in cooking, and to aid the student in arranging matter for teaching; it deals with the composition and nutritive value of foods, the fundamental principles and processes of cookery, and a comparative study of fuels and of cooking apparatus. Special attention is given to scientific methods in kitchen laboratory work, and to the adaptation of such methods to schools. The second is concerned with the production of food materials, such as dairy products, manufacture of flours, cereals, spices, &c.,

\* See Appendix H.

TABLE XXXIV.  
TEACHERS COLLEGE, COLUMBIA UNIVERSITY, NEW YORK CITY.  
SCHEDULE OF COURSE IN DOMESTIC SCIENCE.

Institution and Course.	Entrance Requirements.	Scope of Course.	Methods.	Length of Course.	Fees and Finance.	Equipment.
Teachers College, Columbia University, N.Y.  Domestic Science Course.  Directress, Miss Helen Kinné.	Evidence of completion of a satisfactory course in a secondary school, followed by at least two years collegiate study, or technical training, or experience in teaching.	Domestic Science. Foods, 2 years, 4 hours a week. Food production and manufacture, 1 year, 2 hours a week. House Sanitation and Economics, 1 year, 2 hours a week. Chemistry—General, Household, 2 years, 2 hours a week. Biology, Physiology, Personal Hygiene (this includes Occupation, Recreation, Physical Culture), 1 year, 2 hours a week. Psychology, 1 year, 1½ hours a week. Education—Application of Psychology, History of Education, 1 year, 3 hours a week. Theory and Practice of teaching Domestic Science, 1 year, 4 hours a week. Students are recommended to take as "electives":—Bacteriology, Household Chemistry (advanced course), Laundry work, Home Nursing and First Aid, The Teaching of Domestic Art, Sewing and Making Garments, Critic Teaching, Hand Work, Economic and Social History of the United States.	The practical work includes practice in the kitchen, chemical and bacteriological laboratories, observation, assistance and teaching in school classes, the planning of laboratory equipment, and assistance in the management of the departmental house-keeping. The theoretical work includes the consideration of courses of study and the planning of lessons. The course is intended to present the methods of teaching Domestic Science in schools of all grades.	2 years.  Leads to Science Diploma.	Per annum Graduates. \$150 (£30).  Undergraduates. \$100 (£20).  Books, etc., \$15-\$30 (£3-£6).  Total living expenses, \$300-\$500. (£60-£100).  Income derived from legacies and gifts administered by a Board of Trustees.	Very complete laboratories, biological, chemical and for special Domestic Science work; all equipped for individual work.

as well as with food adulterations and other processes in the preparation of food materials. The third takes up advanced cookery, the preservation of food, cookery for invalids and children, food values and dietaries, the planning, cooking, and serving of meals, a waitresses' course, and marketing. The cookery practice is made as experimental as it can be, in order to enforce and to illustrate fundamental principles. Students are set problems from which to gain their own experience, and are trained not to rely on that of others as recorded in cookery books. No stereotyped set of recipes is worked through; laboratory rather than ordinary kitchen methods are enforced, and such variety of problems presented as to demand practical individual solution from each member of the class. A tabulated method of record is usually employed, by which the effects of heat, of varying proportions of materials, &c., are set out graphically.

Botany and zoology, under Professors Lloyd and Bigelow, are studied in the form of lectures, laboratory work, recitations, excursions for field work, and collateral reading. These courses are obligatory on Domestic Science students, and must be taken before the course in physiology and hygiene, in which the same professors adopt similar methods. This latter course covers a laboratory study of the structure of cells, tissues, and organs in various organisms, both plant and animal, including man, and of the fundamental principles of hygiene, personal and domestic. Individual hygiene is also studied from the standpoint of occupation and recreation, the claims of physical culture receiving attention. Home sanitation and economics find a place in the second year of study. The course embraces the following subjects: situation and structure of the house, water supply, disposal of waste, heating and ventilation, lighting, healthful furnishing, cleansing of the house, development and organisation of the home and its adaptation to modern conditions, systematic methods of housekeeping, the cost of living and household accounts, domestic service. The lectures on bacteriology are optional; they are associated with practical laboratory work, in illustration of the theoretical teaching which deals with the nature of bacteria, with methods of isolation and recognition of species, the part which bacteria play in nature, the industrial uses to which they are put; the bacteria of air, water, ice, milk, and foods generally; the methods of sterilisation and disinfection; the relation of bacteria to disease, and, in connection with this, certain phases of hygiene and household sanitation, extending to the care of the sick. This and the courses in Home Nursing and Emergencies are so usually elected that they enter into the training of the majority of students. These last-mentioned subjects consist of lectures, with practical illustrations and experiments on the part of the students, and are considered to afford sufficient training to enable teachers to present the subjects in the schools. Both are conducted by a trained nurse. The course in Laundry-work includes both theory and practice. No

(b) Course in  
Domestic  
Science—  
*continued.*

b) Course in Domestic Science—*continued.* laundry is provided, but the practical work is carried out in the large kitchen laboratory by means of portable equipment, upon which much thought has been expended. That this has been to good effect is shown by the success which has attended its employment not only for the college students, but for public school work in poor districts where no "centres" are yet organised. This subject is of recent introduction, and has by no means reached its final development.

Another course described as "Supervision and Critic Teaching in Domestic Science" consists of conferences and practical work under Professor Kinné. It affords opportunity for practical investigations of conditions and problems in Domestic Science teaching in schools, colleges, universities, clubs, and social settlements; it also includes a study of the development and present status of domestic science at home and abroad; the organisation and management of departments; supervision in city schools; and critic teaching in normal schools.

The enrolment in both departments is progressing steadily in number. During last year 114 students, all women, were under instruction in the department of Domestic Science, while sixty-six, of whom four were men, were found in that of Domestic Art. Miss Kinné and her colleague, Mrs. Woolman, have in view a scheme to combine the two-years courses in each of these two subjects into one three-years course, especially for the training of inspectors; but, among other difficulties, they are confronted with the fact that the students who select the one or the other of these courses of study are usually of temperaments and types of mind so different that for one individual to gain intelligent command of all that would be involved in such a combined course would be a relatively rare attainment.

A perusal of the preceding pages cannot fail to have impressed on the mind of the reader the valuable impetus given to educational progress by the work carried on in the independent institutions of all grades to which this part of the Report refers. It is evident that official coercion is not needed to stimulate the zeal which finds an honourable outlet in thus promoting studies framed to advance the efficiency of the nation. It is true that much still remains to be done in the development, multiplication and organisation of these courses, nevertheless, each year's work is more full of promise for the future, while at least a decade must elapse before its fruition can reasonably be anticipated.

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## PART III.

SOCIAL AGENCIES FOR THE PROMOTION OF DOMESTIC SCIENCE.  
TEACHING.

That the educational institutions of a country reflect the public opinion of its people is an assured, though relatively somewhat recently recognised fact. Its acceptance will direct the attention of thoughtful observers to a study of the forces active in the formation of current national beliefs. Of these, there are two distinct classes: the one, by its progressive spirit, moulding the conception of the few wise or far-sighted into the ideals of the many; the other retarding advisable developments, because the issues at stake are allowed to be obscured by the prejudices it fosters. These dual factors are constantly at work, and always important, whether in the sphere of sociology and philanthropy, or in the scholastic, commercial and professional worlds; most particularly so when the subject presented to the public for consideration is closely linked with daily life. Therefore, this Report on "The Teaching of Hygiene and Household Science in the United States of America" would be incomplete without a reference, however brief, to the social, as well as to the educational, agencies which are responsible, to a greater or less degree, for the promising activity of interest in these subjects observable in the schools and colleges of the country. The provision of a more healthy, happy, intelligent, and economical home life is rightly considered to be a national problem; its solution is not relegated to one profession, or confined to one state; the movement in favour of sanitary reform is increasingly general, and I could not fail to be impressed with the unfeigned interest expressed in it by both sexes in many different centres. In the case of men, this seemed stimulated chiefly by their desire for national supremacy; in the case of women, it was more often the domestic side which appealed to their sympathies. It also appeared to me that there exists a small percentage of professional and commercial men, who sincerely deplore the melancholy corruption which is so serious a blight on the country's municipal life. Their hopes for sweeping and immediate reform are not great; but they look for a gradual transmutation of the base ore of self-seeking into the refined metal of zeal for social progress by a succeeding generation, which shall be trained in the best traditions of citizenship during early and impressionable years. Professor Adams has said that "the requisite of a citizen is that he should be able to appreciate and feel and understand those forces that touch his life"; he must be able to grasp something of the import of heredity, and of the powerful influences of environment. Apart from sanitary science based upon biology, how is this appreciation or understanding to be fully gained? Testimony that a study of hygiene furnishes one necessary foundation to good citizenship

is afforded by the fact that in Chicago University, the State University of Michigan, and elsewhere, the courses offered are the direct outcome of the male students' sense of need; a sensation of sufficient strength to embolden men in some other universities to follow Household Science Courses, hitherto confined to female students, until provision is made for courses better suited to masculine requirements.

Sociology and Economics are subjects much discussed just now in the States; increasing attention, for example, is devoted to their study in High Schools; and it would seem to good purpose, if a more general demand for and interest in the study of public health be the enduring fruit. The mere making of man into a better animal is the argument which it must be admitted carries weight with the majority in the business world. That Boston merchant is by no means unique, who supported the introduction of Physical Culture (to include a knowledge of Hygiene) into the curriculum of both boys and girls in the High School of Brookline, on the grounds that the clerk who knows how to keep himself mentally and physically at high-water mark has his financial worth to his employer materially increased. Thus, though the motives, when analysed, may be very mixed, and not always of a high ethical standard, their outcome bodes well for the efficiency of the nation.

#### A.—WOMEN'S CLUBS.

Their  
organisation  
and  
methods.

This awakening to the importance of intelligent civic administration is, however, not confined to men. The records of many cities testify to the vivid interest taken in "municipal house-keeping" by women, and to their achievements in that sphere. The influence they exercise upon public life in the United States is due, among other causes, to the strength derived from co-operation. The social life of the nation is woven into one great web by a network of women's clubs. These are federated into large organizations, which knit together those units separated by apparent distance, and facilitate the concentration of an almost irresistible force upon any selected subject. The significance of the term "club" differs from that attached to it in this country; any community of interest which links a few women together for some common object—for example, the study of art, or of history, or a foreign language, or some measure of social reform, or some political alarm, results in the formation of a "club," or perhaps of a special branch of one already in existence. The clubs of a district, town, or city are usually federated under a President, who, while supreme in her district, is subservient to the County or State President; the whole organisation finds its focus in the National President, elected at definite intervals from among the State Presidents. Great independence is characteristic of these clubs; there may be activity or indolence, concentration of interest or diffusion of energy, ideals confined to vague theories, or demanding instant realisation in practice; but there is one fact assured, and that is that women have it in their power, by this means, to mould public opinion to



an extent inconceivable in Great Britain. Signs are not wanting of the realisation that the responsibility thus involved must be lived up to and prepared for; among these may be mentioned the growing demand for assistance from University Extension lectures, and increased attendance at the Summer Schools.

In addition to periodical congresses, at which the attendance of experts gives worth and vitality to the proceedings, it is the custom among these women's clubs to meet at frequent intervals, to pursue the study of some selected subject. A yearly programme is drawn up; for instance, in the Domestic Science Club, the topics chosen range over the whole wide field of personal, domestic, educational and municipal hygiene:—House Construction; Plumbing; Ice Supply; the Problem of Domestic Service; what constitutes a good Menu; Household Accounts; Art in the Household; Recreations; School Sanitation; these are a few culled at random from a last year's list. A subject is assigned to each member, who is required to study and present a paper upon it at a given date; free discussion follows the reading of this essay. I heard repeatedly of the beneficial results which follow this amateur work; not the least of which is the growing interest among mothers as to the teaching of Domestic Science in High and Grammar schools. Material assistance in home and club study is afforded by the system of Travelling Libraries, loaned, for six months or longer, to any registered club by the Public Library Division of several State Libraries.

In illustration of the good missionary work possible of performance by a local branch of one Women's Club, I may mention the Illinois Association of Domestic Science, though examples could be easily multiplied. The objects of this Association are "to stimulate interest in all that pertains to home-making; to instigate the organisation of domestic science associations in order to coordinate the work; and to secure the introduction of the study of domestic science into the educational system." The President and her Committee were animated in the first instance by a desire to introduce better methods, based upon sound reasons, into the conduct of their own home life; then they desired to interest those whose existence is usually hampered by unintelligent "rule of thumb" habits, and who are hard to reach in consequence of their often isolated dwellings. Stimulated by enthusiasm, these women took advantage of the presence of a large number of club members on the occasion of the annual meeting of the Illinois Farmers' Institute, held at Champaign in February, 1898; they called a meeting, at which attention was directed to the advantage of organising a State Domestic Science Association. In this instance, the intention was more particularly to reach the farmers' wives; that is to say, to initiate a movement which should provide for them what these Institutes do for the farmers, *i.e.*, a recurring opportunity for the discussion of professional questions, and for the securing of new light or reliable information upon doubtful points. The support afforded by the men was so cordial that, from the start, the Association was looked upon as a legitimate

Specimen  
organisations  
for  
promoting  
Domestic  
Science  
Teaching.  
(a) Illinois  
Association  
of Domestic  
Science.

part of the Farmers' Institute's work ; and, soon after the first annual meeting, the Institution Board passed a formal resolution by which the Illinois Association of Domestic Science was recognised as an organisation affiliated to the Illinois Farmers' Institute, while a committee of the directors was appointed to look after its interests. That the women worked to some purpose is evident from the endowment three years later of scholarships for girls in Household Economics, tenable at the Illinois State University, of the same number (two to each county of the State) and on the same terms as those in Agriculture, appropriated some years previously to young men.

6) Sanitary  
Science  
Club of the  
Association  
of College  
Alumnæ.

Foremost in the earnest, intelligent, public service rendered by women has been the Sanitary Science Club of the Association of College Alumnæ, which is itself composed of graduates from certain selected women's colleges of high standing. This department of the Association was organised in Boston twenty years ago, when there were as yet few college graduates in the country, and fewer still at the head of homes of their own. Its object was the promotion of home sanitation, and for the first two years of the Club's existence, its members devoted their time to general study of the subject and to research into methods, either in the homes of the club members, or in those opened for this purpose by friends. Such positive help and satisfactory material resulted from this work that two of the members were appointed to edit the notes made. The resulting publication, issued in 1887 and brought up to date by subsequent new editions, retains its position as an acknowledged text-book, and has influenced large numbers for good. With the advantage of that increased knowledge, which results from accumulated and sifted experience, this Sanitary Science Club has directed its attention to the betterment of homes of all classes ; to the securing of necessary reforms in school and municipal sanitation ; and to the introduction of suitable opportunities for a study of the subject of Home Economics into High Schools and Colleges. For some years several of the most prominent Club members have been engaged in teaching Sanitary Science at the University of Chicago, the Massachusetts Institute of Technology, and other important educational centres. It is regrettable that the interesting exhibit of "The Work of College Women for the Home" was not more generally observed at the Paris Exhibition of 1900, for it constituted an instructive record of good work done. Plans and descriptions of houses were included, as well as specimen details of administrative work carried on by these women, and a bibliography of their published writings. A recent exhibit in the cause of Home Economics at Boston illustrated in seven sections their practical services to the community ; these consisted of : (i.) Bibliography ; (ii.) Home Economics applied to children ; (iii.) applied to Shelter and Furnishings ; (iv.) applied to Food ; (v.) applied to Clothing ; (vi.) applied to Household Management ; (vii.) suggested applications of the subjects to Public School instruction. The exhibits included useful models,

notably one of the New England Kitchen at Boston; a clever portable device for the division of an ordinary schoolroom into four rooms for housewifery lessons; examples of hygienic clothing for children; laundry and food exhibits; dietaries calculated at various figures, and some of Mrs. Ellen H. Richards' useful aids to intelligent and wholesome housekeeping. Indeed, it may be justly said, to their honour, that the college women of the United States were among the first to see the importance to the home of healthful management and environment, and to take practical means to secure such conditions. To them is due the credit for directing attention also to the true significance of Domestic Economy, viz., that it embraces economy of time, of method, and of strength, as well as of pounds, shillings, and pence.

The work and publications of the Sanitary Science Club of the College Alumnæ are undoubtedly largely responsible for the inception of another social organisation, the National Household Economic Association. This was actually formed as the direct result of a congress held at the Chicago Exhibition, 1893; it now embraces a large membership in thirty of the States and in Canada. Its work lies chiefly among the well-to-do classes, though its members assist in the training of women in very poor districts. Both sexes are eligible for membership. The Annual Congress, held for three or four days in some important centre, serves to stimulate its own supporters, while it arouses interest among those previously indifferent to its objects. To awaken the middle class to a sense of the dignity, interest, and importance of Household Economics has been very uphill work. But the President can now report hopeful signs of ground securely gained among a class often difficult to influence, hedged in as it is by social convention and the possession of homes, which, because they bear the hall-marks of comfort or wealth, are presupposed to possess the sign manual of health. However, the Committee are spurred on to persevering efforts by the conviction that the formation of an intelligent public opinion on the right conduct of home life among these educated members of the community is an indispensable factor in its general study; while, incidentally, they anticipate that one outcome may be some promising solution of that most vexed problem, the future of domestic service. The Association endeavours to work through existing organisations; consequently, it puts itself in touch with the Women's Clubs throughout the country, and has successfully secured the inauguration of many a department in this subject, as well as organising local committees for the conduct of specific lines of study. These local committees are urged, in their turn, to influence the Farmers' Institutes, School Managers, Factory Girls' Clubs, indeed all industrial, sociological and educational organisations; as a result, more attention is given annually to the essentials of successful housekeeping, to the right care of children, and to the making of attractive and healthy homes.

(c) The  
National  
Household  
Economic  
Association.

(d) The Women's Institute, Yonkers, N.Y.

The Women's Institute, Yonkers, New York, offers an excellent example of somewhat similar work, carried on among another section of society, in which also the Young Women's Christian Association is satisfactorily active. This Institute was founded in 1880, and owes its existence to Miss Mary Marshall Butler; its membership is largely composed of those employed in the factories and mills in the neighbourhood. Club membership entitles to the use of a lunch-room, where excellent hot food, tea, coffee, and fruit are served daily to upwards of eighty or a hundred of these factory workers. Evening classes in cooking, sewing, millinery, and dressmaking, etc., are provided at very low fees, usually two shillings for ten lessons. Special classes for married women are provided in the same subjects; also courses in invalid cooking for nurses from the local hospital, and Saturday classes for school children.

(e) The Civic League.

But the departure to which I now desire to draw attention was the foundation, in 1895, of the Civic League, which can already show a good record of practical results, attained through the active co-operation existing between the members and the public authorities. Lectures have been given on "The Hygienic Care of Milk," "Improved Housing," "The Consumers' League," "Our Public Schools," "Children's Playgrounds," and other kindred topics, which have not only stimulated interest but borne fruit. The appointment of a woman Sanitary Inspector in 1900 is the direct outcome of tactful action taken by this League. The approval by the Board of Education of the appointment of a School Visiting Committee is another tangible result of its work. This committee visits the schools regularly, confers with the teachers, and reports concerning hygienic and sanitary matters. Not only do problems of ventilation and cleanliness receive their attention, but care is given to the physical condition of children in need of fresh air, of improved food, or of warm clothing. The teachers eminently appreciate the interest displayed by this committee in the teaching of civics, of nature work, and of physiology, as well as in the suitable decoration of schoolrooms and in the organisation of boys' and girls' clubs. Among other hygienic achievements may be enumerated the introduction of Cooking into the Evening Schools, and the initiation of Kindergartens during the three months' summer vacations.

(f) Women's Educational and Industrial Union.

The last of these numerous social, as distinguished from philanthropic, organisations which I will mention is the Women's Educational and Industrial Union. This Union has branches in numerous cities, with committees on Domestic Science, Hygiene, Physical Culture, and "Kitchen Garden" work for children, as well as on its other numerous interests. The activity of these branches is probably a variable quantity; but annual reports testify to new ground broken and fresh seed sown. Reference has already been made in Part II. to the special outgrowth of this Union, the School of Housekeeping, now a department of the Simmons College for Women at Boston.

B.—PHILANTHROPIC AGENCIES.

Before I touch upon the numerous philanthropic agencies which play a valuable part in the formation of an intelligent public opinion upon Household and Sanitary Science, it may be well to remind my readers of the influence exercised on the public school curriculum by private individuals and by voluntary organisations.\* These agencies, when convinced of the social advantage to be derived from certain subjects, initiate them at first on a modest scale, in the form of free Saturday, evening, or vacation classes; when satisfied that the instruction meets a distinct want and is worthy of public recognition, they exert all their influence to secure its adoption by the official school authorities. Instances are not far to seek of this zeal attaining such proportions that private individuals even undertake to defray all expenses for a time after the subject has been introduced into the public schools.

Such pioneer work, along many lines, has been carried on with success in Indianapolis for some years past; indeed, the free Kindergarten movement in that city dates back to 1875, and its superintendent reports continuous and encouraging developments. It would seem that honest efforts are made, even at the early age of Kindergarten children, to judiciously prepare the little ones for home and school life and for future citizenship, as well as to provide for them conditions of wholesome growth. And so it comes about that five and six-year-old children are admitted to what is described as the "Kitchen Garden," or the "Little Housekeepers' School," where the miniature furniture, dishes, brooms, and buckets are arranged with special consideration for their capacity and strength. Every phase of home work, except cooking and laundrying, is taught in these classes. That pleasure and profit is derived from this weekly instruction is apparent from the demand for promotion to the regular Domestic Training School as soon as the age limit is attained. This is from eight to seventeen years, although coloured students up to twenty have gladly availed themselves of the opportunity for securing the training in Domestic Science afforded by this means. The children of all ages attend at the various centres each Saturday at 9.30 a.m.; that particular hour is fixed to give both boys and girls time to assist previously in regular home duties, and thus to impress upon them the priority of home claims. The training is thoroughly practical in all lines of domestic work; the children are asked to practise these weekly lessons at home, and the mothers can themselves have the methods taught to their children explained in special classes should they so desire. The Domestic Science Course is arranged as follows:—Cooking, seven lessons; practical dining-room and table-setting classes, six lessons; hall and stair-cleaning classes, four lessons; parlour classes, three lessons; bedroom classes, four lessons; sewing classes, twelve lessons; laundry, three lessons; cellar, three lessons; elementary Sloyd and woodwork, nine lessons; whitewashing, one lesson.

Examples of Household and Sanitary Science Courses. (a) Indianapolis Kindergarten and Domestic Training Schools.

\* See Introduction to Report.

(a) Indian-  
apolis  
Kinder-  
garten and  
Domestic  
Training  
Schools—  
*continued.*

The food cooked is, so far as possible, that which the children could afford to have at home; they are taught how to choose and use it economically and to prepare it wholesomely. They keep their own recipe-books, but are required to know their contents sufficiently well to cook from memory; incidentally they learn the care of the kitchen, pantry, and closets. Right methods of daily, weekly, and yearly cleaning are slowly and carefully inculcated, by theory and in practice; while the practical dining-room work includes, besides table-setting and serving, the proprieties of personal behaviour and the care at table of a baby or of little children. The sewing course has six divisions; in the first the different stitches are learnt, to be applied in the doll-dressing department; there is a crochet class (for which the mothers asked) and another for the mending of garments and the darning of stockings; the fifth is ambitiously described as the Dressmaking School, in which the use of the sewing machine is acquired; and, finally, satisfactory results are quoted from the hat and bonnet trimming class, which forms the sixth department. The superintendent, Mrs. Eliza A. Blaker, reported to me that the result of this training is readily apparent in many homes of the districts from which the children attend; and from other sources I learnt what excellent results follow the instruction. It seems as if the aims held in view were actually attained. Mrs. Blaker states her objects to be the brightening of the homes of to-day; the removal of drudgery from home work; the formation of industrious habits; the inculcation of the great value of personal cleanliness, courtesy, neatness, method, clean houses, and well cooked food to others besides the individual learner. Attendance is purely voluntary; it amounts to 2,000 annually; the young pupils flock to the classes because they really enjoy the work. The first of these Indianapolis Domestic Training Schools was established in 1888, and the number of centres has apparently increased at the rate of one a year. The students at the Normal School at once volunteered their services as helpers, whereupon an unforeseen result followed. In 1894 *practical* work in Domestic Training became the regular exercise on Friday afternoon in the Normal School, where hitherto the students had gained their information by theory only. Each pupil has, since that date, rehearsed in practice the work she will teach to, and require of, the children the following morning. No materials were purchased with which to begin the teaching—"Had we not rooms to sweep, chairs to be dusted, floors to be scrubbed, woodwork to be cleansed?" Sewing, cooking, table-setting, were introduced as occasion offered, and the majority of necessary and desirable articles have been given by degrees.

The organisation of this Indianapolis Society is far-reaching, for in this Domestic Science Department alone, in addition to the work being carried on for children, fourteen Mothers' Classes on Cooking and on the Training of Children are conducted in different sections of the city, and the same subjects are dealt with in the Young Women's Evening Clubs.

The School of Domestic Science attached to the Boston Branch (b) Y.W.C.A. of the Young Women's Christian Association provides a series of lessons in Domestic Science for primary school children, described as the "Kitchen Garden." Here again the course of ten hours' is devoted to lessons in cooking and to the practice of household occupations, by the use of toys and by means of songs and games. School of Domestic Science, Boston.

Another most interesting pioneer course exists at the Louisa M. Alcott Club, started in one of the poorest neighbourhoods of Boston by Miss Isabel F. Hyams, as a result of observing on all sides the ignorance of how to manage a home. She felt that to enter each house with a view to training its inmates would be, if not impossible, yet a great waste of power, and concluded that the young citizen should rather be trained in the principles of home-making through a system of "play in earnest," continued through several years of life, until the methods learnt would have become habitual. She therefore took a house in one of the most unpromising streets, furnished it brightly yet simply, and opened its doors to the children of the neighbourhood. The upper rooms are devoted to Kindergarten; the well-lit basement is reserved for these domestic classes. The utensils provided are of such a size and so arranged in the cupboards that they are within the reach of the smallest child, and each is entirely responsible for her own. They are taught to wash the dishes, set the table, sweep and dust; small brooms, dustpans, etc., being provided. As the lessons usually succeed the ordinary school day, they are rightly limited to one hour in length. This frequently necessitates previous preparation of some part of the work, as all the processes cannot be carried through in so short a time. For instance, if the lesson be on the service and clearing up of a meal, the food required must be prepared before the class assembles. The first year's experiment was but a qualified success; too much was attempted, and the character of the work proved unsatisfactory. The second year's experience was much more encouraging; provision was made for individual, not group, work, evidently indispensable to obtain the desired results. The average age of the youngest class is eight years. The kitchen is kept as near the home ideal as possible. Miss Hyams hopes eventually to furnish a living-room and bedroom in the same way. It must be remembered that the work is carried on in what we should describe as a slum district, where ignorance and often poverty prevail. No one in the neighbourhood occupies a whole house; many families live in dark rooms, with air-shafts only to ventilate the inside bedrooms; and the children are entirely unconscious of any other possible conditions; so the first lessons are given to thoughts about what constitutes a home. The rooms of a house are talked about in turn and their uses considered; then the children think out and decide the names and uses of the simple kitchen utensils provided. Next, they fill their own linen chest, a famous incentive to conquer the use of the needle. A start is made with cheese-cloth dusters, after which towels, napkins, and table-cloths are hemmed, each (c) The Louisa M. Alcott Club, Boston.

article being on a scale proportioned to its maker. This introduces the need for laundry work, to which the children take very kindly. The subject of cooking is approached through the consideration of some seasonable, familiar, and simple food, *e.g.*, the potato; few of the children can at first trace its origin further back than the shop; so a sprouting potato is examined, compared with other plants, and planted, to be finally compared with a picture. By this and other means their eyes are gradually opened to the realisation of the many agencies needed to provide the boiled potato which forms so common an article of daily diet. All the lessons and their subjects are taken up in this way; a method which Miss Hyams feels to be best in this instance, as it widens the children's horizons and exercises their imagination and observation, while it guides them into more wholesome and intelligent habits. The whole object of this particular club is to better the home conditions of a very poor neighbourhood, to further which a class for elder girls in cooking is also carried on. At first the preparation of a whole meal was tried with them, but time limits obliged this to be too hurried; so at last the existing plan was devised. The lady in charge supervises the preparation of and gives the recipe for the dish selected at one lesson, while on the next occasion the girls are required to come in, set about and carry on the entire process alone, though their instructor remains in the room and assists where help proves necessary. This method, while making no serious demand on the children, leads to the exercise of attention, forethought, and good method.

Much care and ingenuity have been devoted to the equipment of this children's kitchen, which impressed me particularly by its practical completeness, compact arrangement, and the advantages it offers for the acquirement of orderly habits and a desirable sense of personal ownership. Three wooden shelves are fixed below the windows, right across one end of the room. These are sub-divided by partitions into ten cupboards, each two feet high by one foot wide; in these are kept, respectively, a half-pint saucepan, bowl, baking-dish, tin plate, vegetable knife, fork, spoon, and other small ware. On the long shelf which forms the top of the series of cupboards, and on the wall above, are placed the articles less frequently used, such as scales, spice boxes, meat chopper, etc. The children have also an extension table for cooking and little chairs of the right height for meals, a refrigerator, a chest of drawers to hold table and kitchen linen, a china closet and gas range, etc., all small, but perfect in detail. The means for washing and ironing have also been provided; tubs, trestle tables, irons, ironing boards, and so forth; bare necessaries, no luxuries, but everything bears the impress of being used and kept decently and in order.

(d) Free Lectures.

The educational value of all this private enterprise in good habit training, with its eventual influence on public health, is not lost upon the Boards of Education in the cities where it is at work; while its social worth is recognised, though as yet vaguely, by



TABLE XXXV.  
CHAUTAQUA (SUMMER) SCHOOL OF DOMESTIC SCIENCE.

INSTITUTION AND COURSE.	ENTRANCE REQUIREMENTS.	SCOPE OF COURSE.		LENGTH OF COURSE.	FEES.
<p>Chautauqua School of Domestic Science.</p> <p>Normal Course in Domestic Science.</p> <p>Directress : Mrs. Alice Peloubet Norton.</p>	<p>(1) A High School Diploma or its equivalent.</p> <p>(2) Actual teaching experience.</p>	<p style="text-align: center;"><i>First Year.</i></p> <p>General Chemistry. 8 hours a week. (Lectures and laboratory.)</p> <p>Physics. 5 hours a week : Energy in its forms : Air. Water. Wells. Heat. Electricity.</p> <p>Physiology. 3 hours a week : Chemical elements : Tissues and organs of human body ; circulation, respiration, and digestion.</p> <p>Botany of Food Plants. 5 hours a week. (Lectures and microscope work.)</p> <p>Domestic Science. 5 hours a week : Food materials : Their composition, cost, and digestibility. Home Sanitation : Its planning, furnishing and care ; plumbing and drainage ; physics and physiology of ventilation ; heating and lighting ; the chemistry of combustion ; chemistry and bacteriology of cleaning.</p> <p>Cookery. 5 hours a week : Practice work. Food principles and laws of cooking. Animal, vegetable and cereal foods. Making of dough ; simple daily menus ; invalid cooking.</p>	<p style="text-align: center;"><i>Second Year.</i></p> <p>Applied Chemistry. 5 hours a week : (Laboratory work and lectures.) Qualitative tests of food materials. Study of proteids, starch, sugar.</p> <p>Physiology. 2 hours a week : Animal functions. Muscular physiology. Digestion. (Illustrated with fresh specimens and mannikin.)</p> <p>Bacteriology. 5 hours per week : (Lectures and laboratory work.) Description and life history of bacteria. Methods of culture. Bacteria in dust, water, and milk, etc. Administrations of Households. 5 hours a week. (Small and Large.) Household expenditure. Food as an economic factor. Diet and dietaries (schools and institutions.) Methods of keeping accounts. Housekeeping equipment. Helpers, their training, duties, hours, and wages. Economic buying and storing of food. Planning of menus with balanced ration. Simplest ways of serving meals.</p> <p>Experimental Cooking. 5 hours a week : Existing methods of preparing food judged by scientific standards.</p> <p>Pedagogy. 5 hours a week : Principles of pedagogy as applied to the teaching of domestic science. Planning of courses. Sewing.—(Special classes with extra fee )</p>	<p>2 years. 6 weeks a year.</p>	<p>First year, \$40 (£8).</p> <p>Second year, \$45 (£9).</p> <p>Single lectures, 35 cents (1s. 6d.).</p>

many of the community at large. Some city Boards of Education have Saturday Morning Classes in Cooking and Sewing for girls, while these and Evening Classes for girls and adults are offered by practically all the Technical Institutes and in some Manual Training High Schools. The subjects of Physiology and Hygiene being obligatory in schools do not depend for their introduction upon outside agencies, but that an interest in them is manifesting itself among adults is evident from the fact that courses of instruction in them are becoming more general in the published schedules of Free Lectures; especially has this been the case in the boroughs of Manhattan and the Bronx, New York City. The Superintendent of the "Free Lectures to the People," Dr. H. M. Leipzinger, brought forward some interesting facts in this connection in his last Report. After drawing attention to the large and steady attendance at most of the centres, and to the discomfort frequently but cheerfully suffered by the crowded audiences (old men and women, after climbing sixty-five steps, obliged to sit on benches meant for children, etc.), he enumerates in order the subjects which excite this thirst to learn, and which, in one season, held the attention and awakened permanent interest among more than half a million middle-aged people. Physiology and Hygiene head the list; Civics appear in company with History and Geography, while Sociology closes the roll of first favourites, following after Music and Art. By means of illustrations, where possible by experiments and lantern views, the eye, ear and brain are stimulated and trained; so that he feels it to be now justifiable to plan a four-years' course in several lines of study, of which Hygiene is to be one. Those who wish to pursue a definite course will thus be enabled to get a general and well-defined outline of their subject; at the conclusion of the period they will be entitled to receive a certificate, which shall possess a genuine value.

(e) People's University Extension Society, N.Y.C.

(f) University Settlements.

(g) Vacation Schools.

Hygiene teaching on simple lines is undertaken by the People's University Extension Society of New York; while similar educational lectures are given by competent teachers at many University Settlements, among which special mention should be made of those at Hull House, Chicago. I must not omit to mention that domestic subjects are also included in the classes offered to boys and girls in most of the social settlements in New York City, Chicago, Cleveland, O., Columbus, O., and elsewhere. These, with many other branches of manual work, prove, exclusive of the excursions, the most popular features at the various schools carried on by voluntary agencies, in an increasing number of cities, during a part of the three months' summer vacation. It would be beside the mark to dwell at length upon these Vacation Schools, with their ideas, methods and influences; though it has quite recently been proved in London, that the short holidays usual in England among the class of children they are designed to benefit, does not prevent the possibility of their successful introduction into this country.

C.—SUMMER SCHOOLS.

The case of Summer Schools for adults is somewhat different. These are also held during the long cessation of school work, rendered desirable by the intense heat of a climate very diverse from the English. They are attended by a great number of teachers of all subjects, so that the scholastic element is well represented; but a large body of their students is furnished by members of other professions and by the leisured classes. Mothers of families will speak in a matter-of-fact way of the number of consecutive summers which have found them at one or other such school, in pursuit of knowledge either to equip themselves better for their household duties, for their social position, or to make them more intelligently companionable to their sons and daughters. These Summer Schools correspond somewhat to the University Extension Meetings held at Oxford and Cambridge, but are on a much larger scale; their programmes offer a considerable range of practical courses in the arts and sciences; while a feature is made of opportunities for consecutive study. These schools are attached to the greater number of Universities and Colleges, as well as occupying an independent position, as, for instance, the world-renowned Chautauqua. Professor Herbert B. Adams has given a vivid and exhaustive exposition of the popular enthusiasm for this class of education in his monograph for the Department of Education at the Paris Exhibition. (Monographs on Education in the United States, No. 16, "Summer Schools and University Extension".) The courses average six weeks in length, and, by judicious arrangement and selection, very real work can be accomplished. This possibility is illustrated by the comprehensive practical course in Household Science at Chautauqua.\*

Typical  
Domestic  
Science  
Courses:—

(a) Chautauqua School of Domestic Science. Table XXXV.

To illustrate that the civic side also is kept in view in these courses, I may mention those available for summer students at Chicago University. The Department of Sociology heads its list of Summer School lectures with the "Citizen as Householder" (the house as a factor in public health, the control of the householder by the State, his duties in relation to sanitation and food supplies); while the second course is on "Food Supplies and Dietaries" under the same professor, Dean Marion Talbot. Eight alternate courses are detailed, of which four are largely concerned with sanitary science, viz., the two just enumerated and two more, of which the titles are "The Elements and Structure of Society" (a study of the economic, physiological, social, æsthetic, intellectual and moral elements in American Society), and "Municipal Sociology."

(b) Chicago University.

The School of Education attached to the University also has classes in Home Economics and Art, and in Applied Art in its Summer School. These are, however, practically Normal, not general classes. Their end is the illustration of educational principles in connection with the subjects selected for study, with special reference to the needs of those who are already engaged in teaching; the subject matter of the classes falls, therefore,

(c) Chicago University School of Education. Table XXXVI.

\* See Appendix J.

TABLE XXXVI.

CHICAGO UNIVERSITY SCHOOL OF EDUCATION.—SUMMER SCHOOL.

COURSE OF INSTRUCTION.	ENTRANCE REQUIREMENTS.	LENGTH OF COURSE.	FEES AND FINANCE.	SCOPE OF COURSES.	
<p>Summer Term of the School of Education.</p> <p>President:— Will. Rainey Harper, Ph.D., D.D., LL.D.</p>	<p>Open to all, but intended especially for teachers and teachers elect.</p>	<p>Six weeks, divided into two terms.</p>	<p>\$10 a term. \$20 the full course.</p> <p>Average amount of expenses for six weeks (including tuition fees) \$69 (about £14).</p>	<p><b>Education:</b> Philosophy of education. Training and supervision of teachers. Applied pedagogy.</p> <p><b>Kindergarten:</b> Introductory Course (for primary teachers). Advanced course (for experienced Kindergarteners). Work with the Kindergarten children.</p> <p><b>Natural Science:</b> Pedagogics of Nature Study. General Chemistry. Elementary Biology.</p> <p><b>Museum:</b> Arrangement and preservation of collections suitable for public schools.</p> <p><b>Home Economics:</b> Lectures and laboratory work in Applied Chemistry.</p> <p><b>History and Literature:</b> History and Literature for the elementary schools. History and Literature for the primary grades.</p> <p><b>Geography:</b> General Geography.</p> <p><b>French:</b> Pedagogy of the teaching of the French language. Beginners in French.</p> <p><b>Mathematics:</b> Mathematics of the High School. Arithmetic for the Intermediate and Grammar Grades. Applied Mathematics.</p> <p><b>Speech and Oral Reading:</b> Speech, reading and dramatic art.</p> <p><b>Art:</b> Nature Study, Drawing and Painting; illustrations of history, etc. Chalk and clay modelling.</p> <p><b>Applied Art:</b> Textiles, woodwork, book binding.</p> <p><b>Manual Training:</b> Course in woodwork. Course for Primary Grades.</p> <p><b>Physical Training:</b> Educational Gymnastics. The basis of Gymnastic Development. Corrective work (based upon anatomy and the science of nutrition.) Dancing and Gymnastic Dancing. Primary games adapted to the school-room.</p> <p><b>Library:</b> Library economy.</p> <p><b>Music:</b> Psychology and Pedagogy of Music.</p>	

NOTE.—The regular work for a summer student is three courses; any of those on the list may be selected except Art, Applied Art, Library and Museum work (which are always extras); each course takes five hours a week. A charge of \$7.50 is made for each extra subject taken in addition to the regular work.

within the fields of elementary and secondary education, treated from the point of view of philosophy and pedagogy. The course in Home Economics consists of lectures and laboratory work in Applied Chemistry, the Study of Food Principles, the Chemistry of Food Fermentation, Detection of Food Adulterants and Preservatives, etc. Cooking and Sewing, as introduced into the primary grades, are discussed also in another course on Applied Pedagogy.

So widespread is this system of Summer Schools that it is quite impossible to do more than thus concisely indicate the attention their organisers devote to the study of Domestic Science and Art, an attention rendered necessary by the demand, not among members of the teaching profession only, but among the public in general, who find in them a useful and feasible means of acquiring information and practical experience. The fees, naturally somewhat variable in amount, are distinctly reasonable; the teaching staff is, as a rule, chosen with care, and of a high quality.

#### D.—UNIVERSITY EXTENSION.

The University Extension system of instruction in these subjects is also successful, and has developments of detail in the several States to meet local and particular needs. It acts in more ways than one as a support and a stimulus to the Women's Clubs, the Farmers' Institutes, and to similar organisations for self and communal improvement. When employed, as is habitual in this country, its lectures furnish the expert's standpoint, desirable in the study of any subject, but especially so where the students are drawn from those whose sphere and experience are somewhat limited and along similar lines. When active chiefly by means of its Travelling Libraries it brings the written views of leading authorities into the homes of those who, owing to narrow means or to home claims, are unable otherwise to come in touch with this suggestive material. If this agency for education be "extended" into a reading course, controlled by some department of the University with which it is connected, correspondents are guided in their studies, encouraged to submit practical problems to their directors, and to persevere in one line of work until a degree of thoroughness has been attained. The Travelling Library method is specially well organised in New York State, under the leadership of Mr. Melvil Dewey, State Librarian of the New York Library at Albany. Compliance with the rules he has framed requires, for instance, that one subject must be studied for at least ten weeks; continuity to this extent is insisted upon. Excellent printed outlines of the topics included in the selected subjects are prepared by experts, and are supplied at nominal fees. Members are expected to submit occasional written exercises for criticism, and occasional conferences with qualified lecturers are advised. The admirable syllabus on "Home Economics" is reproduced by kind permission in Appendix L., and gives an insight into the care and skill lavished upon these publications,

Illustrations  
of System  
of Instruction  
in  
Domestic  
Science  
Subjects.

(a) New  
York State  
Travelling  
Library.

(b) Cornell University Reading Courses for Farmers' Wives.

Cornell University has also organised Reading Courses, in which it is customary to send short especially prepared lessons to the students, followed after a brief interval by a paper of questions. Each subject is under the charge of a professor of wide practical experience. For example, the general supervision of reading courses for farmers' wives is entrusted to Miss Martha Van Rensselaer, who, as a result of her sympathetic work, has a large and constant correspondence among her flock; this enables her to give individual advice on questions which arise out of their perusal of the "Reading Lessons," and opens her mind to the needs, aspirations, and limitations of her correspondents, a source of valuable guidance in the preparation of her quarterly "Bulletin." Each quarter also sees a useful Supplement, issued gratuitously to the 6,000 members, on some home question, sanitary, economic, etc., freely illustrated, absolutely practical, eminently suggestive. That for January, 1900, was entitled, "Saving Steps." It is so full of useful hints that it is hard to resist the temptation to reproduce it in its entirety. The text taken is, "All household improvements which can be provided to conserve a woman's strength will add to her power and efficiency." The exposition suggests a hundred feasible ways for the attainment of this end, while the illustrations graphically depict their practical application in kitchen and parlour. Similar in tone and value is "Home Sanitation," issued in April, 1901; not the least interesting part of which is, "What our correspondents say"—an appendix consisting of the comments, suggestions and criticisms elicited by the previous number. It would be tedious to enumerate further the subjects and methods of treatment in these Bulletins; that they meet a need is evident, that they are doing valuable work in the formation of an intelligent public opinion is unquestionable. They awaken the minds of farmers and their wives to the usually unrecognised fact that housekeeping is a fine art, and that women possess the ability to change much that is passively permitted to prejudice the health and happiness of a family. They direct thought and attention to modes of healthful living, and teach that to minister to the bodily, intellectual, and spiritual needs of humanity is the highest type of world's work. They show that to accomplish this it is unnecessary to sacrifice either woman's health or comfort; for by intelligent thought and skilled practice mountains of tacitly existing difficulties and prejudices may be surmounted or removed. The circular of suggestions for initiating such Reading Courses in new districts is worthy of attention from those who recognise the opening which exists for similar work in this country.\*

#### E.—THE DOMESTIC SERVICE PROBLEM.

With the energy characteristic of their nation, the women of the Eastern States have set themselves seriously to study that acute problem, the Domestic Service question; fortunately for the cause in which they are interested they are animated by a spirit of dogged determination which remains undaunted by the discouragement

\* See Appendix K.

ments which attend their investigations. That the complexities which are encountered should be intricate and well-nigh innumerable appears inevitable in the conduct of an inquiry where social, economic, professional, and domestic interests are all concerned; that the difficulties are very real is recognisable, when the conditions incidental to the collection of accurate information on so delicate a subject are taken into account. To grumble and remain quiescent is an old-world monopoly; to grumble and find therein a spur to action of some sort appears to be instinctive among the members of a younger race. As the activity, in this instance, first arose amongst the most highly educated women it assumed a sound form. Careful observations of existing conditions, under which domestic service becomes increasingly unpopular, were succeeded by a series of carefully-conducted investigations, upon which reliable statistics might be based, and certain assertions and conclusions tested. The Massachusetts Labour Bureau has prepared and published three studies of considerable interest upon this subject, consisting of information collected by the Women's Educational and Industrial Union of Boston and the School of Housekeeping. Of these the first was issued in 1898, entitled, "The Hours of Labour in Domestic Service"; the second appeared in 1900, under the title of "Social Conditions of Domestic Service"; the third was made public in 1901, and deals with some "Social Statistics of Working Women." The inquiries were in each case hampered by the very personal relations of mistress to maid, which lead the former usually to resent requests for explicit information; the result of this attitude is that deductions have to be made from relatively small numbers. The first bulletin, for instance, embodies the analysis of returns from 184 different families in which 289 persons were employed; though few in number, these were found to be decidedly representative of the general conditions obtaining in Boston. It appears that the average length of a day's work for all branches of domestic service somewhat exceeded twelve hours; that, although the employees nominally had a "day out," the full amount of business time on that day amounted to but three hours less than the daily average for the entire week; and on Saturdays about four hours less; and that restrictions existed as to the employment of "free time" (reception of visitors; meals not to be served to friends; stated hour of return usually 10 p.m.). All these facts substantiate some of the invariable objections raised to this occupation, viz., the difference between the number of hours required in domestic service and the amount and character of free time afforded, as compared with conditions which obtain in factories and some kinds of mercantile employment, plus the indefiniteness of the hours, which many consider to be an insuperable drawback. In the 1900 bulletin, attention is directed to the unfortunate "social stigma" which attaches to domestic servants.

Massachusetts Labour Bureau Bulletins, showing existing conditions.

"No criticism is intended, either direct or implied, of either mistress or servant. The fragmentary character of the data, and the comparatively

Existing  
Conditions.  
--continued.

limited field covered by the inquiries may be at once admitted. It is, however, beyond question that while certain social opportunities are enjoyed by those who are employed in the factory or the shop, due, in a measure, to unity of action on the part of the workers, and to generally accepted customs growing out of the employment, in domestic service there is neither uniformity of privilege nor recognised social status. There is neither clear recognition of mutual responsibility and reciprocal rights and duties which marked the old relation of mistress and servant, nor the equally well defined relations which in industrial or mercantile employment exist between employer and employee. The domestic has ceased to be a servant as that term was formerly used; she has not yet become an employee as that term is now used in industrial occupations."

Inquiries addressed to 181 families included the following topics:—"What church is attended, and to what extent does it play a part in the social life of your servants? What opportunities do you offer for intellectual improvement? What is the character of the reading they affect—is the servant allowed access to the library, or given newspapers? When not on duty, what opportunities for enjoyment are open to her (playing on a musical instrument, attendance at a choral class, etc.), is she permitted to entertain visitors? Is she afforded opportunity to do her personal sewing? Is she given facilities to attend lectures, entertainments, or classes for self-improvement?" The data collected exemplified every possible variety of treatment of, and interest in, the welfare of the servant concerned; to tabulate or work out percentages is impossible, but it would seem that the words used by Professor Mary Roberts Smith in a recent number of the "Forum" might be considered to their advantage by many employers. "Whatever is done for manners or morals must be done, as for other working girls, by establishing friendly relations with them, and by winning them to more refined conceptions of life. The want of rational social pleasures and of opportunities for self-education is the result of all the conditions just discussed, to which must be added the one most fatal of all, namely, the want of aspiration. With the improvement of other conditions, this will remedy itself. But the desire for some social and intellectual recreation may be stimulated through clubs, books, and amusements. To all these the mistress can at least contribute the stimulus of her own culture and friendly interest."

The following conclusion, quoted from the last published investigation, suggests that in some respects at least, the conditions of domestic service in England and the United States have a good deal in common: "The social and economic conditions prevailing in domestic service place it quite apart from other groups. It appears that *houseworkers* have less free time and fewer vacation privileges than the women in other groups; that these employees are generally foreign born; and that they have had fewer educational opportunities than the others. The conditions of their employment, especially when but one employee is engaged in a family, often isolate them from other workers and tend to a narrower point of view. Their home surroundings, and, to a large extent, their social environment, must vary greatly, since



these are dependent on the conditions prevailing in the families in which they are employed and are largely governed by the will of the employer, and their content of life must be correspondingly affected. On the other hand, housework has a decided advantage from the standpoint of healthfulness; and the food and general surroundings of the employees in housework are frequently somewhat better than in other employments. Making due allowance for board and lodging, the wages of the houseworkers appear to be better also; at any rate, they seem to have a larger surplus. A fairly skilled houseworker is in little danger of being out of employment for any length of time. The consideration which more than anything else leads women to prefer factory, shop, or restaurant work to housework, appears to be the greater independence enjoyed in these employments."

The next point considered has been the possible sources of relief for the tension which now exists. What are the remedies proposed by our neighbours? It seemed to me they are broadly divisible into three groups:—

I. Those which are directed to the organisation of domestic service as a profession or skilled trade.

II. Those which would dignify domestic service, as a necessity coincident with the growing desire to elevate home life in all departments. The supporters of this view would not confine training in household occupations to one section of its members; their scheme requires the intelligent co-operation of all.

III. Those which, seeing in the discontent of the servant class a part of the evolutionary process going on throughout the world, and viewing it as a process of preparation for new developments (incidentally disagreeable, because society is not yet wholly ripe for the change), recommend intelligent adjustment to new conditions.

The supporters of the first opinion point out that the old relation of master and servant has passed away, and that of employers and employee must be established.

Miss Hagenbotham has usefully summarised what this involves in a paper she read at the semi-annual meeting of the Housekeeper's Alliance at Philadelphia, May 30th, 1900. She said:—"Women must frankly accept this situation and strive to understand what mutual obligations this relation (of employer and employee) imposes; and what changes must be made to meet the new conditions. The new relation cannot be at once established—it must be a growth—an evolution from present conditions—not a revolution. No movement can be made to-day that will to-morrow lift household service at a bound to the plane of other forms of labour. Much progress may be made, however, if women, everywhere united into some such association as the Housekeepers' Alliance, will agree upon certain principles and certain general measures in the conduct of the household, which may be advocated as advantageous to the relations between the housekeeper and her domestic labourers. A few suggestions are offered in the hope that they may provoke discussion and form the basis of a movement towards establishing household service on business principles so far as is consistent with the very large personal element that enters into it.

Proposed Remedies.

(a) Household Service as a Profession.

(a) Household Service as a Profession  
—continued.

" 1. *We claim that the employer should offer fair conditions for efficient and faithful service; and that the employee on his or her part should recognise that efficient and faithful service should be rendered for fair wages and just conditions.*

" Some standard should be fixed. It rests with the employer, being presumably the better educated and equipped of the two, to prove that the interests of employer and employee are the same, and to lead the way in reasonable, business-like action. Let the employers consider what may be regarded as 'fair conditions,' and frankly state them and agree to hold to them even at the cost of some personal inconvenience. Let them then invite the consideration of these conditions by the employees, and also in return let them consider what rights and privileges they (the employees) have to ask for themselves. Everywhere, except in the household, mutual interests are drawing together 'for consultation, for economy of forces and resources, those engaged in the same activities.'

" 2. *A standard of work and wages should be established.*

" Here again the employer must lead and stand firm. So long as the unskilled worker can command as much as the skilled worker, so long will employees be indifferent to the advantages for improvement offered by the Schools of Housekeeping. There should be a discrimination in wages paid, according to the length of time for which the employee is to serve. Much unreason exists on the part of both employer and employee on this point. A domestic whose work is worth say \$3.50 per week, may, through the desperation of some employer, obtain a place at \$5. Of course she loses the place as soon as a more competent person can be found to replace her. But for ever after the \$3.50 person will contend for \$5—declaring 'that is what I have had'—and for days and weeks she will lose all wages until she has consumed many times the difference between her real value and the fictitious one. Employers, on the other hand, will frequently refuse to pay for those whom they know they shall need for only eight or ten months in the year, more than others are paid who have employment all the year round. This is not paralleled by the custom in any other field of labour. The man who has permanent work of any kind does not expect to receive the same pay as one who is employed only temporarily, or for a fraction of a year.

" 3 *A fair amount of time should be allowed for rest and recreation. Stated times of absolute freedom should be agreed upon and the privilege should be accorded, within due limits, of receiving and entertaining friends.*

" There are still many 'mistresses' who object to the 'afternoon out' and to the visitor, forgetting that change and recreation are absolutely necessary to the preservation of normal conditions in the human being; and forgetting that servants are mentally and socially constituted very much as their masters and mistresses are. The best domestic economy in the world would dictate the wisdom of ample provisions for change and recreation. It is unfortunate that most houses are so constructed that there is no convenient place for the servant to receive her friends outside of the kitchen. If, however, public sentiment recognises the need of such provision, future architectural schemes will take it into account.

" 4. *Everything reasonable should be done to lessen the 'drudgery' in housework.*

" In proportion as intelligence and skill are offered on the part of the employee, employers should provide labour saving machines and all appurtenances that will lessen the irritation and nervous strain of striving to make bricks without straw—in other words, of striving to perform the work of the household without the proper equipment.

- "5. As steps towards lessening the disadvantages of household services, employers should give their attention to the subject of bakeries and laundries.

"It is an enormous waste of strength and of money to carry on a hundred family washes with a hundred separate fires, yet the lawlessness of laundries is a serious menace to health; and the conscientious housewife rightly hesitates about patronising them. The same may be said of bakeries in general. These institutions should be established under sanitary regulations, and placed with dairies and food supply institutions under restriction of the law. Household employers should see that these things are done.

- "6. As a further aid in raising the standard of household service and making it a business, it is suggested—

*"To abolish private employment agencies and intelligence offices, and substitute either Government employment bureaus or reputable business institutions, like the employment bureau of the Housekeepers' Alliance, which shall be conducted with intelligent regard for the office they assume to fill.*

"The ordinary intelligence office is responsible for a large part of the degradation of household service."

These ideas underlie the experiments being now, I believe, made at Chicago and Boston; they consist in an undertaking to supply servants from a central bureau for days of eight hours, the bureau holding itself responsible for the uninterrupted service of its clients on strictly business lines. At present English home life could not easily adapt itself to such a method of service; the more active part taken by the mistress and family in the domestic duties of the average American household renders possible, if not desirable, what would be at present impossible here. Nevertheless, the conception of domestic service as a profession, and the reasonable proposals of Miss Haggenthorn merit full consideration.

With reference to the second point of view I enumerated (the restoration of dignity to domestic work), the writer just quoted comments upon "the aversion to household labour, both inside and outside of the home, as a marked characteristic of the present generation. Children are reared to despise the arts of the household, and to treat with scant respect those who practise them. Wage earners who can find any other avenue of employment shun that of household service, though it offers moral and material advantages that belong to no other employment. Young people enter upon married life not only ignorant of the necessary work of the household, but without any clear conception of the ethical relations involved in the family community, and without the faintest idea as to how the family income ought to be spent—what percentage may be paid for rent, food, clothing, etc. The man does not manage his business that way, but it never seems to occur to him that his housekeeping is a business; or, if it does, he concludes that it is his wife's special domain; and his only duty is to look with indulgent eye upon her ignorance and failures . . . ."

It has been justly said that 'a very large part of the wealth produced in the world is consumed in the household, yet neither those who produce nor those who consume know on what principle it is done.' . . . .

"Public sentiment does not yet demand the preparation of the woman for what is commonly claimed to be her 'heaven-appointed' mission—the wife and the homemaker. It is vaguely believed that when the necessity arises, some domestic instinct will quicken in her, and enable her to administer the duties of her office without previous thought or training. This is an anomaly that exists in no other walk in life. But a household cannot be run on the inspiration plan any more than can a factory, a

(b) Restoration of Dignity to Domestic Work —  
*continued.*

steel plant, or a department store. Household service can never become a business (or trade) and command the same respect as other forms of labour, until there is a better general conception of household affairs from an ethical, sociological and economic standpoint. With this conception will come a greater respect for the household and those who work in it; and then will come also a demand for the better equipment of the *employer and the employee*, and for the application of the scientific and business principles needful for the organisation of the modern household." . . . . .  
 "This conception can be attained only by the greater prevalence of education in the true sense of the word. In addition to the mental training which the so-called 'higher' education is striving to give, there must be, for all classes, from the lowest to the highest, for the poor equally with the rich, an education in the true standards of living, in what constitutes better homes, more comfortable conditions; and in a clearer perception of those tendencies towards mere imitation and luxury which lead to the degeneration of mind and body." . . . . . "Social training in ethical ideals, and the inculcation of the belief that home-making must be the woman's profession, for which she requires a power-giving knowledge, must become accepted factors in the education of every woman, rich or poor." . . . . . "Women are especially responsible for the promotion of this better education through which alone can be accomplished a readjustment in household organisation in accordance with modern conditions."

I quote Miss Haggenthorn's words because the patience of my readers must have been taxed by the frequent presentation of the same idea, in my own language, throughout this Report. Let the thought but once permeate the people that all which conduces to the fullest development of the human being is honourable in the highest degree; that the knowledge necessary to this right care demands the exercise of the best intellectual faculties and is no mere illiterate "rule of thumb" drudgery; and a different complexion is placed upon domestic service. But with its removal from the ranks of unskilled labour comes the question of pay. Will those who desire assistance pay for skilled work? Will they combine to demand it, and be courageous in the endurance of inevitable difficulties during the period that this changed attitude on their part is being realised by a class, whose capacity for duties assumed has not been hitherto tested by any defined standard; whose members, indeed, from the pressing need of employers have in most cases been accepted at their own valuation? Miss Haggenthorn refers to the "ethical, sociological, and economic" aspects of household service as being yet but imperfectly apprehended by either employers or employees; and I think with justice. Considered from the ethical standpoint, the mistress owes a duty to her maid, the maid to her mistress; in thousands of instances this is fulfilled in a measure; in thousands it is ignored. Suitable and wholesome conditions and opportunities for self-improvement are the due of each member of a household. Conscientious performance of duties undertaken is the return rightly demanded for wages paid; damage to food or furniture resulting from ignorant assumption of positions for which no qualifications have been acquired, slovenly evasions of routine work agreed to at the time of engagement, are acts of dishonesty; they constitute a breach of

ethical duty. The sociological standpoint I shall refer to under the opinion of Group III. The economic standpoint is as yet dimly grasped by either party concerned in a calling which has not progressed in company with almost all other means of livelihood in the industrial and commercial worlds. There are members of the directing classes who refuse to recognise that a trained worker must be worth more than an untrained; who deplore "education" as the undoing of domestic service; who do not anticipate the day with any satisfaction when training will be insisted upon; and rate of pay regulated by other rules than the needs of a large family or the pressing inconveniences which often lead to the overpayment of the undeserving. To develop a comprehension of the economic point of view employers should have a more than theoretical acquaintance with the work in question; they should know the time necessarily absorbed in some processes; the immense saving of time to be effected in others through skill, or the use of labour-saving appliances, or the thoughtful rearrangement of kitchen and pantry. They must be trained to appreciate the better class of work which coincides with judicious recreation and suited diversity of interest; and they should study the history of combination and the advantages to be derived from co-operation, if employees are to be guided into the right conception of their relation to employers. The simpler social life in the United States undoubtedly facilitates this self-discipline of housekeepers, while the larger proportion of highly educated women has already led to a modicum of recognition of the imperative claims of these ethical and economic considerations. Not that the period of discomfort incidental to a stage of transition is passed; the present pangs are sharper than with us, but a few tentative efforts are being made to gain relief, based on scientific observation of the past and intelligent adaptation of the knowledge so acquired to the needs of to-day. A few mistresses are submitting themselves to courses of training; unremitting efforts are being made by a small number of thoughtful women to induce girls to train and employers to make it worth their while to do so. In an annually increasing number of schools, colleges and institutes, the dignity of ministering with intelligence to the needs of the body is impressed upon the young people. Nevertheless, some years must necessarily elapse even in that country of mercurial activity before it will be possible to gauge results of these tentative reforms with any degree of accuracy.

My report of the opinions held by Group III. must be very concise; the grounds upon which they are based are detailed with some elaboration in an article by Miss A. S. Vrooman on the "Servant Question," published in the "Arena" for June, 1901. This lady points out that the acute stage of her subject, from which society is suffering, is in reality the effect of a great force, actively contributing towards the preparation of humanity for a full co-operative life. The process she admits is far from agreeable. Those who share her views maintain that the home of to-day presents in

(c) Recon-  
struction of  
Domestic  
Life.

miniature a picture of "society in its strife, its unequal division of labour and enjoyments, its suppression of some for the luxurious self-indulgence of others." The process of home destruction evident to some eyes in the rapid growth (in New York City and elsewhere) of the "apartment house" is antecedent in her opinion only to construction on sounder lines. The "apartment house" in its present form is but a milestone on the road of domestic evolution; in its methods may be seen the crude beginnings of a new system, that of co-operative housekeeping.

Miss Vrooman writes very helpfully upon one point, namely, the somewhat unwise use made of their liberty by domestic servants when all restrictions are removed from the employment of their leisure hours. The latitude they permit themselves is a favourite argument with employers against the granting of periods of recreation. "First effects of emancipation usually appear as an argument against it; a fact familiar to the student of sociology; therefore patient forbearance needs to be exercised with the servant class; only after long emancipation from restraint is the sense of personal responsibility and self-control developed; yet both a sense of responsibility and the power of self-control are essential qualities to honest intelligent service."

Miss Salmon  
on Domestic  
Service.

\*Miss Salmon has rendered a real service to the cause of Domestic Service by the scholarly methods in which she presents it. In the first instance she draws attention to the omission of domestic service from previous theoretical, statistical and historical discussions of economic problems, for which she accounts mainly because (1) the occupation does not involve the investment of a large amount of capital on the part of the individual employer or employee; (2) no combinations have yet been found among employers or employees; (3) the products of domestic service are more transient than are the results of other forms of labour. After an interesting enumeration of various subsidiary explanations of the failure to consider domestic service in connection with these other forms of labour, Miss Salmon concludes that these are all in reality but different phases of one fundamental reason—the isolation that has always attended household service and household employments. Though the facts revealed in her historical sketch of Domestic Employments in the United States are not identical with those which a similar study would bring to light in this country, they deserve our attention and point to conclusions to which analogous inquiries in Great Britain would probably lead, viz., that the question is one of preparing for the next step in the process of evolution, not of retrograding towards a condition impossible to restore. Domestic service is not only amenable to some of the general economic laws and conditions which affect other occupations,

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\*A most valuable epitome of her scientific and thorough study of this servant question is found in her book on "Domestic Service," by Miss Lucy M. Salmon, Professor of History at Vassar College. In this volume she approaches her subject as part of the general labour problem; the first real attempt to treat it from the historical and economic, rather than from the personal standpoint. Her comments suggest that in the recognition of the professional aspect of the problem lies its solution.

The book is published by Macmillan & Co.

but is also governed by economic laws developed within itself. "The difficulties that meet the employer of domestic labour both in America and Europe are the difficulties that arise from the attempt to harmonise an ancient, patriarchal industrial system with the conditions of modern life. Everywhere the employer closes his eyes to the incongruities of the attempt and lays the blame of failure, not to a defective system, but to the natural weaknesses in the character of the unfortunate persons obliged to carry it out. The difficulties in the path of both employer and employee will not only never be removed but will increase until the subject of domestic service is regarded as a part of the great labour question of the day and given the same serious consideration." (Chapter VI.) Miss Salmon devotes some space to the consideration of the advantages of domestic service, which, though patent, are unequal to counterbalancing the industrial and social disadvantages which she discusses. More to my immediate purpose is her enumeration of the popularly prescribed remedial measures which she truthfully describes as "doubtful," and of which she disposes one by one, for the good reasons that they do not touch the economic, educational, and industrial difficulties, or that they run at right angles to general economic, educational and industrial progress.

They include the application of intelligence by the employer; the reception of the employee into the family of the employer; increased employment of negro or Chinese labour; the licensing of domestic employees by municipal corporations; the system of German service books; the abolition of public schools above the primary grade, on the ground that girls are educated above their station; the introduction of housework into all public schools, a proposition which ignores the fact that it is the function of the public school to educate, not to supply information on technical subjects; and the establishment of training schools for servants, a plan which Miss Salmon considers in opposition to present political and social tendencies; lastly, co-operative housekeeping.

She points out that relief from present difficulties must be sought in accordance with certain social and economic tendencies; among which she mentions the concentration of capital and labour in large industrial enterprises; specialisation in every department of labour, and the training this necessitates; the association for mutual benefit of persons interested in special lines of work; the growth of productive and distributive co-operation; greater industrial independence on the part of women; finally, "that result of the systematic study of social conditions which aims at the amelioration of some of the conditions under which work is performed, not at the cessation of the work itself. The application of these principles has led to wiser charities, to the Chautauqua movement, to University Extension, to working girls' clubs, to enlarged opportunities everywhere for every class, . . . "they mean that ultimately the position in society of every person is to depend not on his occupation, but on the use he has made of these increasing opportunities for self help and self improvement; they mean that in time all social stigma will be removed from every occupation, and work will be judged by its quality rather than its

nature; that in time, for example, a first-class cook will receive more honour than a second-class china decorator or a third-class teacher."

Miss Salmon concludes this portion of her book as follows:—  
 "The general remedies must include a wider prevalence of education in the true sense of the word, not its counterfeit, information; that mental education which results in habits of accuracy, precision and observation, in the exercise of reason, judgment and self-control; and that education of character which results in the ability constantly to put one's self in the place of another. There must be scientific training and investigation in economic theory, history, and statistics, especially in their application to the household, and an increased popular knowledge of all scientific subjects concerning the home. . . . The educational forces must 'pull from the top' and draw domestic service into the general current of industrial development." (Chap. XI.) Miss Salmon looks with hopeful anticipation for the future to improvement in the social condition of employees; to specialisation of household employments so far as possible; and to education in household affairs, *i.e.*, the careful, systematic education of housekeepers, through the study of art, chemistry, economics, physiology, psychology, and history. "Housekeeping must advance," she maintains, and must become "on its own part an active creative force." She also traces the prevalent inactivity in all household affairs to three causes, (1) the belief that a knowledge of all things pertaining to the house, home, and family, "unlike anything else, comes by instinct"; (2) the assumption that household affairs concern women only, whereas, "when the fact is everywhere recognised that both men and women have a vital concern in the affairs of the house, the relation between the different parts of the household will become an organic one, and its highest development reached"; (3) the erroneous conviction that "all women have a natural taste for household affairs, which without cultivation grows into positive genius for carrying them on." Systematic and scientific training in, and professional investigation of, all matters appertaining to the household, this is a concise summary of Miss Salmon's Recommendations, each of which she considers to be essential to lift the subject "out of the domain of sentiment and to transfer it to a realm where reason and judgment have control." The chapter entitled "Conclusion" is too condensed to be further summarised; in the space of ten pages the problem and its solution are compressed into the proverbial nutshell. Space is also found to touch upon several complications which obtain in this country as in hers; for instance, the growing wealth of the nation and increased luxury in living; the natural conservatism of many women; the desire of both employers and employees to get everything for nothing—"the largest expenditure of woman for the smallest expenditure of money"; the many elements of uncertainty which enter into a woman's life. Miss Salmon claims no novelty or originality for her remedial proposals,



but we are indebted to her for a clear statement of a complicated case, wherein lies my excuse for detailing somewhat *in extenso* views, which, after all, can only be adequately digested by their study in her own pages. One strong conviction, which she reiterates, has so close a connection with the subject of this Report that its proper introduction would alone justify this lengthy presentation of her views:—"One thing, and only one thing, will turn the household into the channel where every other occupation has made advancement. This is the establishment of a great professional school, amply equipped for the investigation of all matters pertaining to the household, and open only to graduates of the leading colleges and universities of the country. . . . Professional training and investigation must supplement home and collegiate instruction in the case of the housekeeper, as the professional school supplements private and collegiate instruction for the physician, the lawyer and the clergyman." Indications are not wanting that this desired opportunity will be presently afforded in the United States; times in England are not perhaps yet ripe for such a movement, even were funds and other essentials available for the purpose; but, meanwhile, we can profit by the inquiries, experiences and investigations of a less conservative people. At least we can begin to set our own ideas in order, and endeavour by judicious methods, at school, at technical institute, and at college, to open the minds of all classes to the economic, social, hygienic, and industrial principles, upon a due recognition of which depends any feasible solution of the domestic service problem.

While fully alive to the fact that the diverse sociological conditions which exist in the two countries demand diverse treatment of a difficulty which confronts both, I still believe that a thoughtful study of the writings of our American sisters upon the subject will prove instructive and suggestive to those called upon to grapple with its complexities; and I confidently look to a measure of success being attained here as there by the same means; viz., the suitable training in their duties of both parties to these engagements; a more extended and intelligent study of the economic side of housekeeping (economy of time, labour, strength, and money); and a consistent and sustained national effort to dignify home life and all the term comprehends. The college women of the States are foremost in this movement of reform. They pride themselves upon their skill in the performance of daily domestic duties equally with their achievements in literature and history, or in their selected branches of science. It behoves the "educated" women of England to bring their skilled minds and trained bodies also to the aid of their less intelligent or capable sisters, in order that the period of unrest and waste of energy may be shortened and the necessary adjustment made to the changes consequent upon social evolution. To attempt to remedy the increasing troubles, the whole situation must be studied from the bottom; the same patient and scientific method must be used as in the interpretation

Aspect of  
Problem in  
England.

of an obscure fact in natural history, or in the decision upon a vexed question in the history of nations. Trained minds must be brought to bear on the subject, intelligent heads and willing hands must all work together. The responsibilities of all concerned must be recognised; rank does not release from obligation, neither does the possession of exceptional mental ability or of abundant means relieve from liability. Were the efforts to solve the domestic service problem now being made in England accorded the intelligent and active support furnished to similar movements in the United States, the outlook would assume a brighter aspect than is at present apparent to an interested observer.

#### SUMMARY OF ENQUIRY.

Prior to my visit to the United States, in 1901, I was provided for my guidance with certain "Suggested Heads of Enquiry," intended to cover, more or less, the scope of my commission. A brief résumé of the resultant Report, reproduced in the order of these instructions, suggests itself as a suitable form of conclusion; for while it should serve to gauge the thoroughness with which I executed the commission entrusted to me, it will, at the same time, focus the main points to which reference has been made in the preceding pages.

Scope of  
Enquiry.

The first of these "Suggestions" detailed the subjects into the position and teaching of which I was to enquire, all of these being included in this country under the title of Domestic Science, viz:—Cookery, Laundry Work, Housewifery, including learning to purchase commodities, the Elements of Domestic and Personal Hygiene, Needlework, Dressmaking, Millinery, Care of the Nursery, and of Children. The general practice in the United States is to divide the above subjects into three groups:—(1) Cookery (which always includes some practical Housewifery), Laundry-work, and the Care of Children, which are all comprehended under Domestic, or Home, or Household Science, as it is variously described; (2) Needlework, Dressmaking and Millinery, which are classified as Domestic Arts; (3) Personal and Domestic Hygiene, which is invariably based upon Physiology, and forms a part of the ordinary State school curriculum; as such being studied co-educationally by all children, boys and girls alike. In many Elementary Schools, and in some Secondary, cookery and needlework appear under the designation of Manual Training, being used with that intention for girls, while boys are engaged in wood or iron work. "Household Economics" is a term much favoured when the broadest aspect of the whole subject is intended; that is to say, when technical skill in the domestic applications is based upon a sound knowledge of the fundamental sciences and arts, supplemented by a comprehension of the ethical and economic principles involved in their intelligent employment.

The second "Suggestion" dealt with the classification of the differ-

ent grades and types of institution in which these subjects, under whatever designation, are taught, *e.g.*, Primary Day Schools, Evening Continuation Schools for pupils from thirteen to sixteen years of age or older, Secondary Day Schools, Technical Institutes, Training Colleges for Teachers in the above various types of schools and Universities.

Classification and Character of Educational Institutions.

The fact is familiar that English methods of school nomenclature vary from those adopted in the States; Elementary Day Schools are there habitually described as Grade Schools (Grades I. to VIII. or IX.); and this term I have usually employed. It includes certain sub-divisions—as a rule, but two—Primary and Grammar; but occasionally there are three departments—Primary, Intermediate, and Grammar. The expression “Evening Continuation School” is not in use, but Evening Schools are connected with Grade and High Schools in most, if not in all, cities. No restrictions, so far as I could learn, are placed upon the age of pupils. High Schools of various types and for both sexes do not exactly correspond with our “Secondary” Schools; they are a sequence to the Grade Schools, the entering age is fourteen, and no fees exist. Certain departments of State Agricultural Colleges, and of the great Technical Institutes endowed by private citizens, permit of classification under the one head of Technical Schools; in these teachers of Domestic Science and Art most usually receive their training, though half of the State Universities and one or two Normal Colleges also offer Household Science courses. Columbia, Chicago, Leland Stanford, Michigan, and one or two more Universities of the first rank have initiated courses in Sanitary or Household Science; some of a special character, as at Teachers College, Columbia University, but more usually open to all students.

Cooking and Sewing may be described as now generally taught in Grade Schools; these subjects have been introduced in a still limited but steadily increasing, amount in High Schools; they are studied to a very considerable extent, on exhaustive and elaborate lines, in Technical Institutes as well as more simply in Evening and Saturday classes. This latter type of instruction is also provided by such agencies as the Young Women’s Christian Association and Girls’ Clubs. Laundry-work is almost unknown as a subject in Grade Schools, but is usually included in Domestic Science as taught in High Schools, while it finds a place in the courses at Technical Institutes and Normal Colleges. Dressmaking and Millinery are popular subjects in Manual Training High Schools, Technical Institutes and in Evening Classes. With few exceptions, definite artistic training in design, form, colour and the use of brush and pencil constitute an important feature in these latter courses. Personal, Domestic, and Civic Hygiene appears, though to a variable extent, in the programmes of all schools, colleges and Technical Institutes. It is at present, in conjunction with physiology, an obligatory subject in the Grade Schools of nearly all the States; in the High Schools it is usually optional; but it is again practically obligatory

Extent of Domestic Science and Hygiene Teaching.

in the majority of colleges, for it constitutes the theoretical study required to accompany, and to give intelligent impetus to, the Physical Culture Courses required of all students. The peculiar educational advantages it offers, especially as the outcome of Nature Study and Biology, to which much attention is now paid, leads to its voluntary inclusion in the curricula of both High Schools and Colleges. The Care of Children is specifically taught in relatively few schools, but incidentally the subject receives attention in the study of hygiene. The case is different in institutions for higher education; in these Child Study, Psychology, Ethics and Sociology all serve to bring the question of child hygiene before students.

The "commencing age" in Grade Schools for instruction in any of these subjects, except Hygiene, varies from ten to thirteen years; twelve may be taken as the average age for Cooking classes; nine or ten for Sewing. I think the age selected for the cooking classes is especially influenced by the consideration that increased physical capacity (*i.e.*, muscular strength and height) and intelligence (*i.e.*, the power to use the reasoning faculty) are secured by placing it as late as possible in the curriculum. Where, as is now very often the case, girls receive equally with boys actual manual training in wood or chip carving and in clay modelling, dexterity of manipulation is acquired previously; this is found materially to influence the amount of good gained during the subsequent course in cooking; observation, accuracy in detail, and so forth, having become to a greater or less degree habitual. The average age for city children to leave school is certainly later than in England; most girls remain until fully thirteen; a growing number stay till they are fourteen, and then pass on to the High School for at least two years more; so that a large proportion receive the benefit of this instruction, even where thirteen is the commencing age. These facts are taken into account in planning most Domestic Science Courses. In cities where industrial conditions and economic considerations shorten school life, I found that the age for attendance at cooking classes was earlier—eleven years, or even ten, being fixed in some instances. Domestic Science is not taught in rural schools; these serve, as a rule, very scattered districts, and are usually somewhat understaffed; consequently, much division into separate classes is not possible, especially as the co-educational system requires, under such circumstances, that the instruction shall be adapted throughout for mixed classes.

Sewing, where taught, almost without exception precedes Cooking. There is a marked divergence from English methods in this connection; one or two years is the usual length of time apportioned to weekly or bi-weekly lessons in needlework, either in Grade or High Schools—a great contrast to the five or six years devoted to its practice in our elementary schools. This may be attributed to several causes; for instance, it has proved difficult to break down public prejudice against devoting precious school hours to so "homely" a subject; consequently, short courses could only be introduced

tentatively, almost apologetically, though this is a fast-vanishing stage. There is also a strong and prevalent objection to wearying children with the constant and often monotonous repetition of very similar processes, or to requiring fine muscular movements and concentration of sight upon near objects for too long a period. I was frequently assured, and I confess my eyes substantiated the assertion, that if this subject be but presented at the right time in a child's development, it will be rapidly and more satisfactorily acquired than when attempted prematurely. In children whose eyes and hands have been systematically trained from Kindergarten upwards, two years of needlework practice produces very promising results. As a whole, I considered these to hold their own with those attained by the longer practice common in England; but accurate comparisons are almost impossible, because the United States Grade Schools are frequented by children of all social grades, so that the general standards of intelligence, nutrition and energy should be, and are, higher than in our English Elementary Schools. It would, however, be interesting to test by experiment here a method which seems well worthy of consideration and fair trial from the results gained in that country; among other advantages claimed are the wider variety of interest and occupation afforded to the children, and the development of a larger number of muscles in the practice of the diverse manual exercises for which time thus becomes available. Sewing, too, is so commonly classed as Manual Training that it readily falls into rank with the other exercises included under that title. The great interest in and rapid progress made by High School girls in needlework, both elementary and advanced, bodes well for the future housewifery of the country. The subject is held in special esteem educationally at the High School age, on account of the valuable training it affords in method, neatness, cleanliness, discretion, good taste, and economy; while it lends itself admirably to home application.

Domestic Science subjects are taught to deaf and blind children of both sexes at New York, Boston, Providence, and elsewhere, with reported excellent results. The one school I was able to visit (Horace Mann School, Boston) amply confirmed the testimony I received; deaf lads, of fifteen and upwards, as well as girls, become in some cases so thoroughly proficient with their needles and such really good cooks that they are fit for wage-earning situations. The number of feeble-minded children is very small; special provision is made for their training in most States, but time did not permit me to secure information from personal observation.

The High School courses in Household Science and Art have only this in common, that they are all conducted along very practical lines; they vary in length from ten months to four years; they may be correlated with work in the laboratory or studio, or may be complete in themselves. With rare exceptions, no branch of Domestic Science is taught to boys in Grade Schools, but attendance at courses on House Sanitation is occasionally optional in

High Schools. Physiology and Hygiene are studied co-educationally throughout school and college life. A marked interest in these subjects is evinced by school boys; while the demand for a knowledge of Sanitary Science on the part of a small proportion of male students at some colleges and universities has warranted the introduction of courses to meet it.

The "General Courses" in Household Economics at High Schools, Technical Institutes and at half the total number of State Universities serve as admirable schools for training young women as home-makers; a very considerable number make use of these opportunities before marriage. The Summer School and Technical Institute courses serve a similar purpose for those who do not realise till after marriage the need of such preparation for, or assistance in, their domestic duties. It is also now the object of University Extension organisers and of Women's Clubs to secure suitable instruction, though necessarily of a more limited character, for farmers' wives and others whose place of residence or home-claims prevent their attendance at a prolonged course of study.

Position of  
Domestic  
Science in  
School and  
College  
Curricula.

I was further desired to give special attention as to the present position of Domestic Science teaching in school and college curricula; and was also invited to make observations as to the methods employed, the equipment provided, and other essential details. This "Suggestion" necessarily implied a study of other important points, viz., to what extent are teachers allowed a free hand in shaping the courses of instruction; must syllabuses be rigidly followed, and how far is Domestic Science correlated with other subjects in the time-table, *e.g.*, with Natural Science, Arithmetic, Reading and Drawing. The authorities I consulted were practically unanimous in their opinion that Domestic Science is now spontaneously assigned a much more important and honourable place in school and college curricula than was the case until quite recent years. Its claims to recognition on the grounds of its high educational, ethical, and sociological value are proved true, and each session sees its more general introduction, under one or other of its many titles, into Grade and High Schools, as well as into College courses. This Report contains a large number of specimen Tables, which illustrate how the necessary time is found for the various subjects; and I again desire emphatically to draw attention to the invaluable opportunities thus afforded for linking learning with life. That Teachers College, Columbia University, includes both Domestic Science and Domestic Art in the post-graduate courses bears high testimony to the estimation in which these subjects are held; the fact that the degree of B.Sc. is offered in Universities of good and recognised standing to graduates in Household Economics, equally with other sciences, is a valuable proof of the support accorded to its introduction by the respective faculties. The presence of highly-educated college women as students in these courses at the leading Technical Institutes attests to the intellectual as well as to the utilitarian attractions of Household Economics when efficiently organised. The

growing demand for instruction in Sanitary Science among male students testifies both to the interest aroused by the elementary teaching in Physiology and Hygiene obligatory in Grade Schools, and to their own practical realisation that the possession of still more advanced information is an essential equipment for the student of economics, for the intelligent citizen or for the social reformer. The principals of several widely-separated High Schools told me that, from the purely educational standpoint, Physiology and Hygiene for both sexes, and Domestic Science and Art for girls, prove of high value—ethically, sociologically, scientifically, and as manual exercises; and on these grounds an honourable place is assigned to them in their school programmes. Not that this opinion is as yet universal; in some cities these subjects still receive scant and contemptuous consideration; but those chiefly responsible for what has been accomplished are full of hope for the future, and are content with, even prefer, slow progress, if it be but sure and steady.

Many details of methods of teaching have been given in Parts I. Methods of Teaching and II. of this Report, so that I now merely propose to emphasise of Teaching Domestic Science and Hygiene in Grade Schools. certain points which might be overlooked in the previous pages. The following remarks bear upon the teaching of Domestic Science and Hygiene in the Grade Schools. It will have been observed that instruction in these subjects is common to the children of all classes of society. It may still be said that there are no social distinctions in the national system of education. The children of the professional man, merchant, clerk, artisan and mill-hand sit side by side at the school desk, and no distinction is made in the curriculum they pursue. I was told the interest aroused in and desire to apply the knowledge gained in these studies were mutually strong; while "good breeding" will often show itself in the voluntary assumption of the less pleasing duties in connection, for instance, with the cleansing of cooking utensils by the more delicately-nurtured child. It is hoped that this mutual training in home duties may eventually assist in the solution of the existing difficulties which have to be faced in domestic service and other industrial problems.

A study of these Grade School Household Science courses shows the sustained efforts to teach underlying principles for what is done; this is as apparent in the Sewing as in the Cooking classes. Two characteristics of the American child, as I observed him, are an insatiable thirst to know the "reason why" for all he does, and an admirable (though not invariably an *apropos*) energy in the application of new knowledge. These characteristics facilitate the teacher's work to a great degree, but they also necessitate broad-minded, well-cultured instructors, to whom sufficient scope must be given for the legitimate satisfaction and direction of these qualities. Much confidence is usually reposed in his staff by a principal. It is rare to require the accomplishment of a definite amount of instruction in each lesson; elasticity of method, if it promote the children's good, is freely permitted, and time for revision is accorded, even at

Methods of  
Teaching  
Domestic  
Science and  
Hygiene in  
Grade  
Schools—  
*continued.*

the sacrifice of a part of the syllabus, if considered necessary. It must not be assumed that irregularity and incompleteness rule in these schools. I saw no such tendency; but I did notice much intelligence among pupils, a good comprehension of the "reason why," and tangible examples of the results of the active interest aroused in the shape of excellent specimens of home practice.

In the teaching of cooking, our English system of alternate demonstration and practice is entirely disapproved, as is also our custom of defraying a part of the cost by the sale of the food prepared by a class. Against the first method it is argued that few girls of eleven or twelve are intellectually capable of profiting by prolonged observation unrelieved by active participation in the processes under demonstration. They may be interested, but to what extent are they informed? Constant practice under supervision, immediately subsequent to, or, if necessary, interrupted by, a short demonstration, is the generally approved plan. With regard to the sale of the food cooked, rather than its consumption by those who had prepared it, the feeling was unanimously adverse; without exception, all authorities on the subject maintained that the cause of failures, as in deficient beating of a cake, or the fact of possible improvement—as in the seasoning of a dish, for instance—cannot be realised by the inexperienced cook unless results be tasted when the whole process is complete. It is also held that the strength of interest can be hardly equal in the two cases; the desire to improve is but poorly stimulated, and a practical difficulty will thrust itself into prominence, viz., that the tastes of possible purchasers may be occasionally consulted, rather than making the rigorous inculcation of principles by practice the first consideration. The use of printed recipes is advocated, on the plea of the valuable time thus saved; these are preserved in books specially provided, which contain, in addition, directions, &c., dictated by the teacher when necessary, or made by the child herself. As a whole, these special teachers are well trained and of a high stamp; most usually I found them to be interested in the correlation of both cooking and needlework with other school work. One of their chief difficulties in this respect is met with in the common custom of "centres," by which children are taught these subjects by teachers not in touch with their ordinary work. In the case of one school used as a "centre," I found the special teacher overcame this difficulty by conferences with her fellows: but this could not be managed for the majority of her pupils when these numbered several hundred and were drawn from perhaps nine separate schools.

In respect of sewing I would like to remind my readers of the good results which have followed, in a few cities, this teaching to boys, as well as to girls, from the age of nine to ten or eleven years. In addition to its practical and educational values it is said to promote community of interest, while small boys take to it most kindly and apply it readily. Great diversity of opinion prevails as to the use of the "specimen" system of teaching needlework; I should say



unhesitatingly that the best results I observed were attained where it was not in force, or only to a modified degree ; for instance, where the specimens of stitches for preservation formed the conclusion of the whole course. The interest of the children is markedly greater where they learn to sew on some article for which they see an immediate purpose ; but in all my comments, it is necessary to bear in mind that my personal observations were necessarily limited.

In the Grade School teaching of Personal and Domestic Hygiene (Physiology and Hygiene, as it is invariably described) the best teachers lose no opportunity to inculcate ideas of duty to one's self, duty to one's neighbour, duty to one's country. They impress that the body is worthy of, and well repays, intelligent care ; that without this good work cannot be accomplished. Children are led to see that no one has a right to injure his neighbour by his slovenly, ignorant, or filthy habits ; and that the State demands that her children shall maintain her prestige by their efficiency and good health. Such practical physical morality comes within the daily observation of children ; it throws a new light on the daily bath, the orderly back yard, the decent habits ; it sets before them as an ideal the conduct of a self-respecting, self-controlled citizen.

The evidences of home application of Cookery, Housewifery, Sewing, and, last but not least, the practice of good habits are quite evident. Great stress is laid upon the encouragement of such applications, though it is reported to be usually spontaneous ; indeed, it appears to have been the means of breaking down much parental opposition to Domestic Science teaching, and has served, in some cases, to form the first connecting link between home and school life. What impressed me even more than the specimens of home productions brought for inspection at the cookery classes, were the corresponding examples of home needlework, especially where the making of a simple blouse and skirt forms part of the course. These spoke of sustained perseverance and of practical ability, as well as of lively interest. It would be wearisome to quote instances of the influence exercised on personal habits and family life by the instruction in Physiology and Hygiene ; but I must mention that this seemed to be very noticeable among boys, in whom, also, I was told, this teaching, when well conducted, serves the useful purpose of developing the latent sense of civic responsibility.

So far Domestic Science has had a somewhat difficult position to face in some cities. These difficulties are, however, described as diminishing, and are usually short-lived. It is habitual to entrust the organisation of manual training in city schools to an expert, and though this expert is not necessarily a woman, the interests of girls are not as a rule overlooked, the funds at a Superintendent's disposal for purposes of manual work (under which Cookery and Needlework are grouped) being equally distributed. In High Schools, so far as my observations extended, no financial problems have presented themselves. With regard to equipment, I have

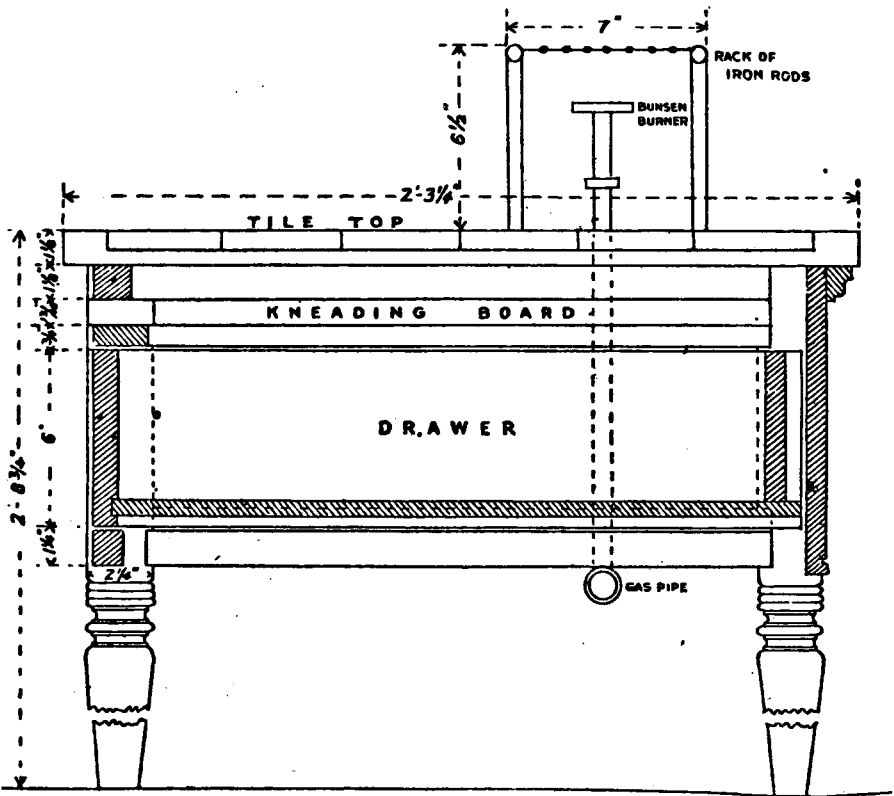
already said that the "centre" system is usual in the case of Grade Schools; but institutions for higher education have each their own kitchen laboratories and work-rooms. The equipment, in respect to the provision of specially planned and fitted tables,\* has been most carefully thought out, and presents certain definite advantages; some of these have been dealt with in Part I. of this Report. Teachers are trained to be very resourceful in the matter of apparatus, though the cost of equipment does not usually present insurmountable obstacles, there is too much appreciation of the necessity to provide all that contributes to the efficiency of the schools. To trammel work, for want of financial support, in which the public has faith, is contrary to general American practice. Those responsible for the organisation of education continue their representations until private or public funds are found for the desired purpose. Nevertheless my informants emphasised the encouragement given to judicious simplicity and to the employment of "home made" apparatus. The use of text books is unusual in any course, in any grade of institution; training in the right use of books of reference is the prevalent method; and the teacher causes careful notes to be kept of the theory she supplies, which usually precedes practice. Only very rarely is adherence to an entire syllabus rigidly required, it is usual to repose confidence in the teacher's judgment, and no cases of abuse were reported. The teachers habitually consult upon this point with their principals or inspectors, and the plan is found to work well for all concerned. Much time and thought is evidently expended upon wise correlation of Domestic Science with other school subjects. The presentation of all knowledge in a form to permit of its speedy application is very present just now in the minds of school authorities, and the children seem so generally anxious to turn what they study to some immediate use, that their enthusiasm acts as a spur to the teacher, and introduces a very pleasant atmosphere into the schools.

Household  
Science and  
Hygiene  
in High  
Schools.

In High Schools all courses in these subjects are of a more comprehensive and scientific character than those in the lower grades. They usually include a fairly thorough treatment of cooking, housewifery, needlework, dressmaking and millinery; laundry work also almost invariably finds a place. Where Household Science is taught, house sanitation is generally introduced, but hygiene in its personal aspects is reserved for the courses in Physiology. It is usual to accompany this training by a study of fundamental principles in laboratory and studio. There appear to be two weighty arguments in favour of adopting Household Science and Art into the curriculum, which counterbalance all the objections; the one, that these subjects afford an unrivalled field for correlation with and application of other studies, literary, artistic, and scientific; the other, that much advantage is gained from the variety of occupation incidental to the active practical work they necessitate, that better results are secured in these other studies, even though they

\*See Fig. VIII.

Fig. VIII.



WORKING DRAWING OF COOKING TABLE,  
School Kitchen, Pratt Institute, Brooklyn, New York.

Household  
Science  
and Hygiene  
in High  
Schools.

—*continued.*

are pursued for shorter periods than are assumed to be desirable where Household Science is not in favour. In his article on High Schools in the "Pratt Institute Monthly" for April, 1901, Dr. Luther Gülick emphasises yet another argument in its favour, viz., that "in the teens there is a great accession to the capacity for, and delight in, reason. This fact is so generally recognised that it needs no particular discussion. The High School programme should be definitely related to the increasing capacity to reason. Facts should be continually put into relation with one another. This is the time for the laboratory method, which is well worked out in physics, chemistry, physiography, and in certain respects in biology. It needs to be, and can be worked out in history, mathematics and art." Under his interested supervision the girls' High School course in Household Science, pursued on lines consonant with these developing faculties, has well justified its existence at the Pratt Institute. To Dr. Gülick this term, "laboratory method," means that process by which "the pupil discovers his own facts; comes to his own conclusions in regard to them, and formulates for himself the laws that grow out of these facts"—a different form of procedure from that which often goes under this designation. Nevertheless, Professor Francis E. Lloyd, of Teachers College, Columbia University, recognises the danger which accompanies careless use of this laboratory method, and sounds a note of timely warning when he points out that it is valuable, "just in proportion as it trains in careful methods of observation, and cultivates a scientific habit of mind. It succeeds when it trains a pupil in inductive reasoning; it fails, at least in school life, when it becomes an end in itself." To guard against this perversion of its worth, and to stimulate the development of the reasoning faculties by its judicious introduction, seemed to me the guiding principles of those in charge of the best High School courses I observed in Household Science. Thus on educational grounds alone the subject justifies its introduction into the curriculum of Secondary Schools; but there are other forcible arguments which appeal to those not immediately concerned with the training of young people. There are few who have not noted that it is at the High School age especially that girls' ideas of life are apt to be falsified; they become discontented with their environment, and often ashamed of family claims or relationships. Observation shows that a rational study of Household Science helps to bind the girl to her home, to centre her interest there, and to show her the worth and beauty of family life. It has been well said that this subject, above all others, forges the facts of science and art into practical tools, by whose aid the home's efficiency in the production of health and character is materially increased. It would seem, at least over a certain area in the United States, as if this conception of domestic dignity has a fascination for the growing girl, who appears to be also unexpectedly alive to the communal and economic aspects of the subject. Her mind receives ideas readily concerning the duty of right living, and its effect upon the community. She is easily

aroused to realise the responsibilities of each individual home as a social unit, whose character inevitably assists to determine the composition of the whole mass. She is impressed by the thought that home and school together form the social workshop, in which are moulded the citizens of the future. The economics of consumption also exercise an attraction which was not anticipated. When the topic is judiciously introduced, girls exhibit eagerness and perseverance in learning the right use of energy, health, time, and money. Speaking generally, it seemed to me that the aspects of Household Science and Art most emphasised in High School courses are the sound theoretical and scientific bases which underlie household duties; the opportunities for immediate application afforded in home life for artistic training; the increased mental and physical efficiency which follows upon a wise economy of time and an intelligent expenditure of money; and the claims of civics and patriotism upon those responsible for the rearing of the race. In Physiology and Hygiene, where the boys and girls work together, continued stress is laid upon the close relationship of living conditions to health and working power. Here, as in Domestic Science, the method employed is almost exclusively that of lectures, followed by periods of laboratory work. My observations, and the information I gained, convinced me that, under the best professors, the teaching is based upon the lines defined by Dr. W. Townsend Porter, of the Harvard Medical School, in an article entitled, "The Teaching of Physiology," published in the Philadelphia "Medical Journal," September 1st, 1900:—"Deal as far as possible with the phenomena themselves, and not with the descriptions of them. Where the fundamental experiments cannot all be performed, fill the gap with the original protocols from the classical sources. Associate facts which the student can observe for himself with those which he cannot observe. Use as the basis of instruction, where practicable, the facts and methods to be used by the student in earning his living. Teach the elements by practical work. Let the student state his observations and results in a laboratory note-book. Control his progress, and remove his difficulties, by a daily written examination and a daily conference, in which the instructor shall discuss the observations made by the student, and supplement them from his own reading. Stimulate the student by personal intercourse in the laboratory, by glimpses of the researches in progress, and by constant reference to the original sources. From the beginning to the end of the instruction hold fast to concentration, sequence, and election."

Of an interest equal to these High School courses are those in the State Agricultural Colleges; not alone those concerned with Household Economics, but the lectures on Hygiene associated with active physical culture, which enters compulsorily into the curriculum of students of both sexes. Mrs. Ellen H. Richards, of the Massachusetts Institute of Technology, has pointed out on more than one occasion that Household Economics rest on two

chief corner stones—economy of health and economy of wealth. Economy of wealth appeals with force, and receives implicit, if not explicit, attention from students engaged in equipping themselves for their future callings in life. That their attention should be directed with equal emphasis to the study of the economy of health, in a country where the pursuit of money is considered a national characteristic, augurs well for the race; it speaks volumes also for the common sense attitude of a people whose point of view is occasionally obstructed by the excitement and effervescence incidental to the rapid progress of a new country. The claim that these subjects have for a recognition from college authorities is again based upon their comprehensive and educational character. Household Economics and Hygiene are neither the one nor the other separate sciences or arts to be taught by one person with a specialist training; all departments of a University can and should contribute to their right presentation. Where the experiment has been tried the results are most emphatically favourable. It is also stated that in no other instances have such valuable and successful efforts at co-operation been established between faculties. The leaven is manifestly at work for the spread of this movement in colleges. Some college presidents are standing with open minds, waiting for a longer observation of existing courses before formulating a definite opinion; but all are apparently inquiring as to the attitude of their confrères. Many professors show a disposition to accept the subject under the plea that college teaching of Economics, Sociology, Pedagogy, History or Sanitary Science, must include the relation of the family and the household to society; and that distinct advantages accompany practical demonstration of this truth by the work carried on in a department set apart for the purpose. It is true that the accomplishments of women in Chemistry, Physics, or Biology, have not yet inspired men with full confidence in their power to successfully attack a new problem in a consistently scientific spirit; but, though somewhat less unanimous upon the definite adoption of Household Economics as a distinct college subject, than upon its inclusion under some branch of Sociology, college professors are as a whole favourable to some place being assigned to it on the grounds of its great importance: so far women have justified any confidence reposed in them in respect of the organisation of such advanced courses.

Domestic  
Science as a  
"Technical"  
Subject.

A further point to which I was directed to give special attention was the extent to which Domestic Science is regarded as an early instalment of technical education, inserted in the Primary or Secondary School curriculum. "How far is an attempt made (and, if made, how far is it successful) to deal with the subject as part of a liberal education—*i.e.* for its value as an educational discipline as distinct from its practical utility? In practice, does the aim in view affect the course of instruction, and has it been found possible to combine the benefits of disciplining the intelligence and the reasoning power with those of increased manual and prac-

tical skill?" Such were my instructions. There seemed to me no tendency to introduce the subject into elementary schools as a preliminary stage in technical education. To fit their charges for life, not for one means of earning a livelihood, is the aim of all the best superintendents and teachers at the present day. The leading idea, much emphasised by educationalists, is that the early periods of education should be essentially devoted to general culture and not to premature specialisation. The "poise" or well-balanced characters which it is desired to form by school education, can only be developed by an all-round training of the mind and body, and not by early concentration upon any one branch of study to the exclusion of others. I learnt that the early efforts made to introduce Domestic Science into schools were, more or less, leavened with the trade school idea, but the later realisation of the true scope of education and more enlightened methods of instruction have led to the virtual extinction of this misapprehension. It is true that inculcation of the principles, that is of the fundamental laws of matter and form, with enough practice to illustrate them, play an important part in the High School courses; but there is no ulterior object of training children technically for domestic service or as juvenile dressmakers; the idea is to bring the teaching of Domestic Science into harmony with the broad, scientific, and educational theories characteristic of the time.

In Manual Training High Schools, the technical, as distinct from the educational study of Household Science, is naturally brought into more prominence than in others. During the last two of a four year course, girls of sixteen have attained an age when specialisation is admissible; and the fact that they have sought their education in a Manual Training rather than in an ordinary High School indicates that their intention is to select some form of occupation in the future in which the hands are to be as active as the head. But a study of the time-tables will make clear that the first two years of these courses are emphatically "general" in method; indeed the necessity of supporting a special subject by means of coincident, systematic study of other branches of knowledge is clearly realised by those responsible for the schemes of technical training in Household Science and Art at all the Institutes and Colleges, as well as in Manual Training High Schools.

It would be superfluous for me to reiterate the success which has attended efforts to deal with these subjects as part of a liberal education. Indeed, it is on account of their peculiar value in this connection that they find favour in the eyes of some who otherwise would not countenance them as either school or college subjects. Their sociological, ethical, and economic as well as their industrial values are of quite recent appreciation; but, as I have pointed out, now that students of these sciences clearly see the intimate relation of family life to the whole social and industrial order, they deem it right, not only to devote some of their precious hours to a study absolutely essential for intelligent life under twentieth-century

conditions, but desire that an early interest shall be awakened in those who may be unable to pursue the subject at a later period in their lives.

Training of  
Teachers in  
Domestic  
Science.  
Table  
XXXVII.

A further request was made that I should give careful observation to the methods of training and qualifications of teachers of Domestic Science. Readers of this Report will have observed what stress is laid upon the preparation of well-equipped teachers for this subject, and what liberal opportunities are offered for their training. Definite qualifications are required of all teachers of Domestic Science, and each year the standard of these is raised. The accompanying comparative Table sets forth in detail the subjects included in what are recognised as among the best training courses now available in the United States, and the length of time devoted respectively to the various studies. What, however, no tabulated statement can show is the method upon which successful results depend. However, it will be noted that the general scope of the courses is somewhat broader in the United States than in this country; that considerable time is devoted to the careful study of the theory which underlies all practice; and that importance is attached to a practical study of the scientific and artistic principles basal to that technical skill, to the attainment of which the training is directed. For these reasons the Domestic Sciences and Arts are almost always studied in two distinct courses; time does not permit of a command of both being acquired by the same student in the three years she can invest in the special preparation for her profession. There is a feeling, at least in one Institute, that the scientific side of Household Science has been slightly over emphasised. Probably the fact that this is recognised and that already definite efforts are being made for the more accurate adjustment of values, indicates that if the danger exist it will soon be averted. The weak points which would probably immediately present themselves to an experienced eye, will be want of teaching practice in some of the American Normal Courses, and the very short time devoted to laundry training. It must, however, be borne in mind that each year sees modifications of these courses, as experience shows their strength or weakness. The ideal set forth is very high. The directress of one of these departments said to me that it is set so high they sometimes feel disheartened—it seems beyond human attainment; yet, each year, the Lake Placid Conference of experts, men and women, spurs them on to renewed exertions by reiterating from some new standpoint the enormous importance to the individual and to the nation of this work of home-making. Evidence of good preliminary preparation in elementary science or art, in addition to a sound general education, is demanded of all students. As a fact, college women are preferred to those who have had only the advantage of a high school education, on account of the greater breadth of culture they will bring to their class work. In all cases, general information and physical well-being are not allowed to suffer during the special training.



TABLE XXXVII.  
DOMESTIC SCIENCE.

NORMAL TRAINING COURSES, UNITED STATES OF AMERICA.			NORMAL TRAINING COURSES, ENGLAND.										
STATE NORMAL SCHOOL, FRAMINGHAM.	DREXEL INSTITUTE, PHILADELPHIA.	PRATT INSTITUTE, BROOKLYN.	GLOUCESTERSHIRE SCHOOL OF DOMESTIC SCIENCE.			LEEDS SCHOOL OF COOKERY.			BATTERSEA POLYTECHNIC TRAINING SCHOOL OF DOMESTIC ECONOMY.				
			COOKERY.	LAUNDRY.	HOUSEWIFERY.	COOKERY.	LAUNDRY.	HOUSEWIFERY.	COOKERY.	LAUNDRY.	HOUSEWIFERY.		
Chemistry—General, 133 hours. Qualitative, 114 hours. Quantitative, 342 hours. Organic, 19 hours.	Chemistry—General Principles, 64 hours (Lectures). Qualitative (Laboratory) Analysis, 96 hours. Quantitative Analysis, 48 hours. Organic, 112 hours.	Chemistry—General Inorganic. Qualitative Analysis, 384 hours. Organic.	Chemistry—General. Students attend the School of Science open from September to May. This is not counted in the training.	Chemistry—General. Students attend the School of Science open from September to May. This is not counted in the training.	Cookery and Laundry diplomas are pre-requisite.	Chemistry, 60 hours.	Chemistry. Elementary Alternative stage, if not previously taken in the Cookery.	Chemistry.	Chemistry } Minimum 80 hours; more than this time is usually found necessary.	Chemistry and Hygiene } about 80 hours.	Cookery and Laundry Diplomas are pre-requisite.	Physiology and Hygiene } about 80 hours.	Cookery and Laundry Diplomas are pre-requisite.
Physics (elementary), 29 hours.	Physics (Heat), 52 hours.	Physics (Heat), 52 hours.	Food Dietetics, 30 hours.	Food Dietetics, 30 hours.	Food Dietetics, 30 hours.	Food and Dietetics (Lectures) } 10 hours.	Food and Dietetics (Lectures) } 10 hours.	Food and Dietetics (Lectures).	Food and Dietetics (Lectures).	Food and Dietetics (Lectures).	Food and Dietetics (Lectures).	Food and Dietetics (Lectures).	Food and Dietetics (Lectures).
Food and Dietetics, 38 hours.	Chemistry of Food and Dietetics, 144 hours.	Physiology and Hygiene, 128 hours.	Physiology } Students attend the School of Science (see above). First Aid. } Supplemental by an occasional course of lectures.	Physiology } Students attend the School of Science (see above). First Aid. } Supplemental by an occasional course of lectures.	Physiology } Students attend the School of Science (see above). First Aid. } Supplemental by an occasional course of lectures.	Physiology (optional) 45 hours. Hygiene . . . . . 45 hours.	Physiology (optional) 45 hours. Hygiene . . . . . 45 hours.	Physiology (optional) 45 hours. Hygiene . . . . . 45 hours.	Physiology (optional) 45 hours. Hygiene . . . . . 45 hours.	Physiology (optional) 45 hours. Hygiene . . . . . 45 hours.	Physiology (optional) 45 hours. Hygiene . . . . . 45 hours.	Physiology (optional) 45 hours. Hygiene . . . . . 45 hours.	Physiology (optional) 45 hours. Hygiene . . . . . 45 hours.
Physiology and Hygiene } 152 hours.	Anatomy and Physiology, including Hygiene and Emergencies, 96 hours.	Nature Study, 128 hours.	Cookery practice, 560 hours. Demonstration, 50 hours.	Cookery practice, 560 hours. Demonstration, 50 hours.	Cookery practice, 560 hours. Demonstration, 50 hours.	Cookery, practice } 680 hours. Demonstration } 25 hours. Theory of Cookery, (Lectures) } 25 hours.	Cookery, practice } 680 hours. Demonstration } 25 hours. Theory of Cookery, (Lectures) } 25 hours.	Cookery, practice } 680 hours. Demonstration } 25 hours. Theory of Cookery, (Lectures) } 25 hours.	Cookery, practice } 680 hours. Demonstration } 25 hours. Theory of Cookery, (Lectures) } 25 hours.	Cookery, practice } 680 hours. Demonstration } 25 hours. Theory of Cookery, (Lectures) } 25 hours.	Cookery, practice } 680 hours. Demonstration } 25 hours. Theory of Cookery, (Lectures) } 25 hours.	Cookery, practice } 680 hours. Demonstration } 25 hours. Theory of Cookery, (Lectures) } 25 hours.	Cookery, practice } 680 hours. Demonstration } 25 hours. Theory of Cookery, (Lectures) } 25 hours.
Biology, 57 hours.	Biology and Physiological Chemistry, 48 hours.	Bacteriology, 52 hours.	Table appointments } 80 hours. Marketing } 80 hours.	Table appointments } 80 hours. Marketing } 80 hours.	Table appointments } 80 hours. Marketing } 80 hours.	Care of Store-room. } 45 hours. Marketing } 45 hours.	Care of Store-room. } 45 hours. Marketing } 45 hours.	Care of Store-room. } 45 hours. Marketing } 45 hours.	Care of Store-room. } 45 hours. Marketing } 45 hours.	Care of Store-room. } 45 hours. Marketing } 45 hours.	Care of Store-room. } 45 hours. Marketing } 45 hours.	Care of Store-room. } 45 hours. Marketing } 45 hours.	Care of Store-room. } 45 hours. Marketing } 45 hours.
Bacteriology, 60 hours.	Bacteriology, 160 hours.	Bacteriology, 52 hours.	Home Nursing. Courses are held during the winter in connection with the Evening Continuation School.	Home Nursing. Courses are held during the winter in connection with the Evening Continuation School.	Home Nursing. Courses are held during the winter in connection with the Evening Continuation School.	Home Nursing. Courses are held during the winter in connection with the Evening Continuation School.	Home Nursing. Courses are held during the winter in connection with the Evening Continuation School.	Home Nursing. Courses are held during the winter in connection with the Evening Continuation School.	Home Nursing. Courses are held during the winter in connection with the Evening Continuation School.	Home Nursing. Courses are held during the winter in connection with the Evening Continuation School.	Home Nursing. Courses are held during the winter in connection with the Evening Continuation School.	Home Nursing. Courses are held during the winter in connection with the Evening Continuation School.	Home Nursing. Courses are held during the winter in connection with the Evening Continuation School.
Cookery, 912 hours.	Cookery, 448 hours. Waiting, 32 hours.	Waiting, 16 hours.	Computing of Diets, 32 hours. Physical Training, 128 hours.	Computing of Diets, 32 hours. Physical Training, 128 hours.	Computing of Diets, 32 hours. Physical Training, 128 hours.	Laundry Practice and Demonstrations } 520 hours.	Laundry Practice and Demonstrations } 520 hours.	Laundry Practice and Demonstrations } 520 hours.	Laundry Practice and Demonstrations } 520 hours.	Laundry Practice and Demonstrations } 520 hours.	Laundry Practice and Demonstrations } 520 hours.	Laundry Practice and Demonstrations } 520 hours.	Laundry Practice and Demonstrations } 520 hours.
Laundry, 30 hours.	Laundry Course, 32 hours. Marketing, Several lessons. Food Economics, 64 hours. Lunch-room Cookery, 32 hours. Demonstrations, 32 hours. Home Nursing, 12 hours.	Laundry work, 32 hours. Marketing, 26 hours.	Business Forms and Accounts, 32 hours.	Business Forms and Accounts, 32 hours.	Business Forms and Accounts, 32 hours.	English Language } 16 hours. and Literature. } 16 hours. Domestic Architecture, 6 hours.	English Language } 16 hours. and Literature. } 16 hours. Domestic Architecture, 6 hours.	English Language } 16 hours. and Literature. } 16 hours. Domestic Architecture, 6 hours.	English Language } 16 hours. and Literature. } 16 hours. Domestic Architecture, 6 hours.	English Language } 16 hours. and Literature. } 16 hours. Domestic Architecture, 6 hours.	English Language } 16 hours. and Literature. } 16 hours. Domestic Architecture, 6 hours.	English Language } 16 hours. and Literature. } 16 hours. Domestic Architecture, 6 hours.	English Language } 16 hours. and Literature. } 16 hours. Domestic Architecture, 6 hours.
Physical Training, 228 hours.	Physical Training, 128 hours.	Physical Training, 128 hours.	Psychology, 57 hours.	Psychology, 57 hours.	Psychology, 57 hours.	Practice in Teaching, 160 hours.	Practice in Teaching, 160 hours.	Practice in Teaching, 160 hours.	Practice in Teaching, 160 hours.	Practice in Teaching, 160 hours.	Practice in Teaching, 160 hours.	Practice in Teaching, 160 hours.	Practice in Teaching, 160 hours.
Practice Teaching, 456 hours.	Practice Teaching, 456 hours.	Practice Teaching, 456 hours.	Teachers' Conference, 76 hours.	Teachers' Conference, 76 hours.	Teachers' Conference, 76 hours.	Art of Teaching, 36 hours.	Art of Teaching, 36 hours.	Art of Teaching, 36 hours.	Art of Teaching, 36 hours.	Art of Teaching, 36 hours.	Art of Teaching, 36 hours.	Art of Teaching, 36 hours.	Art of Teaching, 36 hours.
Art Training, 114 hours.	Art Training, 114 hours.	Art Training, 114 hours.	Singing, 76 hours.	Singing, 76 hours.	Singing, 76 hours.	Demonstrations under Critic Teacher } 36 hours.	Demonstrations under Critic Teacher } 36 hours.	Demonstrations under Critic Teacher } 36 hours.	Demonstrations under Critic Teacher } 36 hours.	Demonstrations under Critic Teacher } 36 hours.	Demonstrations under Critic Teacher } 36 hours.	Demonstrations under Critic Teacher } 36 hours.	Demonstrations under Critic Teacher } 36 hours.
French, 57 hours.	French, 57 hours.	French, 57 hours.	Field Work" consists of conducted visits to markets, shops, factories, farms, houses, etc.	Field Work" consists of conducted visits to markets, shops, factories, farms, houses, etc.	Field Work" consists of conducted visits to markets, shops, factories, farms, houses, etc.	Length of Training, 2 years.	Length of Training, 2 years.	Length of Training, 2 years.	Length of Training, 2 years.	Length of Training, 2 years.	Length of Training, 2 years.	Length of Training, 2 years.	Length of Training, 2 years.
Length of Training, 2 years.	Length of Training, 2 years.	Length of Training, 2 years.	Fees, Nil.	Fees, Nil.	Fees, Nil.	Fees, £18 18s. 0d.	Fees, £18 18s. 0d.	Fees, £18 18s. 0d.	Fees, £18 18s. 0d.	Fees, £18 18s. 0d.	Fees, £18 18s. 0d.	Fees, £18 18s. 0d.	Fees, £18 18s. 0d.

DOMESTIC ARTS.

STATE NORMAL SCHOOL, FRAMINGHAM.	DREXEL INSTITUTE, PHILADELPHIA.	PRATT INSTITUTE, BROOKLYN.	GLOUCESTERSHIRE SCHOOL OF DOMESTIC SCIENCE.			LEEDS SCHOOL OF COOKERY.			BATTERSEA POLYTECHNIC TRAINING SCHOOL OF DOMESTIC ECONOMY.		
			SEWING.	DRESSMAKING.	MILLINERY.	SEWING.	DRESSMAKING.	MILLINERY.	PLAIN NEEDLEWORK.	DRESSMAKING.	MILLINERY.
Science—Chemistry of Textiles, 6 hours. Dyeing and Cleaning, 128 hours.	Chemistry, 1 year.	Chemistry, 1 year.	Art . . . . . 12 hours (not in school hours).	Art . . . . . 12 hours (not in school hours).	Art . . . . . 12 hours (not in school hours).	Modelling. Drawing. Renovating. Sewing—Practice Demonstration } 310 hours.	Modelling. Drawing. Renovating. Sewing—Practice Demonstration } 310 hours.	Modelling. Drawing. Renovating. Sewing—Practice Demonstration } 310 hours.	Hygiene, 36 hours.	Hygiene, 36 hours.	This certificate is only given to holders of Diploma recognised by the National Union for the Training of Women in Domestic Science, which includes an Examination in the Theory and Practice of Education.
Human Physiology and Hygiene } 96 hours.	Bacteriology, 3 months.	Bacteriology, 3 months.	Sewing { Practice Demonstration, 339 hours.	Sewing { Practice Demonstration, 339 hours.	Sewing { Practice Demonstration, 339 hours.	Art of Teaching, 36 hours.	Art of Teaching, 36 hours.	Art of Teaching, 36 hours.	Art training varies with the requirement of the student.	Art training varies with the requirement of the student.	Art training varies with the requirement of the student.
Emergencies, 16 hours.	Physiology and Hygiene, 1 year.	Physiology and Hygiene, 1 year.	Dressmaking—Practice Demonstration } 339 hours.	Dressmaking—Practice Demonstration } 339 hours.	Dressmaking—Practice Demonstration } 339 hours.	Demonstrations under Critic Teacher } 10 hours.	Demonstrations under Critic Teacher } 10 hours.	Demonstrations under Critic Teacher } 10 hours.	Practice Demonstration } 385 hours.	Practice Demonstration } 385 hours.	Practice Demonstration } 160 hours.
Drawing, 256 hours.	Nature Study, 6 months.	Nature Study, 6 months.	Not taking Millinery at present, and only plain Dressmaking.	Not taking Millinery at present, and only plain Dressmaking.	Not taking Millinery at present, and only plain Dressmaking.	Length of Training, 425 hours.	Length of Training, 425 hours.	Length of Training, 425 hours.	Length of Training, 425 hours.	Length of Training, 425 hours.	Length of Training, 425 hours.
Sewing, 256 hours.	Cord work, &c., 1 year.	Cord work, &c., 1 year.	Art of Teaching, 36 hours.	Art of Teaching, 36 hours.	Art of Teaching, 36 hours.	Length of Training, 180 hours.	Length of Training, 180 hours.	Length of Training, 180 hours.	Length of Training, 425 hours.	Length of Training, 425 hours.	Length of Training, 180 hours.
Dressmaking, 320 hours.	Sewing (methods of teaching hand sewing, machine sewing, drafting, garment making, study of textiles), 1 year.	Sewing (methods of teaching hand sewing, machine sewing, drafting, garment making, study of textiles), 1 year.	Practice in Teaching, 40 hours.	Practice in Teaching, 40 hours.	Practice in Teaching, 40 hours.	Fees, £8 0s. 0d.	Fees, £8 0s. 0d.	Fees, £8 0s. 0d.	Fees, £9 0s. 0d.	Fees, £9 0s. 0d.	Fees, £4 10s. 0d.
Millinery, 256 hours.	Dressmaking, 6 months.	Dressmaking, 6 months.	Demonstrations under Critic Teacher } 10 hours.	Demonstrations under Critic Teacher } 10 hours.	Demonstrations under Critic Teacher } 10 hours.	Fees, £8 0s. 0d.	Fees, £8 0s. 0d.	Fees, £8 0s. 0d.	Fees, £9 0s. 0d.	Fees, £9 0s. 0d.	Fees, £4 10s. 0d.
Business Training, 64 hours.	Millinery, 6 months.	Millinery, 6 months.	Length of Training (minimum), 425 hours.	Length of Training (minimum), 425 hours.	Length of Training (minimum), 425 hours.	Fees, £8 0s. 0d.	Fees, £8 0s. 0d.	Fees, £8 0s. 0d.	Fees, £9 0s. 0d.	Fees, £9 0s. 0d.	Fees, £4 10s. 0d.
History of Costume, 9 hours. (Lectures).	Art Needlework, 3 months.	Art Needlework, 3 months.	Fees, £7 7s. 0d.	Fees, £7 7s. 0d.	Fees, £7 7s. 0d.	Fees, £8 0s. 0d.	Fees, £8 0s. 0d.	Fees, £8 0s. 0d.	Fees, £9 0s. 0d.	Fees, £9 0s. 0d.	Fees, £4 10s. 0d.
Observation and Practice in Teaching, 192 hours.	History of Art (Lectures), 10 hours.	History of Art (Lectures), 10 hours.	Fees, £7 7s. 0d.	Fees, £7 7s. 0d.	Fees, £7 7s. 0d.	Fees, £8 0s. 0d.	Fees, £8 0s. 0d.	Fees, £8 0s. 0d.	Fees, £9 0s. 0d.	Fees, £9 0s. 0d.	Fees, £4 10s. 0d.
Physical Training, 128 hours.	Drawing (colour, form, and costume design), 2 years.	Drawing (colour, form, and costume design), 2 years.	Fees, £7 7s. 0d.	Fees, £7 7s. 0d.	Fees, £7 7s. 0d.	Fees, £8 0s. 0d.	Fees, £8 0s. 0d.	Fees, £8 0s. 0d.	Fees, £9 0s. 0d.	Fees, £9 0s. 0d.	Fees, £4 10s. 0d.
Length of Training, 2 years.	Historic Costume (Lectures), 10 hours.	Historic Costume (Lectures), 10 hours.	Fees, £7 7s. 0d.	Fees, £7 7s. 0d.	Fees, £7 7s. 0d.	Fees, £8 0s. 0d.	Fees, £8 0s. 0d.	Fees, £8 0s. 0d.	Fees, £9 0s. 0d.	Fees, £9 0s. 0d.	Fees, £4 10s. 0d.
Fees, £80 (£16) a year.	Psychology and History of Education, 1 year.	Psychology and History of Education, 1 year.	Fees, £7 7s. 0d.	Fees, £7 7s. 0d.	Fees, £7 7s. 0d.	Fees, £8 0s. 0d.	Fees, £8 0s. 0d.	Fees, £8 0s. 0d.	Fees, £9 0s. 0d.	Fees, £9 0s. 0d.	Fees, £4 10s. 0d.

The type of woman attracted to the Normal Courses is distinctly good, and when qualified she takes rank with teachers or professors of any other subjects taught at school or college. The dignity which attaches to the teaching profession in the United States is also conducive to a selection of these subjects by independent and well-bred women, who do not thereby feel that they in any way diminish their social status. I found them resourceful, interested, and possessed usually of considerable enterprise and independence of thought. Many have had considerable difficulties to encounter in their work, as the prejudices of parents, and even of members of Boards of Education, have died hard; but enthusiasm is rarely lacking, and the excellent results observed from their exertions in each grade of educational institution serve apparently as a sufficient stimulus to continued efforts.

Very great account is taken of personal equation in all Normal students, and greater stress is laid upon the estimate formed of their daily work than upon the results of a final examination. The teaching staff meet periodically to discuss and to compare notes as to the students' dispositions, progress, and conduct in their various classes; this study of individual character is taken into careful account by the examiners. The fact that applications for training so far exceed available vacancies permits a careful sifting in the first instance. At present about a fifth or sixth only of those who seek training in the best Normal Courses can be admitted.

Diplomas are usually, if not invariably, given upon the successful completion of a whole course of training; they are not dependent upon the results of a final examination. As has been stated above, estimates of efficiency are based upon the general character and work; small importance is attached to a single examination, however practical, which demands chiefly presence of mind, a good memory, and manual dexterity. It is quite unusual for an outside examiner to conduct any tests. Periodical examinations are made at intervals by members of the staff, as, for instance, at Teachers College, Columbia University, where each professor examines his or her own students in theory and practice at various periods in the course, and considers the results in consultation with his colleagues. In some States there is a Central Examining Board, which conducts entrance examinations for teachers before admittance to its schools: this is the case in New York State, but the custom is not general. It will be thus realised that diplomas have different values. The prestige of a school or college is maintained by the work of its graduates; and it is considered that in this lies the guarantee for the maintenance of a high standard in its teaching. Were the students insufficiently trained or graduated unfairly their work would rapidly reveal the fact, and the whole institution would suffer. Probably it is the difficulty of attaining or maintaining the required standard which accounts for the gradual dying out of the short, pioneer, private

Training of  
Teachers in  
Domestic  
Science —  
*continued.*

Normal Courses in Domestic Science, now being superseded as unsatisfactory. Normal diplomas are not granted for separate subjects, but only for specified groups, under the comprehensive title of Domestic Science or of Domestic Art; the studies are carried on concurrently, and proficiency in the whole scheme is demanded. This is one of the broad distinctions in the United States between Normal and Technical courses; in Technical courses certificates are granted separately for each subject, a group of which constitute the complete Normal course. There is very little inspection of normal courses by outside experts; those conducted in primary or secondary schools are under the supervision of city or state inspectors; the general courses in Technical schools are practically independent of inspection, as these institutions are chiefly under the control of private bodies.

It has been found difficult, in some cases, to prevent teachers of the humanities, whose tastes are purely artistic and literary, from disparaging the important and intellectual attractions of Household Science; and, as I have mentioned, there is also a danger of specialist teachers treating it in so complex a manner as to dissociate it from daily life. Efforts to meet both tendencies are constantly at work; and I learned that the introduction of a Household Arts Department into institutions attended by teachers going through a literary or general course of study has had the result of converting those who previously depreciated Household Science into its interested supporters. Information to the same effect was furnished me by professors under more than one important Board of Education; general teachers disposed to look upon the study and practice of cooking and sewing unfavourably, because of the time so taken away from other studies, have become advocates of such work when pains have been taken to investigate its claims. The principal of one State College mentioned to me particularly that the male professors had become the warmest supporters of the Household Economic course.

There is a strong feeling among some superintendents in favour of removing these subjects from the hands of special teachers in Grade schools, owing to a tendency to lose the right sense of proportion in the lessons. They argue that a young specialist teacher has too narrow an experience of life to enable her to interpret her special knowledge in the light of common things, whereas it is most essential that it should be so presented to the children. This is used as a strong point by those who advocate the pursuit of all special training, normal or otherwise, in general colleges, where work is not confined to one special line and much assistance is available in attaining and maintaining a broad and open outlook. It seemed to me that the constant interchange of opinion and experience common in the school world of the United States is in any case favourable to the breaking down of prejudices and contributes to the maintenance of that sense of proportion hard to attain when working in an isolated position. Two good features

in all its educational work, which balance some of the exaggerations to which the enthusiasms of the people are inclined to lead, are the ready recognition of mistakes made and an open mind towards suggested reforms. In these qualities lies the promise of strength, which bids fair to develop eventually the necessary sense of proportion and right values.

State or Municipal Boards of Education encourage Domestic Science by allotting to it a suitable proportion of the money voted for educational purposes in their respective districts. The same system supports the work in State Agricultural Colleges. The appropriation, granted by the State, is subdivided according to the needs of the different departments.

In conclusion it was suggested to me to collect information under the following heads:—"Is it felt to be necessary for schools to provide an increasing part of that education which used to be more generally furnished by home life? Is there a feeling that there is a danger of an actual decline in household skill owing to the conditions of modern city life, or to the increasing employment of women in houses of business? Is it felt that the school should attempt to arrest this decline? Are people at all concerned by any observed or suspected tendency in primary education, as now organised, to make girls wish to be typewriters, clerks, shop assistants, etc., rather than housekeepers or domestic servants?"

The following remarks embody the result of the extended inquiries I made in fulfilment of this part of my commission:—The changing social conditions which demand rearrangement of former expenditure of time and energy are recognised as a factor in the evident need to secure for young people in school that which a previous state of society permitted to be gained in the home. That the integrity and dignity of home life must be maintained as a coefficient of national prosperity is widely accepted; that the power and interest necessary for the realisation of this ideal have been weakened has been slowly dawning upon the few for more than a quarter of a century. That this conception is now reaching the many seems evident from the great increase of attention devoted to the whole question during the last five or even ten years, credit for which is largely due to the Association of College Alumnae and the Women's Clubs. I should place as the most powerful motive, held perhaps unconsciously but nevertheless tenaciously, by the majority of the population, the determination that the United States shall be foremost among the nations. This determination leads a people, instinctively interested in the study of cause and effect, to observe wherein lies their weakness and in what direction may be found their strength. The stress and strain of professional and commercial life soon test the vigour of the physical as well as of the mental constitution of those subjected to it, and thus turn the thoughts to the essentials of physical well-being. The constant inroads of immigrants, whose habits

Financial Support accorded to Domestic Science.

Influence of Domestic Science on Social Conditions.

Influence  
of Domestic  
Science on  
Social condi-  
tions—  
*continued.*

and standard of existence are a menace to their neighbours, have also stimulated many minds to a study of Sociology and Economics, in neither of which can much progress be made without some knowledge of Sanitary Science. The trained intelligence of college women has also been directed by circumstances too numerous to detail to the economic effects of ignorance, carelessness, or indifference in the conduct of homes or of cities. Among their sisters whose minds are more immediately centred upon daily domestic difficulties, interest in the subject is arising from the desire to do something to make housekeeping easier; their efforts being first inspired by probably no higher motive than to secure alleviation from the troubles which spring out of the present chaotic state of domestic service. The expression given to their views by representatives amongst these different classes has exerted an influence upon public opinion, which causes it now to demand that schools *shall* provide for children such training in citizenship and home making as shall raise up a strong race of well-nurtured people, skilled not alone in the right conduct of their own lives, but impatient of the existence of any conditions unfavourable to the health of the community. Among these conditions would rank decline in household skill and a weakening of the maternal instincts, both, when apparent, being traceable results of the increasing employment of women outside their homes. The false sense of shame associated with domestic service, impatience of the so-called uneventful life of the young mother engaged in household or family cares, are prevalent on both sides of the ocean; but I am able to report that in the United States determined efforts are now being made to combat these erroneous sentiments. In many directions, in the east and west, systematic efforts are evidently and spontaneously active, directed to enhance the dignity of household service, to point out the beauty and intense responsibility of motherhood, and to encourage all women to consider that their education is incomplete unless they are practically acquainted with household management, which must necessarily include knowledge of child hygiene.

The reader of Part III. of this Report cannot fail to realise the admirable spirit animating some among the leisured women of the community to set personal example of the strength of their convictions in respect of home dignity and worth. Direct acquaintance with, and practice of, domestic duties stimulates their minds to consider and to introduce improved methods and labour-saving appliances. Their sympathy with the difficulties dependent upon dirt, inconvenient dwellings, and futile expenditure of time and strength experienced by the less well-to-do, ceases to exist as sentiment, but finds expression in urging on responsible authorities the absolute importance of housing and similar reforms. Their perception of the bearing upon domestic processes and national health of municipal regulations concerned with cleanliness of streets and markets, adulteration of food, provision of

safe supplies of water and of means for refuse disposal, has resulted in raising the level of public administration, as visitors to certain cities rapidly recognise.

Professor James L. Hughes, Superintendent of the Public Schools at Toronto, has well expressed the sentiment, now happily common to a considerable section of society, that the Home is the most comprehensive influence in deciding a child's qualification for sustained and effective work in adult life. "The child's whole life power, in its essential elements of physical, intellectual, and spiritual vitality, is influenced directly and indirectly in the home. If the best conditions of physical power, and the apperceptive centres of true and rich intellectual and spiritual development are not established in the home, no other agencies can raise the child to the richest and truest manhood or womanhood. A dwarfed or undeveloped childhood necessarily results in impaired power and defective life. Every child has a right to the best conditions known for childhood by the highest civilisation. Full growth, physically, intellectually and spiritually, is possible only in the best conditions. The 'lost waif' will never cease to disgrace civilisation so long as homes are less efficient than they should be. The improvement of homes does not demand greater expense so much as better training and more practical common sense. The aims of progressive workers in securing improved home conditions are, not to spend more money, but to get greater returns for the money spent; not to increase labour, but to make labour more effective in promoting health, comfort, and happiness. The true home maker considers every element that influences the life of the family physically, intellectually, and spiritually. The physical conditions especially require careful attention from the most advanced scientific minds. The schools and some of the churches have recognised the fundamental fact that physical culture is a very important element in the development of human character. The quality of intellectual and spiritual power, and the capacity for sustained intellectual and spiritual effort depends to a large extent on the perfect growth of the body. The higher the character of the physical life the more completely it aids in the development and the expression of intellectual and spiritual energy. Rousseau taught the great truth that the more perfect the body the more readily it obeys the intellect and will; but the perfect body does more than respond to the mind and spirit; it contributes to their power and fuller growth. It is, therefore, of vital importance to consider all subjects related to the proper construction and sanitation of the home, and the whole range of domestic science, including the correct choice and proper preparation of foods. Pure air, proper lighting, and sanitary cleanliness in the home are essential elements in promoting health, comfort, and happiness, and these are the conditions in which man's best nature develops most rapidly, most naturally, and most harmoniously. The highest success demands harmonious development. But even

Influence  
of Domestic  
Science on  
Social  
Conditions  
—*continued.*

with these conditions in a high degree of efficiency we require the most perfect possible nutrition in order that each individual may be raised to, and sustained in, the best condition physically, intellectually, and spiritually for effective work without unnatural and therefore destructive over-fatigue. The 'wear and tear' of life results not from overwork, as is generally believed, but from work under improper conditions. Most men and women work at a rate under their capacity rather than over it. Men wear out quickly because they are not properly nourished. They wear out most quickly when they take unnatural stimulants to overcome the lack of energy resulting from imperfect nutrition, and thus force their enfeebled bodies to do work under pressure beyond the natural fatigue point. Under these conditions the 'wear and tear' is inevitable, because work then is an unnatural strain on the physical and intellectual power, and because work done beyond the fatigue point destroys the reactive tendency to rest that results from fatigue under normal conditions. The basis of intemperance is largely physical. The nervous systems that are not kept in comfortable working order crave something that for a time will bring exhilaration. Unnatural exhilaration is always debilitating. Natural exhilaration, resulting in appropriate and well-cooked food eaten in proper quantities and at proper times, is always productive of greater power along life's broadest and highest lines of effort. When school children become nervous and irritable, and feeble, the schools are continually blamed for these evil conditions. Sometimes the schools have shared in the causes that lead to such undesirable results by long hours and inadequate ventilation, by the substitution of pressure for natural interest, by continuous sitting, and by lack of play; but the homes have done the greater part of the wrong to childhood by failing to send children to school in a proper condition for work. The true remedies for a weak, nervous system are food suitable for nerve and brain building, and physical exercise, especially free play. One of the fundamental thoughts in Domestic Science is a new and higher ideal of the higher meaning of digestion. Digestion should be regarded as the transmutation of material things into physical, intellectual, and spiritual energy. This function of elevating food into the highest forms of human power is the true work of digestion, but it has been almost universally degraded. The selection and preparation of foods has been regarded as one of the baser departments of household economics. The systematic study of foods and their scientific preparation for the table have been carefully conducted, chiefly to provide gratification for unnatural appetite. The true study of foods and their scientific preparation should be conducted in order to find what foods are best for all conditions and ages of humanity—for sickness and health, for infancy, childhood, vigorous adult and declining age; for brain building, nerve strengthening, muscle development, and bone growth; for promoting or retarding

the storing of fat, and for aiding the functional work of all the vital organs, and preserving the harmonious balance of man's powers. This study is now recognised as a most important department of the science of human evolution. Domestic art is a necessary part of the study of scientific home-making. Our mental and spiritual conditions, and therefore our physical life, are directly influenced by the nature of our environment. Calmness or irritation, hopefulness or despondency, joyousness or moroseness, definiteness or carelessness, prospering ambition or lack of vital interest, may depend to a greater extent than is generally realised on the colour of the walls, the ceilings, and the carpets in our homes. The study of pictures and furniture, and furnishings, and gardens, and the beautifying of front yards, and especially of back yards, will lead to a true æsthetic culture, and promote the happiness and the broader and higher development of the race. The new century will elevate the character of household work, cleaning, cooking, and all departments of service, by making them more scientific and more systematic; and with this elevation of the service will come a corresponding elevation in the qualification of servants, and in the greater recognition of their rights."

I employ this lengthy quotation as my conclusion, because it is the accurate embodiment by a British subject of the sentiments of the sexes essential to national well-being. his prolonged personal acquaintance with the educational world of the United States has led him to recognise as inspiring its leaders. I have also selected it because it is the expressed opinion of a member of that sex, which, in England, is disposed to release itself from any direct responsibility in the promotion of a higher level in home comfort and family life. Only by co-operation of the sexes can the ideal standard be attained. It has been well said that co-operation for a common aim creates a spirit of mutual helpfulness. The common aim of all who are concerned with the affairs of men, personal, domestic, communal, or national, is the physical, moral, and intellectual development of each child born into the world. Upon women, properly and naturally, devolve the care of the young and the right conduct of the home for all whom it shelters. Upon men, as naturally, devolve the provision and maintenance of such conditions in connection with, though outside, the home as shall secure the means without which women's special duties are seriously hampered or even rendered impossible of fulfilment. To this end boys and girls should learn together as they do in the United States the essentials to a healthy existence, and be familiarised with the broad, general principles upon which life and its functions depend for their continuance. In subsequent years, or even concurrently, girls are introduced to the processes of home making, which are indispensable to domestic well-being and happiness; while boys are encouraged to a study of the duties of citizenship, with all these mean to the welfare of the community. At college, as at school, opportunities for this wise preparation for their future lives are offered to the young men



and women ; it speaks well for the influence of the teaching profession that the numbers of those glad to seize these opportunities show annual increase. Public (and parental) opinion is gradually giving intelligent heed to the growth of a movement which promises, if wisely controlled and intelligently fostered, to yield a harvest of rich national results ; for, to quote Mrs. Browning's words—the "multitude of leaves" will hold—

"Loves filial, loves fraternal, neighbour-loves  
And civic—all fair petals, all good scents,  
All reddened, sweetened from one central Heart,"\*

inspired with the belief that "man is made in God's image," and as such must be freed from all conditions which hinder the expression of his inherent powers.

It now remains for me to express, though most inadequately, my deep sense of gratitude to those whose generous response to inquiries, ready sacrifice of valuable time for the promotion of my object, and sympathetic interest in my commission are mainly responsible for its execution. Their number is so large, the evidences of their cordial co-operation so numerous, that individual acknowledgment becomes impossible. The debt of gratitude which stands in my name would be overwhelming in its extent were it not rather a national than an individual liability. Not to the Commissioner of small account, but to the old Mother Country, was the gift of experience, experiment, theory and practice so freely tendered. Though social and other diverse conditions necessarily militate against any proposal to adopt or to imitate in this country methods of proved worth in the United States, it is nevertheless of immense advantage to all concerned with the public health and prosperity of Great Britain to become acquainted with the measures designed to promote these objects in other thriving communities. That this necessarily imperfect Report of the educational means devoted to these ends in the United States should achieve even a partial degree of success or of completeness, is entirely the outcome of the stimulus and assistance received from my generous friends in that country.

I have spared no pains in the effort to be impartial, accurate, and consistent in the sifting and employment of the mass of material I collected ; if, therefore, there be misrepresentation, exaggeration or culpable omission in the preceding pages I would offer my sincere apology to those whose cause I may thus most unintentionally wrong. That some errors of observation and of comprehension should have occurred in the course of my compulsorily short visits to a large number of centres in the Eastern and Middle West States appears to me to be inevitable. In spite of much concentrated effort on my part and of most valuable assistance rendered me in the form of personal and written explanations and of printed matter, it would be presumptuous

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\* "Aurora Leigh," IX., 884. E. B. B.

to imagine I could grasp in a few hours all the points in courses of study, the evolutions which have constantly cost years of thought and experimental practice, and which are also adapted to social conditions diverse from our own. For all these reasons I have abstained from critical analysis, preferring to present my Report in a descriptive form, in which I hope it may, in spite of its many shortcomings, prove stimulating and suggestive.

Of all my readers I will ask for kindly forbearance and for lenient judgment on a work which has been fraught for me throughout with a lively sense of responsibility, not alone towards those by whom the commission was entrusted to me, but towards those whose aspirations and attainments were given into my hands to present, as well as to my fellow teachers whose methods in practice or whose estimate of another nation's educational standards may be influenced by the perusal of the preceding pages.

ALICE RAVENHILL.

May, 1903.

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## APPENDIX A.

## EQUIPMENT FOR GRADE SCHOOL COOKERY COURSES.

The following exhaustive list of the equipment recommended for use in Cookery Courses is reproduced by kind permission from "The Economics of Manual Training" Teachers' College Record. Vol. II., No. 5. November, 1901. It is presented as a model; considerable modifications are compatible with efficiency, and discretion would dictate suitable selection according to the class and grade of school for which equipment is to be provided. The United States of America Coinage has been converted for convenience into English money.

## COOKING.

## KITCHEN EQUIPMENT.

	£	s.	d.
Table for 15 pupils, with drawers for provisions and materials: cupboard, closed with roll-front, sliding board, and tiled top made of quartered oak, about	100	0	0
Table for 15 pupils, with one drawer for each pupil, made of Georgia pine, white pine or stained white-wood, from £31 5s. 0d. to	52	1	8
Kitchen tables may be used where funds are extremely limited, but are not advisable, about		6	0
Individual stove equipment for tables	£6 to	15	12
Coal or Gas ranges	£3 to	6	13

## UTENSILS.

(Two for each pupil.)

	£	s.	d.
Bowl, 1 pint, earthen or granite	0	0	3
Tea-spoon, nickel or aluminium	0	0	5½
Towel, 1 yard long, crash	0	0	8

(One for each pupil.)

	£0	1	4½
Baking dish, 1 quart, earthen or granite	0	0	4
Bowl, 4 quarts, earthen or granite	0	0	10
Bread board, small wood	0	0	10
Dish cloth or mop	0	0	5
Egg beater, medium, wire or iron	0	0	5
Frying pan, small, iron	0	0	7½
Kitchen fork, steel, wood handle	0	0	2½
Kitchen knife, steel, wood handle	0	0	2½
Mat, 8 inches square, linoleum	0	0	2½
Pepper shaker, glass	0	0	5
Plate, granite or tin	0	0	7½
Salt shaker, glass	0	0	5
Salt-spoon, bone	0	0	2½
Saucepan, with cover, granite	0	0	9
Table-spoon, nickel or aluminium	0	0	7½
Vegetable brush, small, wood back	0	0	2½
Vegetable knife, steel, wood handle	0	0	5
Measuring cup, ½ pint, block tin	0	0	5

(One for each two pupils.)

	£0	8	2
Biscuit cutter, block tin	0	0	3
Bread pan, medium, block tin	0	0	8½
Colander, medium, block tin	0	1	4
Double boiler, 1 or ½ pint, block tin or granite	0	2	1

(One for each two pupils)—*continued.*

	£	s.	d.
Flour dredger, block tin - - - - -	0	0	5
Flour sifter (revolving handle) block tin - - - - -	0	0	11
Grater, medium, block tin - - - - -	0	0	5
Nutmeg grater, block tin - - - - -	0	0	4
Potato-masher, wire, wood handle - - - - -	0	0	4½
Rolling-pin, wood- - - - -	0	0	3
Scrubbing brush, large wood - - - - -	0	0	5
Skimmer, small, block tin - - - - -	0	0	4
Strainer, medium, block tin - - - - -	0	0	6
Teapot, 1 pint earthen (Japanese) - - - - -	0	1	0½
Thermometer - - - - -	0	3	1½

£0 12 6

(Three or four for class of twelve.)

Apple-corer, block tin - - - - -	0	0	2½
Chopping knife, steel - - - - -	0	2	1½
Chopping tray, wood - - - - -	0	1	8
Coffee pot, 1 quart, granite or tin - - - - -	0	1	5½
Japanned tray, medium - - - - -	0	1	10½
Mixing spoon, large, wood - - - - -	0	0	2½
Muffin pan, 12 in a pan, block tin - - - - -	0	0	7½
Pitcher, 1, 2 and 3 quarts, earthen - - - - -	0	1	6

£0 9 8

(Two for a class of twelve.)

Cake pan, medium, block tin - - - - -	0	1	0½
Double boiler, 3 pints, granite - - - - -	0	4	9
Griddle, medium, soapstone - - - - -	0	4	8
Griddle cake turner, iron - - - - -	0	0	5
Kettle, 6 quarts, granite - - - - -	0	7	9
Lemon squeezer, glass - - - - -	0	0	4½
Saucepan, 2 quarts, granite - - - - -	0	2	10½
Strainer, 3 pints, block tin - - - - -	0	1	0½
Toaster, wire - - - - -	0	0	5

£1 3 4

(One for a class of twelve.)

Bread knife - - - - -	0	2	1
Can-opener - - - - -	0	0	5
Coffee-mill - - - - -	0	4	8
Corkscrew - - - - -	0	0	5
Egg beater (Dover), large, iron - - - - -	0	0	5
Fruit jars, 1 doz., 1 quart, glass - - - - -	0	4	8
Fruit jars, 1 doz., 1 pint, glass - - - - -	0	3	1½
Frying kettle, large, iron - - - - -	0	7	7
Funnel, medium, block tin - - - - -	0	0	7½
Ice cream freezer (Packer's standard), 3 quarts - - - - -	0	9	4½
Jelly glasses, 1 doz. - - - - -	0	2	1
Knife sharpener - - - - -	0	2	3½
Larding needle - - - - -	0	0	10
Measure, 1 quart, block tin - - - - -	0	0	10
Measure, 1 pint, block tin - - - - -	0	0	2½
Meat broiler, medium, iron - - - - -	0	2	1
Meat knife - - - - -	0	0	10
Pot chain - - - - -	0	0	3½
Pudding mould, 3 pints, block tin - - - - -	0	1	3
Scales, to 10 pounds - - - - -	0	9	4
Skimmer, large, tin - - - - -	0	0	5
Steamer, medium, block tin - - - - -	0	2	3½
Tea-kettle, large, iron, granite or aluminium - - - - -	0	2	1½

£2 18 3

## UTENSILS FOR HOUSEWORK.

	£	s.	d.
Blacking brush - - - - -	0	0	2½
Broom - - - - -	0	1	0½
Cheese-cloth duster - - - - -	0	0	5
Dust brush - - - - -	0	0	5
Dust pan - - - - -	0	0	7½
Floor brush - - - - -	0	3	1½
Lamp cloths - - - - -	0	0	5
Mop - - - - -	0	1	0½
Pail, indurated fibre - - - - -	0	1	1½
Scrubbing brush - - - - -	0	1	0
Whisk broom - - - - -	0	0	5
Window cloths etc. - - - - -	0	0	5
	£0	10	3

## STORE-ROOM EQUIPMENT.

	£	s.	d.
Bread cloths - - - - -	0	0	5
6 crocks, large, earthen - - - - -	0	10	5
6 crocks, medium - - - - -	0	8	4
4 flour pails, wooden - - - - -	0	8	4
Ice bag, 1 yard, duck - - - - -	0	0	3½
1 dozen jelly glasses, with covers - - - - -	0	1	3
6 2-quart Mason jars, for coffee, glass - - - - -	0	5	0
Strainers, 5 yards, cheese-cloth - - - - -	0	1	0½
Strainers, 1 yard, flannel - - - - -	0	0	10
Cupboards for provisions, utensils and dishes - - - - -	£4	3	4 to 10 8 4
Refrigerator, medium size - - - - -	£3	2	6 to 4 3 6
	£9	1	9 to £16 7 9

## DINING-ROOM EQUIPMENT.

	£	s.	d.
Canton flannel cloth - - - - -			
1 dining table and 6 chairs - - - - -	£4	3	6 to 6 13 4
2 table cloths and napkins - - - - -			2 1 8
Enough dishes for setting table and serving a simple meal - - - - -			2 1 8
Knives, forks, spoons, glasses, etc. - - - - -			4 3 4

£12 10 2 to £15 0 0

(If a sideboard is added, the cost would be about £5 16s. 8d. additional.)

## SUMMARY OF COST OF EQUIPMENT TO ACCOMMODATE TWELVE PUPILS AT A TIME.

## KITCHEN EQUIPMENT.

	£	s.	d.
Table with cupboards, etc., stools, stove, range and sink - - - - -	£113	15	0 to 135 8 4
Utensils, as per detailed statement - - - - -			17 17 9½
Store-room equipment - - - - -	£9	1	9 to 16 7 9
Dining-room equipment - - - - -	£12	10	2 to 15 0 0
	£153	4	8½ to £164 13 10½

**APPENDIX B.**  
**STATE MANUAL TRAINING HIGH SCHOOL,**  
**PROVIDENCE, RHODE ISLAND.**

The Year is nominally 40 Weeks, excluding Vacations 38 Weeks.

**DOMESTIC SCIENCE COURSE.**

*First Year.*

*Academic.	Domestic Science.	†Household Art and Manual Training.	‡Art.
<p>Elementary rhetoric. English composition. American authors by Brander Mathews. 38 weeks.</p>	<p align="center">Alternate.</p>	<p>Carpentry : — 60 hours. Elementary carpentry and joinery. Making of useful articles :— Model of hand loom.</p>	<p>Lettering. Geometrical figures, working drawings used in carpentry.</p>
<p>Algebra to quadratic. 38 weeks.</p>		<p>Basketry :—60 hours. Woven baskets of rattan, sewed baskets of raffia. (a) Plain. (b) Coloured.</p>	<p>Drawing from models. Historic ornaments, elementary design.</p>
<p>Physical geography. Laboratory work in physical character of minerals. 19 weeks.</p>		<p>Sewing : — 112½ hours. Hand-machine work, undergarments, cooking apron and cap, hygienic clothing, economics of buying, study of textiles, including study of fibres and methods of manufacture. Simple weaving on model loom, made in carpentry. Note book work supplements the English work. Millinery 52½ hours. Bows, rosettes, facings, shirred linings. Braid, sew and trim raffia hat after individual design.</p>	<p>Application in basketry.</p>
<p>Book - keeping. Sadler's system. Physics. Dynamics of liquids. Dynamics of gases. Sound, heat. 19 weeks.</p>		<p>†Manual and household art classes are 1½ hour periods on alternate days.</p>	
<p>*Lessons are in 45 minute periods daily, unless otherwise indicated by a numeral to show number of days per week.</p>			

## APPENDIX B.—continued.

## DOMESTIC SCIENCE COURSE.

*Second Year.*

Academic.	*Domestic Science.	†Household Art and Manual Training.	Art.
English composition, alternating with English history with especial reference to American institutions. 19 weeks.	Science of cooking. Application of laws of heat: water, fire. Application of chemistry to cookery of proteids, albuminoids, starches, sugars, fats. 38 weeks.	Millinery (winter hats). Alternating with sewing: — Cotton dress or blouse, and unlined skirt. 45 hours.	Historic ornament used in wood carving designs.  Values in light and shade. — Still life.
Ancient and Medieval History alternating with German. 19 weeks.	Yeast and baking powder used in flour mixtures. Dietary standards, calculating daily dietary for a family of six. Cooking and serving of breakfast, luncheon, dinner, thus planned.	Modelling in clay and wood from nature; casts and designs.	Charcoal from casts.
Geometry, plane. 38 weeks.	Visit to the public market to see meats cut, and inspect vegetables.	Brief study of the ornament of local buildings.	Pen and ink.
Civil Government alternating with physics, dynamics of solids, work-energy, magnetism. 19 weeks.	Note books in students' language and essays aid in English composition work.		
General chemistry alternating with science of cooking. 38 weeks.	*Periods are 1½ hours alternate days for 38 weeks.	†Time given per day the same as in first year.	

APPENDIX B.—continued.

DOMESTIC SCIENCE COURSE.

Third Year.

Academic.	Domestic Science.	Household Art and Manual Training.	Art.
<p>English literature (as required for admission to American colleges.) (2) 38 weeks.</p> <p>German— (3) 38 weeks.</p> <p>Algebra—completed. 19 weeks.</p> <p>Geometry—solid. 19 weeks.</p> <p>Physics, light, electricity. 19 weeks.</p> <p>Botany—structural preparation of bacteriology: cultures from air, water, milk, clothing, hands.</p>	<p>Chemistry of foods and physiology of digestion. 19 weeks.</p> <p>Food for the sick.</p> <p>I. Water analysis.</p> <p>II. Proteid analysis.</p> <p>III. Albuminoid analysis.</p> <p>IV. Sugar analysis.</p> <p>V. Starch analysis.</p> <p>VI. Fat analysis.</p> <p>Analysis of milk, meat, some baby food.</p> <p>VII. Digestion experiment.</p> <p>VIII. Practice in cookery for the sick.</p> <p>IX. Diet in special diseases.</p>	<p>Dressmaking. 19 weeks.</p> <p>Drafting, cutting, fitting, making lined bodice and lined skirt the sketch for which has been made in the Art department.</p>	<p>Water colour :—</p> <p>I. Still life.</p> <p>II. Design in wall paper, rugs, hangings.</p> <p>III. Sketching from nature.</p> <p>IV. Costume design.</p> <p>Design in embroidery stencil.</p> <p>Pyrography.</p>



## APPENDIX B.—continued.

## DOMESTIC SCIENCE COURSE.

## Fourth Year.

Academic.	Domestic Science.	Household Art and Manual Training.	Art.
<p>English literature "College English." (2) 38 weeks.</p> <p>German. 38 weeks.</p> <p>Trigonometry. (3) 19 weeks.</p> <p>Analytical chemistry, Study of five groups. Analysis of minerals studied in first year. Analysis of unknown. 19 weeks.</p> <p>Psychology, in part experimental. 19 weeks.</p> <p>Electives for those who are to take the teacher's training. 19 weeks.</p> <p>Review arithmetic alternating with review English grammar (Elective) 19 weeks.</p> <p>Photographic science.</p>	<p>Sanitation. 19 weeks.</p> <p>House: soil, foundation, floor plans, plumbing, heating and ventilating systems.</p> <p>Visits to house in process of erection to study details.</p> <p>Plan a house.</p> <p>Food supply:—Purity in foods. (a) Adulterations. (b) Plant life, bacteria, moulds. (c) Insecta.</p> <p>Air Supply. Rate of entrance of fresh air; bacterial cultures of air.</p> <p>Water.</p> <p>Disinfection (experiment on germ life.)</p> <p>Theory of disease.</p> <p>Home-nursing (visit to hospital).</p> <p>Cost of living.</p>	<p>Electives. 19 weeks.</p> <p>Advanced dress-making.</p> <p>Wood carving, applied historic ornament.</p> <p>Advanced carpentry—design in furniture.</p>	<p>Charcoal from the antique.</p> <p>House plans:—floor plans drawn to scale.</p> <p>Theory of colour.</p> <p>Household decoration; colour sketches of interiors.</p> <p>Illustrations, pen and ink.</p> <p>Book covers.</p>

**APPENDIX C.**  
**COMPREHENSIVE EQUIPMENT FOR HIGH SCHOOL COURSE**  
**IN DRESSMAKING AND LAUNDRY WORK.**

The following is reproduced by kind permission from "Teachers College Record," Vol. II, No. 5, November, 1901. "The Economics of Manual Training." (The United States of America dollars have been converted for convenience into English coinage.)

## (1).—DRESSMAKING.

## EQUIPMENT FOR CLASS OF FIFTEEN GIRLS.

## (1) Drafting and dressmaking room.

		£.	s.	d.
8 tables - - - - -			12	10 0
Mirror - - - - -	£3. 2s. 6d. to		4	3 4
Pedestal - - - - -			1	7 0
Screen - - - - -			1	13 4
1 gas stove, 3 burners - - - - -			1	0 10
Connections to stove - - - - -			0	8 4
8 irons, 4 heavy, and 4 long narrow - - - - -			0	8 4
Wardrobe - - - - -	£5. 4s. 2d. to		8	6 8
15 chairs - - - - -			6	5 0
15 high stools - - - - -			1	11 3
Clothes tree - - - - -			0	14 7
5 sewing machines - - - - -	£31. 5s. 0d. to		57	5 10
4 ironing boards - - - - -			0	16 8
Board for curved seams - - - - -			0	3 9
15 boxes for materials - - - - -			0	4 4
Paper roll holder - - - - -			1	0 10
18 yard sticks - - - - -			0	17 10
18 tape measures - - - - -			0	3 5
18 scissors - - - - -			1	1 10
3 bust forms - - - - -			0	6 3
2 skirt forms - - - - -			1	5 0

£71. 10s. 3d. to £101 14 5

## (2) Sewing room, to accommodate thirty pupils.

		£.	s.	d.
Roll front case for materials for 90 pupils - - - - -			10	8 4
Tables to accommodate 30 pupils - - - - -	£6. 5s. 0d. to		16	13 6
30 chairs - - - - -			12	10 0
30 footstools - - - - -			12	10 0
36 boxes (6 large and 30 small) - - - - -			0	17 6
Demonstration frame - - - - -			0	8 4

£42. 19s. 2d. to £53 7 8

Total cost of equipment - - - £114. 9s. 5d. to £155 2 1

CHEAPER EQUIPMENTS FOR FIFTEEN IN DRESSMAKING AND THIRTY IN SEWING.

Dressmaking and Sewing Room combined.

	£.	s.	d.
8 tables, 5 foot kitchen - - - - -	4	14	0
(An even less expensive table arrangement may be obtained of boards supported on saw-horses, when the two kinds of work are practised in the same room. A convenient plan for the dressmaking tables is to have these hinged to the wall, so as to drop down when not in use.)			
30 chairs at £1 11s. 3d. per doz. - - - - -	3	18	1
1 stove (3 burners) and tubing - - - - -	0	15	7
6 irons - - - - -	0	6	3
4 ironing boards - - - - -	0	15	0
Wardrobe - - - - -	£1	0s. 10d. to	4 3 4
4 sewing machines - - - - -	£25	0s. 0d. to	45 16 8
Screen - - - - -	0	12	6
18 yard sticks - - - - -	0	17	4
33 scissors (3 of them buttonhole) - - - - -	1	19	2
6 large boxes at 1s. 5½d. - - - - -	0	8	9
30 small boxes at 3½d. - - - - -	0	8	9
Total cost - - - - -	£40	16s. 3d. to	£61 15 5

Average cost of maintenance for the work in the High school, if the pupils furnish their own garment materials, is about 6d. per pupil.

(2).—LAUNDRY EQUIPMENT.

Equipment for class of eight pupils.

	£.	s.	d.
Large fibre tub - - - - -	0	3	5½
Double boiler for starch - - - - -	0	4	3½
Tea-kettle - - - - -	0	4	0½
12 small fibre tubs - - - - -	1	10	0
Small fibre pail - - - - -	0	0	10
Granite soap cooker - - - - -	0	2	8½
Yellow earthen bowl, 1 quart - - - - -	0	0	6
Yellow earthen bowl, 2 quarts - - - - -	0	0	8
Yellow earthen bowl, 4 quarts - - - - -	0	1	8½
8 yellow earthenware bowls, 1 quart - - - - -	0	1	8
2 tin measuring cups - - - - -	0	0	10
6 table-spoons - - - - -	0	2	0
6 tea-spoons - - - - -	0	1	3
Knife - - - - -	0	0	5
Wooden spoon - - - - -	0	0	2½
Carried forward - - - - -	£2	14	7

	£	s.	d.
Brought forward - - - - -	2	14	7
100 feet of clothes line - - - - -	0	3	9
Clothes pins - - - - -	0	0	5
Towel roller - - - - -	0	0	5
Skirt board covers :			
10 yards unbleached cotton cloth - - - - -	0	3	4
4 yards cotton felting, 54 inches - - - - -	0	8	4
1 yard white flannel - - - - -	0	1	8
Safety pins - - - - -	0	1	0½
3 roller towels (7½ in., linen-towelling) - - - - -	0	3	8
Dish pan, 14 quarts - - - - -	0	2	7½
Universal wringer, large - - - - -	0	17	8½
2 universal wringers, small - - - - -	1	0	10
Tin dipper - - - - -	0	0	10
Oval clothes basket - - - - -	0	5	2½
Oval boiler - - - - -	0	5	2½
6 4-foot benches - - - - -	1	2	6
8 4½-foot skirt boards, with adjustable supports - - - - -	2	10	0
8 small wash boards, two-thirds usual size - - - - -	0	12	6
2 clothes horses (4 feet high, 4 folds) - - - - -	0	7	4
Fringe brush - - - - -	0	2	7½
3 soft brushes - - - - -	0	4	9
3 whisk brooms, for sprinkling - - - - -	0	2	3
4 flat irons, 7 pounds - - - - -	0	9	2
8 flat irons, 5 pounds - - - - -	0	10	8
8 flat irons, 4 pounds - - - - -	0	13	4
4 flat irons, 3 pounds - - - - -	0	5	10
(Cheaper irons may be had at twopence per pound.)			
8 Troy polishers - - - - -	0	15	0
8 iron stands - - - - -	0	1	8
8 iron holders (asbestos) - - - - -	0	1	4
	£14	8	7

Maintenance.

	£.	s.	d.
3 dozen ivory soap - - - - -	0	6	3
Starch - - - - -	0	1	3
Blueing - - - - -	0	1	0½
Beeswax - - - - -	0	1	8
Borax - - - - -	0	0	10
Ammonia - - - - -	0	0	10
White wine vinegar - - - - -	0	0	5
Salt - - - - -	0	0	2½

Cost per pupil 1s. 6½d. - - - - - £0 12 6

## APPENDIX D.

HOUSEHOLD SCIENCE COURSES IN BOSTON HIGH  
SCHOOLS.

## A COURSE OF TWENTY LECTURES FOR HIGH SCHOOL STUDENTS

Miss S. MARIA ELLIOTT, Boston, Mass.

## I. CHOICE OF A HOME.

1. Requisites and conditions—air, light, situation, soil, etc.
2. Heating, ventilation, lighting—health, comfort, etc.
3. Drainage—purpose, dangers, etc.
4. House inspection—health, convenience, economy of energy.

## II. FURNISHING THE HOUSE.

5. Dust, a study of—the foundation for.
6. The Science of Cleanliness.
7. House furnishings—sanitary, artistic, economical.

## III. CARE OF THE HOUSE.

8. Removal of dust—sweeping, dusting.
9. Care of woodwork—cleanliness and preservation
10. Care of metallic, mineral surfaces and fabrics.
11. Special sanitation and disinfection.

## IV. FOOD.

12. The five Food Principles.
13. Food materials.
14. Food combinations.
15. Diet and dietaries
16. (applied to different ages and conditions.

## V. HEALTH AND HYGIENE.

17. Emergencies.
18. What to do for the invalid and sick.
19. School and public hygiene.
20. Disposal of refuse.

**A COURSE OF TWENTY LESSONS FOR HIGH SCHOOL STUDENTS.**

1. Necessities of a house—location, soil, etc.
2. Building materials and general healthful construction.
3. Elements in house-building—arrangement, size, mechanics, etc.
4. Heating and ventilation.
5. Drainage systems. Water supply.
6. House inspection.
7. House furnishings—principles of sanitary, artistic, economical furnishings.
8. Study of dust and its dangers.
9. Construction and form applied to furnishings.
10. Colour.
11. Removal of dust.
12. Study of woodwork.
13. Care of woodwork.
14. Study of metals and mineral surfaces.
15. Care of metals and mineral surfaces
16. Study of fabrics.
17. Care of fabrics.
18. Principles of laundry-work.
19. Household insects.
20. Care of plumbing. Disposal of refuse.

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**THE EVOLUTION OF THE HOUSE.**

**A COURSE OF LESSONS FOR HIGH SCHOOL STUDENT**

Miss MARIA ELLIOTT, Boston, Mass.

Shelter—protection from animals and elements.  
Privacy—safety of person and possessions.  
Necessities of a house.  
Luxuries of a house.  
Care of necessities.  
Care of luxuries.  
Personal hygiene.  
School hygiene.  
Public hygiene.  
Duty to self.  
Duty to friends.  
Duty to public at large.  
Bacteriology.  
Chemistry applied to food principles.  
Chemistry applied to cleaning principles  
Physics applied to food principles.  
Physics applied to cleaning principles.  
Physics of house building and care.

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## APPENDIX E.

COURSE IN HOME DRESSMAKING, PRATT INSTITUTE,  
BROOKLYN, NEW YORK.

Two lessons a week ; five terms of three months each.

*Entrance Requirements.*—Students are required to be over sixteen years of age, to have a knowledge of hand and machine sewing, to be able to use the tape measure, and to make simple garments and cambric dresses as taught in the sewing classes.

## COURSE OF STUDY.

*First Grade.*—Draughting skirts and bodices. Exercise with practice material in fitting and designing and in making dress trimmings and finishings. Study of colour, form, line and texture.

*Second Grade.*—Draughting and making walking skirt. Cutting fitting and making lined bodice. Study of the contour and poise of the body.

*Third Grade.*—Matching stripes and plaids. Draughting and making princess gown. Practice in designing: study of artistic principles.

*Fourth Grade.*—Draughting, cutting, and making jacket. Draughting child's dress and coat. Study of woollen textiles.

*Fifth Grade.*—Draughting and making evening gown. Practice in designing gowns for home and evening wear.

*Drawing, Water-colour and Elementary Design.*—Practice in the use of the pencil and of water-colour. Appearance of objects, bows, gowns and drapery. Outline and proportion of the human form. Study of historic costumes: designing of gowns.

APPENDIX F.

COURSES OF DOMESTIC SCIENCE AND ART AT DREXEL INSTITUTE.

(Drexel Institute of Art, Science, and Industry, Philadelphia.)

L.—NORMAL COURSE OF DOMESTIC SCIENCE.

Applicants to enter the Normal Course in Domestic Science are requested to give the following information :—

- Name (in full).....
- Address.....
- Date of birth.....
- What is your general health ?.....
- Have you any noticeable defect of any kind as in sight, hearing, or any other defect ?.....
- From what school, or college, or courses of study have you been graduated ?.....
- Year of graduation ?.....
- Have you taught ?.....
- In what grades ?.....
- Where ?.....
- How long ?.....
- What year or years ?.....
- Have you any knowledge of cookery ?.....
- Do you intend taking this course to fit yourself as a director or instructor of Domestic Science ?.....
- Remarks.....

Applicants to enter the Housekeepers' Course are requested to give the following information :—

- Name (in full).....
- Philadelphia address.....
- If not a resident of Philadelphia, also give home address.....
- Age.....
- From what school, or courses of study have you been graduated ?.....
- What has been your occupation ?.....
- Have you any knowledge of cookery ?.....
- Do you intend taking this course to fit yourself to take a position as housekeeper or matron ?.....

DEPARTMENT OF DOMESTIC SCIENCE.

NORMAL COURSE.

The following additional information concerning the Normal Course in Domestic Science will answer a large number of the questions made by inquirers :—

*Examinations.*—No entrance examination is required. For admission at least a high-school education or its equivalent is necessary. Age, education, previous experience, personal fitness, etc., are considered in the selection of applicants.

*Expenses.*—There are no free scholarships. Tuition fee \$80 (£16) per year, text-books and stationery, \$10 (£2). Board may be had near the Institute at prices ranging from five to eight dollars per week.



The following articles are required for work—

FOR KITCHEN LABORATORY.

- Black woollen skirt.
- Four plain white blouses. Not a thin material and without tucks or insertion.
- One dozen white linen collars.
- Narrow tie of any colour.
- Black belt.
- Six aprons:—White cambric, 36 in. wide; use one and a half widths, finish with a five-inch hem; length three inches from the bottom of skirt. Band, one and a half inches, finished. Bib, eight inches by nine, finished, with a hem of half an inch. Straps, one and a quarter inches wide, finished; fasten to upper corners of the bib, pass over shoulders, and button on waist button. May be bought at the Institute.
- Six pairs of sleeves; seven inches deep, finished; one inch hem top and bottom. May be purchased at the Institute for ten cents a pair.
- Caps: Must be purchased at the Institute as needed, 15 cents each.
- Holdes: Four thin holdes with tape 27 inches long, with a loop to put on apron band.
- Towels: Five towels made of glass towelling, 18 inches long, with a tape loop to put on apron band.

*Gymnasium Suits.*—Black serge, made into a simple blouse with a rolling collar and a divided skirt.

Length of skirt, from waist to ankle. Divided two inches above the knee and an eight-inch gusset inserted. It requires four widths of 42-inch material, two widths in each leg; or three widths of 56-inch goods, with one and a half widths in each leg. Put elastic at the bottom of each leg. Skirt opens in front.

Blouse and skirt must be buttoned together by no less than six buttons.

Black tie.

Black stockings. Black rubber-soled shoes, bought at 25 North 13th Street, Philadelphia.

*Positions.*—The school does not guarantee positions to graduates, but assists them when it can. Salaries depend upon the kind of work done, the responsibility involved, the capabilities of the applicant, etc.

*Outside Work.*—Students have no time to engage in outside work, and cannot, therefore, earn any money while taking the course.

There are no summer, evening, or correspondence courses for Normal Students.

STUDENTS' HOUSE.

A Students House has been organized in connection with the work of the Department of Domestic Science. Board and room may be obtained at \$5 per week. Board alone \$3.50 per week.

Applicants wishing to have a place in the house should send in their names and they will be put on the waiting list.

The three following Courses are taken by Normal students, House-keepers, and General Students.

The First Course is given by Normal students as Practice Classes to children.

FIRST COURSE IN COOKERY.

1. Combustion, building fire, scalloped oysters.
2. Food principles, water, tea coffee, chocolate.
3. Starch, white sauce, milk toast.
4. Vegetables in white sauce, celery, cabbage, carrots, stuffed potatoes.
5. Soups without meats, cream of potato, potato, croutons, crisp crackers
6. Cereals, sugar, steamed apples, apple sauce, avena, steamed and boiled rice, wheatena.

7. Fats and oils, caramel, beef drippings, fried oysters, cranberry jelly.
8. Fish balls, baked apples.
9. Proteids, eggs cooked in water, plain omelet, flour omelet, poached egg, soft cooked egg.
10. Milk, cup custard, floating island, pasteurized milk, rennet.
11. Cheese, soufflé, welsh rarebit, cheese straws.
12. Meats, cuts for broiling and roasting, roast, broiled chops, lemon jelly, Hamburg steaks.
13. Meats, cuts for soups and stews, soup stock, scalloped mutton, baking powder biscuits.
14. Corn beef hash, corn muffins.
15. Bread, large quantity.
16. Small loaves of bread, hash with gravy.

#### SECOND COURSE IN COOKERY.

1. Parker house rolls, bread sticks, buns, cinnamon buns.
2. Brown bread, fruit pudding, hard and lemon sauces, butter balls.
3. Plain griddle cakes, waffles, fricassees, oysters.
4. Fish, baked fish with stuffing, tomato sauce, Hollandaise sauce, steamed fish.
5. Poultry, draw a fowl, truss for roasting, cut for fricassée.
6. Cooking in deep fat, alternate rice and chicken croquettes, crumpets.
7. Soup lesson with white stock, cream and potato, clam purée, soup sticks, noodles.
8. Review meat, veal cutlets, noodles with cheese.
9. Pastry, apple and lemon pie.
10. Desserts, snow pudding, soft custard, coffee cream, sponge cake.
11. Cake, plain, cream almond frosting,
12. Cookies, strawberry shortcake.
13. Salads, potato, French dressing, cole slaw, boiled dressing, stuffed eggs.
14. Opening a lobster, Mayonnaise dressing.
15. Luncheon, served on desks.
16. Ice cream, chocolate cakes.

#### THIRD COURSE IN COOKERY.

1. Preserving, general rules, canned peaches, crab apple jelly, spiced pears.
2. Preserving continued, ketchup, quince preserve, grape juice, grape jam.
3. Reed birds, Bavarian cream, stuffed peppers, black bean soup.
4. Devilled crabs, chocolate cake, boiled frosting, chocolate filling.
5. Sweetbread patties, Swedish timbales, breaded mutton cutlets, Cuban sauce, potatoes for garnishing.
6. Caramel Charlotte, Charlotte Russe, bombe glacé, jumbles, macaroons.
7. Fillet of beef, mushroom sauce, mock turtle soup.
8. Lobster cutlets, sauce tartare, rolled wafers.
9. Candy, candied orange peel, peppermints, glacé, salted almonds, mint leaves.

10. Roast duck, potato stuffing, gravy, plum pudding.
11. Boned chicken, tomato salad, brandy sauce.
12. Puff paste, cream horns, condés, patties, tarts.
13. Terrapin, cream puffs.
14. Ginger ice cream, white sponge cake, meringues, grape frappé.
15. Nesselrode pudding, plain cake, ornamental frosting, sponge fingers.
16. Marketing.

NORMAL DOMESTIC SCIENCE.—WORK IN SENIOR YEAR.  
ADVANCED COOKERY.

- |                                                                                 |                           |
|---------------------------------------------------------------------------------|---------------------------|
| 1. Veal croquettes.                                                             | Clam chowder              |
| Creole soup.                                                                    | Smelts.                   |
| Buns.                                                                           | Pop overs.                |
| Molasses cookies.                                                               | Jelly roll.               |
| White corn cake.                                                                | Chicken cutlets.          |
|                                                                                 | Macaroni croquettes.      |
| 2. Calf's foot jelly.                                                           | Banbury tarts.            |
| Duchess soup.                                                                   | Puff paste.               |
| Ox tail soup.                                                                   | Cannelon of beef.         |
| Consommé.                                                                       | Yorkshire pudding.        |
| Boiled fish.                                                                    | Queen fritters.           |
|                                                                                 | Roast turkey.             |
| 3. Breakfast.                                                                   | Cost \$1.25.              |
|                                                                                 | Oranges.                  |
| Germea.                                                                         | Sugar, cream.             |
| Halibut.                                                                        | Potato balls.             |
|                                                                                 | Waffles with syrup.       |
| Butter balls.                                                                   | Bread.                    |
|                                                                                 | Coffee.                   |
| Prepared by four members of the class and served to eight members of the class. |                           |
| 4. Oyster croquettes.                                                           | Capon.                    |
| Fish chowder.                                                                   | Orange puffs.             |
| Guinea fowl.                                                                    | Chocolate Charlotte.      |
| Veal loaf.                                                                      | Orange sauce.             |
| Jumbles.                                                                        | White mountain cake.      |
| Rabbit.                                                                         | Fig filling.              |
| 5. Braised tongue.                                                              | Ginger pudding.           |
| Roast pork.                                                                     | Molasses drop cake.       |
| Boiled leg of mutton.                                                           | Custard soufflé.          |
| Caper sauce.                                                                    | Cranberry pudding.        |
| Cream puffs.                                                                    | Sterling sauce.           |
| 6. Luncheon.                                                                    | Cost \$ 1.50 (about 6s.). |
|                                                                                 | Cream of tomato soup.     |
|                                                                                 | Soup sticks.              |
|                                                                                 | Salmon cutlets.           |
| Potato soufflé.                                                                 | Corn pudding.             |
|                                                                                 | Lettuce.                  |
| Crackers.                                                                       | Cheese.                   |
|                                                                                 | Grape frappé.             |
| Cake.                                                                           | Coffee.                   |
|                                                                                 | Olives.                   |
| 7. Sally Lunn.                                                                  | Bavarian cream.           |
| Chicken pie.                                                                    | White sponge cake.        |
| Lemon pie.                                                                      | Cream puffs.              |
| Mock terrapin.                                                                  | Salmon croquettes.        |
| French rusks.                                                                   | Peptonized beef broth.    |
| Brown bread.                                                                    | Squab in paper.           |
|                                                                                 | Tomato jelly.             |

8. Aladdin cooker used for following dishes :—  
 Stewed chicken. Baked potatoes.  
 Stewed tomatoes. Chocolate bread pudding.  
 Rolled almond wafers. Devilled scallops.  
 Chocolate wafers. Meat cakes.  
 Coffee moussee. Chestnut purée.  
 Loin of veal with vegetables.
9. Luncheon. Cost \$ 2.00.  
 Cranberry pie. Peach short cake.  
 Coffee cake. Coffee moussee.  
 Planked shad. Spring chicken.  
 Spring lamb. Lemon pie.  
 White corn cake. Ice rice pudding.
10. Dinner. Rice cream.  
 Cost \$ 2.50.  
 Mock turtle soup.  
 Bread sticks. Radishes.  
 Boiled trout.  
 Potato roses.  
 Baked chicken.  
 Brown gravy. Asparagus.  
 Brain patties.  
 Lettuce salad.  
 French dressing. Cheese.  
 Crackers.  
 Wafers. Frozen strawberries. Coffee.

COURSE OF DEMONSTRATIONS.—ONE TERM.

SENIOR CLASS.

SUBJECTS.	DEMONSTRATIONS.
1. - - - - -	Instructor in Cookery
2. - - - - -	" "
3. - - - - -	" "
4. Eggs - - - - -	Student
5. Milk - - - - -	"
6. Invalid Cookery - - - - -	"
7. Use of Chafing Dish - - - - -	"
8. Milk - - - - -	"
9. Meat - - - - -	"
10. Bread - - - - -	"
11. Invalid Cookery - - - - -	"
12. Soups - - - - -	"
13. Use of Chafing Dish - - - - -	"
14. Meat - - - - -	"
15. Baking - - - - -	"
16. Desserts - - - - -	"

NORMAL DOMESTIC SCIENCE.

SHORT COURSE IN HOME NURSING.

(Additional lectures given in the course in Physiology.)

Spring term.

Senior year.

1. Sick room.
2. Sick bed, changing bed and body clothing.
3. Baths, for cleanliness.
4. Baths, hot water, hot air, vapour.
5. Baths, cold ; poultices, fomentation.
6. Sleep. Method of inducing it, administration of medicine, feeding a patient.

NORMAL AND TECHNICAL CLASSES.  
LAUNDRY COURSE.

1. General notes. Removal of stains.
2. Wash : table linen, tablecloths, napkins, doylies,;
3. Wash : bed linen, sheets, pillow cases. Iron : Table linen.
4. Wash : body linen, night dress, drawers. Iron : Bed linen.
5. Wash : body linen, white skirt, corset cover. Iron : Body linen.
6. Wash : shirt-waist ; collars. Iron : corset cover, skirts.
7. Wash : stockings. Starch : blouse, collars.
8. Iron : blouse, collars.
9. Wash : flannels and coloured clothes.
10. Iron : flannels and coloured clothes.
11. Wash : handkerchiefs, embroideries. Iron : embroideries, handkerchiefs.
12. Clean and wash black and coloured woollen goods. Wash, clear starch, and iron sash curtains.

Theoretical instruction of the scientific principles involved in the various processes is followed by practice.

Soaps, washing fluids, bleaching powders, blueings, and starch, are discussed in their scientific and practical relations to laundry work.

NORMAL AND TECHNICAL DOMESTIC SCIENCE COURSES.  
WAITRESSES' COURSE.

1. Appearance and dress of waitresses.
2. Washing dishes.
3. Care of pantry.
4. Care of dining-room.
5. Rules for serving.
6. Rules for making and serving chocolate, tea, black coffee, bread, butter balls, sandwiches, salads, French dressing, mayonnaise dressing, potato salad, soft cooked egg.
7. The keeping of table linen.
8. Early morning work in bedroom.
9. Later morning work in bedroom.
10. Evening work in bedroom.
11. General directions for bedroom.

DOMESTIC SCIENCE COURSE FOR NORMAL AND OTHER STUDENTS.

SYNOPSIS OF LECTURES ON PLANNING AND BUILDING OF A HOUSE.

**FIRST LECTURE.**—The location and surroundings of the house, the placing of the house, topography, drawings of site, opportunities of situation cost of houses and general method of figuring them.

**SECOND LECTURE.**—The house in detail, the rooms and their position in the house, the basement, first floor, second floor, attic. The materials used in their construction as they interest the housekeeper.

**THIRD LECTURE.**—The planning of suburban houses ; when a wooden house is preferable, when a masonry house, stone or brick, style of architecture.

**FOURTH LECTURE.**—The simple city house, fire limits, planning of the city house as to economy of space and conveniences, the architectural character of the front, architectural details of the interior.

**FIFTH LECTURE.**—Sanitation of the house, heating and ventilation, water supply and drainage, plumbing, lighting, the kitchen, importance of sanitary arrangements of the house.

This is succeeded by a course in House Decoration and Furnishing, illustrated by visits of observation to houses, shops, factories, etc.

HOUSEHOLD SCIENCE AND ECONOMICS.

Classification of Food Principles.

Food adjuncts.

Fermentation.

Preservation of food materials.

National and State laws regarding food adulteration and inspection.

Manufactured food materials.

Scientific kitchens (public, school, home).

Care of the house according to hygienic laws.

Water supply—filtration of water.

Heating and lighting. Care of lamps.

Care of rooms—dining-room, bath-room, bed-room.

The kitchen.

Disposal of waste.

Chemicals for household use. Care and cleaning of silver, nickel, iron, paints, copper, tin, marble, woodwork, brass, zinc, porcelain, glass.

Laundry of table linen, removal of stains.

Laundry of lace.

LECTURES TO DOMESTIC SCIENCE AND DOMESTIC ART STUDENTS.

By PRESIDENT MAC ALISTER.

HISTORY OF EDUCATION.

1. Education in ancient times.
2. Education in the Middle Ages, with special reference to monastic institutions.
3. The great reformers of education in modern times.
4. The beginnings of scientific, technical, and industrial education.
5. The fundamental principles of method in education. (2 lectures.)
6. Domestic Science Training in schools.
7. Domestic Arts Training in schools.
8. Domestic Science and Arts in their relations to some social problems.
9. The duties and responsibilities of the teacher.

CHEMISTRY.

*Junior Year.*

I—*General Chemistry*—

Lectures illustrated by experiments, diagrams, specimens, etc.  
Laboratory work.

The student is trained—

- (a) to deduce the more important facts of the science ;
- (b) to study comparative properties of substances ;
- (c) to acquire a scientific habit of thought

II. *Qualitative Analysis*—

Common metals and their reactions.

Analysis of solutions containing those metals.

Acids and their reactions.

Analysis of solutions containing bases and acids studied.

General miscellaneous qualitative work, examination of powders, alloys, insoluble substances, as time permits.

*Senior Year.*

I—*Organic Chemistry*—

Hydrocarbons and their derivatives.

The students prepare and study a typical compound of each class.

## II—Quantitative Analysis—

### Analysis of food materials.

The following list indicates the general scope of the quantitative work.

Chemically pure salts, potable water, common salt, bi-carbonate of sodium, flour or bread, baking powders, sugar or syrups, milk, butter, lard, cheese, tea, coffee, chocolate.

During the senior year, second term, a course of lectures in the Chemistry of Food and Dietetics is given, the lectures being supplemented by laboratory work.

### OUTLINE OF LECTURE COURSE ON FOOD AND DIETETICS, 1901.

By ERNEST A. CONGDON, Professor of Chemistry.

- I.—Introductory. Historical. Relation of chemistry to food and diet.
- II.—Definition of a food. Uses of food in the human economy (repair tissues ; produce heat ; produce force).
- III.—Chemical composition of the human body. (Elements present. Compounds present.)
- IV.—Chemical composition of food materials. Proximate food principles : Proteids, fats, carbohydrates, water, mineral matter.
- V.—Chemical analysis of food materials. (Analyses of American food materials—Atwater.)
- VI.—Value of foods. Use of the "Calorie" (heat unit). Value of the nutrients (proteids, fats, carbohydrates) expressed in calories. The nutrient ratio, the ratio expressed in calories, between the nitrogenous and non-nitrogenous nutrients.
- VII.—Metabolism, or the exchange of food materials in the animal economy. (Anabolism and Katabolism.) Metabolism divided into—introduction, digestion, absorption, and assimilation of food.
- VIII.—Study of diet. Standard for dietaries. Foreign and American. (Work of Voit, Atwater and others.)
- IX.—Computation of amounts of foods necessary to conform to standard dietaries. Calculation of the value of various diets and of prepared foods.
- X.—Chemical study of materials used as foods. Water (potable and mineral), common salt, starch foods, sugars, fats, oils, cereals ; dairy products—milk, butter, cheese, etc., eggs ; flesh foods—meat, fish, etc. ; fruits, vegetables, salads, beverages, food adjuncts.
- XI.—Study of fermentation. Organized and unorganized ferments. Fermentative and putrefactive changes. Yeast. Work of Bacteria.
- XII.—Preparation of food materials for consumption. Chemical study of changes that foods undergo in cooking processes. Food adulterations and their detection. Bibliography. Literature on foods and dietetics.

### OUTLINE OF COURSE ON FOOD ANALYSIS, 1901.

(LABORATORY WORK AND RECITATIONS.)

By A. HONWOOD, Instructor in Chemistry.

- I. Analysis of crystallized barium chloride.—
  - (a) Determination of barium.
  - (b) " chloride.
  - (c) " water.
- II. Analysis of potable water :—
  - (a) Total solids.
  - (b) Chlorine.
  - (c) Free ammonia.
  - (d) Albuminoid ammonia

III. Analysis of milk.—

- (a) Specific gravity.
- (b) Water or total solids.
- (c) Fat (Feser lactoscope, lacto-butyrrometer and Adam's method).
- (d) Casein (Kjeldahl method).
- (e) Ash.
- (f) Milk sugar (Soxhlet, gravimetric).

IV. Analysis of butter.—

- (a) Water.
- (b) Fat.
- (c) Curd
- (d) Salt.
- (e) Ash.
- (f) Volatile acids (distinction from oleomargarine.)

V. Analysis of cereal foods, bread, flour.—

- (a) Water.
- (b) Fat.
- (c) Protein.
- (d) Carbohydrate (starch, sugar)
- (e) Fibre.
- (f) Ash.

VI. Analysis of tea.—

- (a) Moisture.
- (b) Tannin.
- (c) Extract.
- (d) Caffein
- (e) Ash.

VII. Analysis of baking powders.—

- (a) Determination of class (phosphate, alum, etc.)
- (b) Total carbon dioxide.
- (c) Available carbon dioxide.

REFERENCES.

U. S. Government Bulletin, No. 46. *Leffman and Bean, Water Analysis.*  
*Wanklyn, Water Analysis.* *Leffman and Bean, Milk and Butter.* *Gerber, Analysis of Milk.*

NORMAL DOMESTIC SCIENCE AND DOMESTIC ART STUDENTS.  
PHYSIOLOGY COURSE.

*Junior Year.*

- 1.—Introduction. Definitions. Plan of organization of the animal body. General dissection of an animal.
- 2.—Chemical composition of the human body. The carbohydrates and fats.
- 3.—Chemical composition of the human body. The proteids and inorganic compounds.
- 4.—The physiology of the cell. Its growth, movements, reproduction and general nutrition.
- 5.—Histology and physiology of the epithelial and connective tissues.
- 6.—Mechanism of the skeleton. Structure and function of the joints. The animal body as a machine for doing work.
- 7.—The general physiology of muscle tissue. The structure and chemical composition of muscle.
- 8.—The muscle contraction. The conditions influencing the contraction. The production of heat. The relation of food to heat and work. The special physiology of muscles.



- 9.—The general physiology of nerve tissue. The general arrangement of the nervous system. The structure and function of the nerves.
- 10.—Reflex and voluntary actions.
- 11.—Foods. Dietetics. The necessity for foods. Phenomena of starvation. Classification of alimentary principles. The uses of foods in the body.
- 12.—The heat values of foods. The chemic composition of the animal. The vegetable and cereal foods.
- 13.—Digestion. The structure of the alimentary canal. Mastication.
- 14.—Insalivation. The physical and chemic action of saliva on the food and starch.
- 15.—Gastric digestion. The composition of gastric juice and its chemic action on the proteids. Influences affecting digestion.
- 16.—Intestinal digestion. The physiologic action of the pancreatic juice. The bile and intestinal juice. Their actions on foods.
- 17.—Absorption. The mechanism by which the digested products enter the blood.
- 18.—The blood. Its physical properties. Its chemic composition.
- 19.—The blood corpuscles, red and white. The relation of the blood to the tissues.
- 20.—The circulation of the blood. The general anatomy of the circulating apparatus. The structure and functions of the heart.
- 21.—The structure and functions of the arteries.
- 22.—The capillaries and veins.
- 23.—Respiration—the object of. The general structure of the respiratory apparatus. The movements of respiration. The amount of air breathed under different conditions. The composition of the air.
- 24.—The changes it undergoes at the time of breathing. The amount of oxygen absorbed and the amount of CO<sub>2</sub> discharged.
- 25.—Ventilation.
- 26.—Animal heat. Source and causes of heat production. The disposition of heat in the body. The manner in which the normal temperature is regulated.
- 27.—The skin. Its structure and functions.
- 28.—The kidneys. Their structure and functions. The urine and its chemical composition.

*Senior Year.*

The Physiological Chemistry of—		
Starches and sugars	}	Three lectures.
Fats		
Proteids		
The Physiological Chemistry of Digestion—		
Salivary digestion	}	Three lectures.
Gastric digestion		
Intestinal digestion		
Absorption of Foods—		
Demonstration.		One lecture.
The Fermentation of Foods—		
Causes and conditions determining it.		One lecture
The Putrefactive Changes in Foods—		
The causes and the conditions determining it and the products	}	One lecture.
BACTERIOLOGY—		
Bacteria. Their nature, structure	}	One lecture.
Mode of activity and classification		
The Parasites of Animal Foods.		One lecture.
The Bacterial Infection of Foods.		One lecture.
Ptomaines. Leucomaines—		
Their influence in the production of disease.		
The Thyms and Thyroid Glands.		One lecture.

**BIOLOGY—**

General dissection of animal forms.

The structure of the fish, turtle, frog, chicken, rabbit, lobster, oyster and clam.

Reproduction

Three lectures.

**THE DISEASES CONNECTED WITH DISORDERED NUTRITION—**

Gout. Diabetes. Rickets. Rheumatism. Scurvy.

**HYGIENE.**

Physical development (details of).

Physical training (supplemented by practice).

Effects of diet.

Care of the skin.

Clothing suited for various ages.

Ventilation—Natural and Artificial.

Household sanitation.

Emergencies—First aid and accidents, etc., etc.

**LECTURES ON BACTERIOLOGY.**

- 1.—Place in Nature.
- 2.—Presence.
- 3.—Morphology.
  - (a) Bacillus—grouping.
  - (b) Micrococcus—grouping.
  - (c) Spirillum.
- 4.—Size and numbers.
- 5.—Motility.
- 6.—Nutrition.
- 7.—Relation to air.
- 8.—Relation to temperature.
- 9.—Reproduction.
- 10.—Helpful and harmful.
  - (a) Saprophytes.
  - (b) Parasites.
- 11.—Relation to water supply.
- 12.—Relation to milk supply.
- 13.—Relation to butter and cheese making.
- 14.—Products of activity.
- 15.—Sterilization. Antiseptics. Disinfectants.
- 16.—Yeasts and Moulds.
- 17.—History.

**LABORATORY WORK IN BACTERIOLOGY.**

- 1.—Use of microscope.—Cover class preparations.
- 2.—Unicellular organisms.—Bacteria, infusoria, yeast.
- 3.—Washing, plugging, and sterilizing glassware.
- 4.—Preparation of media for pure cultures.—Bouillon, gelatin, agar-agar, potatoes, milk.
- 5.—Sterilizing media.
- 6.—Making air plate.
- 7.—Staining bacteria.
- 8.—Effect of light on bacteria.
- 9.—Quantitative analysis of—Tap water, Pasteur filtered water, ice.
- 10.—Testing Pasteur filter.
- 11.—Quantitative analysis of :—Walker-Gordon milk, lunch room milk.
- 12.—Examination and identification of bacteria.
- 13.—*M. butyri aromafaciens*.
- 14.—Tests of disinfectants and antiseptics.—Milk of lime, carbolic acid, boiling water, listerine.

## BUSINESS CUSTOMS AND ACCOUNTS.

## Lectures on—

Money and its circulation.  
 Banks and banking methods.  
 Trust companies.  
 Women as stockholders and bondholders.  
 Capital and credit, failures, assignments, etc.  
 Legal status of women.  
 Business papers, cheques, promissory notes, etc.  
 Practical work in drawing cheques, writing business letters.  
 Book-keeping by double entry (cash book, day book, ledger).

## II.—NORMAL COURSE OF DOMESTIC ART.

## HAND AND MACHINE SEWING.

*Junior Year.*

*First Grade.*—History of implements used in hand sewing; kinds and qualities of materials for undergarments; proper position of the body in sewing; methods of using thread and needles, thimble and tape-measure; woven textiles; different kinds of stitches; combination of stitches; seams, hems, tucks, button-holes; making simple garments.

*Second Grade.*—Sewing machines; measurements; drafting drawers, underskirts and nightgowns; making of garments; cutting and making corset-covers from patterns; cutting and making blouses.

*Third Grade.*—Drafting, cutting, making blouses, cotton dresses, and garments for infants.

## DRESSMAKING.

*First Grade.*

I.—Implements and appliances used in dressmaking.

II.—Cotton staple, its various uses; choice of materials; textiles as to colour and application to dress.

III.—Taking measurements; drafting foundation skirt; drafting draperies and principles of same; finishing skirt for trimming or draping; making lined skirt.

IV.—Form, proportion and line relating to ornament in dress.

V.—Plans for completing skirts; cutting blouses with seams from patterns drafted by students of the advanced grades, from measurements taken from different members of the class; basting, fitting, planning, trimming; general finish.

*Senior Year.**Second Grade.*

I.—Colour and textiles; their various uses and relations to personal adornment; growth of wool and silk; manufacture of fabrics.

II.—Taking measurements; drafting plain bodice from different measurements; drafting bodice with extra seams for large figure; cutting and matching striped, plaid, or figured material for bodice-making and trimming the same; drafting and making dresses on the gown-form.

III.—Artistic dress in its relation to the body; design in drapery.

IV.—Making dress on gown-form from the students' own designs,

*Third Grade.*

- I.—Advanced drafting. Choice of materials for gowns of special character.
- II.—Making dinner dress, evening dress ; choice of materials for same. Handling of velvet.
- III.—Making models of inexpensive materials to test the design.
- IV.—The form and poise of the body in their relation to dress.
- V.—Child's dress-materials, drafting, cutting and making the same.

*Fourth Grade.*

- I.—Materials used in making coats, as staple and manufactured.
- II.—Drafting jackets and coats of various styles ; cutting, basting, fitting, pressing ; practice in making pockets, applying same to garments ; making button holes, sewing on buttons ; lining and finish of coat ; making collars.
- III.—Principles applied to tailor-made dresses.

**MILLINERY.**

*Junior Year.*

**First Grade.**

- I.—Colour and materials as related to the head dress.
- II.—Wiring ; folds ; fitted facing ; shirred facing ; puffed edge.
- III.—Bows and rosettes.
- IV.—Study of line and form as applied to frame-making ; buckram hat frames.
- V.—Fitted hat made, lined and trimmed.
- VI.—Manufactures of straw and felt hats, velvet, and ribbon explained.

**Second Grade.**

- I.—Bonnet, with plain crown and with puffing, made, lined, and trimmed.
- II.—Bonnet of more complex design.
- III.—Toque made, lined, and trimmed.
- IV.—Practical work, regulated by the season in which the grade is studied, and leading to a knowledge of the designing of bonnets and hats. At least four pieces of millinery must be made by each student.

*Senior Year.*

**Third Grade.**

- I.—Crêpe bonnet.
- II.—Silk bonnet or hat.
- III.—Growth and manufacture of silk explained.
- IV.—Wire frame-making.
- V.—Large velvet hat.
- VI.—Evening bonnet from student's own design
- VII.—Shirred hat.  
Designing of head-dresses.

**DRAWING.**

*Junior Year.*

- Outline and light and shade drawing.  
Colour studies.  
Proportions of the human figure.  
Draperies, bows, feathers and hat trimmings in black and white and in colour.  
Colour values.

*Senior Year.*

Rendering of dresses and gowns in black and white and colour.  
 Designing of hats, bonnets and toques, in black and white and in colour.  
 Designing of costumes and head-dresses in colour.

## LECTURES ON THE CHEMISTRY OF TEXTILES—DYEING AND CLEANSING.

Historical sketch	}	Use of textiles.
		Art of dyeing.
Study of textiles.	}	Cotton.
		Flax.
		Ramie.
		Wool.
		Silk.

Microscopic and chemical methods of ascertaining organic structure.

Materials used in dyeing.

Operations preliminary to process.

Chemistry of —

Washing.

Cleansing.

Bleaching.

Dyeing.

Colouring matters { Natural.  
 Artificial.

Chemistry of coal-tar colours.

## III.—EVENING CLASSES IN HOUSEHOLD SCIENCE.

## FIRST COURSE IN COOKERY.

- LESSON I Introductory talk and measurements.  
 II. Build fire ; scalloped oysters.  
 III. Food Principles ; Chocolate and whipped cream.  
 IV. Water ; Boiled and filtered coffee. Tea.  
 V. Starch ; Baked potatoes, cornstarch pudding.  
 VI. Starch ; Toast with white sauce.  
 VII. Vegetables ; Vegetables with white sauce.  
 VIII. Soups ; Cream of tomato, potato soup, croutons and crisped crackers.  
 IX. Cereals, avena, wheatena ; boiled rice, steamed apples, steamed rice, stewed apples.  
 X. Sugar ; Peanut candy, fish balls.  
 XI. Fats ; Fried oysters, cranberry jelly.  
 XII. Eggs ; Dropped eggs, omelet, eggs cooked in water.  
 XIII. Milk ; Cup custard, rennet, floating island.  
 XIV. Cheese ; Welsh rarebit, cheese soufflé, Pasteurized milk.  
 XV. Meat ; broiled chops, Hamburg steaks, lemon jelly.  
 XVI. Meat ; scalloped mutton, corn muffins.  
 XVII. Meat ; casserole of rice, tomato sauce, baking powder biscuits.  
 XVIII. Meat ; Browned hash, whole wheat muffins.  
 XIX. Cake ; Gingerbread, lemon sauce.  
 XX. Cake.  
 XXI. Bread.  
 XXII. Invalid Cookery ; Beef broth, beef juice, milk porridge, flour gruel.  
 XXIII. Practical examination.  
 XXIV. Apple snowballs ; lemon sauce.

IV.—JUNIOR DOMESTIC SCIENCE COURSE.

SPECIMEN HOUSEHOLD SCIENCE COURSE.

*Senior Year.*

1. Cellar : Plan and care.
  2. Kitchen : Range, etc.
  3. Care of pantry.
  4. Clean dining-room.
  5. Review and have a talk on serving meals.
  6. Serving breakfast.
  7. Serving luncheon.
  8. Serving dinner.
  9. Lighting and heating : Care of lamps.
  10. Washing table linen.
  11. Ironing table linen.
  12. Washing and ironing embroideries.
  13. Care of bedroom.
  14. Spring cleaning : Daily care of a home.
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## APPENDIX G.

SCHOOL OF HOUSEKEEPING, BOSTON.  
SYNOPSIS OF COURSE. -*Term I.*

## 1.—HOME SOCIOLOGY.

A study of the home in its sociological aspects. Evolution of the family. Its forms and functions. The standard of living among different races. Industrial changes in their reaction on the home. Tendencies of present industrial forces, and of city life. Economics of production in relation to the family. The home as the unit of consumption. Ethical relation of the home to society ; responsibility of the home as a factor in public health and education. (Eight lectures.)

## 2.—BACTERIOLOGY IN RELATION TO DAILY LIVING.

Bacteria, their nature and life-history. Conditions affecting growth. Helpful bacteria, with special emphasis on bacteria which are of use to the housekeeper. Bacteria harmful in household processes. Disease germs, with a brief discussion of the most common contagious diseases, and the means by which the intelligent housekeeper can prevent their spread. (Lectures, laboratory work and recitations.)

## 3.—HOUSE SANITATION.

Location of house, with discussion of soil and drainage of land. Building materials. Construction of cellar. Plumbing. Water supply. Heating, lighting, ventilation, furnishing, cleaning and disinfection. (Lectures, laboratory work and recitations.)

## 4.—CHEMISTRY OF FOOD-STUFFS.

Relation of food to health. Classes of food-stuffs ; definition, description, physical and chemical properties, decomposition products, occurrence in natural food materials. Effects on food-stuffs of heat, of acids, of alkalis. Typical foods. Composition, food value, money value, and principles of cooking of :—milk and milk products, eggs and meat, fish, cereals, breads, legumes, roots and tubers, fresh vegetables and fruits. (Lectures, laboratory work and recitations.)

## 5.—DIETARIES.

Aim—to find that combination of food-stuffs which will produce the most efficient individual, and to indicate how this may be done with the least expenditure of money. In planning a dietary there are to be considered : nutritive value, digestibility, palatability, complementary qualities and cost. The common foods are studied in various combinations as suited for children up to the age of fifteen. (Lectures and recitations.)

## 6.—HYGIENE OF CHILDHOOD.

These exercises will include lectures, reading and reports upon the development of the normal child. Special attention will be given to sleep, diet, clothing, exercise, and play. The course will be illustrated by diagrams, photographs and demonstrations of normal and abnormal conditions. (Six lectures.)

## 7.—HOME NURSING.

Bed-making for bed patients. Change of sheet and night dress. Lifting and moving helpless patients. Bandaging. Baths. (Five lectures, with demonstrations.)

8.—EMERGENCIES.

Anatomy. Cause, symptoms and first treatment of hæmorrhages, burns and scalds, of sprains, dislocations and fractures, of unconscious conditions. (Five lectures, with demonstrations.)

9.—JOURNAL CLUB.

A resumé of the most recent publications in current literature relating to the Household.

10.—ELEMENTARY CHEMISTRY

Chemical and physical change. Constitution of matter. Valence. Laws of chemical actions. Acids, bases and salts. Writing of reactions. Chemistry of combustion, of water, of the atmosphere. Methods of preparation and uses of the more common acids, bases and salts. Chemistry of the common elements and their compounds. (Sixteen lectures and recitations.)

11.—PRINCIPLES OF COOKING.

Practical individual work, including both large and small quantities of material. Food value, cost, preparation and cooking of soup, meats, eggs, fish, poultry, cereals, vegetables, batters and doughs, including breads, sauces, salad dressings, jellies, frozen mixtures, pastry, puddings, and beverages.

12.—PRACTICE WORK IN COOKING.

Resident pupils will be required to do practice work in cooking and serving on Wednesday afternoons.

*Term II.*

1.—HOME ECONOMICS.

Purpose of the home. Its significance as a civilizing force. Its danger to-day. Ideals of living in relation to the home. Economics of living, of the house, of furniture and decoration, of purchase and of food, as controlled by standards of life. Women's responsibility for these standards. The home mother. The house worker. (Lectures and recitations.)

2.—PUBLIC HYGIENE IN RELATION TO THE HOUSEKEEPER.

Points of contact between the housekeeper and the public in sanitary matters. Responsibility of the housekeeper. Water supply, ice supply, milk supply. Gas and electricity. House drainage. The disposal of sewage in city and country. Laws regulating the inspection of meat, milk, other foods and drugs. Pavements, street cleaning and disposal of garbage. The relation of the housekeeper to public health in quarantine, isolation notification and disinfection. School hygiene. The sanitation of bake-shops. The abatement of noises and of smoke. Public playgrounds, baths, gymnasias, open spaces. The disposal of garbage, ashes and combustible waste. (Lectures and recitations.)

3.—HOUSE ARCHITECTURE.

Designed to supplement a woman's practical knowledge of the needs of the housekeeper, with a few of the fundamental principles of domestic architecture, in order to secure more intelligent co-operation between herself and the architect. Preparation of site. Construction of foundation, cellar, walls, floors, ceilings, roofs. House plans, with a discussion of what can be done for varying sums of money. Relation of plan to ideals of home life, and to work to be done in the house. (Eight lessons. Lectures, recitations, and field lessons.)



## 4.—ART IN THE HOME.

Fundamental rules of Art. General principles of proportion, colour and construction. Treatment of walls, floors, ceiling. Selection and cost of furniture, floor coverings, hangings, pictures, chandeliers, lamps, and bric-a-brac. Present shop-standards; house buyer's responsibility for these standards. Artistic clothing. (Eight lessons. Lectures, recitations, and field lessons.)

## 5.—CHEMISTRY OF FOOD STUFFS.

Energy giving power of foods. Bodily energy. Methods of food analysis. Study of food values. Effect of storage, of drying, of preservatives. Results of wrong combinations. The science of nutrition. (Lectures and recitations.)

## 6.—DIETARIES.

Review of principles governing dietary standards. The balanced ration. Combinations of food suited for workers, for old persons, for invalids. Economic dietaries. Practice in providing acceptable food for from fifteen to sixty cents per person per day. (Lectures, recitations, and practical work.)

## 7.—ESTIMATES OF HOUSEHOLD EXPENDITURE.

To proportion incomes wisely; the real expense in heating, lighting, cleaning, laundry work; serving and preparing food, by various processes and with different materials must be known. No body of exact information on these lines exists. The aim of this course is to obtain such information and to give practice in the actual management of a family income and in the keeping of household accounts. (Recitations and practical work.)

## 8.—HOUSEHOLD BUYING.

Equipment required for a house. Qualities to be secured in buying equipment. Quality and money value of different grades in the market, with reference to the furnishing of—kitchen, laundry, dining-room, bedroom. Quality and cost of—cleaning supplies, furniture, carpets, rugs, curtains, etc. (Lectures, recitations, field and practice lessons.)

## 9.—MARKETING.

Beef, anatomy and cuts, illustrated by charts and cutting up of fore and hind quarters of beef. Mutton, veal, pork, fish, poultry, game. Vegetables and their season. Buying of groceries, quantity and quality. Simple methods of detecting adulterations in foods. Canned goods. Practice in marketing and in cooking and comparing different cuts of meat, different grades of canned goods, etc. (Lectures, recitations, field and practice lessons.)

## 10.—JOURNAL CLUB.

A continuation of course 9, first term.

## 11.—PRINCIPLES OF HOUSEWORK.

Care of cellar, including vegetable cellar and storage room. Kitchen, involving care of refrigerator, pantries, sinks, and disposal of garbage. Cleaning and care of china, glass, silver and brasses. Laundry work. Care of bedroom, plumbing, floors, etc. (Practice lessons.)

## 12.—PRINCIPLES OF COOKING.

Preparation of breakfasts, luncheons, dinners, Salads and sandwiches Chafing-dish recipes. (Practice lessons.)

## 13.—PRACTICE WORK IN COOKING.

Resident pupils will be required to do practice work in cooking and serving on Thursday afternoons.

## APPENDIX H.

TEACHERS' COLLEGE, COLUMBIA UNIVERSITY, NEW YORK.  
I.—OUTLINE OF COURSE IN HOUSEHOLD ART.

PROFESSOR WOOLMAN, Teachers College, Columbia University, New York

## DOMESTIC ART DEPARTMENT.

## I. ART IN GENERAL.

- (I.) Place in civilization—
1. Definition.
  2. As related to characteristics of a people.
  3. Value.
    - Culture.
    - Industry and economics.
- (II.) Distinction between decorative art and pictorial art. (Suggested thoughts, purpose, relation of colour, material, etc.)
- (III.) Leading Principles.
1. Fine Arts (painting, music, poetry, architecture, sculpture).
  2. Decorative Arts.
  3. Art in everyday relations.
    - (1) Gaining good taste and applying it
    - (2) How to present the subject in schools.
- (IV.) Historic Ornament.
1. Important national variations and their distinctive features.
    - (1) Egyptian, Grecian, Roman, Byzantine, Romanesque, Gothic, Renaissance and Modern, with comparative study of the architecture, ornament, dress, and furniture of each era.

## II. WOMAN'S INFLUENCE.

- (I.) Health.
1. Mental and physical.
  2. Keeping in health—Exercise, food, baths, disposition, fresh air, care of person, complexion, hair, etc., posture, standing, walking, sitting.
  3. Injurious habits.
  4. Effect on classes.
- (II.) Voice and manner.
- (III.) Study of children.
1. General condition, health, eyes, fatigue, posture, etc.,
  2. Diseases, understanding indications, care needed after disease.
- (IV.) Dress.
1. Purpose.
  2. Hygienic.
    - (1) Warmth—Next body, in doors, out of doors, evening, different seasons.
    - (2) Weight.
    - (3) Pressure.
  - 3 Artistic.
    - (1) Applying laws of art to dress—use, simplicity, truth, individuality, harmony, relation of colour, etc.
  4. Cost and purchase.
    - (1) Choice of materials—Manufacture, properties of people value and durability. Ethics of shopping, economic standpoint, relation of consumer to manufacturer, etc.
    - (2) Dress for varied purposes.
    - (3) Care.
- (V.) Home.
1. Laws of art applied to architecture, furnishing and decoration; economics; ethics; individuality, health, etc.
- VI.) Business Life.

## III. COLOUR.

- (I.) Physics, physiology, psychology.
- (II.) Terms in use.
- (III.) Investigation of colour—Coloured paper and materials, standards, secondary, broken, scales, etc., contrast of colour, harmony of colour.
- (IV.) Application to decoration, furnishing and dress.

## II.—OUTLINE OF COURSE IN HOUSEHOLD CHEMISTRY.

## DOMESTIC SCIENCE DEPARTMENT.

(To be preceded by a year's work in General Chemistry.)

## PROFESSOR VULTÉ.

- Carbon and Combustion.
- Water.—Physical properties of.
  - Distillation of.
  - Qualitative examination of.
  - Tests for Ammonia in.
  - Tests for Nitrites.
  - Tests for Chlorine.
  - Estimation of hardness (Temporary).
  - (Permanent).
- The Atmosphere.—Presence of  $\text{CO}_2$  and  $\text{H}_2\text{S}$ .
  - Moisture.
  - Dust and solid matter.
  - Ferments.
- Starch and sugar. Examination of Dextrine.
  - Glucose.
  - Fehling's Solution Test.
  - Action of Unorganised Ferments.
  - Polariscope or Saccharimeter Test.
- Cellulose. Examination of various forms.
- Fats.
 

Butter	}	Specific Tests.
Olive or cotton seed oil		
Tallow.		
- Proteids. Egg Albumen, examination of—
  - Millon's Test.
  - Precipitation Test.
  - Heller's Test.
  - Biuret Test.
  - Meta phosphoric Acid Test, etc.
- Globulins, Nucleo Albumens. Alkali and acid albuminates.
  - Tests for Albumose and Peptone.
- Gelatine. Examination of—
  - Tests on milk.
  - Bread and flour, examination of
  - Meat (muscle) examination of
  - Glycogen, examination of
- Review work on the proteids.
- Digestive fluids and their action (in detail).
- Action of ferments and their prevention (in detail).
- Antiseptics (in detail).
- Action of alkalis and vegetable acids on metals or their oxides.
- Baking powders. Three general types.
- Tests on bread, tea, coffee, etc.

## APPENDIX J.

## CHAUTAQUA SCHOOL OF DOMESTIC SCIENCE.

## GENERAL PURPOSE.

The School of Domestic Science is designed primarily for teachers who wish to compare their own methods with those of others, or who desire to supplement their training in this department; but the work will also be of especial value to housekeepers, whether engaged in the administration of large institutions or in the direction of their own homes.

**THE DEPARTMENT OF COOKERY.**—This department offers the following lines of work: (a) Courses for teachers of Domestic Science; (b) a series of thirty demonstration lectures on practical subjects, extending through six weeks; (c) practice classes for young housekeepers; (d) such private lessons as may be desired. The economic selection of materials, the wise choice of implements for each process, and the application of the right temperature to secure the best results, are points which receive careful attention in both lectures and practice lessons.

**NORMAL COURSE IN DOMESTIC SCIENCE.**—This embraces two years of work, and a certificate is given to those satisfactorily completing it. Young women without experience as teachers must present, for admission to this course, the equivalent of a High School diploma. The curriculum is as follows:—

## FIRST YEAR.

1. **GENERAL CHEMISTRY** (Five hours a week).—Lectures and laboratory. The course will include a study of air, water, and their constituents, of acids, bases and salts, and of the various groups or elements with their more important compounds.

2. **PHYSICS** (Five hours a week).—The subjects discussed will be energy in all its forms, the air, physical properties of water, wells, springs, fountains, etc., with a full explanation of the instruments used in investigating problems in these subjects. Heat will be thoroughly discussed, since it occupies so important a place in these sciences, and the application of electricity in the arts will be fully explained and illustrated. Syllabus text (Gage's recommended).

3. **PHYSIOLOGY** (Three hours a week).—Chemical elements of human body. Cell life, illustrated by amœbæ, etc. Study of tissues. The anatomy, physiology and hygiene of the internal organs. Circulation of the blood, respiration, animal heat, general study of digestion.

4. **BOTANY OF FOOD PLANTS** (Five hours a week).—Lectures and laboratory work with the compound microscope; the illustrative material, food plants; as lettuce for leaves, potatoes for store rooms, and wheat for seeds. Emphasis will also be put on starch and vegetable proteids yeasts and moulds.

5. **SANITATION** (Five hours a week).—Principles of sanitation applied to the house—location, surroundings, plan, construction, furnishing, and care. Application of chemistry, physics, physiology, bacteriology, and kindred sciences, to water supply, drainage, and plumbing, disposal of wastes: lighting, heating, and ventilation. Care of woodwork, metallic and mineral surfaces and coloured fabrics. Laundry processes. Household pests. Problems of public hygiene discussed in relation to house sanitation.

6. **COOKERY** (Five hours a week).—Practice work. Food principles and the fundamental laws of cookery. Animal foods, vegetables, cereals, methods of making doughs light, menus for daily meals, and cooking for invalids will be discussed.

## SECOND YEAR.

7. APPLIED CHEMISTRY (Five hours a week).—Laboratory work and lectures. Qualitative tests of food materials. Study of proteids, carbohydrates, fats, etc. Experiments with soda and baking powder. Detection of food adulterants and preservatives. Testing of various household supplies.

8. EXPERIMENTAL COOKERY (Five hours a week).—Existing methods of preparing food judged by scientific standards. Arrangement of lessons, the details of recipes and the order of work are planned in a way to help teachers.

9. PHYSIOLOGY (Two hours a week).—Animal functions, muscular physiology, digestion, with the study of the body fluids, and the nervous system. During the two years' course demonstrations with manikins and fresh specimens will be furnished. The course also deals especially and most practically with the digestion and nutritive value of food stuffs.

10. BACTERIOLOGY (Five hours a week).—Lectures and laboratory work. Description and life history of bacteria and other micro-organisms. Methods of culture. Bacteria in dust, water, milk, etc.

11. PEDAGOGY (Five hours a week).—Principles of pedagogy as applied to the teaching of Domestic Science. Schools of Cookery and Domestic Economy. Planning of courses.

12. ADMINISTRATION OF HOUSEHOLDS, SMALL AND LARGE (Five hours a week).—Household expenditure. Food as an economic factor. Diet and dietaries. Especially planned for matrons of schools and public institutions. Methods of keeping accounts. The best implements for house-keeping and the general equipment. The helpers, their training and advancement and the adjustment of duties, hours and wages. Economic buying and storing of food. The planning of menus, with due regard to a balanced ration; and the simplest way of serving meals.

13. \*—Classes in sewing will be organized during the second term.

## FEES.

	\$	£	s.	d.
Full normal course (first year) . . . . .	40.00	about	8	0 0
Full normal course (second year) - - - - -	45.00	„	9	0 0
Cookery (six weeks) - - - - -	15.00	„	3	0 0
Cookery (three weeks) - - - - -	9.00	„	1	15 0
Single courses (six weeks) - - - - -	12.00	„	2	10 0
Half courses (three weeks) - - - - -	7.00	„	1	10 0
Cookery (Demonstration only) :--				
Six weeks - - - - -	5.00	„	1	0 0
Per week - - - - -	1.00	„	4	0
Single lectures - - - - -	35	„	1	6

\* Special fees will be charged for the classes in sewing.

## APPENDIX K.

## CORNELL UNIVERSITY, COLLEGE OF AGRICULTURE.

## BUREAU OF NATURE-STUDY AND FARMERS' READING-COURSE.

*How to Organize a Farmers' Wives' Reading-Club.*

At the present time there are three Correspondence courses conducted by the Farmers' Reading-course and Nature-study Bureau. These are (a) the Farmers' Reading-course, (b) the Farmers' Wives' Reading-course, and (c) the Home Nature-study course. These are especially adapted for study in clubs, and this circular suggests how women's clubs may be organized and conducted.

A club may consist of five or more members. An ideal number is twelve. Anyone interested in home work, directly or indirectly, is eligible to membership.

*How to organize:*—Some one must take the lead. Let this person (you) write us for information regarding the Reading-courses, distribute the circulars, and talk it over personally with as many women as possible. When interest has ripened, call a meeting at your own home, or some other convenient place, to consider organization. Then select a president and a secretary. She may be asked by the club to forward the answered quizzes in one consignment to this office. She should supply this office promptly with a list of the members and their addresses.

Select a suitable night for meeting. Each lesson will furnish subject matter for two meetings. One lesson is furnished each month, so that meetings may be held fortnightly. An excellent way is to meet at the house of the members of the club. Early in the season arrange a schedule giving places of meeting for some time ahead. Of course if a room in the grange, town hall, or school house is available and convenient, this may prove to be the most desirable arrangement. The club may apply for a charter from this Bureau, by adopting a name and reporting it to us with the first consignment of answered quizzes.

The sessions should not last over an hour and a half; the discussion should be brisk, and it is better to adjourn early when interest is warm, than to wait till it cools and discussion lags. The meeting should begin promptly at 8 p.m., better still at 7.30.

When the meaning is not clear, or when new ideas occur to you, write us by all means. Let us labour together for the success of your club.

## APPENDIX L.

UNIVERSITY OF THE STATE OF NEW YORK, ALBANY, N.Y.  
HOME EDUCATION DEPARTMENT.

## HOME ECONOMICS SYLLABUS.

Syllabus prepared by the Lake Placid Conference Committee on Home Economics.

*This syllabus, giving a suggestive outline of the present state of the subject, is expanded from a course given in 1900 by Mrs. Ellen H. Richards, B.S., M.A., Instructor in Sanitary Chemistry, Massachusetts Institute of Technology, and Mrs. Alice Peloubet Norton, M.A., Home Economics Department, Chicago Institute. Only a few of the best books are referred to, and enough topics for papers given to provide for local conditions and needs.*

## LECTURE 1.

## HOME AND FAMILY LIFE: IDEALS AND STANDARDS.

To keep the home a centre of moral and intellectual progress in the face of the economic tendencies encroaching on its position the problem of the day.

Family life is unselfish devotion inspired by self-sacrificing love. Cooperation for a common aim creates a spirit of mutual helpfulness.

The significance of the family to the individuals composing it and to the nation. The physical, moral, and intellectual development of its members.

Its historical development: growth from reproductive and social institution in which wife and child were alike valued for their powers of production, to a spiritual relationship in which each gives according to his power and receives according to his need. Basis of choice in primitive marriage, economic utility and physiological attraction; modern basis, personal relationship.

The growing individualism of all the members of the family; the union of all in the service of each.

Woman's past progress conditioned on the overcoming of men's passions and her education; her future progress dependent on the growth of her self-respect and her work; the result of knowledge.

Farther progress conditioned on evolution, not revolution; the family life, the development of ages, is to be spiritualised, not materialised.

The significance of a higher or more complicated adaptation is not reduced to the level of a lower or simpler one by showing that it has been evolved from the latter.—*Griggs*.

The future of the race is bound up in the development of home ideals. Standards of life come before standards of living. "There is little moral consequence in the association of parents and children unless there are ideas to communicate."—*Ross, Journal of Sociology*, Vol. 5, No. 5, 1900.

Home life distinguished from community life; the home educational rather than economic. Character building above price.

## REFERENCES.

- American Journal of Sociology*, v. 1-6.  
*Bosanquet.—Standard of Life.*  
*Demolins.—Anglo-Saxon Superiority.*  
*Dewey.—School and Society.*  
*Earle.—Home Life in Colonial Days.*  
*Griggs.—The New Humanism.*  
*Patten.—The Development of English Thought.*  
*Richards.—Cost of Living*, ch. 1-2.

Salmon.—*Domestic Service.*

Small and Vincent.—*Introduction to the Study of Society.*

Stetson.—*Women and Economics.*

Wright.—*Industrial Evolution of the United States.*

#### TOPICS FOR PAPERS.

1. How can the ideals of family life be maintained under present economic and social conditions?
2. Is it necessary to prepare and eat food and to make and launder clothing in the house in order to retain the essentials of the home?
3. The family as a unit of society.
4. The "living" wage; definition; rises according to standards of living. Show that comforts increase and luxuries decrease efficiency.
5. The woman in bondage to her neighbour's opinion; how may she be set free?
6. The inveterate shopper; how can her ideals be elevated?

#### LECTURE 2.

##### THE HOUSE BEAUTIFUL: SITUATION AND ARCHITECTURE.

Shelter the protection of home life. Maintains unity and privacy with sense of ownership.

The house beautiful: Location, plan, grounds. Soil must be clean, dry, porous. Influence of ground water and ground air. Sunshine and pure air essential; scientific reasons for need of sunlight.

Plan of house according to needs of family; both privacy and community of interests to be provided for; individual rights-respected. Labour saving in stairs, in proximity of certain rooms; care in placing doors and windows for various reasons. Sun plan the most important requisite. "Sweetness and light" interpreted by the sanitarian means sunshine and pure air.

The detached house needs its setting of grass or shrubs, or both, and flowers, if there is one to care for them; sickly, straggling flower-beds are as distasteful as uncared-for children. Treatment of small grounds may relieve ugly architecture.

#### REFERENCES.

Brown.—*Healthy Foundations for Houses.*

Clark.—*Building Superintendence.*

Gardner.—*The House that Jill Built.*

Grimshaw.—*Hints on House Building.*

Osborne.—*Notes on the Art of House Planning.*

Parsons.—*How to Plan the Home Grounds.*

Richards and Talbot.—*Home Sanitation. Ch. 2.*

#### TOPICS FOR PAPERS.

1. House architecture; how to secure beautiful, comfortable homes.
2. The apartment house; its advantages and disadvantages.
3. The lawn; its treatment and care.
4. How to improve that eyesore, the small back yard.

#### LECTURE 3.

##### THE HOUSE BEAUTIFUL: SANITATION.

Esthetic and sanitary requirements not opposed; often identical. The poorly-built, ill-equipped house, neither healthful nor beautiful.

Ventilation and heating in close connection. Pure air not free in cold climates. Importance to health; methods of providing; tests.

Plumbing and drainage: General requirements are simplicity, accessibility ventilation of system. soundness of material, tightness of joints, thorough flushing.



## REFERENCES.

- Barré.*—*La Maison Salubre.*  
*Billings.*—*Ventilation and Heating.*  
*Corfield.*—*Dwelling Houses.*  
*Currier.*—*Outlines of Practical Hygiene.*  
*Egbert.*—*Manual of Hygiene and Sanitation.*  
*Gerhard.*—*House Drainage and Sanitary Plumbing.*  
*Plunkett.*—*Women, Plumbers and Doctors.*  
*Putnam.*—*Lectures on Principles of House Drainage.*  
*Richard and Talbot.*—*Home Sanitation. Ch. 3-6, 9.*  
*Tracy.*—*Handbook of Sanitary Information.*  
*Waring.*—*How to Drain a House.*  
 ——— *Principles and Practice of House Drainage.*  
 ——— *Sanitary Condition of City and Country Dwelling Houses.*  
 ——— *Sanitary Drainage of Houses and Towns.*

## TOPICS FOR PAPERS.

1. The house plan with special reference to sanitary requirements.
2. An ideal system of ventilation for a modern house.
3. How to adapt modern principles to an old house.
4. Advantages and dangers of modern plumbing.

## LECTURE 4.

## THE HOUSE BEAUTIFUL: FURNISHING.

Adaptation to purpose and environment. Fitness as to form, colour, cleanliness, and durability. Truth a fundamental element of beauty.

Simplicity tends towards healthfulness and beauty. Overcrowding spoils effect of really good things. Furnishings should minister to comfort or pleasure; should not make a slave of mistress or maid.

Knowledge of true values necessary.

## REFERENCES.

- Beauty in the Home.*—*20th Century Club Leaflets.*  
*Church.*—*How to Furnish a Home.*  
*Cook.*—*The House Beautiful.*  
*Dewing.*—*Beauty in the Household.*  
*Gardner.*—*Homes and All About Them.*  
*Garrett.*—*Suggestions for House Decoration.*  
*Loftie.*—*A Plea for Art in the House.*  
*Lyon.*—*Colonial Furniture of New England.*  
*Ormsbee.*—*The House Comfortable.*  
*Salisbury.*—*Principles of Domestic Taste.*  
*Watson.*—*Art of the House.*  
*Wharton and Codman.*—*Decoration of Houses.*  
*Wheeler.*—*Household Art.*

## TOPICS FOR PAPERS.

1. Hall and reception room: How to express hospitality without sacrificing family privacy and reserve.
2. The living room: Its furniture, decoration, schemes of colour.
3. The nursery: What it can do for the character of the child.
4. The dining room: Influence of surroundings on digestion; special reference to cleanliness.
5. The sleeping room: Not a sitting room; appropriate furnishing.

LECTURE 5.

THE HOUSE BEAUTIFUL: CLEANING AND CARE.

*Cleanliness is next to godliness.*

DUST, INDOORS AND OUT:

Composed of inorganic and dead matter, and living organisms; danger chiefly from the latter. Of these "dust plants" the most important are bacteria.

BACTERIA:

1. Description and life history:

Simple one-celled plants; smallest of living things and perhaps most numerous. Classified according to shape as cocci, bacilli, spirilla. Reproduction by cell division.

2. Methods of culture. "Dust plant" gardens:

Bacteria too small to be thoroughly studied even under the microscope till methods of cultivating them were devised. Beef tea, specially prepared and stiffened with gelatin or agar-agar, serves as food and also as a prison. Bacteria planted in this grow and form "colonies" large enough to be seen and studied. A small particle of dust introduced into this medium may produce thousands of these colonies.

DUST AND DISEASE:

1. Disease germs:

Most bacteria harmless or even useful, but some foes to human existence. Some of these disease germs, notably those of tuberculosis, often conveyed in dust.

2. Protection of body against disease:

Ciliated cells of air passages; dust filters in lungs; phagocytes or wandering cells of body.

HOUSEHOLD APPLICATIONS:

1. Cleanliness of food:

Milk supply. Fruit and candy exposed on street for sale.

2. Care of house:

(a) House should be finished and furnished so as to provide as few dust traps as possible. Smooth finish, rounded corners, simple ornaments desirable. Carpets *v.* bare floors.

(b) Removal of dust. Sweeping and dusting should remove and destroy dust, not merely stir it up. Results of experiments with different methods.

MUNICIPAL HOUSEKEEPING:

Clean streets and sidewalks; proper disposal of refuse; influence of clean houses and schoolhouses; moral effect of good housekeeping.

REFERENCES.

*Abbott.—Principles of Bacteriology.*

*Conn.—Story of Germ Life.*

*Frankland.—Our Secret Friends and Foes.*

*Hüppe.—Principles of Bacteriology.*

*Prudden.—Dust and its Dangers.*

——— *Story of the Bacteria.*

*Tyndall.—Essays on Floating Matter of the Air.*

TOPICS FOR PAPERS.

1. Dust as a means for carrying disease.
2. Plan for furnishing a house with special reference to avoidance of dust.
3. Housekeeping *v.* home making. Is the care necessary for exquisite cleanliness conducive to the happiest home?
4. Some devices in house building which would simplify housekeeping.

## LECTURE 6.

## CLOTHING.

Purposes : (1) Protection of body from extremes of heat and cold ; saving of food by preventing loss of heat essential in sedentary pursuits where digestion fails to produce sufficient heat ; more clothing less food ; (2) adornment ; (3) satisfaction of modesty.

Hygienic clothing : Even layer of air inclosed ; non-conductor ; per cent. of air space in wool, silk, linen ; kind of weave ; per cent. of moisture contained by each. Looseness of clothing permits evaporation and better circulation.

Style of dress dependent on climate and occupation ; wide sleeves and loose trousers for warm countries, close-fitting for cold. Work calls for looser dress than leisure ; ideal housework dress for women ; business dress.

Esthetic qualities : Becomingness ; artistic outlines ; softening of crude forms ; toning down of colour. Fashion cruel to all but a certain type. Dress may enhance beauty and render agreeable otherwise ugly forms and features.

Nothing more individual than dress ; part of oneself ; indicative of character. Historical development ; ideals expressed in costume.

Textiles : Study of as to fibre, weaving, colouring, dyeing, washing, cleansing, durability.

The function of clothing from the hygienic standpoint is to regulate heat. In its lowest terms clothing is a net to catch air, which is the best known non-conductor of heat. Even in a temperature greater than that of the body the air space prevents the penetration of heat. Clothing should be loose in summer and close-fitting in winter. The skin needs to breathe, as it were, hence air and moisture should have free but slow passage through all clothing. The products of excretion should not be retained. Rational clothing has the greatest useful effect with the least material ; it does not interfere with free movement of any part, acts as a dietetic measure, lessening the quantity of food required and promoting evaporation from the skin.

Loosely woven wool is rich in air (87 per cent. air, 13 per cent. solid substance), is elastic and soft, has little contact with the skin so that in addition to the contained air there is an isolating layer between the garment and the skin. It is also characteristic of wool not to be wet by moisture but to allow it to pass through and evaporate. Cotton over wool becomes saturated, and soon gives the odour of decay.

Fine, smooth linen is dense, poor in air (42 per cent. air, 58 per cent. solid substance ; when starched, no air), has close contact with the skin and so feels cooler, conducts heat away more rapidly, has little or no air between it and the skin, becomes saturated with moisture and causes the concentration of the skin waste in the smallest space near the skin. It takes thirty times as long for a given quantity of air to pass through linen as through wool tricot, hence little circulation. That cotton and linen bear washing by unskilled labour is the greatest argument for their use. Some modes of weaving may inclose as much air in a cotton or linen mesh as in wool, but the fibres lack elasticity, and tend to become matted and saturated with moisture. Silk lies between wool and linen.

For protection in different temperatures it has been estimated that :

1·7mm. suffices for high summer (if of loosely woven wool) ;

3·3mm. for ordinary summer weather ;

5·9mm. for spring and fall ;

12·6mm. for winter ;

26mm. for very cold days.

In a strong, cold wind an impervious layer-like skin of a fur garment prevents too rapid change of air.

To foot gear the same principles apply : Skin breathing is very impor-

tant, as also circulation of air, free evaporation, and protection from too rapid loss of heat. Air from next the skin in stocking feet gave only one tenth the amount of carbon-dioxid found when a narrow close-fitting boot was worn. Stockings of cotton conduct heat one-third faster than those of wool, the thinner, less elastic layer preventing circulation of air and holding moisture. Leather, if loose and soft, approaches wool in the property of not conducting heat. As it is more dense and "filled" with water or enamel it becomes like linen, a good conductor. Loss of heat by contact with cold surface depends on intimacy and area of contact.

Habit has much to do with clothing certain portions of the body, head, hands, etc. The skin becomes non-breathing to a certain extent, but knees and wrists, where the arteries approach the surface, should be protected from sudden changes.

Costume—outer dress—may be quite independent of clothing, but it should not interfere by tightness, weight, or impervious material with the true office of clothing.

Beauty without health is incomplete. Health can never be perfect for you so long as your eye is troubled with ugliness. . . . To dress well you must possess the gift of colour and be a master of form. But this is not enough; with these accomplishments you might clothe a dummy or a corpse satisfactorily, but not a living human being; for there comes into the problem, with this word *living*, the element of motion. I do not mean the mere action of moving the limbs, but the action of breathing, of growth and of decay, and it is here that the laws of hygiene must be faced. We may obey them or disobey, but the measure of our obedience or disobedience will be the measure of our health or no health.—*Godwin*.

The pursuit of things fashionable, for the sole reason that they are fashionable, is, I think, not an exalted occupation, and is indeed, I think, a somewhat sheep-like attribute.—*Treves*.

#### REFERENCES.

- Archiv für Hygiene.*  
*Ballin.—Science of Dress in Theory and Practice.*  
*Blanc.—Art in Ornament and Dress.*  
*Bowman.—The Structure of the Wool Fibre.*  
*Brooks.—Cotton.*  
*Ecob.—The Well Dressed Woman.*  
*Godwin.—Dress and its Relation to Health and Climate.*  
*Haweis.—Art of Dress.*  
*Robida.—"Yester-year": Ten Centuries of Toilet.*  
*Steele and Adams.—Beauty of Form and Grace of Vesture.*  
*Treves.—The Dress of the Period in its Relation to Health.*  
*Wilkinson.—Story of the Cotton Plant.*  
*Williams.—Philosophy of Clothing.*  
*Wykoff.—The Silk Goods of America.*  
*U.S. Experiment Stations. Cotton Plant (Bulletin 33).*

#### TOPICS FOR PAPERS.

1. The ideal working dress.
2. Street costume.
3. Children's clothing.
4. Summer clothing.
5. Economic clothing.
6. Economic costume.
7. The choice of fabrics.
8. A study of textiles.
9. A history of "dress goods."
10. The development of costume.

## LECTURE 7.

## FOOD IN RELATION TO HEALTH.

The balanced ration. Object of the farmer to secure the highest efficiency of muscle or product. He has found that knowledge of the principle of feeding pays; that while his animals may live on what they can pick up or what is by chance given them, they attain their best development only when he understands and supplies their needs.

Balanced ration for the human race. In man there is not only the animal or muscular efficiency to consider, but the intellectual output and the enjoyment of the higher nature; hence additional need of knowledge and care.

Food the source of human energy. Metabolism in the body. Classes, costs, quantities; variation for different ages, seasons, kinds of work.

Food material often spoiled in cooking. Food material often wasted in the body as well as in the kitchen.

Food a source of pleasure, but this is not its only or chief use. The art of cooking the right combination of æsthetic and nutritive qualities.

## REFERENCES.

*Atwater.*—*Methods and Results of Investigations on the Chemistry and Economy of Food.*

——— *and Bryant.*—*Dietary Studies in Chicago.*

——— *and Woods.*—*Chemical Composition of American Food Materials*

*Bevier.*—*Nutrition Investigations in Pittsburg.*

*Goss.*—*Nutrition Investigations in New Mexico.*

*Hart.*—*Diet in Sickness and in Health.*

*Hogan.*—*How to feed Children.*

*Knight.*—*Food and its Functions.*

*Richards, ed.*—*Rumford Kitchen Leaflets.*

——— *and Woodman.*—*Air, Water, and Food. Ch. 8. 9.*

*Thompson.*—*Food and Feeding.*

*Townsend.*—*Relation of Foods to Health.*

*Wait.*—*Nutrition Investigations at University of Tennessee.*

*Yeo.*—*Food in Health and Disease.*

## TOPICS FOR PAPERS.

1. How to feed the baby.
2. How to feed the school girl.
3. How to feed the business man.
4. How to feed the farmer.
5. How to feed the grandmother.
6. The summer dietary; how it should differ from that of winter.
7. Why should I know anything about food?
8. How to secure good food habits in children.
9. How to preserve the right attitude of mind toward food.
10. A dietary: What it is and how it is made.

## LECTURE 8.

## SCIENCE AND ART OF COOKERY.

## INTRODUCTION:

## 1. Cooking defined:

Socrates's estimate of the art. Ruskin's interpretation.  
Scientific definition: Application of heat to food materials.

## 2. Object of cooking:

To make food safer, more digestible, palatable. The last formerly most important. Modern methods emphasise the first two.

**CLASSIFICATION OF FOODS :**

Goodfellow's chart :

Inorganic	{	1. Water.	Organic	{	1. Nitrogenous. (a) Proteids. (b) Gelatinoids.
		2. Salts.			

**EFFECT OF COOKING ON DIFFERENT FOOD PRINCIPLES :**

1. Water : Cooked chiefly as a medium for conveying heat ; some times to render it safe.
2. Salts or mineral matter : Unchanged by heat, but may be dissolved out of food by water and lost. Effect of hard and soft water on food.
3. Proteids : As a rule changed from soluble to insoluble and less digestible forms.
4. Fats : Decomposed by high temperature and made less digestible.
5. Starch : Digestibility increased by cooking. Changed partially to soluble starch and often to dextrine and sugar.

**TWO TYPICAL FOODS :**

1. Meat :

Contains albumen and allied proteids, extractives, gelatin, fat. Effect of different degrees of heat on each must be considered to find right cooking temperature for the whole. Different methods of applying heat : Boiling, baking, soup-making, etc.

2. Bread :

Two classes of changes : By fermentation, by heat.

(a) Fermentation : Effect of yeast on gluten, the proteid of flour, not well understood. Starch changed into sugar ; sugar broken up into alcohol and carbon dioxide.

(b) Heat : Gluten changed ; part of the starch changed into dextrine, and some sugar into caramel ; carbon dioxide and alcohol driven off and the ferments killed.

**COOKING FOR SAFETY OR PRESERVATION OF FOOD :**

Dangers of uncooked food. Principle of canning and preserving. High temperature or long continued heat.

**REFERENCES.**

*Abel.*—*Practical, Sanitary, and Economic Cooking.*

*Child.*—*Delicate Feasting.*

*Corson.*—*Practical American Cookery and Household Management.*

*De Salis.*—*Art of Cookery.*

*Dodds.*—*Health in the Household.*

*Goodfellow.*—*Dietetic Value of Bread.*

*Jago.*—*Textbook of the Science and Art of Breadmaking.*

*Richards and Elliott.*—*Chemistry of Cooking and Cleaning.*

*Thudichum.*—*Spirit of Cookery.*

*Williams.*—*Chemistry of Cooking.*

**TOPICS FOR PAPERS.**

1. Yeast fermentation in relation to breadmaking.
2. Effect on bread of different manipulations of the dough ; pulling, kneading, beating, etc.
3. Cookery of vegetables.
4. Canning industry and its methods.
5. Cost of cooking : Relative economy of gas, coal, etc.
6. Cookery of milk : Pasteurisation and sterilisation.

## LECTURE 9.

## DIVISION OF THE ANNUAL INCOME.

Money is spent for existence, comfort, luxury, philanthropy.

Aim should be that degree of comfort which enhances the capacity for work and enjoyment without weakening moral or physical characteristics.

Present restraint for purpose of attaining a future good an attribute of the higher nature of man.

## REFERENCES.

*Bosanquet.*—*Standard of Life.*

*Damon.*—*Wealth of Households.*

*Dawson.*—*Wealth of Households.*

*Devine.*—*Economic Function of Woman.*

*Dewson.*—*The 20th Century Expense Book.*

*Grant.*—*Art of Living.*

*Herrick.*—*Liberal Living upon Narrow Means.*

*Nitsch.*—*Ten Dollars Enough.*

*Richards.*—*Cost of Living.*

*Smart.*—*Distribution of the Income.*

*Stackpole.*—*Handbook of Housekeeping for Small Incomes.*

## TOPICS FOR PAPERS.

1. What sections of your city offer houses or apartments for \$25 a month suitable for the young family of a student or literary or scientific man? What improvements in housing up to \$50 a month might be made?
2. How to clothe a family of five on \$300, \$400, \$500 a year.
3. A study of the markets of your city; which are the best conducted? Does it pay for the housewife to go to market herself?
4. Household accounts: How to make them interesting. How to buy for two.
5. Make out a table of fruits, vegetables, and fish showing the season at which they are best in flavour and least expensive. Compare these prices with those that are highest.
6. How may running expenses be regulated?
7. The little leaks in the household purse: How to stop them.
8. What relation should wages bear to rent?
9. Does modern philanthropy take the place of the tithe for the church?
10. How far is it wise to sacrifice present comfort for the possible "rainy day"?

## LECTURE 10.

## MUNICIPAL HOUSEKEEPING.

The City of Hygiea: How nearly it can be approached. "Applied hygiene the condition *sine qua non* of the farther development of mankind."

Clean soil: Requires removal, not burial, of all refuse; cleanly collection and effectual disposal of garbage and street sweepings; efficient subsoil drainage; suitably paved streets, dustless and impervious, wide for circulation of air and admission of sunlight; no dirty back alleys.

Pure air: Depends largely on clean soil; free from dust and noxious vapours; parks and promenades well supplied with vegetation. A crowd in an enclosed space, palace or hovel, defiles the air. Churches, schools, railroad waiting rooms, lecture halls, parlours used for social functions, all demand special attention.

Safe and abundant water supply: Intelligent use of appliances; quick removal of used water; complete sewerage system before the introduction of public supplies; polluted soil means unsafe water.

Safe buildings: Construction, plumbing, air space. City regulations; are they enforced?

Urban hygiene: Inspection of markets, factories, sweat shops; density of population. Before all other social reforms stands that of healthy living,

REFERENCES.

- American Public Health Association.—Annual Reports.*  
*Barré.—La Ville Salubre.*  
*Burrage and Bailey.—School Sanitation and Decoration.*  
*Engineering Record (files).*  
*Municipal Affairs.—Vols. 1-3.*  
*Parkes.—Hygiene and Public Health.*  
*Poore.—Essays on Rural Hygiene.*  
*Richardson.—The City of Hygiea.*  
*——— Health of Nations.*  
*Sykes.—Public Health Problems.*  
*Tracy.—Handbook of Sanitary Information.*  
*Waring.—Report on Final Disposition of the Wastes of New York, 1896.*  
*——— Street Cleaning.*  
*Weber.—Growth of Cities. Columbia University Studies in History, Economics, and Public Law. Vol. 11.*

TOPICS FOR PAPERS.

1. Water supply of your city; source, method of storage, distribution material of pipes, house pipes, certified quality of water.
2. Sewerage system; how far extended; disposal of sewage; location of cesspools still used.
3. Ventilation of schoolhouses, churches, and public halls.
4. Sanitary condition of schoolhouses.
5. Afternoon teas and evening receptions; how to make them enduring.
6. City dust: how can it be prevented?
7. Cremation the sanitary ideal.

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*Volume and page numbers are separated by a colon; e.g., 10:141 means Vol. 10, p. 141.*

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- AND BRYANT, A. P.—Dietary Studies in Chicago. 76 p. O. Wash., 1898. (U.S.—Experiment Stations, Office of Bulletin. No. 55.)
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BOARD OF EDUCATION.

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SPECIAL REPORTS  
ON  
EDUCATIONAL SUBJECTS.  
VOLUME 16.

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SCHOOL TRAINING FOR THE HOME DUTIES OF WOMEN.

PART II.

BELGIUM, SWEDEN, NORWAY, DENMARK, SWITZERLAND AND  
FRANCE.

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*Presented to both Houses of Parliament by Command of His Majesty.*

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1906.

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PREFATORY NOTE TO VOLUME 16  
OF  
SPECIAL REPORTS ON EDUCATIONAL SUBJECTS.

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The present volume forms the second part of the series of Special Reports on the school training of women for their home duties, foreshadowed in the Prefatory Note to Miss Ravenhill's Report on this subject, published last year. The Board have been able to supply some of the more important gaps in the material there referred to, by the valuable and comprehensive account of what has been and is being done in Belgium, which opens the present series, and by the careful and interesting paper on Sweden. Mrs. Hierta-Retzius, who has been a zealous pioneer of the teaching of Domestic Economy in Sweden, has added to the value of this contribution by her Supplementary Notes, and for these the Board desire to take this opportunity of thanking her.

In the case of those reports, which were originally prepared before 1904, care has been taken to bring the information so far as possible up to date, by the addition of notes recording any important changes or developments in the teaching of Domestic Economy in the country with which they deal. No attempt has been made, however, to bring any statistics that may be found in them up to date.

The need for greater attention in our schools to the future domestic duties of girls has not diminished since these volumes were first planned. The late Professor Withers, a man whose judgment was far removed from any suspicion of narrow sympathies or reactionary tendencies, was greatly impressed by "the sterile imitation of Boys' Schools on their weakest side" which marked "many of the most distinguished Girls' Schools" that he had inspected. He was under the impression—an impression which many of the most thoughtful women are coming to share—"that the reaction against excessively domestic and feminine types of training has already gone too far, and that there is risk of a progressive diminution of interest among girls in house management." What may be called the "Secondary" aspect of the case has been clearly realised in Sweden, one of the most aristocratic, and in Switzerland, one of the most democratic countries in Europe. In both countries

great attention has been given to the needs of the middle classes, while those of the industrial workers have not been forgotten. In both much has been due to private initiative, supported however in Switzerland by the power of the organised local community. But if the needs of the middle classes in England have only been clearly seen by some of the more far-sighted, there are no two opinions that the pressure of economic and social conditions in a great industrial community is destroying this interest even more surely and rapidly among girls and women who have to work in factories and places of business.

It is this movement of opinion which makes the work being done in Belgium so important. There may be ground for thinking that the utilitarian attitude is in danger of over emphasis in the actual practice of the various types of Belgian school which teach household management as an important part of their curriculum, but it is impossible to deny the truth of the picture drawn by the Minister of Agriculture, Industry, and Public Works in a circular addressed in 1889 to the Governors of the provinces of the kingdom. After calling attention to the preponderant influence which the woman exercises on the welfare and morality of the family, the Minister goes on to ask "how the daughters of our working men actually prepare themselves to exercise this influence and to fulfil the mission which devolves upon them.

"Up to the present, leaving out of account the needlework which she learns at the primary school, a girl is supposed to serve her apprenticeship as future mother of a family at home. Assuredly this system would be the best, but it is only possible if the girl can carry on, in her own home, a trade that enables her to earn her daily bread.

"Now the exigencies of the organisation of modern labour have rendered this method inapplicable in the industrial parts of the country. The girl goes out early in the morning to the coal mines, to the works, to the factory; she often stays there all day and only returns home in the evening. She has, therefore, no opportunity of adapting herself to household duties, nor of acquiring the domestic virtues which will be necessary to her when, in her turn, she founds a new home. And not only is the opportunity wanting, but there is no inclination. When her daily work is accomplished she considers herself dispensed from every other occupation. Having worked as industriously and as long as her father and her brothers, she believes herself justified in resting when they do. It is, doubtless, but rarely that the thought of a preparation for future duties enters her mind. She thus arrives at the marriage period almost a

▼

stranger to all the necessities, as to all the responsibilities, of her new social condition.

“The girl's ignorance is still greater if, as is the case in certain industries, the mother of the family herself works in the factory and lives, for a great part of the day, separated from her children whom she confides to strangers or to charitable institutions.

“It is not surprising that the new home, established under these unfavourable conditions, soon presents a spectacle of the greatest moral and economic disorder. The income is squandered; the dwelling and the furniture are spoiled; the children are deprived of the necessary moral and physical care; the meals are badly and hastily prepared. Soon the head of the family, instinctively revolted by the appearance of permanent mess which his home presents, yields to the temptations of the public-house, and to the invitations of his comrades. Then the home, morally speaking, is dissolved. Continual discussions destroy the affection, and, as they grow up, the children, left to themselves and their education neglected, tend to absent themselves more and more from a home where there is nothing to cheer their eyes or delight their hearts.

“The evil inevitably increases from generation to generation, and we end by becoming accustomed to the idea that it is all normal and that we cannot change any of it.”

This is the problem that all industrial peoples are called upon to grapple with. It needs the gravest consideration and the most energetic measures. What can be done by the earnest efforts of unofficial persons convinced of the need for action is seen in the account given of the development of this work in Switzerland, but, above all, in Sweden, where the State has done little more than to second and support private initiative, where this showed itself effective. Even in Belgium, where the recently constituted Ministry of Industry and Labour, aided by the Ministry of Public Instruction, have done so much, it is the enthusiasm of individuals which lies behind the success of the movement. The ideals that inspire them are well expressed in the following quotation from the words of one to whom a very large share of the credit for all that has been done is due:—

“Je caresse une idée, et je mets tout en œuvre pour la réaliser: c'est de former dans nos écoles industrielles et professionnelles des hommes instruits, aptes, réfléchis, rangés, artisans de la prospérité générale, et d'autre part d'obtenir, par l'enseignement pratique que nous donnons dans nos écoles ménagères, des femmes économes, prévoyantes, éclairées et renseignées sur leur mission familiale, pouvant par le mariage

assurer le bonheur du foyer et servir d'exemple aux autres travailleurs. . . . Ce n'est peut-être qu'un beau rêve mais j'espère cependant qu'il se réalisera bientôt." \*

There is no need to say here that the present volume makes no claim to have given an exhaustive account of housewifery teaching on the Continent. Many countries † are quite unrepresented in its pages but useful information as to some of these will be found in "L'Éducation domestique des jeunes filles ou la formation des mères," Louis Frank (Paris, Librairie Larousse, 1904). Some parts of Germany were visited and reported on for the Board by Miss Ella Pycroft in 1901, but the advance made during the last few years in various parts of that Empire has been so great that it has not seemed advisable to issue her paper, though it is available for consultation at the Board of Education Library. Meantime a new report upon the work being done in Germany and Austria is in course of preparation. Some account, though not an exhaustive one, of domestic economy teaching in Baden will be found in a paper on "Continuation School Work in the Grand Duchy of Baden and in Canton Zürich," by Mrs. Barger, recently issued by the Board of Education.

The Board desire to take this opportunity of recording their thanks to the officials and private individuals, in addition to those already named, who have assisted in the preparation of this volume, especially to the Inspector General of Technical Education (Ministry of Industry and Labour), the Director General of Primary Education and the Director General of Secondary Education (Ministry of the Interior and of Public Education), Belgium; to Director Otto Salomon, Nääs, Sweden; to Dr. jur. Albert Huber, Staatsschreiber of the Canton of Zürich, and to Frau Coradi-Stahl, Federal Inspector of Technical and Domestic Schools for Women, Switzerland.

It should be added that, as in the case of previous volumes, the authors of the following papers are alone responsible for the terms employed and the opinions expressed.

Office of Special Inquiries and Reports,  
March, 1906.

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\* M. Eugène Rombaut, Inspecteur général de l'enseignement industriel et professionnel, avec rang de directeur général (Ministère de Industrie et du Travail).

† An interesting indication of the movement of opinion in Poland is offered by a small book called "Ideals in Practice" by the Countess Zamoyaska, translated from the French by Lady Margaret Donville. (London, Art and Book Co., 1903.)

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## HOUSEWIFERY INSTRUCTION IN STATE-SUPPORTED SCHOOLS IN BELGIUM.

[*Note.*—In the following report the term “housewifery instruction” is not used in the limited or technical sense to which it is sometimes confined, but is held to cover, in accordance with its literal meaning, everything that belongs to the internal management and work of a home; it corresponds to “*enseignement ménager*.” The term “*économie domestique*” is used in the Belgian Reports to represent either the theory and practice of household work (cooking, laundry work, etc.) when this is taught separately from needlework, as in primary and secondary schools, or theoretic instruction as opposed to practical work, as in the special housewifery schools; it has been given as “domestic economy” in both cases in the following pages, and it is hoped that the context will make any differences in meaning clear.

Section IV. of the report (p. 59 ff.) deals with the special housewifery schools and classes, which are the most important institutions in Belgium from the point of view of the training of girls for home life: The present arrangement of the report, beginning with Primary Education, has been adopted in order to show the development of this instruction through the various progressive stages of school life.—H. E. M.]

### 1.—PRIMARY EDUCATION.

#### A.—OUTLINE OF THE GENERAL SYSTEM OF PRIMARY EDUCATION.\*

Education in Belgium is not compulsory; it is free for poor children† between the ages of six and fourteen.

In the communal schools of the town of Brussels, education is free for all children living in the town; 13,994 children attended the nineteen free primary schools of the *Ville de Bruxelles* during 1903–1904. At the close of 1902 there were 827,165 children (boys and girls) in Belgian primary schools under State control; of these 774,378 pupils were receiving free instruction and 52,787 were paying pupils.

The progress that has been made in recent years may be measured by the fact that the proportion of young men at the age of military service (nineteen to twenty years), who are unable to read or write, has fallen from 29·33 per cent. in 1870 to 11·10 per cent. in 1902.

\* A paper on “Recent Legislation on Elementary Education in Belgium,” by Mr. M. E. Sadler and Mr. R. L. Morant, was published in Vol. I. of “Special Reports on Educational Subjects” (1897).

† The right to claim free education for children depends, inversely, upon the amount of State tax paid by parents and is regulated by law.

Ministry.

Primary, Secondary, and Higher (University) Education, when supported from State funds, are under the control of the *Ministère de l'Intérieur et de l'Instruction publique*.

Different  
Classes of  
Primary  
Schools.

The primary schools which receive State grants are of three kinds:—

1. Communal schools.
2. Schools adopted by the communes.
3. Private schools subsidised by the State.

*Communal Schools* are directed by the communes.\* In 1899 there were 4,383 primary communal schools with an attendance of 476,660 pupils.

*Adopted Schools* are private schools which, to a certain extent, are taken over by the communes; they receive communal as well as State support, and educate children who have the right to free instruction, and who are sent to them by the communes. There were 175,118 pupils in adopted schools in 1899.

The third class of schools are *Private Schools*† (i.e., schools under private control), which are not adopted by the communes, but which fulfil the conditions necessary for adoption. The State allows these schools grants on the same footing as the schools of the first two categories. There were altogether 2,368 adopted and private primary schools subsidised by the Belgian Government in 1899, with 134,023 pupils in the private schools.

Each commune is obliged by law to have at least one primary school, open to all children of both sexes for whom free education is claimed. The commune may organise its primary education by

\* The essential internal divisions of Belgium are the provinces and communes. There are 2,600 communes, each with its own elected council, burgo-master or mayor, and *échevins*. The *échevins* (two or more) are selected from the membership of the council and have executive duties to perform as salaried assistants of the mayor. Each of the nine provinces of Belgium has its own elective assembly—the provincial council; the most important work of the council is done by a standing committee of six members (*la députation permanente*).

Information as to the Belgian system of local government may be found in: "Municipal Government in Continental Europe." By Albert Shaw. (New York, The Century Co.) (1897).

† The number of private educational institutions in Belgium is considerable; the greater number of these are supported and directed by the clergy. There are two private universities, of which the one at Louvain is directed by the bishops. There are more than eighty small seminaries, institutes and colleges, of which fifty are under the control of the bishops, and thirty belong to religious bodies; most of these institutions have a large attendance—for instance, the *Institut Saint-Louis* at Brussels has nearly 1,500 pupils; more than sixty-five secondary schools for boys, of which twenty-five belong to the clergy and twenty-four to religious bodies; more than 150 institutions or boarding schools for girls, of which 107 are managed by nuns. There are also numerous primary schools, infant schools, and adult schools founded in great measure by the local committees of Roman Catholic schools, by the Brothers of the Christian schools, and by other orders. Further, in the great centres, private institutions exist, which especially prepare pupils for the higher technical schools and for the military school.

the creation or maintenance of one or more communal schools, or by the adoption of private schools fulfilling the legal conditions, or by a combination of these methods.

The communes may also support infant schools for children from three to six years of age, and adult schools, for pupils from the age of fourteen and upwards. In 1899 there were 2,198 infant schools and 2,615 adult schools in receipt of State grants.

Infant  
Schools and  
Adult  
Schools.

Schools attached to State-supported institutions for the deaf and dumb, and the blind, to orphan asylums and children's homes, to prisons, to the *dépôt de médecine* at Merxplas, and to the *maisons de refuge* at Wortel, the State reformatory schools and the *institution royale* at Messines, are under the jurisdiction of the *Ministère de la Justice*. As these institutions provide primary education, statistics relating to them are included in the Report on primary education of the Minister of the Interior and Public Education.

Schools for  
Defective  
Children and  
Reformatory  
Schools.

The *Œuvre de l'enfance anormale* has recommended and obtained, in some very populous centres, the establishment of special schools for poor children whose intellectual or physical infirmities prevent them from attending the public schools; teachers assist by giving up a part of their spare time, teaching these children for two or three half hours a week, either in their own or in the children's homes.

The three classes of *primary schools*, named above, are eligible for State grants, if they fulfil the necessary conditions. In order to be subsidised by the State, a primary school, whether communal, adopted, or adoptable, must be attended by at least twenty pupils who are legally entitled to free education;\* account is not taken, in calculating State grants, of pupils who receive free instruction by reason of local regulations, or of those who pay a fee. The school must be in a position to give a complete primary education, including the three standards or classes corresponding to the three degrees of the syllabus of primary education. For the purposes of grant, schools having at least the minimum number of free pupils prescribed, are arranged in three categories, according to the average number per class of pupils having a right to free instruction who attend:—

State Grants.

Third category.—Schools with twenty to thirty-five free pupils per class.

Second category.—Schools with thirty-six to fifty free pupils per class.

First category.—Schools with fifty-one (or more) free pupils per class.

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\* This minimum of twenty pupils is not demanded for the one communal school which every commune is obliged, by law, to possess (which school may be either communal or adopted), nor for communal, adopted, or adoptable schools established in communes or districts of less than 1,000 inhabitants.

State Grants The State grants to primary schools are determined according  
—continued. to the following rates :—

	Schools with only one class.	Schools with two or more classes.	
		For one of the classes.	For each of the other classes.
	francs.	francs.	francs.
3rd category - -	640	640	540
2nd category - -	690	690	590
1st category - -	740	740	640

In addition, if the one school (communal or adopted) obligatory by law in each commune, has less than twenty free pupils, it receives a grant of 640 francs ; schools (communal, adopted or adoptable) established in communes or districts with less than 1,000 inhabitants, with ten to nineteen free pupils, receive 540 francs, with less than ten pupils, 30 francs per pupil. Further regulations apply to special cases. In schools with several classes the grant is reduced by 100 francs for each class conducted by a teacher without a diploma and not definitely dispensed from the examination. State grants for primary education, in 1900, amounted to 15,219,025 francs.

*Infant schools*, communal, adopted, or adoptable, in order to receive State grants, must have suitable accommodation and furniture, a capable teaching staff, be open to inspection, give instruction according to the official syllabus, receive free the children, from three to six years of age, of poor people, and have an attendance of at least twenty free pupils, or in communes or districts with under 1,000 inhabitants, of at least ten free pupils. For the purposes of State grant, infant schools are divided into the same three categories as primary schools, according to the average number per class of pupils who receive free education. The grant is reduced for each class conducted by a teacher who does not possess a recognised teaching certificate. State grants to infant (or kindergarten) schools are given according to the following rates :—

	Schools with only one class.	Schools with two or more classes.	
		For one of the classes.	For each of the other classes.
	francs.	francs.	francs.
3rd category - -	250	250	225
2nd category - -	300	300	275
1st category - -	350	350	325

Schools in communes with less than 1,000 inhabitants, and an attendance of ten to nineteen free pupils, receive ten francs per pupil.

The regulations for *adult schools* (communal, adopted or adoptable) are the same as for infant schools as regards inspection and accommodation ; further, at least half the members of the teaching staff must possess a legal diploma for primary education, the school must belong to one of the three recognised classes of adult schools,\*

\* See page 26.

must be open for at least a hundred hours every year (except schools held on Sunday), must receive poor children over fourteen years of age (or, if they have left the primary school, over twelve years of age) free of charge, must never admit pupils who attend the primary school\*, and must have an attendance of at least ten, or, where the population is under 1,000, of at least six free pupils. Schools are divided, for the purposes of grant, into the following three categories :—

Third category.—Schools with an average of ten to twenty pupils receiving free instruction per class.

Second category.—Schools with twenty-one to forty free pupils per class.

First category.—Schools with forty-one free pupils and upwards per class.

Rates of State grants to adult schools :—

	Schools with only one class.	Schools with two or more classes.	
		For one of the classes.	For each of the other classes.
	francs.	francs.	francs.
3rd category . . .	120	120	100
2nd category . . .	160	160	140
1st category . . .	200	200	180

Adult schools in districts of less than 1,000 inhabitants and with six to nine free pupils, receive ten francs per pupil ; schools open only on Sunday, which are open for less than a hundred hours during the year, can receive, if the courses are given during at least seventy five hours a year, a grant equivalent to three-quarters of the normal rate. The grant is diminished by twenty-five francs for each class conducted by a teacher who has not a diploma for primary education and is not dispensed from the examination.

Instruction in the primary school consists of three courses or standards : the lower standard (*degré élémentaire*) to which children are admitted from six years of age ; the middle standard (*degré moyen*) (ages eight to nine, nine to ten) ; the upper standard (*degré supérieur*) (ages ten to eleven and eleven to twelve). Each standard thus covers two years and consists, if there are sufficient teachers and pupils, of two (or more) divisions or classes. The commune can add a fourth standard (*degré complémentaire*) which represents a seventh school year ; in 1899 there were sixty-four *écoles primaires supérieures* or fourth standards (forty-three communal, six adopted, fifteen private subsidised).

The communal council draws up the syllabus of instruction for communal primary schools, except for religious and moral instruction, which is entirely under the direction of ministers of the various denominations.

The following subjects are compulsory : religious and moral instruction (from which pupils may be dispensed) ; reading ;

\* An exception to this rule is made in the case of special housewifery courses.

writing; arithmetic and the metrical system; French, Flemish, or German, according to the locality; geography; history of Belgium; drawing; principles of hygiene; singing; gymnastics; needlework for girls; principles of agriculture for boys in rural communes. These subjects are compulsory in communal and adopted primary schools; private schools are not obliged to include religious and moral instruction in their curricula in order to receive State grants.

Other optional subjects may be added according to the decision of the communal council. In 1899 elementary principles of natural science were taught in 626 schools (of all three classes); a second language in 2,556 schools; principles of constitutional law and social economy (for boys) in 309 schools; book-keeping in 240 schools; domestic economy (for girls) in 1,116 schools; manual work (for boys) in seventy-four schools; principles of agriculture (for boys) in twenty-six schools; elements of a third language in twenty-seven schools.

A specimen syllabus of instruction, allowing 25 hours a week in each standard, which most communes have adopted without modification, was issued by the Minister of the Interior and of Public Education in 1897. The sections of this model syllabus which deal with needlework and domestic economy are given below (pp. 16 and 19); the syllabus in hygiene is given in Appendix B (p. 127).

School  
Hours.

School is held in the morning and afternoon, lasting two and a half or three hours each time, and every day of the week (except Sunday); Thursday or Saturday afternoon is a holiday.

Teachers  
and Train-  
ing Colleges.

The communal council appoints and dismisses its own teachers, but they have a right of appeal to the Government. A teacher in a communal primary school is obliged by law to be of Belgian nationality, and to hold a recognised teacher's certificate.

The communal council fixes the salaries of its teachers, but the Government has established an obligatory minimum scale of salaries according to the population of the commune.\* In addition to salary, the communes must supply teachers (men and women) with free lodging or an equivalent.

The State, the provinces and the communes have the power to establish training colleges, and to subsidise recognised private training colleges. In order to be recognised, or sanctioned, by the Government a private college must fulfil the legal conditions; these include an acceptance of the syllabus of instruction. In 1899 there were thirteen State training colleges for primary teachers, seven for men and six for women, with a total attendance of 737 pupils; forty recognised, or sanctioned, private training colleges, twelve for men and twenty-eight for women. Most of these colleges are boarding institutions.

\* Minimum scale of salaries (by law), *e.g.*—Fifth category, communes with 1,500 inhabitants and less: teachers (men and women), 1,200 francs; assistants, 1,000 francs. First category, communes with more than 100,000 inhabitants: men, 2,400 francs, women, 2,200; assistants (men) 1,400, (women) 1,200.



For admittance to a training college the student must be between fifteen and twenty-two years of age, and must pass a medical examination. The course lasts four years.

The curriculum includes as compulsory subjects all the subjects given above as obligatory and optional in primary schools (with the exception of a third language) and, in addition, pedagogy and method (theory and practice), elementary principles of the constitutional law of Belgium and of the legislation bearing on primary education, and *savoir-vivre*.<sup>\*</sup> Measures are taken to ensure absolute religious liberty to the students in both State and sanctioned private institutions. Practice in teaching is given in special practising schools attached to the colleges.

There is an entrance examination, including the compulsory subjects of primary schools; an examination, written, oral and practical at the end of each half year, and a leaving examination at the end of the course. The last named includes a written, an oral and a practical examination and a test in teaching. Students who pass the leaving examination receive the *diplôme d'instituteur*.

The Department of the Interior and of Public Education regulates the number and functions of the teachers for each training college, the syllabus of instruction and matters relating to the students, and is responsible, generally speaking, for the administration of the college.

Teachers' conferences are held, at the expense of the State, three Teachers' times a year, under the presidency of the head inspector where Conferences. practicable, otherwise of the district inspector. All communal primary teachers (men and women) are obliged to attend; attendance is optional for teachers in adopted and in private subsidised schools. The head inspector decides the programme for the conferences, and submits it for approval to the Minister. Papers are read, discussions held, and model lessons given; the papers and discussions may deal with anything which bears on the progress of primary education, and especially with the examination of the methods, books, and materials of instruction used in the schools.

There are also conferences twice a year for infant school teachers.

Inspectors are the servants of the central government; there are head inspectors and district inspectors. There is a special Inspectors. inspectress of needlework. In addition, there are communal directors, or inspectors, of communal schools.

## B.—THE TEACHING OF NEEDLEWORK AND DOMESTIC ECONOMY IN PRIMARY SCHOOLS.

### 1.—Introduction of Housewifery Instruction into Schools.

Organised instruction in domestic subjects, with the exception M. Germain's of needlework, † in Belgian schools under State control dates, broadly Report, 1887. speaking, from 1887. In July, 1887, M. A. G. Germain, Director

\* This subject (manners) is not given as a special course nor included in the examination.

† As regards needlework, see pages 13-14.

M. Germain's General of Primary Education, presented a report on the teaching of household work in primary girls' schools and in training colleges for women teachers, to the Minister of the Interior and of Public Education.

Report, 1887  
—continued.

The first chapter of the report dealt with the necessity of fitting girls for household work. The number of women and girls badly prepared for attending to domestic duties, M. Germain said, was very considerable in middle-class families, and still greater in the homes of the working classes. A visit to some villages, to some of the great industrial centres, to the populous quarters of cities, would offer a striking proof of the neglect of the domestic education of girls.

The reasons given for this neglect were numerous: "In the first place the bad domestic education of the mothers themselves; the insufficiency of their knowledge and of their intellectual and moral culture; the severe exigencies of material life, which take the woman away from home, the mother from her children, the growing girl from her mother and her teacher, to keep them all day, from Monday to Saturday in the field, in the shop, in the work-room, in the factory, at the coal mine. The verbatim reports of the Labour Commission appointed by the Government to conduct a wide inquiry into the conditions of industries and of workers, have only to be read to see that one of the principal causes of the misery of the working classes is the absence of order and economy in the home, the ignorance of the woman, her incompetency in the performance of domestic work. Consequently, administrators, masters, work-people alike demand measures that will ensure to the girl of the people, with a sufficient knowledge of domestic economy and hygiene, the ability to manage a home. It is towards the school that all look who desire to see the sentiment of personal dignity, the spirit of order, activity and economy, the love of home, awakened in our girls; they claim that it is at the primary school, above all at the housewifery school, that the domestic education of our girls should be undertaken."

Household work (*travaux du ménage*) is held to include:—

- (1) Needlework, principally knitting, sewing, cutting out and making ordinary garments; mending.
- (2) Household occupations properly so called, such as various ways of cleaning, washing and ironing linen, cooking, etc.

M. Germain's report dealt mainly with the second category. He reviewed the work that was being done in this direction in Germany, England, Austria, the United States of America, France, Switzerland and Belgium.

In Belgium, only the higher primary schools had a regular domestic economy course in accordance with a syllabus drawn up by the Government. Principles of domestic economy were taught to the pupils of the upper standard in many primary schools, not as a special, connected course, but, for the most part, in the form of occasional remarks and advice,

M. Germain gave, however, an interesting account of a visit he had paid to a school-mistress, who had started a cooking course for the pupils in her upper standard and had, to a great extent, succeeded, not only with the pupils but also with the parents and neighbours, whose co-operation she had gained; those of the latter who had leisure and means gave the girls opportunities for practice in their own kitchens.

The proposals made by M. Germain for improving this branch of education were issued as an order concerning the teaching of domestic economy and household work in primary schools, and in adult schools for girls, in the Circular, Ministry of the Interior and of Public Education, of the 1st September, 1887,\* addressed to the Governors of Provinces and intended, through them, for the information of communal authorities and teachers. As this circular laid the foundations for housewifery instruction in various classes and types of schools, it is given in Appendix A.

Ministerial  
Circular,  
September  
1st, 1887.

The Circular contained proposals for the training of girls for home life in the primary school, in a housewifery class to be attached to the primary school and in a special class for adults.

While it is obviously impossible to teach actual household work in the primary school proper, the Circular urged that regular instruction in the principles of domestic economy and hygiene, with practical demonstrations, should take the place of the occasional talks generally given, and that the teacher should encourage her pupils to do household tasks at home in illustration of what they learnt at school. In addition, needlework, which was already included in the primary school curriculum, was considered to form an essential part of the contribution of the primary school to the domestic education of girls.

To complete the instruction given in the primary school, it was proposed to attach a special class (*classe ménagère*) to the upper standard of the primary school. In this class the older girls could learn practical household work, *e.g.*, for two afternoons a week, and so put into practice the theoretic knowledge acquired in the schoolroom. Various simplifications of the curriculum of the primary school for girls were suggested in order to make room for domestic education.

The Circular further outlined the organisation of a proposed *classe ménagère* for adults.

The following pages will show how far these proposals have been carried out, and the organisation of the further developments which are controlled by the Ministry of Industry and Labour.

## 2.—The Teaching of Needlework.

The first administrative measures for promoting the teaching of needlework in Belgian schools date, according to M. Germain,†

Introduction  
of Needle-  
work as a  
Compulsory  
Subject in  
Primary  
Schools.

\* M. Germain submitted chapters of his work to the Minister as "*instructions*," and they were accepted.

† Appendix to the report on housewifery education by M. Germain, mentioned above, pages 11-12.

from Maria Theresa. Her general ordinance, published the 6th December, 1774, contains the following direction :—“ *Là où il y a des écoles distinctes, les filles seront instruites séparément. On leur enseignera autant que possible la couture, le tricot, et tout ce qui est convenable à leur sexe.*” But in spite of this promising beginning, it was not until 1879 that needlework was made a compulsory subject in primary schools for girls.

In 1874 the Minister of the Interior and of Public Education charged the Central Commission of Primary Education with an examination of this question. The Commission adopted the conclusions presented by M. Germain, at that time Inspector for West Flanders. Their report dealt with the actual condition of needlework instruction and with various measures proposed by Inspectors with regard to syllabus, methods, materials, teachers, etc.

By circular of the 26th June, 1877, the Minister of the Interior directed that the proposed syllabus should be adopted. This syllabus contained instruction (1) in needlework, (2) in principles of hygiene, and domestic economy.

The laws of the 1st July, 1879, and the 20th September, 1884, included needlework among the compulsory subjects in primary girls' schools. The syllabus of 1877 was maintained, as regards this subject, and was reproduced in the model syllabus issued by the Government in 1897 (see page 16).

Aims and  
Methods of  
Teaching.

Needlework instruction in primary schools aims chiefly at practical results, and by practical is meant everything which is applicable in the homes of working men, labourers, small tradesmen, etc. Thus, for instance, great attention is paid to the making and mending of ordinary garments, and fancy work is only taught when useful kinds of sewing have been mastered, and then it consists principally of trimmings for linen and clothes. While the pupils are only taught work adapted to their practical needs, to the conditions in which, presumably, they will have to live, an attempt is made to form their taste and to show them that simplicity favours, rather than excludes, elegance; no luxury in the way of bought ornaments, even of small cost, is allowed.

Needlework is taught to the whole class simultaneously, with individual correction. The teacher herself generally institutes her own methods of instruction; as a rule the first step consists in inductive explanations and demonstration before the pupils. The teacher does everything on a large scale so that all the children may see; the knitting stitch in the lower standard, for instance, will be shown with large wooden needles, and with thick wool of two colours, used alternately for each row of stitches, so that each stitch is distinguishable; this is followed by an examination of knitted articles of real sizes—stockings, etc. In a similar way in sewing, the different stitches will be first demonstrated on canvas upon a frame, with a big needle and thick coloured thread. The learning of each stitch is followed by practical applications, at first simple and then more advanced; the latter combine two or

more different stitches. When pieces of work are too difficult for the pupils of the lower standard to finish, they are handed over to the pupils of the middle or the upper standard in order to teach the girls to help each other; cuffs, for instance, are sometimes finished with crochet work by the pupils of the middle standard, and children's petticoats knitted in strips in the middle standard, are joined and put into a waist-band by the pupils of the upper standard.

In the upper standard, where cutting out is learnt, measurements are taken by one pupil from another before the class; the pattern is drawn and cut out in paper and afterwards in the material, having been first studied in the made-up article; then comes the necessary tacking together, fitting, correcting and making up. The lessons in cutting out are accompanied by talks on raw materials, the choice of stuffs from the point of view of price, usefulness, taste, their hygienic properties, etc.; the mistresses also make technological collections (cotton industry, wool industry, etc.) and collections of patterns.

All the work done by the pupils is in real sizes and not on a reduced scale. As far as possible, articles are chosen which can be used by the girls themselves; it is hoped that this will help the pupils to realise the usefulness of needlework, and that the pleasure they take in it will develop their taste for manual occupations.

The necessary materials—thread, wool, knitting and sewing needles, material, etc.—are supplied gratis by the communal council (in the case of private subsidised schools, by friends of the schools) to pupils who receive free instruction, at the rate of one to one and a half francs per pupil. In some communes the pupils are given all the articles which they make themselves; in others, these articles are distributed at the end of the school year, or at the beginning of winter to the neediest children in the school.

At every favourable opportunity the subject of other lessons is chosen so as to recall or enforce the principles taught in the needlework lessons. In arithmetic, for instance, in the lower standard the pupils calculate the cost of the work that has been done (the wool used for cuffs, etc.); in the middle standard they are taught to calculate beforehand the cost of the stuff and materials necessary for the work, and to translate into figures the economy of doing certain work themselves; in the upper standard they do similar, but more difficult, exercises. Subjects bearing on needlework will be chosen for reading, writing, dictation lessons—e.g., the usefulness or the pleasure of needlework, a *résumé* of what has been learnt, good taste and simplicity in dress, etc.

Drawing, in girls' schools, is taught with especial reference to needlework, principally in the middle and upper standards. The model course issued by the Government includes designs for letters and figures for marking, for borders, frillings, and embroidery

of various kinds; patterns for various garments—collar, apron, chemise, bodice, etc.; representations of the various kinds of darning and patching; and lessons on the choice of colours for embroidery, for dress materials, etc.

Model  
Syllabus.

The specimen syllabus issued by the Ministry in 1897 allows three hours a week for needlework in the lower standard (first two school years), and four hours in the middle (third and fourth years), and upper (fifth and sixth years) standards; there are generally four lessons a week. The following is the model course laid down for this subject:—

#### LOWER STANDARD.

1. Knitting a band or garter (two needles): study of the stitches: stitches on the right side; stitches on the wrong side; edges; increasing and decreasing; how to cast on stitches.
2. Knitting (four needles): cuffs.
3. Socks: study of relative proportions, casting on and knitting.

#### MIDDLE STANDARD.

Recapitulation of the preceding course.

1. Knitting stockings: study of the relative proportions; drawing a stocking and its different parts in their relative proportions; casting on and knitting; how to measure the stocking in course of making it; how to strengthen the heel.
2. Study of cross stitch on canvas: letters and numbers.
3. Elements of sewing: running; hemming; backstitching; overcasting; seam; hem; French double seam; oversewing selvedge; oversewing folded edge.
4. Making simple and easy articles: towels, napkins, handkerchiefs, aprons, women's chemises; patching.

#### UPPER STANDARD.

Recapitulation of the preceding course.

1. Knitting a vest, mittens.
2. Marking linen; letters and numbers.
3. Stitching, gathers, button-holes, eyelet-holes.
4. Mending garments: simple darning, and darning according to the web, of stockings; patching linen and garments; fine darning on linen and table-linen.
5. Cutting out and making easy garments, especially chemises and bodices.

*Note.*—Fancy work: crochet, embroidery, tapestry work, etc., should only be taught to those pupils who have mastered useful sewing.

Brussels  
Primary  
School  
Course.

The needlework syllabus drawn up by Mlle. Gilias, inspectress of needlework, is followed in all the communal primary schools of the inspectorial district of Brussels. The syllabus is arranged in six school years; three hours a week are devoted to needlework during the first five, and three and a half hours during the sixth school year. The first and simplest sewing stitches are taught from the first year onwards; every year revision is made of the stitches already learnt. Raw materials are furnished gratis by the communes, at the rate of one and a half francs per pupil; all the apparatus necessary for instruction—models, charts, frames, large

wooden needles, thick wool, etc.—are also furnished by the communes, and are occasionally supplemented by the teacher. The needlework lessons are given to all the class together, with individual help and correction; the instruction is to be given methodically, to be as inductive as possible, and to appeal to the pupil's intelligence.

I heard some interesting lessons in the communal primary schools for girls, *rue Gallait*, Schaerbeek (a suburb of Brussels), and in the communal primary school, No. 17, *rue des Six Jetons*, Brussels.

To teach new stitches, a thick needle is used and a large frame, woven with coarse thread of different colours; diagrams showing each stage in the new process are drawn on the blackboard. The teacher stands before the class, holds up the frame so that all the children can see, and slowly makes the new stitch (explaining each step) and showing exactly how it is a variation on what they already know; reference is also made to the diagrams on the blackboard. When all the children appear to understand they take their needles and pieces of material and make the various steps of the stitch in time with the teacher—hold the needle in position, put the point in the right spot at a correct angle, take up the threads, push the needle through, etc.; when one or two stitches have been made, the teacher looks at each child's work and gives the necessary help and correction. Knitting is taught in a similar way, the teacher using large wooden needles and thick wool.

The children make the new stitches on pieces of white material with coloured thread; the material and thread used are finer from year to year. In the first year (ages six to seven), for instance, running and backstitch on soft, canvas material; in the second year (ages seven to eight), cross stitch, in various patterns on canvas, and revision of the stitches learnt in the first year, back stitch and running, applied to seams on linen canvas material; third year (eight to nine years), letters and figures in cross stitch on canvas, revision of stitches on fine linen canvas, fine seams on the straight, on the cross, etc., and hems; fourth year (ages nine to ten), more elaborate letters and numbers in cross stitch on finer canvas, revision of stitches, herring bone stitch and hemstitch, entering insertions, various kinds of patches; fifth year (ages ten to eleven), cross stitch, letters and numbers on fine linen canvas, hemstitch, joining insertions, putting on buttons, hooks and eyes and tapes, gathers, tucks, plaits, patches; sixth year (ages eleven to twelve), fine darning and revision of earlier stitches, etc. The pieces of material on which the stitches are first practised, are joined together into one long strip, forming a sampler, or *résumé* of all the stitches included in the syllabus, which is given to the girl who has made it at the end of her school course. These samplers are useful to the teachers as showing exactly what each child has learnt in previous classes, and to the inspectress, who can by this means see if the syllabus is regularly carried out in each year.

Brussels  
Primary  
School  
Needlework  
Course—  
*continued.*

Special attention is paid to the practical mending of garments from the fourth school year onwards. A table, called "table of mending," drawn up by the teacher and exposed in the class-room, gives an account of the mending done by each pupil during the course of the year; this method has been adopted to encourage the children to bring to school used garments from home, and to overcome the false shame some of them feel.

Knitting is taught from the second to the fourth year. Simple darning of stockings is learnt in the fourth year, darning according to the web, more elaborate and fine darning in the fifth and sixth years. Fancy work is taught from the fourth year to pupils who have thoroughly learnt the useful work included in the syllabus for the year; it consists chiefly of crochet borders for knitted garments, trimmings for underlinen, simple embroidery, etc. Drafting, cutting out and making simple garments are also taught.

As soon as the children know a new stitch, they apply it practically—on aprons, chemises, etc. In one class I saw, the girls were trimming skirts simply with braid, in patterns designed by them in drawing lessons. Great care is taken to teach the pupils to waste nothing; scraps of material left over from underclothes, for example, are made into nightdress bags. Similarly with knitting, a practical use is made of everything; squares by which increasing and decreasing are learnt, will be joined together, feather stitched, edged with crochet, and so made into a cot cover; a small practice piece of plain knitting, made in the first school year, will be edged with crochet and made into a child's bib; similarly strips of knitting, including perhaps two different stitches and made by seven or eight girls in the first year, will be joined, edged at the bottom with crochet and put into a band, making a child's petticoat; or again, the first attempts of the children in the second year to knit with four needles will be converted into children's vests.

Owing to the courtesy of Mme. Clerebaut, directress of the primary school for girls in the *rue Gallait*, Schaerbeek, examples of the needlework done in a primary school (Brussels) may be seen at the Board of Education Library.

### 3.—*The Teaching of Domestic Economy.*

Aims and  
Methods of  
Teaching.

Domestic economy is an optional, not a compulsory, subject in the primary schools; in 1899 it was taught in 1,116 schools.\*

In teaching this subject in primary schools special attention is paid to what is useful and practical, and to possible comfort, but any appearance of luxury is avoided. The aim of the instruction is, briefly, that the daughters of working men should learn to use the resources at their disposal to the best advantage, to have intelligence and taste for household occupations as well as practical skill, and, generally speaking, to be happy in the actual conditions of their lives. Particular stress is laid on the influence

\* In 648 communal, 252 adopted, and 216 private subsidised schools.



of the housewife in preventing intemperance and in promoting prudential measures; and an attempt is made to counteract, by wholesome and practical school education, tendencies towards vanity, a taste for dress and false luxury.

The lessons have an essentially practical bearing; inductive methods of teaching are employed, and the teachers are expected to exercise the reasoning powers of their pupils. The syllabus is not in any way binding; the teachers can modify it according to the particular needs of the pupils and according to local conditions, which vary, for instance, in agricultural and in industrial neighbourhoods.

As with needlework, indirect application, or correlation, is adopted as much as possible; reading, writing, arithmetic, botany, hygiene and other lessons are brought into touch with domestic economy. Particular importance is attached to the principles of domestic hygiene, to the study of nourishing and medicinal plants, of certain poisonous plants, and to a knowledge of the elements of practical medicine indispensable to the mother of a family.

The teachers encourage the girls to practise at home what they learn at school, and to apply principles of order and neatness to their own persons, and also to their younger brothers and sisters. In most well-conducted elementary schools, the girls, in turn, are expected to keep their own classrooms clean and tidy—polish handles, dust, etc.—in addition to the ordinary functions of a monitress.

In rural districts, many primary schools have a garden\* where the pupils are given practical instruction. One part of this garden is sometimes reserved for ordinary medicinal herbs, and for some poisonous plants, especially those which are easily confused with certain plants used in cooking.

In the specimen syllabus for primary schools (1897), already Model referred to, domestic economy is given among the optional courses. Syllabus. It will be seen that the syllabus in this subject, as follows, is on the same lines as that proposed in 1887 (see Appendix A, pp. 120-122).

#### PRINCIPLES OF DOMESTIC ECONOMY AND HOUSEHOLD WORK.

(Girls' Schools.)

##### LOWER STANDARD.

*Very simple talks on the following subjects:—*

1. *Garments* of a little girl; order and preservation.
2. Some *furniture* for kitchen, dining-room, bedroom. Necessary care of it.
3. Some *food substances*; how to serve them at table.
4. *Charcoal* and *wood* for burning; precautions to take when the fire is lighted.

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\* In 1899, there were 3,680 gardens belonging to communes and attached to primary schools.

5. *Candle and lamp* ; dangers to avoid.
6. Some *garden plants* for decorating the house ; use to make of them

## MIDDLE STANDARD.

*Inductive and practical talks on the following subjects :—*

1. Washing *linen and clothes*.
2. Cleaning *table-service and furniture*. Sweeping the kitchen and rooms of the house ; dusting.
3. Qualities and preservation of *meat, fish, eggs, milk, butter, bread*. Picking and cooking vegetables.
4. How to prepare a *fire* ; precautions to take in lighting it.
5. Cleaning and use of a *lamp*.
6. Weeding and watering garden plants. Preservation of fruit. Arrangement of *bouquets of flowers*.
7. How to *lay the table*, to serve and to clear away.

## UPPER STANDARD.

*Inductive and practical talks, sometimes accompanied or followed by reading or composition exercises, on the following subjects :—*

1. Washing and ironing small articles of *lingerie and of dress*. Taking out stains and keeping garments in repair.
2. Cleaning and care of *kitchen utensils* and of the principal furniture of a house. Cleaning kitchen and rooms.
3. Choice and preservation of the principal *food substances* and of milk, coffee, beer.
4. Use of *ordinary combustibles* ; lighting a fire ; care of a stove.
5. Choice, care and use of a *lamp*.
6. Weeding, thinning, transplanting, hoeing, watering, etc., the *garden vegetables*. Care of *flowering plants*.
7. *Table service*.
8. Care of *fowls and poultry yard*.

Practical  
Class for  
Girls in the  
Upper  
Standard.

It will be seen from the above syllabus that, in the lower and middle standards, the domestic economy lessons consist of theoretic instruction in the form of familiar talks. These theory lessons are continued in the upper standard but, at the same time, the pupils do practical household work in the *classe ménagère* ; the domestic economy instruction is thus followed, in the last one, or two, school years by direct application. Although the *classes ménagères* attached to the upper standards of primary schools are a completion of the primary school course, and belong in a measure rather to primary than to technical education, they are dealt with in Section IV. of this report (page 59 ff.), together with the special housewifery schools and classes for adults, because they are, like the latter, subsidised by, and under the control of, the Department of Industry and Labour.

École Rue  
Gallait,  
Schaerbeek  
(Brussels).

As an example, however, of a practical housewifery class attached to a primary school, which does not fulfil the conditions necessary for grants from the Ministry of Industry and Labour, I may refer to the communal primary school for girls in the *rue Gallait*, Schaerbeek (a suburb of Brussels). The school is situated in a large and handsome building ; the class rooms open out of a central hall, or upstairs, out of a balcony above the hall, and they are all lighted from the left, and have the most approved desks

and fittings. The housewifery class is held in rooms in the basement, consisting of a large kitchen, a recess for brooms, pails and other utensils which spoil the pleasant appearance which a kitchen ought to have, a larder, wash-house, ironing room, and a dining-room to accommodate fifty children from the kindergarten section of the school.

The practical work includes needlework, cutting out and making articles of *lingerie* and mending, taught by a primary school teacher, and household work (including cleaning the premises, washing, ironing, cooking), taught in the housewifery class. Girls from the upper standard, sixth school year (from twelve years of age), are admitted to the housewifery course. Twenty-eight girls attend the course, working in seven groups of four pupils; each group works in turn for a week at a time, so that each pupil devotes five weeks in the school year to household work, which, in the opinion of the head-mistress, is a sufficient length of time.

During the week the pupils work under the direction of a housewifery mistress at practical household work, as follows:—Every day the preparation of a dinner; once a week, washing, ironing, complete cleaning of premises, furniture, kitchen utensils. The pupils, in turn, help the mistress with the meals for the infants admitted to the *cantine*, and by this means they learn a number of things indispensable in the feeding of children. Lessons begin with the explanation of the menu; the girls are then occupied with the various culinary preparations, supervise the cooking, copy the menu, calculate the cost price, lay the table, dine, wash up the dinner service and put everything tidy. The menus of the meals are arranged so as to provide nourishing food by means of varied and inexpensive dishes; examples are given below. The afternoon is devoted to the other household occupations. The pupils themselves do the shopping, but the school provides certain food materials. The pupils keep a note-book, into which they copy the menus, price of provisions, and cost price, and a note-book giving a *résumé* of the method of preparing soups, meat, vegetables, etc., length of cooking, the quantities to use for a household of six people, principles relating to washing, ironing, cleaning; further, in turn, they keep the journal of laundry work, daily expenses, repairing of utensils, and mending of clothes. The cooking teacher reports, at the end of each week, on the girls' conduct and aptitude for household work; the parents are informed of her report by the *bulletin de ménage*, submitted for their signature.

PRIMARY COMMUNAL SCHOOL FOR GIRLS.

RUE GALLAIT, SCHAERBEEK.

Menus.

March—

*Soupe aux poireaux*  
*Epinards à l'oseille*  
*Pommes de terre*  
*Flan*  
*Pain et*  
*Bière.*

April—

*Polage printanier*  
*Rôti de bœuf*  
*Gâteau de pommes de terre*  
*Pain et*  
*Bière.*

May—	<i>Soupe aux céleris</i> <i>Omelette au lard</i> <i>Pommes de terre</i> <i>Fraises</i> <i>Pain et</i> <i>Bière.</i>	October—	<i>soupe au cerfeuil</i> <i>Epaule de mouton</i> <i>Gâteau de pommes de terre</i> <i>Pain et</i> <i>Bière.</i>
June—	<i>Soupe aux pois cassés</i> <i>Pain de veau</i> <i>Pommes de terre</i> <i>Pain et</i> <i>Bière.</i>	November—	<i>Potage Julienne</i> <i>Bifteck</i> <i>Pommes de terre frites</i> <i>Pain et</i> <i>Bière.</i>
July—	<i>Soupe printanière</i> <i>Purée de pommes de terre</i> <i>Gâteau de semoule</i> <i>Pain et</i> <i>Bière.</i>	December—	<i>Soupe aux tomates</i> <i>Jambon, carbonnades de porc</i> <i>Hoche-pot</i> { <i>Choux blancs</i> <i>Carottes, oignons</i> <i>Pain et Bière.</i>

The communal administration (Schæerbeek) defrays the cost of the cooking instruction; the grant of two thousand francs is handed in advance to the directress who keeps detailed accounts of the expenses and submits them for approval to the *Échevin de l'Instruction publique* at the end of each quarter.

This new organisation, which is due to the directress, has been adopted since 1899. The co-operation of the housewifery class with the *cantine scolaire* is said to produce excellent results from the point of view of the girls' practical education.

The *cantine scolaire* is open all the year, or for at least 220 days. The following infants are admitted: children of poor parents; those whose parents are absent from home at work all day for the support of their family; children with delicate constitutions. Members of the staff take it in turn to superintend the *cantine* for a week. As the little children come down to the dining-room, the housewifery pupils have to see that their faces and hands are clean and that they are ready for the meal; then the children sing a song together while the teacher superintending, with the help of the housewifery pupils, serves the soup. When dinner is over the children have games out of doors if the weather permits.

#### C.—TRAINING OF TEACHERS OF NEEDLEWORK AND DOMESTIC ECONOMY FOR PRIMARY SCHOOLS AND FOR TRAINING COLLEGES.

Hygiene,  
Needlework  
and  
Domestic  
Economy in  
Training  
Colleges.

As already stated, hygiene, domestic economy and needlework are included in the curriculum of training colleges for primary school mistresses.

The State syllabus in hygiene covers practically the same ground as that appointed for State secondary schools for girls (given below, page 34), but in the training college syllabus first-aid is treated in greater detail, there is a paragraph relating to age, sex, constitution, temperament, heredity, habits, and a section on school hygiene: position and arrangement of school premises,

cloakrooms, playgrounds, lavatories, etc., heating, lighting, ventilation, school furniture, symptoms of illnesses, intellectual work.

Hygiene is taught for one hour a week, in the second year in women's training colleges, and in the third year in colleges for men. Two questions on this subject are included in the written paper at the half-yearly examinations, and at the leaving examination.

Needlework is taught for three hours a week in the first and third years, and two hours a week in the second and fourth years. As in the primary schools, this instruction is given as class teaching, inductively and with demonstrations. The syllabus includes: knitting; marking; patching, darning, darning according to the web, and damask darning\*; the usual sewing stitches; cutting out and making bed linen, underlinen, aprons, child's dress, girl's dress, man's shirt, boy's costume, girl's dressing-gown; use of the sewing machine; fancy-work (crochet, embroidery of initials, etc.). In the fourth year there is a special section on the teaching of needlework at the primary school:—knowledge that a teacher of needlework should possess; the primary school syllabus; need for class-teaching of needlework as of other subjects; inductive methods; the application of drawing to needlework; practice lessons.

There is no examination in needlework either in the half-yearly examinations or in the leaving examination. The examiners assign marks to this subject according to the report of the teachers on the pupils' work during the half-year (for half-yearly examinations), or during the year (for the leaving examinations). The examiners may also demand to see the work that the pupils have done during the preceding six or twelve months.

In the drawing syllabus there is a direction to the effect that, in training colleges for women, the drawing course should be brought into touch with the needlework instruction, by a suitable choice of subjects, *e.g.*, flowers, leaves, embroidery, patterns, laces, etc.

Domestic economy is taught for one hour a week in the second year, three hours in the third, and two hours in the fourth. The instruction is inductive, experimental and practical, and the teacher is expected to encourage her pupils to make little collections in connection with each part of the course. The theory lessons deal in the usual way with questions relating to the dwelling, furniture and utensils, heating, lighting, food, accounts, linen and clothes, washing and ironing, etc. Practical work accompanies or follows the theoretic instruction, and consists of cleaning, cooking, etc. For the practical lessons, the pupils are divided into groups; each group works for an hour a week in the second school year, and for one hour and a half in the third and fourth years. In addition, each girl makes her own bed, and keeps her room tidy. Cooking is taught in a small kitchen, economically equipped; meals are prepared for eight to ten people, and served, as dinner

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\* The pupils devote half an hour a week to mending their clothes.

or supper, for the pupils of the cooking group and for others chosen with the approval of the directress.

At the half-yearly examinations of the second and third years, and at the leaving examination, there are written questions, and a practical test in domestic economy.

In their course on elementary natural science and horticulture, the students have lessons on gardening and on the care of domestic animals.

Temporary  
Courses of  
Domestic  
Economy.

Temporary normal courses of domestic economy and household work for teachers in communal and adopted schools were first organised in 1888. These courses, lasting about four weeks, are held at State or sanctioned training colleges during the summer holidays. Teachers and assistant teachers in communal and adopted primary schools are admitted to the course. In 1899, forty teachers attended, the maximum number allowed.

The course includes theoretic instruction in domestic economy, in principles of hygiene and of horticulture, and practical work : middle-class and artizan cooking; household cleaning, etc.; washing and ironing; gardening.

Special  
Diplomas  
and Certifi-  
cates :—  
(a) Needle-  
work.

*Diplômes de capacité pour l'enseignement des travaux à l'aiguille dans les écoles normales primaires* were instituted in 1890. Only holders of the recognised primary school teacher's diploma are allowed to sit for the examination, at the earliest, one year after obtaining their diploma. The examination includes a written paper, practical work and a teaching test.

The written examination deals with methods of teaching needle-work in primary schools and in normal schools. It occupies three hours and twenty-five marks are allotted to it.

The following are the practical tests:—i.—Mending (25 marks); ii.—some piece of hand-sewing (20 marks); iii.—some piece of machine sewing (10 marks) (i., ii., and iii. together occupy 2½ hours); iv.—cutting out and tacking together an article of *lingerie* chosen by the examiners from the training college syllabus (3 hours—30 marks); v.—cutting out and tacking together a garment chosen by the examiners (3 hours—30 marks); vi.—questions relating to the various kinds of materials used for *lingerie* and dressmaking (10 minutes—10 marks). The tests iv. and v. include taking measurements, drafting patterns, cutting out and tacking together, first fitting and corrections, final fitting.

The teaching test consists of two lessons to be given by each candidate, the subject of one being chosen from the primary school syllabus, and of the other from the training college syllabus (1 hour, 50 marks).

To receive a diploma, the candidate must obtain at least 65 per cent. of the total number of marks, and at least 50 per cent. of the marks assigned respectively to the written test, to the teaching test and to each of the practical tests (i. to v.); to pass with distinction, 75 per cent.; with great distinction, 85 per cent.

Similar in organisation and scope to the above, and instituted at the same date, is the examination for the *certificat de capacité* for teaching needlework in primary schools. Teachers and assistant teachers in communal, adopted or private primary schools, and teachers in the practising schools attached to training colleges, are admitted to the examination. The following shows the scope of the examination :—

	Marks:
A. Written paper (2 hours) - - - - -	20
B. Practical tests :—	
1 { (a) Mending - - - - -	(2½ hours) 50
(b) Handsewing - - - - -	
(c) Machine sewing - - - - -	
2 Cutting out and tacking together a garment (3 hours) - - - - -	50
C. Teaching test (a lesson on some subject chosen from the primary school syllabus) (½ hour) -	50

Four diplomas and certificates were delivered during 1897-1899.

The regulations for admission to the examinations, and the portion of marks necessary for obtaining the special diploma and certificate for teaching domestic economy are the same as in the case of the above needlework examinations, which were started at the same time.

The *diplôme de capacité* for teaching domestic economy and household work in training colleges for primary school teachers, is delivered after an examination including written, practical and teaching tests.

The written examination lasts four hours, and includes two questions on hygiene (20 marks), two questions on domestic economy (25 marks), and two on horticulture (20 marks).

Seventy-five marks are allotted to the practical examination, for which the candidates are divided into groups of six to eight, each group working for four to six hours. Each candidate must clean part of the house or some furniture or household utensil ; wash and iron one or two articles of *lingerie* or a garment ; cook two dishes, one, soup or fish or meat, the other, vegetables or eggs or sweet dish.

The teaching test consists of two lessons, lasting one hour together, to be given by each candidate ; the subject of one lesson is chosen by lot from the training college syllabus (35 marks), that of the other from the primary school syllabus (25 marks).

For the *certificat de capacité* for primary schools :—

	Marks.
Written test { 1. Principles of hygiene and of domestic economy (20 marks)	(2½ hours) 30
2. Principles of horticulture (10 marks) - - - - -	
Practical test (same as above)—(4 to 6 hours for each candidate) - - - - -	40

	Marks.
Teaching test (on a subject chosen by lot from the syllabus for the upper standard of primary schools) ( $\frac{1}{2}$ hour for each candidate)	30
Twenty-seven diplomas and certificates for domestic economy were gained during 1897-1899.	

#### D.—ADULT SCHOOLS.

General  
Organisa-  
tion.

Adult schools proper are under the authority of the Ministry of the Interior and of Public Education. The communal council regulate the establishment and organisation of adult schools and determine the syllabus. The conditions necessary for the receipt of State grants and the rates of grant have been given above.

To recapitulate briefly:—an adult school may be either communal, adopted, or private but fulfilling the conditions necessary for adoption; a communal school must be open to all the inhabitants of the commune over fourteen years of age, or over twelve years of age if, for legitimate reasons, they have definitely left the primary school; pupils who attend a primary school may not attend an adult school (exception to this rule is made for the special housewifery courses); at least half the members of the teaching staff must possess a legal diploma for primary education; the school must provide suitable accommodation and be open for inspection; lessons must be given for at least a hundred hours every year, except when the school is held on Sunday only, when the minimum number of hours is seventy-five; there must be an attendance of at least ten, or, where the population is under 1,000, of at least six pupils receiving free instruction\*; the school must belong to one of the three following classes: (a) an elementary course for young men and women who have not had a primary education or who have only had an incomplete primary education; (b) a course of repetition and improvement for young men or women who have attended the three standards of a primary school; (c) special courses of natural science, agriculture, practical geometry, languages, domestic economy and household work including needlework (syllabus of the primary school), book-keeping, etc.

Ministerial  
Circular,  
1902.

On July 30th, 1902, the Minister of the Interior and of Public Education addressed a circular to the governors of provinces on the subject of adult schools, with the aim of bringing these courses more and more into harmony with the needs of localities.

The circular begins by recalling that the third class of adult schools consists of "special courses of natural science, agriculture . . . domestic economy and household work including needlework," and points out that the communes are free to give their adult schools the special character which seems to them useful so long as these schools, in aim, organisation, and syllabus,

\* The communal council decides what children shall receive free instruction and fixes the fee to be paid by the others.



come under one of the three classes entitled to State grants; few communes, however, had taken advantage of this latitude. The special attention of inspectors is directed to this point; their duty is not only to examine how and with what success instruction is given in adult schools, but also to see if this instruction corresponds to local needs, if it sufficiently prepares the majority of the pupils for their future occupations and careers. The circular proceeds:—

“A very great number of young people in rural districts will one day become agriculturists, and it may be said that almost all the girls will become housewives; this is true for town as well as for country girls. If this important consideration is taken into account, the necessity is recognised of giving a strongly agricultural tendency to adult schools for boys in rural districts, and of accentuating the domestic tendency of adult schools for girls in all localities alike.

“Still more than the primary school the adult school must be the school for life, the direct preparation, in immediate touch with real life, for the career which the pupils are following already or which they will soon follow.

\* \* \* \* \*

“Parallel with these applications [to the future occupations of girls and boys] of fundamental principles acquired at the primary school, it is necessary to have, at the adult school, a special syllabus including the subjects indispensable to the intelligent practice of each of these occupations or professions.

\* \* \* \* \*

“I think it useful to add some considerations relative to the housewifery schools for adults (*écoles d'adultes ménagères*).

“The majority of pupils attending these schools will some day be entrusted with the direction of a modest household: the cottage of a labourer or farmer, the humble dwelling of a workman. It is this modest domain that they must be taught to manage profitably, to adorn economically, in order to make order, cleanliness, comfort, and happiness reign there. If the head of the family, if the children, find at home what is indispensable to the well-being of the body, to the affections of the heart, to peace of mind, one may be sure that they will not seek these things out-of-doors, at public-houses, in noisy gatherings.

“It is therefore advisable to establish the housewifery school for adults in premises resembling as much as possible, in extent, arrangement, and furniture, those in which the girl will fulfil later her beneficent mission. To initiate her to household work in vast and luxurious surroundings provided with perfect apparatus, is to expose her to bitter disappointment, even despondency, on the day when she must confine her activity and aspirations in a home as meagre as that of a labourer or workman generally is. What is primarily necessary to the girl of the people is a domestic education really in touch with her future condition, and not a so-called preparation in which the inevitable realities and demands of practical life are not sufficiently taken into account.

“The primary schoolmistress seems specially fitted to preside over the organisation and direction of the housewifery school for adults; but there are very many localities where the only member of the teaching staff is a man. Is it necessary to give up the organisation of such a school in these neighbourhoods? As a general rule the adult school for girls should be held in the day time; moreover, for the same group of pupils, three lessons a week of two and a half hours each are sufficient. In these conditions, communes could combine to confide to one mistress the direction of four schools established in different districts not far apart. By means of six lessons in the morning and six lessons in the afternoon a week, there would

be every month, for each school, six mornings which would be devoted to cooking and six afternoons for the other household work and for general education.

“Granting that these schools should be open for five months (from October 15th to March 15th), we arrive, for each of them, at sixty lessons of two and a half hours, or a total of 150 hours.

“With a salary of 200 to 250 francs for each school, the teacher would have an income of 800 to 1,000 francs, besides lodging and part of her board.

“Girls from the upper standard of the primary school could be admitted, and also girls over twelve years of age who have left school after having taken a complete course of study according to the minimum syllabus or the whole syllabus. For both alike the housewifery school would be the continuation, the extension, and the rational completion of the primary school.”

House-  
wifery  
Schools

The proposals made in the above circular for the organisation of housewifery schools for adults follow, in intention and aim, in the steps of the special housewifery schools and classes which have existed for many years with the support and under the jurisdiction of the Ministry of Industry and Labour; on reading the regulations governing the latter schools (*see below*, p. 59 ff.) the differences in method and organisation will become apparent.

Reports of inspectors on adult schools, for 1902, stated that some communes had already begun to act in accordance with the proposals of the above circular, that teachers responded with enthusiasm, and that marked progress might be anticipated during the coming years. The general report of 1902 for Brussels states that “wherever the instruction responds to the needs of the inhabitants of the neighbourhood, wherever the teaching staff applies itself to treat, practically and simply, the principles of which the adult has immediate need, as the ministerial circular of July 30th, 1902, recommends, the number of pupils is considerable and attendance is regular.” “The adult schools,” to quote the Tournai report, “which are the subject of the Ministerial circular of July 30th, 1902, are those which respond best to the needs of our people. We are even of opinion that it is only by being inspired by the spirit of this circular that it will be possible to revive the existing adult schools which vegetate, for the most part, in agricultural, rural communes.”

## II.—SECONDARY EDUCATION.

A.—GENERAL SYSTEM OF STATE SECONDARY SCHOOLS FOR GIRLS  
(*Écoles Moyennes*).

Secondary education, like primary, is under the direction of the *Ministère de l'Intérieur et de l'Instruction Publique*. By the law of the 15th July, 1881, the State founded secondary schools for girls which, before this date, had been left entirely to private organisation and control.

Secondary schools for girls had already been established by the law of the 1st June, 1850; they are of two kinds: the higher secondary schools, *athénées royales*, and the lower secondary schools, the *écoles moyennes*. The latter are intended for boys who probably engage in some trade or industry, for whom primary education is insufficient and secondary education proper too advanced; in the *écoles moyennes* the instruction which the boys have already received is continued and, at the same time, directed towards the practical necessities of their probable future condition in life.

State secondary schools for girls\* belong to the second type of boys' school; they are the *écoles moyennes de l'état pour filles*.

The law dealing with the *écoles moyennes* has been, to a certain extent, altered and modified. At the present time the *école moyenne* proper consists of three classes or school years. A preparatory course (*section préparatoire*) can be annexed to the *école moyenne* and this course is organised as a complete primary school with six school years; the following subjects, which are optional in primary schools, are compulsory in the curriculum of *sections préparatoires*: a second language, natural science, domestic economy (for girls). There are but few *écoles moyennes* to which a preparatory course is not annexed.

The maximum number of State *écoles moyennes* has been fixed by law at 100 for boys, and 50 for girls. At the present time there are 78 boys' schools and 34 girls' schools; in 1902 there were 1,941 pupils in the latter (*sections moyennes*), while the *sections préparatoires* for girls contained 3,834 pupils.

The Commune where a State *école moyenne* is situated must provide the school premises and material and is responsible for their maintenance, but the State contributes certain grants for this purpose.

Secondary schools are placed under the direction of local administrative bodies, renewed every three years, composed of the

\* These schools are all day schools, but boarding houses, inspected by the State, for pupils of State *écoles moyennes* can be established with the authorisation of the Minister.

of Mayor and Aldermen (*Collège des bourgmestre et échevins*\*), and of not less than four and not more than six members who are nominated by the Government from a double list of candidates presented by the Communal Council; at least half the candidates are not members of the Communal Council.

**School Fees.** The proposals of the local governing body as to school fees must be approved by the Ministry. The fees vary considerably in different neighbourhoods; the lowest amount in 1902 (for the *section moyenne*) was apparently 18 francs a year, and the highest 120 francs, but for the most part they were between 30 and 80 francs. The fees help to defray the general expenses of the school.

There are state scholarships, and a limited number of free admissions and of admissions at reduced fees are allowed.

**School Age.** Children must be at least six years old for admittance to the *section préparatoire*, and at least twelve years old to be admitted to the first *année moyenne*, or third class, of the secondary school proper.

**School Hours.** School hours are generally from about 8.30 to 12 a.m., and from 2 to 4 p.m. Thursday afternoon is a holiday.

**Examinations.** There are entrance and leaving examinations; the leaving examination includes all the subjects of the third school year and a diploma is granted to successful candidates. Further, in each class the pupils are examined from time to time in the work of the term.

**Curriculum.** The curriculum of the *écoles moyennes* includes†: religious instruction (given by the Ministers of denominations and obligatory except in cases of special dispensation) (2); mother tongue (French, Flemish, or German) (5); a second obligatory language (French for schools in Flemish or German localities, Flemish or German for schools in Walloon districts) (4); a third optional language, Flemish, German, or English (3); geography (1); general history and history of Belgium (2); elementary mathematics (3); elementary principles of natural science and hygiene (2); writing (1 hour, second year); book-keeping and principles of commercial law (1); drawing (2); singing (1); gymnastics (2½); needlework (3) and domestic economy (1 hour in first and second years, 2 hours in third) in girls' schools. In addition, the Director or Directress gives monthly talks to the pupils of all three classes together, on the principles of *savoir-vivre*, family duties, civic duties, charitable duties, and duties towards animals.

The syllabus of instruction is drawn up by the *Ministère de l'Intérieur et de l'Instruction Publique*.

**Special Courses.** Special courses or sections may be attached to the *écoles moyennes* according to local needs, the final decision lying with the Communal Council. Courses in agriculture, commerce or industry may be given in boys' schools, and commercial courses in girls' schools.

\* See footnote, page 6.

† The figures in parenthesis show the number of hours per week given to each subject.

When there is a special course, the first school year is common to all the pupils of the secondary school proper, *i.e.*, of the course of general instruction and of the special course; in the second and third years the special course is followed and, at the same time, the general education of the pupils in the most important subjects is continued. Commercial sections are attached to the *écoles moyennes* for girls at Charleroy and Malines, and at Molenbeek and Schaerbeek (suburbs of Brussels).

The State appoints the staff of its own schools; all teachers must be of Belgian nationality, and hold a teacher's certificate. A primary school teacher's diploma serves temporarily for all posts in the *écoles moyennes* for girls.

Inspectors are servants of the State; there is a special inspectress of needlework and domestic economy.

Besides the State schools, there are numerous private institutions providing secondary education, as well as Communal secondary schools; the latter may be of three kinds:—

- (a) The Communal institution subsidised from State funds. In order to receive State grants certain conditions must be fulfilled; the syllabus of instruction laid down by the Government must be accepted; accounts, regulations, school-books, etc., must be submitted to the Government for approval, and the schools must be open to State inspection. The Commune appoints its own teachers, but they must hold the legal diploma. There are six schools of this class for girls.
- (b) Institutions exclusively supported by the Commune.
- (c) Private institutions to which the Commune grants its "patronage," supplying subsidies or buildings. There are no girls' schools of types (b) or (c).

## B.—INSTRUCTION IN NEEDLEWORK AND DOMESTIC ECONOMY IN STATE SECONDARY SCHOOLS FOR GIRLS.

When the State founded secondary schools for girls by the law of 1881, the prescribed curriculum included needlework and domestic economy; these subjects occupied two hours a week in each of the three school years, and three hours a week in each of the preparatory classes in accordance with the primary school curriculum.

The needlework course in the secondary school began with learning the different stitches, and included knitting, mending, crochet work and embroidery. In the third year the pupils had lessons in measuring and cutting out.

Domestic economy was made a sort of appendage to the needlework course and both subjects were taught by the same mistress. The lessons took the form of "talks" to the pupils on the general theory of household management and on the woman's duty as

Needlework and Domestic Economy Course, 1881.

housewife ; the girls were given no actual practice in housework of any kind.

Early De-  
velopments  
of  
Needlework  
Instruction.

Needlework was felt to be one of the most important subjects included in the curriculum, but the results were at first somewhat disappointing. A Ministerial circular of the 5th January, 1885, drew the attention of directresses of *écoles moyennes* to certain points which required correction. In the first place the importance of the subject was not always sufficiently realised ; the pupils were not always taught to put into their sewing the care and neatness which should govern women's work ; sometimes they even received another lesson at the same time that they were doing needlework ; among other things, the circular objected that articles were often made on a small scale and, finally, that the instruction was almost invariably individual, thus causing considerable waste of time.

The following improvements, among others, were suggested : that a small exhibition of all the needlework done during the year should be held at the annual prize giving ; that the pupils might be given work to do at home, which would help to overcome the difficulty of insufficient time for the subject during school hours, and would also teach the girls independence ; that the girls should be taught how to use a sewing-machine, which is to be found in nearly every household.

The official report on secondary education, 1890,\* records that " the Government is happy to state that these recommendations have not been made in vain. The subsequent reports of the Inspector of needlework announce, indeed, a remarkable improvement in this instruction in the majority of secondary schools."

Revised  
Syllabus of  
Instruction  
for  
Secondary  
Schools,  
1897.

The syllabus of instruction for the *écoles moyennes* was modified in 1888, but though some slight changes were introduced into the domestic economy syllabus, both this and the needlework course remained practically the same. In 1897 a new syllabus was issued for both boys' and girls' schools.

The *écoles moyennes* were intended to supply the educational needs of the children of the *petite bourgeoisie*, but the instruction they provided was felt to be too uniform and too theoretic. The curriculum no longer supplied the theoretic and practical knowledge necessary for those who wished to engage in commerce, trade or agriculture ; there were only four school years in the *sections préparatoires* and, as the pupils were admitted to the secondary school proper at the age of ten-and-a-half to eleven years, many of them were too young to profit by the instruction ; and, among other complaints, the domestic economy course in the *écoles moyennes* for girls was " essentially theoretic, the pupils gained little profit from it."

In the re-organisation of the curriculum in September, 1897, the Government attempted to remedy these defects. The syllabus was made more detailed, and special attention was directed to the con-

\* *Rapport triennal sur l'état de l'enseignement moyen en Belgique. XII. Période triennale 1885-1886-1887. Brussels, 1890.*

stant practical application of the instruction to daily life. The aim throughout was that the *écoles moyennes* should respond, as far as possible, to the intellectual, moral, and material needs of the pupils, and should give them an education preparing them more especially for their future careers—trade, commerce, agriculture, etc.

This aim of practical usefulness is nowhere more apparent than in the provisions bearing upon the training of girls for home life.

The syllabus of instruction for State secondary schools for girls opens with the following sentences:—

“It is the duty of the teachers to apply constantly, with perseverance, those methods most likely to develop in the pupils the moral qualities of the woman and those of the good housewife.

“In the first place, the spirit of goodness, of charity, of generosity, family affection, simplicity and modesty . . . then those more humble, but not less valuable, qualities which contribute powerfully to the prosperity of the home: order and cleanliness, energy, accuracy, carefulness, the spirit of economy, the habit of saving.

“The girl possesses the germs of these qualities; they are latent in her mind, in her heart, in her woman’s instincts. But only school education, replacing or completing the mother’s mission, combined with the personal action of the girl, can develop these germs . . . .

“The task of the school, as regards education, is not complete if it does not accustom the girl to observe, on all occasions, the rules of politeness and of good manners; if it does not prepare her for introducing into the home, in accordance with her true nature, taste, grace, and even that high standard of elegance which ‘knows how, without luxury, without great expense, to choose and arrange things in such a way as to please the taste and the imagination.’”

This point of view is repeatedly insisted upon to inspectors, administrative bodies, and teachers; it is continually emphasised in the syllabus. In the notes appended to the arithmetic course we find for instance:—

“The teacher should attach the highest importance to practical applications; she must never lose sight of the fact that, though the arithmetic lessons should be a veritable gymnastic of the faculties of judgment and reasoning, the primary necessity is that they should prepare the pupils, efficiently, to apply arithmetic to the ordinary affairs of life, that is to say, to the requirements of trade, domestic economy, commerce, industry, agriculture, etc. . . . . The subjects of the problems should be chosen within the limits of reality and should furnish the pupils with practical ideas of great usefulness. . . . A considerable number of arithmetical problems set for the girls should bear upon household things, domestic economics, the results of thrift. When it is well taught, arithmetic helps to introduce into the homes that methodical spirit which regulates expenses by receipts, inspires foresight, and makes the produce of thrift fruitful.”

In the third year of the syllabus in natural science, one section is as follows:—

Practical ideas on some substances which the good housewife ought to know:

1. Decolorising and disinfectant properties of porous charcoals.—Oxide of carbon.—Gas for lighting.—Petroleum.
2. Sulphur, sulphuric acid.
3. Chlorine, chloride of sodium.
4. Substances used in washing linen, cleaning garments, etc.—Soda, soaps, starch, blue, chlorine water, salts of sorrel, benzine, naphtha, ammonia, alcohol, turpentine.

Bearing of  
General  
School In-  
struction on  
Domestic  
Training.

Arithmetic  
correlated  
with  
Domestic  
Economy.

Natural  
Science and  
Hygiene for  
the  
Housewife.

5. Substances used as disinfectants.—Lime, chloride of lime, sulphate of iron, sulphate of copper, phenic acid, etc.

Lessons on elementary hygiene are included in the natural science course of the second and third years. As they bear upon the subject in hand the syllabus is given here :—

#### SECOND YEAR.

1. Some very elementary ideas on the rôle of microbes from the point of view of health.
2. *Heat*.—Clothes.—Dwellings; heating.
3. *Light*.—Hygiene of the sight; artificial lighting.
4. *Movement*.—Sanitary influence of corporal exercises.—Rest and sleep.
5. *Air*.—Causes and effects of the vitiation of the air in dwellings.—Ventilation.
6. *Water*.—Drinking water.—Methods of improving impure water.
7. *Personal cleanliness*.—Hygienic care.—Washing and baths.—Dangers of cosmetics.

#### THIRD YEAR.

1. *Food*.—Very simple ideas on albuminoid substances, hydrates of carbon and fats.—Classification of foods.—Rules essential to a good diet.—Drinks.
2. *Alcoholism*.—Alcohol and various alcoholic drinks.—Ravages of alcoholism from the point of view of health, intelligence and morality.—Fight against alcoholism.—Danger of the use of ether, morphia, etc.
3. Very brief ideas on infectious illnesses and disinfection.—Vaccination.
4. First aid in cases of sudden illness and of accidents (the most common cases).

Drawing in connection with Needlework.

In teaching drawing to girls, special attention is paid to practical applications to needlework. In the new drawing syllabus, issued by the Department, 30th July, 1904, there is a direction to teachers in each year's course to choose subjects for drawing in relation to needlework, *e.g.*—drawings connected with the cutting out of garments. In the first year the pupils are to draw ornamental patterns in connection with needlework. Similarly, in the second, and especially in the third year, the syllabus provides for drawings from nature to be applied in needlework, for designing embroidered letters, numbers, monograms, festoons, braids, embroideries, laces, etc. The teacher is to pay especial attention to subjects which bear upon the æsthetic character of needlework; by giving pupils exercises in drawing patterns, complete garments and designs, from nature, she should prove to them the utility of instruction in drawing and its adaption to practical life.

Needlework Syllabus.

The following is the syllabus for needlework :—

#### FIRST YEAR.

(3 hours a week.)

1. *Knitting*.—Recapitulation of the elements taught in the preparatory section by means of :
  - (a) Drawing, setting and knitting a sock and a stocking;



- (b) Knitting articles where all the difficulties of this kind of work are encountered: bands, squares, rosettes, lace for bed or cot coverings.
2. *Marking*.—Different ways of marking linen: cross-stitch, stitching, chain-stitch, etc.
  3. *Recapitulation of the elements of sewing* in the making of a pillow-case or a night-dress case.
  4. *Mending*.—Patching linen and ordinary garments; darning\* according to the web; simple patching of knitted materials.
  5. *Cutting out and making*.—Woman's chemise; fancy apron.
  6. *Fancy work*:
    - (a) Embroidery: Feather-stitch, etc.—Initials.
    - (b) Crochet: Trimmings for pillow-cases, chemises, etc.

## SECOND YEAR.

(3 hours a week.)

1. *Recapitulation of the elements of sewing* on figured cotton material. Patching these materials.—Different ways of making a hem to them: false hem, etc.—Loops, button-holes, eyelet-holes.
2. *Mending knitted materials*.—Putting in a new heel, a new foot to a stocking.
3. *Hemstitch on linen*.—Simple and more complicated hemstitch.
4. *Cutting out and making*.—Girl's drawers.—Man's shirt.
5. *Fancy work*:
  - (a) Embroidery: (various stitches).—Ornamental initials for the corner of a handkerchief, a napkin; for a pillow-case, a sheet.
  - (b) Crochet.
  - (c) Tapestry work.

## THIRD YEAR.

(3 hours a week.)

1. *Recapitulation of the elements of sewing* on figured woollen materials: lines, stripes, squares, spots, etc.—Patching these materials.—Ways of making a hem to them.—Button-holes.
2. *Patching garments*.—Mending linen.—Darning.
3. *General principles concerning materials*.—Raw materials, where manufactured, qualities of materials, width, price, etc.—Advice on the choice of materials.
4. *Use of the sewing machine*.
5. *Cutting out and making*.—Petticoat.—Petticoat bodice or camisole.—Girl's dress.
6. *Fancy work*.—Embroidery on cloth.

*Notes*.—The lessons of recapitulation, referred to under paragraph 1 of the syllabus of the second and third years above, must be finished towards the middle of the first three months. Large pieces of work which absorb precious time and involve useless expenditure will, therefore, not be undertaken.

2. The pupils should keep all their work of one year, in order to finish it as they acquire fresh knowledge; for instance: the pillow-case which is made in the course of the first half-year, will receive later embroidered initials, a crochet trimming, etc. The button-holes could only be made the following year.

3. The needlework lessons must be given according to the simultaneous method (as class teaching).

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\* It should be remembered that "darning" in most European countries is a fine art compared with what is usually practised in England.

Domestic  
Economy  
Syllabus.

## The Domestic Economy Syllabus is as follows:—

## FIRST YEAR.

(1 hour a week.)

## Theory.

## Practice.

## 1. Care of the dwelling :

## Advice :

- (a) As to when and how to ventilate it ;  
 (b) On the choice, use, and preservation of the articles necessary for cleaning brick floors, parquet floors, walls and windows.

To open and shut the doors and windows at the proper time.

To clean the brick floors, the parquet floors, the windows ; to dust the walls.

## 2. Practical advice on the choice, purchase and cleaning of the furniture :

- (a) Of the kitchen ;  
 (b) Of the dining-room ;

To clean the kitchen utensils, the table-service, the knives, the plate ;—to lay the table, to wait at table and to clear away.

To make a bed and to keep the bedroom clean.

## 3. Practical suggestions concerning the purchase, the preservation and the use :

- (a) Of heating apparatus and of the firing most generally used, as well as the way to prepare, to light and to keep up the fire ;  
 (b) Of the appliances and substances in ordinary use for artificial lighting.

To clean the stove ;—to prepare, light and keep up the fire.

To clean, trim and light the lamps.

Practice preparatory to ironing : different ways of folding articles of *lingerie* of the same kind : towels, handkerchiefs, working-aprons, fancy aprons, etc.

To arrange a linen-cupboard.

## SECOND YEAR.

(1 hour a week.)

## 1. Economical advice concerning the purchase and the care of linen.—Choice of material, numbering, mending.

## 2. Washing and ironing of linen : material, substances used, series of operations.

To wash and iron articles presenting graduated difficulties :

- (a) Towels, handkerchiefs, working-aprons, fancy aprons ;  
 (b) Napkins, tablecloths, pillow-cases, petticoats, women's chemises, girls' drawers, night-dresses.

## 3. Practical advice concerning a girl's outfit.—Necessary articles and useful articles : quantity, quality, colour, etc.—Care and preservation.—Cleaning.—Taking out of stains.

To wash small pieces of flannel, of cashmere : handkerchiefs, aprons, etc.—Stockings.

To renovate or to repair : silk handkerchiefs, ribbons, velvet, crape, laces, feathers.

To clean gloves.

## 4. Principal methods of preserving fruits, vegetables, eggs.

To prepare some preserves, jams.

THIRD YEAR.

(2 hours a week.)

*Theory.*

1. Very simple ideas on the food substances most used: qualities,—preservation—preparation—nutritive value—digestibility—how to serve them, to combine them, to use up scraps.

2. Composition of some menus.

3. Organisation of a formal meal: arrangement of the table, place of the guests, rôle of the mistress of the house.

4. Principles of domestic accounts.

*Practice.*

Culinary preparations presenting graduated difficulties:

(a) Milk: various preparations;

(b) Coffee, tea, chocolate;

(c) Boiled eggs, scrambled eggs, fried eggs, omelets, custards, creams, etc.;

(d) Rolls, pancakes, *gaufres*, tartlets;

(e) Potatoes (various preparations) and vegetables in season;

(f) *Botillon*.—Thick and thin soups;

(g) Meat, roasted, fried, stewed.—Sauces.—To use up leavings of meat;

(h) Poultry and game;

(i) Fish, boiled, baked, fried, etc.—Mussels;

(k) Various croquettes;

(l) Various cakes and puddings.

*N.B.*—The cost price of each dish that is prepared should be calculated.

Preparation of some meals suitable for a middle-class household.—Calculation of cost price.

Invitations and acceptances.

Ironing: petticoat-bodice, girl's drawers, trimmed linen petticoats, curtains—laces, covers, crochet covers—collars and cuffs.

*Note.*—The instruction in domestic economy should have a fundamentally *inductive, experimental and practical* character. It must not be an education of words, but a real education of things. Above all it is necessary that the pupils, according to the instructions and under the direction of the mistress, frequently do the practical work mentioned in the syllabus.

It will be noticed that a methodical course of instruction, theoretical and practical, has taken the place of the "talks" on domestic economy.\*

\* As the official report puts it:—"On ne se plaint pas aujourd'hui à saturer l'esprit des jeunes filles de principes vides et vagues; par le maniement même des choses, on leur inculque des idées saines, justes et solides concernant la rôle qu'elles ont à remplir dans la famille."

It must be remembered that the syllabus is necessarily limited, both in scope and in method, by the conditions of the secondary school curriculum, and that it is not intended for, nor adapted to, the needs of girls working under more elastic conditions. The division of work, for instance, into mainly cleaning one year, laundry work the second, and cooking the third, lends itself to obvious criticism, but it is difficult to see how, in the short time at command, the subjects could be combined in, theoretically, a more ideal arrangement.

A Ministerial circular of the 24th April, 1899, emphasised the necessity of strict and detailed adherence to the syllabus. The practical work is always to be preceded by explanations based on scientific facts. The attention of directresses is further drawn to the following advice: "In order to remove from the majority of practical lessons the commonplace character which the children are tempted to find in them, the teacher must pay special attention to the perfect correctness of her speech and behaviour—without falling into the affectation so contrary to all good teaching."

As already mentioned, one hour a week in the first and second school years and two hours in the third year are given to domestic economy, and three hours a week each year to needlework. In the commercial section domestic economy and needlework are "general subjects" (see pages 30–31) and the syllabus followed is, therefore, that of the *école moyenne* proper, but only one hour a week is given to needlework in each class.

Equipment.

The communes are nominally responsible for providing and maintaining the requisite appliances for needlework and domestic economy, but the State contributes grants for this purpose. In 1898 the department drew up a list, given in Appendix C., of the apparatus considered necessary for teaching these subjects in a really practical way, and sent it to the directresses of *écoles moyennes*.

Aims and Limitations of Housewifery Instruction in Secondary Schools.

The limited time that can be devoted to domestic economy obviously does not admit of the girls receiving any course of actual training in household work, and there is evidence that some teachers think that, if the course is to be practical, it would be desirable to have two hours a week in the first and second as well as in the third school year; again, in the third year, a cooking lesson of two hours is not long enough for the preparation of a complete meal, though separate dishes may be cooked, nor is there enough time for the pupils to buy the necessary provisions themselves, unless shops happen to be in the immediate neighbourhood of the school. At the same time it is equally obvious that the curriculum of the secondary school is so crowded that it would be difficult, if not impossible, to take more time for domestic economy without injuring some other subject of at least equal importance in a girl's education. It is true that it is sometimes possible to obviate the difficulty, in a measure, by arranging the syllabus so that the domestic economy lesson can be prolonged, at need, beyond its nominal limit, *e.g.*, by putting a period of general study, and not a set lesson, immediately after the domestic economy lesson. Moreover it should be remembered, that, as the director-general pointed out, the aim is not to give the girls housewifery instruction (*enseignement ménager*) but to teach them, by theory and practice, principles of domestic economy (*notions d'économie domestique*), just as, in the needlework course, the girls do not learn to be dressmakers, but they master the principles upon which dressmaking is based. In one hour a week of practical

work which they like, the girls may readily acquire a taste for household occupations, especially when they have already received preliminary domestic instruction in the preparatory or the primary school. The mere fact that the subject is included in the curriculum is evidence to parents and pupils of the estimation in which it is held, and its value is more than doubled when it is correlated with other subjects. The main question remains: so long as only a small minority of girls from secondary schools receive any domestic training after they leave school, either in their own homes or in special schools and classes, is it worth while, from the point of view both of the general curriculum and of this special subject, for the secondary school to attempt to supply this want in the very restricted and incomplete way that is alone possible? I think the experience of the Belgians justifies them in answering this question in the affirmative; the authorities see the wisdom of devoting the one or two hours a week, which are all that can be spared, to inculcating principles of domestic education rather than of avoiding any responsibility in the matter at all.

The leaving examination is oral except for needlework, but the work that has been done during the year is also taken into account. The examination is conducted by the directress and all the members of the teaching staff of the *section moyenne*, under the presidency of a member of the governing body, or if the Government thinks wise, of an inspector of secondary education.

In needlework the examination is entirely practical. The work demanded of the pupils is supposed to differ from year to year, but always to be chosen so as to represent as many different kinds of sewing applied to *lingerie* as possible, and to include, further, cutting out and making various garments, e.g., a pillow-case, or a woman's chemise on a reduced scale. An article of *lingerie* must be marked with an initial worked in red cotton, or embroidered in white cotton.

The day before the examination the pupils prepare and cut out, in the presence of two teachers, the work which they will do during the oral examination in other subjects. The maximum time allowed for preparing and making is arranged by the directress and the teacher of needlework together.

So far it has not been considered possible to include domestic economy in the leaving examination.

In the state *école moyenne* for girls at Brussels, in the *rue du Marais*, there were, in 1902, ninety-nine pupils.\* The school-hours are from 8.30 to 12 in the morning, and from 2 to 4 or 5 o'clock in the afternoon. Needlework lessons are given on Monday and Tuesday from 11.10 to 12 and from 2 to 4. Each lesson lasts fifty minutes; the pupils bring their own materials from home and keep what they make.

\* Ninety-nine pupils in the *école moyenne* proper, 137 in the *section préparatoire*, making a total of 236.

Specimen  
Schools—  
*continued.*

Theory lessons in domestic economy are given at the beginning of the school year ; it seems that practical work is much preferred to theoretic. Pupils of the third class (or year) have their domestic economy lessons on Saturday morning, from 10.25 to 12 ; pupils of the first year, on Saturday afternoon, 2 to 3 ; the second class, who do washing and ironing, have their lesson on Wednesday. The pupils of the first class, the youngest children (aged about twelve), clean and wash up in the afternoon what the older girls have used for their cooking lesson in the morning ; this arrangement is as an instance of the unfortunate effect of the limited amount of time that can be given to the subject, but the teacher told me that she had never known a child disagreeable about it.

There were sixteen pupils in the cooking class (third year) at the time of my visit (March, 1905), divided into two groups of eight pupils. One group does practical work, while the others look on. The girls who cook eat the meal which they have prepared ; their teacher joins them, and sometimes, by invitation, the directress. Each girl pays her share of the cost of the meal, which generally amounts to about eighty centimes per head, not including wine or beer which may be had extra for about six centimes. The mistress explained that the cost of a meal is higher than in some schools, partly because there are fewer pupils here and also partly because everything is cooked with butter. A meal consists of soup, meat, potatoes, vegetables, sweets, coffee. To each pupil, or sometimes to every two pupils, is apportioned a definite task, *e.g.*, to peel the potatoes, to lay the table and wait at table, to prepare the meat, to make the coffee. The pupils themselves buy the food, the approximate cost having been reckoned beforehand ; there are also theory lessons on the purchase of provisions. The girls keep note-books in which they copy out the menu of the meal, with the cost price of each dish.

The school is situated in an old building, not originally intended for a school. The domestic economy lessons are given in two rooms on the ground floor. A list of the apparatus required for these lessons is given in Appendix C.

(b) Laeken  
(Brussels).

At the school at Laeken, a suburb of Brussels, special attention is devoted to the domestic economy lessons, in spite of very limited accommodation. One room on the ground floor serves as kitchen and dining-room, and cellars have been ingeniously utilised as a laundry. In 1902 there were 56 pupils on the register for the *école moyenne*, and 157 for the *section préparatoire*.

In accordance with the official syllabus the pupils learn cleaning for one hour a week in the first year ; washing and ironing, one hour a week, in the second year ; and in the third year, cooking for two hours a week. When there are too many pupils in one class for all to do practical work at the same time, they are divided into two groups, and each group works for three-quarters of an hour

a week in the first year, and one hour in the second year. In the third year there are generally fewer pupils. For washing and ironing, small articles belonging to the school are used, or sometimes the girls bring things from home; on the day of my visit, for instance, six girls had each brought a pair of gloves to wash.

In the cooking lesson the girls go with their teacher to purchase provisions; this is possible as the shops are quite near. The pupils eat the meal which they cook and each girl pays her share which generally amounts to about sixpence or sevenpence. A complete meal includes soup, vegetable, meat, sweets. The following menu is an example of a complete meal:—

MENU.

*Potage aux petits pois.*  
*Beefsteaks au cresson.*  
*Pommes de terre frites.*  
*Crème à la vanille.*

		EXPENSES.	s. d.
1½	lbs.	meat - - - - -	1 9
½	lb.	peas - - - - -	0 1½
1½	lbs.	celery, onions, potatoes - - - - -	0 3
		butter - - - - -	0 6
3		eggs - - - - -	0 2½
		milk and bread - - - - -	0 3½
		watercress - - - - -	0 2
Cost price - - - - -			3 3½

The various dishes in such a menu as that given above are first taught separately, and then the whole meal is made as a sort of repetition lesson. For instance, one lesson will be given on the different ways of making soup, another on the different ways of preparing potatoes; afterwards the pupils will be expected to prepare, by themselves, a meal including a soup, a dish of potatoes, etc., selected from the preparations they have already learnt. The girls draw lots for the dishes they are to make; when possible each pupil prepares one dish.

The following is a menu prepared by the girls on March 25, 1905, copied from the blackboard:—

MENU OF DÉJEUNER FOR SIX PUPILS.

*Gaufres Bruzelloises.*

		Francs.	Cent <sup>s</sup> .
4	eggs - - - - -	0	32
125 gr.*	flour - - - - -	0	04
½ litre*	milk - - - - -	0	10
¼ kilo.*	butter - - - - -	0	45
1	packet vanilla sugar - - - - -	0	10
Cost price- - - - -		1	01
<i>Chocolat.</i>			
1 litre*	milk - - - - -	0	20
1	tablet of chocolate - - - - -	0	50
Cost price - - - - -		0	70

\* 100 Grammes = 3·5 oz.; 1 kilogramme = 2·2 lbs.; 1 litre = 1·7 pints.

Specimen  
Schools—  
*continued.*  
(c) Schaer-  
beek  
(Brussels).

The commune of Schaerbeek (Brussels) has recently provided magnificent buildings for the State *école moyenne* for girls, similar to those for the primary school in the *rue Gallait*. The accommodation for domestic economy lessons consists of kitchen, bedroom, dining-room, with complete equipment.

Needlework lessons are given every afternoon, except Thursday which is a holiday, domestic economy on Wednesday morning from 10 to 12 o'clock.

In the first *année moyenne* the domestic economy work is mostly cleaning, in the second year, washing, ironing, taking out stains; in the third year, cooking.\* A meal costs eighty to ninety centimes per head, and consists of soup, potatoes, vegetables and meat.

(d) Bruges

At the *école moyenne de l'état pour filles* at Bruges, I saw some interesting illustrations of the needlework syllabus. The girls of the highest class had been having a dressmaking lesson; they were, for the most part, making simple dresses for themselves. All the work was very neat and practical, less elaborate than in the *écoles professionnelles*, intended rather as a foundation for future development and study than as an apprenticeship in needlework. To mention a detail which shows that the girls put into practice what they learn, there were, in the dining-room, some effective half-curtains, which the pupils had made, of canvas, embroidered in simple patterns in white washing wool.

Needlework lessons are held on Monday, 2-3 p.m.; Tuesday, 9.30-12 a.m.; Thursday, 11-12; Friday, 11-12 and 2-3; Saturday, 2-4. The girls have three lessons a week, lasting fifty minutes or an hour, in the first and second years, and in the third year one lesson of one hour and one lesson of two hours, as it is difficult to teach dressmaking in lessons only one hour long.

Domestic economy is given on Wednesday. There are a kitchen and a dining-room, both well situated and lighted, a room containing a bed, and a washhouse. For practical work, the pupils are divided into two groups; one group works while the others look on and take notes, those who watch one week doing practical work the next. In cooking, the pupils are taught to prepare single dishes, and occasionally they practise a complete meal.

There are about 50 girls in the *école moyenne* proper, with a total of about 150 including the preparatory section.

#### C.—TEACHERS OF NEEDLEWORK AND DOMESTIC ECONOMY IN STATE SECONDARY SCHOOLS FOR GIRLS.

Temporary  
Courses:—

At first needlework and domestic economy were taught by the same mistress, who was reckoned a teacher of needlework. In most schools the lessons in these subjects suffered from the lack of specially trained and efficient teachers, capable of giving them the practical

\* See above Syllabus, pages 36-37.



application which was their *raison d'être*. The Government sought to remedy this defect by the institution of temporary courses and special diplomas.

A temporary course of needlework for teachers was instituted by (a) Needlework. the *arrêté royal* of the 3rd of July, 1896.

This course was held at the *Section normale moyenne de l'état* for girls at Liège, during the summer holidays, for about four weeks and thirty-six hours a week.

Attendance was compulsory for everyone actually engaged in teaching needlework in state *écoles moyennes*.

The course included lessons on the theory of the subject, and practical needlework and dressmaking. Considerable attention was paid to mending, including the finest kinds of darning.

An examination was held after the course and a *certificat de capacité* awarded to successful candidates. It was intended that, after a certain lapse of time, the possession of this certificate should be compulsory for all teachers of needlework in State secondary schools for girls.

A similar temporary course for domestic economy teachers was established in 1898. (b) Domestic Economy.

This course was held, like the needlework course, during the summer holidays at Liège, and a certificate was awarded on the examination held at the end of the course.

The lessons included the various subjects of the domestic economy syllabus for girls in *écoles moyennes*.

These temporary courses were held for some years, but I was informed that they will probably not be continued, as there are now enough special teachers of needlework and domestic economy.

The examination for the *diplôme de capacité* for the teaching of needlework in the *écoles moyennes* for girls was instituted in 1897. Diplômes de Capacité: —

Holders of the *diplôme de régente* (a secondary school teacher's certificate), and teachers of needlework in State or Communal secondary schools, are allowed to enter for the examination; exceptionally, everyone actually engaged in teaching in an *école moyenne*, whatever her subject, may be admitted. (a) Needlework.

The examination consists of a written paper, a practical examination, and a teaching test. The following gives the syllabus of the examination, with the maximum number of marks allotted to each subject:—

WRITTEN AND PRACTICAL EXAMINATION.

	Marks.
A. Ideas on the importance and utility of needlework; ideas on materials, etc. . . . .	30
Practical work: darning (according to the stitch), mending linen, hemstitch on linen, embroidery, etc. . . . .	40
B. Cutting out and making various articles (e.g., petticoats, bodices, children's frocks). . . . .	50

TEACHING TEST.

C. Lessons on one of the subjects of the syllabus, chosen by lot:	
1. <i>Lingerie</i> ; 2. cutting out and making . . . . .	80

The diploma is granted to candidates who obtain at least sixty-five per cent. of the maximum number of marks (200) for the whole examination, and half the number of marks allotted to each group (A, B, C).

(b) Domestic Economy.

The syllabus and regulations of the examination for the *diplôme de capacité pour l'enseignement de l'économie domestique dans les écoles moyennes de filles* were established by the *arrêté royal* of the 25th February, 1899. The regulations for admission are similar to those for the needlework diploma, and the examination consists of a written and practical examination and a teaching test; the maximum number of marks is 200, and the proportion necessary for a pass is the same as above.

The following is the syllabus of the examination :—

WRITTEN AND PRACTICAL EXAMINATION.		Marks.
A. Ideas on the importance of domestic economy. Ideas on food substances; nutritive value. Domestic accounts	-	40
B. Practical work :		
Cooking	-	40
Washing and ironing *	-	40
Cleaning	-	20
Removing stains	-	10

TEACHING TEST

- C. Lessons on some point in the syllabus of the *écoles moyennes*, to be chosen by lot :
- |             |             |                                 |    |
|-------------|-------------|---------------------------------|----|
| 1. Cooking; | 2. washing; | 3. cleaning and removing stains | 50 |
|-------------|-------------|---------------------------------|----|

Salaries :—

(a) Teachers of Needlework.

Before 1898 no special salary was given to teachers of needlework, except in cases where schools were taken over by the State, when a remuneration already given under this head was continued. It was supposed that every woman must have the necessary knowledge and aptitude for teaching children sewing, and that needlework, therefore, could be taught by the ordinary staff of the school in the same way as other subjects.

The following regulations were established in 1898 :—

An annual salary of 900 francs (minimum) to 1,100 francs (maximum) is given to teachers of needlework who hold a special diploma.† This salary is reducible by a quarter if any other salaried post in the institution is held at the same time. This does not apply to conditions already in existence. There is only one salary for each institution.

Teachers who have not a diploma only receive special payment if the needlework course gives them more than the normal amount

\* Candidates must furnish the articles for washing, ironing and removing stains.

† The same salary is given to teachers of music, drawing and gymnastics. The staff salaries in the *écoles moyennes* for girls are from 1,600 francs a year, the directress's salary being, minimum 2,800 francs, maximum 3,300 francs.

of teaching to do weekly (i.e. 24 hours), and their salary cannot exceed 345 francs.\*

It was not until 1899 that regulations were made for the salaries of domestic economy teachers. At first this subject was supposed to be taught, as stated above, by the needlework mistress, and later by a member of the staff as one of the ordinary subjects of the curriculum. (b) Teachers of Domestic Economy.

Since 1899 domestic economy has counted as a special course for a teacher officially appointed and furnished with a *diplôme de capacité*; but, on the other hand, it remains an ordinary subject of the general curriculum where there is no teacher furnished with a diploma or officially appointed. In the latter case it comes within the twenty-four hours which can be imposed every week and the teachers are only paid if there is more than twenty-four hours' work, and then the salary cannot exceed 200 francs.

The salary of a teacher of domestic economy holding a special diploma is 300 francs, of which a third is charged to the commune†. Only one salary is allowed for each school.

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\* Thus, for instance, a staff teacher (without special diploma) who took the needlework course in addition to her usual duties, would receive no extra salary unless she had more than 24 hours work a week. A special teacher, holding a diploma, might either teach also in other schools (there being 9 hours needlework a week altogether in an *école moyenne*), or she might combine needlework with other instruction in the school, subject to the conditions mentioned.

† Domestic economy, only including 4 hours teaching a week in a school, might be taught by a staff teacher who, if she had a special diploma, would earn 300 francs a year in addition to her usual salary, or it might be combined with other special subjects, e.g. gymnastics or needlework, or again, it might be taken by a visiting teacher.

## III.—TECHNICAL EDUCATION.

## GENERAL TECHNICAL INSTITUTIONS FOR GIRLS.

## A.—GENERAL ORGANIZATION OF TECHNICAL EDUCATION FOR GIRLS.

Ministry.  
Different  
Types of  
School.

Technical education, supported by the State, is administered by the *Ministère de l'Industrie et du Travail*\* and includes the *écoles industrielles, professionnelles, commerciales* and *ménagères*. The number of these institutions in 1901 was 579, 348 for girls and 231 for boys.

Technical schools for girls are officially classified as follows † :—

*Écoles professionnelles* (technical schools);

*Écoles professionnelles-ménagères* (technical and housewifery schools);

*Écoles ménagères-professionnelles* (housewifery and technical schools);

*Cours professionnels et ateliers d'apprentissage* (technical courses and workshops for apprentices).

*Écoles et classes ménagères* (housewifery schools and classes).

Each of these types of institution is intended for a special class of pupils and has its own organisation.

Grants.

These schools may be either communal or under private authority. In order to receive State grants they must submit accounts, estimates, syllabuses and regulations to the Minister, have the appointments of teachers sanctioned, and submit to inspection.

The State contributes two-fifths of the total of the ordinary expenses of technical schools, after deducting the cost of rent

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\* Formerly technical education was under the direction of the *Ministère de l'Intérieur*; when the *Ministère de l'Agriculture, de l'Industrie et des Travaux Publics* was created (1884), technical education was transferred to this new department. In 1895 a separate *Ministère de l'Industrie et du Travail* was formed and the administration of technical education was included in its functions, transferred from the former ministry, which is called now the *Ministère de l'Agriculture*.

† See.—*Rapport sur la situation de l'Enseignement Technique en Belgique présenté aux Chambres Législatives par M. le Ministre de l'Industrie et du Travail, 1897-1901.* (Royaume de Belgique—Ministère de l'Industrie et du Travail—Direction de l'enseignement industriel et professionnel—Inspection générale de l'enseignement industriel et professionnel). 2 Vols. Brussels, 1903.

and maintenance of school premises and any balance from the accounts of the preceding year ; it also gives a grant, which amounts to 50 per cent. of the cost of purchasing the material necessary for instruction, given on production of receipted invoices.

All the schools subsidized by the Department of Industry and Labour are visited at least once a year by an inspector of technical education. A report is addressed to the Minister after each visit. Monsieur Eugène Rombaut is the chief inspector (*inspecteur général de l'enseignement industriel et professionnel, avec rang de directeur général*), and to his efforts and enthusiasm the success of this branch of education, and particularly of the special housewifery schools, must in great measure be attributed. There are, further, three inspectors and four inspectresses.\*

Inspection.

A great deal in the management of the schools is left to private initiative. The Department of Industry and Labour imposes no syllabus on any type of school.

No Compulsory Syllabus.

In the *classes* and *écoles ménagères* the courses are held on the days and hours most convenient for the working people for whom these institutions are intended ; in technical schools of the three other categories lessons are given in the morning and afternoon.†

School Hours.

The latest report on technical education, already referred to, records that progress has recently been most marked in the domain of technical education for girls. Not only has the number of schools increased, but the progress made in individual institutions has been very considerable.

Progress of Technical Education for Girls.

The usefulness of these institutions is now generally recognised, but at first there was considerable opposition from the parents, who did not wish their girls to attend technical classes and to learn a trade. Prejudices have disappeared, however, and the favour with which the schools are now regarded is attributed principally to the practical nature of their instruction—practical not only in the special technical classes, but also in the choice and treatment of general subjects. The education provided in the *écoles professionnelles* for girls is not confined to trade apprenticeship and the teaching of handicrafts, it also develops intelligence by general, or theory, lessons and it attempts to make the girls active and economical housewives.

The organisation of the schools, the care that is taken to prevent useless things from being introduced into their curricula, their eminently practical character, cause this branch of education to be regarded with real favour by parents.

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\* The four inspectresses are Mademoiselle C. Savelberg, *inspectrice de l'enseignement professionnel et ménager* ; Mesdemoiselles C. Van Gehuchten, E. Henckels and A. de Groot, *inspectrices de l'enseignement ménager*.

† All these Schools without exception, are Day Schools.

Summary of Statistics. The following table gives a summary of the statistics relating to the *écoles professionnelles* of all three types, and to the *ateliers d'apprentissage* for the year 1901\* :—

	Number of Institutions.	Number of Pupils		Number of Teachers.	COST (Francs).			
		Total.	Average per Institution.		Total.	Amount of State Grant.	Average per	
							Institution.	Pupil.
<i>Écoles Professionnelles</i> - - -	52	4,130	79	514	653,479	202,554	12,567	158.22
<i>Ateliers d'Apprentissage</i> - - -	4	179	45	17	6,950	2,127	1,737	38.99

### B.—ÉCOLES PROFESSIONNELLES (TECHNICAL SCHOOLS).

First Ecoles] The first technical schools for girls started in Belgium were  
Profession- private undertakings. In 1865 *l'association pour l'enseignement*  
nelles for *professionnel des femmes* founded the first *école professionnelle*  
Girls. in the *rue du Marais* at Brussels.† This school has supplied  
a number of teachers for similar institutions elsewhere.

A second *école professionnelle* was founded privately in 1873; later it was established in the *rue du Poignon* in Brussels and became communal in 1880. The third school, at Antwerp, was also due to private effort; it was founded in 1874, became communal in 1879, and was subsidized by the State in 1880.

Some years later *écoles professionnelles* were opened at Mons and Verviers.

The movement once started, schools opened in various directions and claimed Government support.

Length of The *écoles professionnelles*, properly so called, are the most im-  
Course, and portant as technical institutions; they have the widest curriculum  
School and constitute the upper division of technical education. The  
Hours. full course occupies four years; the school year is generally of ten months. School hours are usually from 8 to 11.30, or 8.30 to 12 a.m., and from 1.30 to 4, 4.30, sometimes 5, or even 6 p.m., with one half holiday a week. Half the time is devoted to the theoretic, or general, lessons, usually given in the morning, and half the time to technical courses, generally held in the afternoon, in order that the pupils may not be fatigued by too lengthy application to the same subject.

Conditions The usual conditions of admission are that pupils should be at  
of least fourteen years old and that they should have completed  
Admission. their primary education.

\* Similar figures relating to the *écoles et classes ménagères* are given on page 67.

† See Appendix E.

Fees are charged in the *écoles professionnelles* of all three classes Fees. (i.e.—*professionnelles*, *professionnelles-ménagères*, *ménagères-professionnelles*). The Government exercises no control over the amount, which is left entirely to the authorities, communal or private, responsible for the school; a limit is to some extent imposed by local conditions, as too high a fee would debar pupils from attending.

Nearly all these schools, both communal and private, are under School the control or "patronage" of local committees of ladies, some- Committees. times of ladies and gentlemen; in some cases a certain proportion of the members of the local committee is appointed by the State, the Province, and the Commune respectively, when all these authorities contribute grants.

The *écoles professionnelles* are designed to give girls a complete Curricula. training for some trade or business—dressmaking, millinery, commerce, etc.—and at the same time to complete the education already begun at the primary or secondary school by theory courses, which not only contribute to the girls' general culture but also form really useful ideas capable of practical application. Girls who wish to become teachers in technical schools, often receive their practical training in the *écoles professionnelles*.

The *cours professionnels*, technical courses, include dressmaking, *lingerie*, corset-making, millinery, the making of artificial flowers, embroidery, painting on china, stuffs or glass, decorative painting, technical drawing, commerce (including one or more languages, commercial law, shorthand, typewriting). All the schools include dressmaking and *lingerie*, which are more fully developed in these than in other technical schools; further courses are added according to the individual school. The pupils choose one technical subject, or in some cases where it is a short course, two, e.g., millinery and artificial flowers. The last school year, that of the examination for the *diplôme de capacité*, is devoted to the most difficult work, including all the garments worn by women, especially tailor-made dresses, coats, evening bodices, etc.

Drawing is taught in connection with the technical courses (dressmaking, millinery, etc.); in some schools there are special sections for drawing applied to embroidery.

The *cours généraux*, or theory courses, include some or all of the following subjects:—Languages (French, Flemish, and sometimes English and German), arithmetic, bookkeeping, geometry, history, geography, natural science, physics, domestic economy, hygiene, the care of infants, drawing, principles of commerce, and further, sometimes morals and manners (*morale* and *savoir-vivre*).

No *enseignement ménager*, or course of housewifery instruction, is given in the *écoles professionnelles*, though in one or two cases an optional course of household work has been added.\*

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\* See Appendix D.

**Diplomas.** In all the schools theoretic instruction is given during three years, and at the end of this course the pupils pass a written examination in all the general subjects included in the curriculum. The *certificat d'études* is only given to pupils who obtain 65 per cent. of the marks. Furnished with this certificate they can enter for the technical examination for the diploma in the special subject which they have taken up, held at the end of the last school year. In order to obtain a diploma, the pupils must satisfy the examiners in a series of tests. For three months before the examination they are locked in a room by themselves during school hours, and they have to make the required articles—a child's dress, an evening bodice, etc.—within a given time. In July the inspector-general, assisted by examiners chosen by himself, examines this work and holds an oral examination, when the pupils have to perform certain tests chosen by the examiners, e.g., take measurements from another pupil, draw the pattern of a garment to scale. To obtain 60 per cent. of the marks is to pass satisfactorily; 70 per cent. with distinction; 80 per cent. with great distinction; 90 per cent. with the greatest distinction.

This technical diploma is awarded in the *écoles professionnelles* and in the *écoles professionnelles-ménagères*. Girls who leave these institutions furnished with technical diplomas easily find employment if they desire it.

**School Exhibitions.** All these schools hold an exhibition of pupils' work at the close of the school year, thus giving the public an opportunity of judging the work and the progress of the workers.

**Teachers.** The teachers in *écoles professionnelles* are generally chosen from among the pupils who have passed through the schools. Intending teachers generally have a year's probation, during which they give lessons under the direction of their teachers, to whom they are attached as assistants.

**Number of Schools.** There are twenty-nine *écoles professionnelles* for girls subsidized by the Government; a list of these is given in Appendix D. with a brief note of such points as are of special interest in connection with the present report. As housewifery instruction, properly speaking, is not given in these schools\*, it is hardly necessary to give a detailed illustration of their organisation, but a short account of the school in the *rue du Marais*—the *école Bisschoffsheim*—will be found in Appendix E.; this school is of particular interest as being the first technical school for girls established in Belgium, and it may be regarded as the forerunner of the numerous technical schools and classes, of different types and degrees, adapted to the various needs of the population.

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\* Where needlework and dressmaking are taught for trade or professional purposes, they are not considered as coming within the scope of this report, which deals with training for *home life* in these and similar subjects.



TABLE OF THE ÉCOLES PROFESSIONNELLES-MÉNAGÈRES.

(Particulars taken from the latest Official Report (1897-1901).)

Address.	Dates : of founding ; of 1st State Grant.	Whether Com-munal or Private Authority.	No. of Pupils 1900-01.	No. of techni-cal diplomas gained since the School opened.	No. of Teachers.*	Annual School Fee. †	Budget 1901. ‡	Curriculum.		Remarks.
								(Subjects taught in addition to those com-mon to all the éc. prof. ménagères. †)		
								Theory Courses.	Technical Courses.	
1. Braire-l'Alleud - -	{ 1893 } { 1893 }	P.	61	36	11	50	12,050	Book-keeping, morals.	Technical drawing -	Attached to Convent of the <i>Sœurs de Marie</i> . Adminis-tered by a committee of 3 members. Mentioned in report as one of the best provincial schools of this class. 4 years course. School hours 8.30-11.45 a.m., 1-4.30 p.m. All the teachers have diplomas. There is a school library.
2. Brussels (rue de Terre Neuve).	{ 1888 } { 1890 }	P.	125	212	13	100	28,830	—	Millinery, artificial flowers, jet orna-ments, commerce (foreign languages).	School committee of 12 members appointed by the <i>Association pour l'enseignement professionnel des femmes</i> . Called the <i>école Couvreur</i> after a former president of the association. School year September 15th—July 15th. School hours 8-11 a.m., 1.30-4.30 or 5.45 p.m. School library of 600 volumes.
3. Brussels (rue de la Roue)	{ 1890 } { 1891 }	P.	64	25	10	75	19,225	—	Millinery, flowers, commerce.	4 years course. School year end of September to August 15th. School hours 8.30-11.45 a.m., 1.45-4.15 p.m. School is controlled by an administrative committee.
4. Etterbeek ** - -	{ 1897 } { 1897 }	P.	40	5	9	60	7,450	—	Commerce (short-hand, typewriting, foreign language), millinery.	Attached to the <i>Sœurs de l'Enfant-Jésus</i> . 4 years course. School year 10 months. School hours 8-11.30 a.m., 1.30-7 p.m. <i>Cours ménagers</i> daily 4.30-7. The accommodation for this course can serve, says the report, as a model. For admittance to the technical courses pupils must be 14 years old, have finished their primary education, and have attended a preparatory course for one year. School library.
5. Gosselies - - -	{ 1898 } { 1899 }	P.	50	2	11	75	6,650	Care of infants, morals, manners. §	Millinery, flowers, commerce (Ger-man, English).	Founded by the <i>Sœurs de la Providence</i> and a committee of 7 members. School year October—August 15th. School hours 8-12 a.m., 1.15-4 p.m.
6. Hal - - - -	{ 1898 } { 1899 }	P.	30	—	8	60	7,500	Manners § - -	—	Attached to Convent of the <i>Sœurs de l'Union au Sacré-Cœur</i> . Governing committee of 3 members. A rural School. 4 years course. School hours 8.30-11.45 a.m., 1.30-4.30 p.m.
7. La Louvière - -	{ 1898 } { 1899 }	P.	12	—	9	50	7,380	Morals, manners § -	Embroidery - -	Attached to Convent of the <i>Sœurs de la Croix</i> . 4 years course. 10 months a year. 9-12 a.m., 1.30-4 p.m. Teachers all have diplomas.
8. Lierre - - - -	{ 1899 } { 1900 }	P.	19	—	7	50	4,515	—	—	Founded by the <i>Sœurs Ursulines</i> . 3 years course. 10 months a year. 8.50-11.30 a.m., 1.30-4 p.m.
9. Nivelles - - -	{ 1896 } { 1897 }	P.	40	12	11	60	12,900	Morals - - -	Commerce (English, Flemish, short-hand, typewriting).	Founded by the <i>Sœurs de l'Union au Sacré-Cœur</i> . A patronage committee of 3 members. 4 years course. School year October 1st—August 15th. School hours 8-11.30 a.m., 1.30-4.15 p.m.
10. Quiévrain - - -	{ 1897 } { 1898 }	P.	31	2	8	60	8,320	—	—	Founded by the <i>Sœurs de Ste.-Marie</i> . Patronage com- mittee of 3 members. School year October—August. School hours 8-11 a.m., 1-3.30 p.m. (See page 52).
11. Saint-Gilles ** - -	{ 1891 } { 1892 }	C.	106	77	13	84	26,681	Care of infants -	Millinery, flowers, commerce (short-hand, typewriting, English), technical drawing, method.	Known as the <i>Institut Sainte-Ursule</i> ; founded by the <i>Sœurs Ursulines</i> . Patronage committee of 5 members. Under the direct control of the Communal Council. 3 years course. School year September 15th—August 1st. School hours 8.30-11.30 a.m., 2-5 p.m. Special attention paid to the Housewifery courses. Teachers all have diplomas.
12. Saint-Trond - - -	{ 1898 } { 1898 }	P.	26	—	9	60	5,475	—	—	Directed by the <i>Sœurs Ursulines</i> . Patronage committee of 3 members. Course covers 4 years. School year 10 months. School hours 8.30-11.30 a.m., 1.30-4.30 p.m.
13. Schaerbeek ** - -	{ 1889 } { 1889 }	C.	87	40	7	60	17,230	Shorthand, care of infants.	Millinery (flowers, jet ornaments and feathers).	
14. Vilvorde - - -	{ 1899 } { 1900 }	P.	17	-	10	40	5,025	Industrial sciences -	—	
Totals - - -			708	411	136	—	169,231			

\* Including Directress, Staff and visiting teachers. † In francs. ‡ In all the *écoles professionnelles-ménagères* the theory courses include : French, Flemish (except in Walloon districts), arithmetic, metric system, geometric forms, physics, principles of commerce, hygiene, domestic economy, technical drawing, national and contemporary history, commercial and industrial geography. The technical courses include, in all the Schools alike : lingerie, dressmaking, housewifery course (*cours ménagers*). \*\* Suburb of Brussels. § *Savoir-vivre*.

TABLE OF THE ÉCOLES PROFESSIONNELLES-MÉNAGÈRES.

(Particulars taken from the latest Official Report (1897-1901).)

Address.	Dates : of founding ; of 1st State Grant.	Whether Communal or Private under Authority.	No. of Pupils 1900-01.	No. of technical diplomas gained since the School opened.	No. of Teachers.*	Annual School Fee.†	Budget 1901.†	Curriculum.		Remarks.
								(Subjects taught in addition to those common to all the éc. prof. ménagères. ‡)		
								Theory Courses.	Technical Courses.	
1. Braine-l'Alleud - - -	{ 1893 1893 }	P.	61	36	11	50	12,050	Book-keeping, morals.	Technical drawing -	Attached to Convent of the <i>Sœurs de Marie</i> . Administered by a committee of 3 members. Mentioned in report as one of the best provincial schools of this class. 4 years course. School hours 8.30-11.45 a.m., 1-4.30 p.m. All the teachers have diplomas. There is a school library.
2. Brussels (rue de Terre Neuve).	{ 1888 1890 }	P.	125	212	13	100	28,830	—	Millinery, artificial flowers, jet ornaments, commerce (foreign languages).	School committee of 12 members appointed by the <i>Association pour l'enseignement professionnel des femmes</i> . Called the <i>école Couvreur</i> after a former president of the association. School year September 15th—July 15th. School hours 8-11 a.m., 1.30-4.30 or 5.45 p.m. School library of 600 volumes.
3. Brussels (rue de la Roue)	{ 1890 1891 }	P.	64	25	10	75	19,225	—	Millinery, flowers, commerce.	4 years course. School year end of September to August 15th. School hours 8.30-11.45 a.m., 1.45-4.15 p.m. School is controlled by an administrative committee.
4. Etterbeek ** - - -	{ 1897 1897 }	P.	40	5	9	60	7,450	—	Commerce (shorthand, typewriting, foreign language), millinery.	Attached to the <i>Sœurs de l'Enfant-Jésus</i> . 4 years course. School year 10 months. School hours 8-11.30 a.m., 1.30-7 p.m. <i>Cours ménagers</i> daily 4.30-7. The accommodation for this course can serve, says the report, as a model. For admittance to the technical courses pupils must be 14 years old, have finished their primary education, and have attended a preparatory course for one year. School library.
5. Gosselies - - -	{ 1898 1899 }	P.	50	2	11	75	6,650	Care of infants, morals, manners. §	Millinery, flowers, commerce (German, English).	Founded by the <i>Sœurs de la Providence</i> and a committee of 7 members. School year October—August 15th. School hours 8-12 a.m., 1.15-4 p.m.
6. Hal - - -	{ 1898 1899 }	P.	30	—	8	60	7,500	Manners § - - -	—	Attached to Convent of the <i>Sœurs de l'Union au Sacré-Cœur</i> . Governing committee of 3 members. A rural School. 4 years course. School hours 8.30-11.45 a.m., 1.30-4.30 p.m.
7. La Louvière - - -	{ 1898 1899 }	P.	12	—	9	50	7,380	Morals, manners § -	Embroidery - -	Attached to Convent of the <i>Sœurs de la Croix</i> . 4 years course. 10 months a year. 9-12 a.m., 1.30-4 p.m. Teachers all have diplomas.
8. Lierre - - -	{ 1899 1900 }	P.	19	—	7	50	4,515	—	—	Founded by the <i>Sœurs Ursulines</i> . 3 years course. 10 months a year. 8.30-11.30 a.m., 1.30-4 p.m.
9. Nivelles - - -	{ 1896 1897 }	P.	40	12	11	60	12,900	Morals - - -	Commerce (English, Flemish, shorthand, typewriting).	Founded by the <i>Sœurs de l'Union au Sacré-Cœur</i> . A patronage committee of 3 members. 4 years course. School year October 1st—August 15th. School hours 8-11.30 a.m., 1.30-4.15 p.m.
10. Quiévrain - - -	{ 1897 1898 }	P.	31	2	8	60	8,320	—	—	Founded by the <i>Sœurs de St<sup>e</sup>.-Marie</i> . Patronage committee of 3 members. School year October—August. School hours 8-11 a.m., 1-3.30 p.m.
11. Saint-Gilles ** - - -	{ 1891 1892 }	C.	106	77	13	84	26,681	Care of infants -	Millinery, flowers, commerce (shorthand, typewriting, English), technical drawing, method.	(See page 52).
12. Saint-Trond - - -	{ 1898 1898 }	P.	26	—	9	60	5,475	—	—	Known as the <i>Institut Sainte-Ursule</i> ; founded by the <i>Sœurs Ursulines</i> . Patronage committee of 5 members.
13. Schaerbeek ** - - -	{ 1889 1889 }	C.	87	40	7	60	17,230	Shorthand, care of infants.	Millinery (flowers, jet ornaments and feathers).	Under the direct control of the Communal Council. 3 years course. School year September 15th—August 1st. School hours 8.30-11.30 a.m., 2-5 p.m. Special attention paid to the Housewifery courses. Teachers all have diplomas.
14. Vilvorde - - -	{ 1899 1900 }	P.	17	—	10	40	5,025	Industrial sciences -	—	Directed by the <i>Sœurs Ursulines</i> . Patronage committee of 3 members. Course covers 4 years. School year 10 months. School hours 8.30-11.30 a.m., 1.30-4.30 p.m.
Totals - - -			708	411	136	—	169,231			

\* Including Directress, Staff and visiting teachers. † In francs. ‡ In all the *écoles professionnelles-ménagères* the theory courses include: French, Flemish (except in Walloon districts), arithmetic, metric system, geometric forms, physics, principles of commerce, hygiene, domestic economy, technical drawing, national and contemporary history, commercial and industrial geography. The technical courses include, in all the Schools alike: lingerie, dressmaking, housewifery course (*cours ménagers*). \*\* Suburb of Brussels. § *Savoir-vivre*.

C.—ÉCOLES PROFESSIONNELLES-MÉNAGÈRES  
(TECHNICAL AND HOUSEWIFERY SCHOOLS).

The *écoles professionnelles-ménagères* are very similar to the *écoles professionnelles* but, as their name implies, they include instruction in household work; further, they have nominally a three years' course but, as a matter of fact, the course is in most cases extended to four years. These schools are intended for the daughters of small tradesmen, clerks, the *petite bourgeoisie*, from homes where paid service cannot be afforded, but where, perhaps, the daughters stay at home and should know how to do all the household work and how to make and mend clothes for all the members of the family. Girls are also trained as dressmakers, milliners, etc., but the scope of the technical courses is not as wide as in the *écoles professionnelles*. As in these schools, half the time is given to general or theory courses, usually held in the morning, and half the time to technical courses, usually in the afternoon. School is open every day of the week, from 8.30 o'clock till midday, or till 11.45, and from 1.30 till 4, sometimes till 4.30, and even in some provincial schools till 5 o'clock. There is one half-holiday a week, generally Thursday or Saturday afternoon. For admittance, pupils must be at least thirteen years old and have completed their primary education. As in the *écoles professionnelles*, there is an exhibition of pupils' work at the end of the school year.

In all schools of this class, the *cours généraux* include French, Flemish (except in Walloon districts), arithmetic, the metric system, geometry—not the demonstration of theorems, but the geometric principles necessary for drawing and for the valuation of surfaces, cubes, and other practical problems; further, physics, commercial principles, hygiene, domestic economy, technical drawing, national and contemporary history, commercial and industrial geography.

The *cours professionnels* include, in all the schools alike, *lingerie*, cutting out and making ordinary garments, housewifery instruction.

In addition, some of the following subjects are taught according to the choice of each school: commercial science (including book-keeping, commercial law, compulsory English or German, shorthand, typewriting, a thorough study of commercial and industrial geography, commercial arithmetic), millinery, the making of artificial flowers, technical drawing. Certain schools also include in their syllabus the care of infants (*pédagogie maternelle*).

The regulations for the technical diploma awarded at the end of the course are the same as in the *écoles professionnelles*, but the practical tests do not include quite so many different subjects, e.g., in dressmaking an evening bodice is not made, as the course is not so far advanced. Even when the course is extended to four years, as in the first class of schools, housewifery is an additional subject in the curricula of the *écoles professionnelles-ménagères*.

There are fourteen of these schools; a summary of the chief points of interest concerning each school is given in the table facing this page.

École Pro-  
fessionnelle-  
Ménagère,  
St. Gilles  
(Brussels).

As an example of this type of school the *école professionnelle-ménagère communale de Saint-Gilles*, a suburb of Brussels, may be quoted. This school was founded in 1891 by a society called *Le Progrès* in order to furnish girls with the means of finding honourable and lucrative employment in trade or commerce, and to train, at the same time, intelligent, industrious, and prudent housewives. The school has received State grants since 1892. In 1894 it was taken over by the commune of Saint-Gilles. A committee of ten members, with the *échevin* of public education as president, has given its patronage to the school. The school is now situated, in large buildings, which are however insufficient for its growing needs, in the *Avenue de la Toison d'Or*.

The length of course is four years for dressmaking, three years for millinery and commerce, and three years for the general, or theory, courses. The school year is 206 days ; lessons are given every day from 8.30 to 12 a.m., and from 2 to 4.30 p.m., with the exception of Thursday afternoon, which is a holiday. The school fees amount to eighty-four francs (about £3 7s. 6d.) a year. There are more than 100 pupils and 13 teachers, who all hold diplomas.

The pupils of each school year, or class, are divided into two groups ; one group has theory lessons in the morning and technical courses in the afternoon, while the other has technical courses in the morning and theory lessons in the afternoon.

The *cours généraux* include : French, Flemish, arithmetic, principles of commerce, history, geography, domestic economy, natural science, drawing, the care of infants (*éducation maternelle*). Pupils who are furnished with a leaving certificate from an *école moyenne* are dispensed from the general, or theory, courses.

The technical drawing, as is usual in these schools, is drawing applied to the various special courses, that is, to designs and models for dresses, for *lingerie* and millinery, and designs for embroidery, etc., according to the courses which the pupils take up.\* I saw a class of girls at work on some test memory drawings of blouses which they designed themselves, and drew life size, according to scale. I also saw some beautiful embroidery which the pupils were making from their own designs.

The *cours professionnels* are : *lingerie*, dressmaking, millinery, artificial flowers, commerce (including English, shorthand and type-writing), technical drawing, method, housewifery courses.

Since the school was opened in 1891, seventy-seven technical diplomas have been issued to the pupils. During the years 1896-7 to 1900-01, fourteen diplomas were given for dressmaking, four for *lingerie*, four for millinery, and twenty-four for commerce ; during the same period there were about 100 pupils every year.

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\* The same mistress teaches drawing, designing, history of art and embroidery, in this school, and a very high standard is reached.

TABLE OF THE ÉCOLES MÉNAGÈRES—PROFESSIONNELLES.  
(Particulars taken from the latest Official Report (1897-1901).)

	Address.	Dates : of founding ; of 1st State Grant.	Whether Com- munal or Private under Authority.	No. of Pupils 1900-01.	No. of tech- nical diplomas gained since the School opened.	No. of Teachers.	Annual School Fee.	Budget 1901.	Curriculum.		Remarks. *
									Theory Courses.	Technical Courses.	
1.	Ath - - - -	{ 1894 } { 1896 }	C.	37	27	4	10 (20 fr. for non-residents in commune).	3,700	Hygiene, domestic economy, French.	Dressmaking, <i>lingerie, cours ménagers.</i>	Under the superintendence of a committee of ladies appointed by the Town, the Province and the Government, with the <i>échevin</i> of public instruction as chairman. Length of course 2 years, a third year is optional for those who wish to perfect themselves as dressmakers. Pupils must be between 14 and 18 years of age and be educated up to the standard of the primary School.
2.	Hougaerde - - -	{ 1898 } { 1900 }	P.	28	—	9	60	7,300	French and Flemish, arithmetic, principles of commerce, hygiene, domestic economy, morals.	<i>Lingerie, dressmaking, cours ménagers.</i>	Founded as an <i>école professionnelle-ménagère</i> in 1898 by a committee of 3 members in order to give girls of the commune a complete education, from the point of view both of scientific instruction and of training for manual and household work. It was attached to the convent of the <i>Union au Sacré-Cœur</i> . Although the technical and domestic work was appreciated by parents and pupils, neither the former nor the latter appeared to realize the usefulness of the scientific courses. Since technical education is, primarily, to be adapted to the needs of the neighbourhood, the scientific courses were suppressed in October, 1901, and the school became an <i>école ménagère-professionnelle</i> . To be admitted, the pupils must be 14 years old and have reached the standard of primary education.
3.	Laeken † - - - -	{ 1900 } { 1900 }	C.	32	—	2	None.	4,125	Elementary arithmetic and simple book-keeping, French, domestic economy and hygiene.	Sewing, mending, dressmaking, cooking, washing, ironing, household work.	Subsidized by the Province as well as by the State and the commune, each appointing 2 members of the managing committee (of 6). 48 pupils entered in October, 1901. School hours : 8.30-11.30 a.m. ; 1.30-4 p.m. except Thursday and Saturday afternoon. Pupils must be 14 years of age and must know the principal subjects included in the syllabus of primary Schools.
4.	Tournai - - - -	{ 1890 } { 1892 }	C.	18	40	3	32	4,350	French, arithmetic, hygiene, domestic economy, book-keeping.	Courses of cooking & household work, needlework.	Under the direct management of a committee of 7 members. Length of course : 2 years. Lessons morning and afternoon. Girls over 13 years of age admitted, when up to the usual standard.
5.	Heverlé - - - -	—	P.	—	—	—	None.	—	French and Flemish, hygiene, domestic economy.	Sewing, mending, cooking, washing, ironing, household work.	Attached to the <i>pensionnat de l'Institut du Sacré-Cœur et de l'Immaculée-Conception</i> , formerly at Louvain. Under the direction of a committee, presided over by the Director-General of the whole institution. The pupils can pass from the School to the workroom, where they earn a small salary, as soon as the directress considers them capable. The course is not limited in length. A considerable number of pupils attend the School. They are divided into groups, taking it in turns to do needlework, which forms their principal occupation, and the work of the housewifery School.
6.	Ghent - - - -	1900 (In process of organization).	C.	—	—	3	10	—	French, Flemish, arithmetic, commerce, drawing, domestic economy, hygiene and the care of infants.	Needlework & dressmaking, household work.	(See page 54).
Totals -				115	67	21	—	19,475			

\* The teachers (not counting the assistants). † Suburb of Brussels.

The *cours ménagers* are obligatory for all pupils who take the theory courses. During the three years of attendance at the housewifery class, each pupil has a half-day's instruction a week. The class, which generally consists of six or seven pupils, is held three days a week for the first year pupils, two days for the second year, and one day for the third year. There are always more pupils in the first school year than in any succeeding one. Cooking is taught in the morning, washing and ironing in the afternoon, for two different groups of pupils; the work is arranged in such a way that the time occupied by housewifery instruction is always taken from the *cours professionnels* and not from the *cours généraux*. Mending is taught to the whole class together.

The school possesses a library and some collections.

The commune has introduced an interesting feature in replacing the prize distribution by a school journey offered to pupils who have gained their diplomas.

#### D.—ÉCOLES MÉNAGÈRES-PROFESSIONNELLES (HOUSEWIFERY AND TECHNICAL SCHOOLS).

In the *écoles ménagères-professionnelles* the course nominally lasts two years. Lessons are given in the morning and in the afternoon. The work is principally practical, as it is in the *écoles ménagères* and *classes ménagères*, but the curriculum also includes theory lessons in some subjects, such as elementary arithmetic, French, Flemish, hygiene, and domestic economy. Aim and Scope.

These schools are intended particularly for girls who, in the future, as working women and wives, will be too restricted in income to keep a servant; that is to say, the *école ménagère-professionnelle* provides practical training in all the various branches of work that are included in a woman's duties as wife and mother in her own home. Though similar in aim to the *écoles ménagères*, the schools of this class have a somewhat broader curriculum, and, with a two years' course,\* needlework and dressmaking can be treated in more detail. Broadly speaking, it may be said that the *écoles ménagères-professionnelles* are for a slightly higher class, socially, than the *écoles ménagères*, for while the latter are devoted almost exclusively to the working classes, the former are attended by the daughters of employes in offices, of mechanics, etc. In the former, also, a small fee is sometimes charged, whereas the latter schools are always free.

In 1901 there were only six of these schools. As the official Report points out, schools of this type would have their *raison d'être*, especially in the country, where they would form a useful intermediate class between the *école ménagère* and the *école professionnelle* proper.

\* Many *écoles ménagères* have a two years' course, but they are not generally open morning and afternoon every day of the week.

The table facing page 53 summarises the latest available information concerning these schools, as regards attendance, curricula, etc. As an illustration, I have taken the communal school at Ghent, which is worked on the same lines as the other institutions of this class, but includes in its curriculum, in addition, lessons on the care of infants.

École Ménagère-Professionnelle, Ghent.

In July, 1900, the Communal Council of Ghent decided to establish the *école ménagère-professionnelle*, which was opened on the following 1st October, in the *rue Froebel*. This school was intended by its founders to replace the communal *écoles ménagères*, which did not give the most encouraging results. The experiment has been successful and the school seems to be appreciated by both parents and pupils.

There were fourteen pupils during the first, and thirty the second year; all the pupils of the first year stayed for the second year of the course and there were sixteen new pupils. In March, 1905, there were forty-eight pupils.

There is a two years' course; this year some pupils have entered for a third year, devoted exclusively to the technical courses, and I was told that the third year will probably soon be definitely organised as part of the course. The school hours are from 8.30 to 12 a.m., and from 2 to 4.30 p.m. Pupils are admitted between the ages of 12 and 15; the entrance examination includes all the subjects of the primary school curriculum. The school fee is ten francs a year. The school is in the charge of a directress and two teachers, who all have diplomas.

The *classe ménagère* consists of a group of eight pupils, who work for one week at a time in the morning. The work is arranged as follows:

Monday morning: three pupils cook\* (for the whole class of eight); five prepare the washing.

Tuesday morning: All the pupils do washing.

Wednesday morning: Two or three girls cook; the others finish, if necessary, the washing, and begin ironing.

Thursday morning: The whole class does ironing.

Friday morning: Two or three pupils cook; the rest iron.

Saturday morning: Cleaning (by the whole class).

The *cours professionnels*, or technical classes, are held from 9.30 to 12 a.m. for all the pupils except those in the housewifery class, and from 3 to 4.30 p.m. for the whole school. The course consists of needlework and dressmaking, including mending. The girls bring their own materials, as they do for washing and ironing.

In the first year they make various simple articles of *lingerie*: children's chemises, women's chemises, boys' shirts, camisoles, white petticoats, aprons; in the second year: children's garments (dresses, coats, etc.), girls' dresses. Those who stay a third year make women's dresses, dressing-gowns, etc. The girls make their

\* Cooking includes the purchase of provisions.

own patterns, taking the measurements from each other, or, if necessary, other children can come to the school to be fitted. They begin learning to use the sewing machine at the end of the first year. On the day of my visit the girls of the first year were doing repetition of what they had already learnt—petticoats, chemises, aprons. Many of the first and second-year pupils were making garments (white petticoats, little dresses, etc.), for younger sisters and cousins, for their first communion. The third-year pupils, for the most part, were making simple stuff or cotton dresses for themselves.

The work is essentially practical, and on a less ambitious scale than in technical schools of the first two categories. In schools of this type needlework is not studied in the elaborate and minute detail demanded in the *écoles professionnelles*. The *écoles ménagères-professionnelles* are intended for a special class of girls, for whom habits of order and carefulness are the primary necessity; hence much time is devoted to mending and to the adaptation and re-arrangement of old garments. The Government strongly emphasises the importance of this instruction, which is considered to form an integral part of the principles of domestic economy, that is to say, of economy in the home. It is possible to teach this principle, in theory and practice, to older girls who are of an age to appreciate its importance and who, besides, in many cases have to be wholly or in part responsible for the management of their own homes.

The *cours généraux*, or theory courses, are held from 8.30 to 9.30 a.m., and from 2 to 3 p.m., the pupils of each year having a lesson of one hour. The following subjects are included: Flemish, French, arithmetic, commerce, drawing, domestic economy and hygiene.

The course in hygiene includes *pédagogie maternelle*, or the care of infants. In order to make these lessons practical and profitable, an arrangement has been made with the committee of the town *crèches* by which the pupils are allowed to visit a neighbouring *crèche* and see the practical application of the principles learnt at school. The hygiene course occupies one hour a week; general hygiene and the care of infants are given alternate weeks. A group of eight or ten pupils, in the charge of a teacher, visits a *crèche* every week for about half to one hour; they are given explanations of what is passing at the moment, and are themselves gradually allowed to do simple things, *e.g.*, feed, wash or dress a baby.

An examination is held at the end of the first school year, bearing on all the work of the year, *cours généraux*, *cours professionnels* and *classe ménagère*; there is an examination for the leaving diploma at the end of the second year, including all the work of the two years' course. The directress examines; the commune gives the diploma.



## E.—COURS PROFESSIONNELS

## (TECHNICAL COURSES).

In 1901 there were three *cours professionnels* for girls. Two of these were established by the communal administration of Saint-Josse-ten-Noode (a suburb of Brussels). Special courses lasting four years are attached to the *école moyenne, rue Musin*, for pupils who care to study dressmaking and other subjects with greater thoroughness and detail than the curriculum of the secondary school admits; another course, with similar organisation, is attached to the primary school (*rue de la Limite*) for pupils who have passed the standard of the fifth school year. In the first case fifty-two pupils attended the course in 1901; there are five teachers; the fee is seventy-two francs yearly. In the second case: fifty-two pupils, eight teachers and no fee.

Thirdly, a course of lessons on the history of dress is held in Brussels, exclusively for pupils of the *écoles professionnelles* subsidised by the Government, who have gained their diplomas. The course is intended to complete the education of girls who have finished their technical studies and to teach them the difficult art of "dressing," or, in other words, to cultivate their taste. Drawing lessons are included in the syllabus of the course. The course is held on Monday, from 1.30–4.30 p.m. At the end of the year a competitive examination is held, and the pupils have to make a costume of a certain period, determined for each by drawing lots. The course was founded in 1895. Since that date twenty-two certificates have been gained. The annual fee is 5 francs. There are two teachers and nineteen pupils (1901).

## F.—ATELIERS D'APPRENTISSAGE

## (WORKSHOPS FOR APPRENTICES).

## Origin.

An account of the origin and development of the *ateliers d'apprentissage* does not come within the scope of this paper, but the following facts may be indicated.

The *ateliers* were originally established to improve and spread the flax industry, which has long been famous in Flanders. The introduction of machinery and other causes created such distress among the Flemish weavers that in 1834 it became clear that the Government must combine with private effort if the decline of the linen industry were to be stopped. Various measures were taken which, together with the difficulties encountered, well repay investigation; it must be sufficient to mention here that the *ateliers d'apprentissage* were definitely organised in 1847.

These institutions are now regulated by the *arrêté royal* of the 10th February, 1861, modified by that of the 10th January, 1873; these measures establish the conditions necessary for State grants, but much is left to be determined by local requirements. The

modern *ateliers* have a different character from those of the old régime; the latter were intended to remedy a disastrous situation and to replace the resources of an industry which had become unproductive for thousands of families, the former are institutions for technical education, intended to keep the country worker abreast of modern industrial progress.

Only *ateliers* established or adopted by the communes receive grants from the State or the province. These institutions are intended to form good workmen by supplying the absence or the insufficiency of the ordinary means of apprenticeship and of technical education. They are directed by an administrative committee of three members, appointed respectively by the State, the province, and the commune, for a period of three years.

General  
Organisa-  
tion.

The curriculum includes primary instruction, which should last at least one hour a day, technical instruction, and practical work. In no case can the day's work exceed twelve hours, not lasting more than four consecutive hours at a time. Apprentices must be at least twelve years old, and have the necessary aptitude for the branch of industry they take up, but those who have received primary education can be admitted, as exceptions, earlier. A fee, fixed by the administrative commission, can be demanded from pupils who are not poor. Salaries are paid to pupils for their work, which is done for manufacturers who provide the raw material.

In 1901 there were four *ateliers d'apprentissage* for girls, three of which are under private control; there are more than forty of these institutions for boys.

Ateliers  
d'Apprentis-  
sage for  
Girls:—

The *atelier d'apprentissage* for straw weaving and the manufacture of straw hats at Bassenge is an attempt to combat the decline of an industry of long standing in the *vallée du Geer*. Girls do the straw-plaiting, the hat-making is done by men; the girls' section was founded in 1893.

(a) Bassenge

The apprenticeship lasts three years; the school year is divided according to the requirements of the trade, the course lasting from July 15th to December 15th, with a fortnight's interval from September 1st to 15th.

The girls have drawing lessons on Sunday from 2.45 to 3.45, and straw-weaving lessons four days a week from 12.30 till two o'clock. On other days they attend the *école ménagère*. On an average twenty-five girls attend the *atelier*.

Another *atelier* for girls was founded at Jemelle in 1877; the speciality here is to teach girls of the neighbourhood sewing and all kinds of *lingerie*, including the making of garments. The term of apprenticeship is not limited, because side by side with this *atelier*, which is communal, there is a private workshop where the girls who know their trade can work for private individuals if they like. The *atelier* is administered by a committee of three members.

(b) Jemelle.

Since 1890 an *école ménagère* has been attached to the *atelier*. In 1901 seventy-six pupils attended the courses of the *atelier* and the *école ménagère*. Besides the directress, there are three teachers

of the order of the *Sœurs de la Doctrine Chrétienne*. There is no fee. The pupils learn, in the *cours généraux*, hygiene and domestic economy; in the *cours professionnels*, hand and machine sewing, *lingerie*, knitting, household work. The hours are from 8 to 12 a.m., and from 1 to 4 p.m. in winter and 1 to 6 in summer; Saturday is a holiday.

c) Maldeg-  
hem (E. Fl.).

The *atelier* at Maldeghem, established in 1896, is for embroidery on tulle,\* an industry which has the advantage that it can be practised at home. The course, which is free, lasts four or five years and is held every day, except Sundays, holidays, and fair days. Pupils are admitted at twelve years of age, and as soon as they produce a saleable article they receive a small payment. About fifty girls are regularly in attendance; there are three teachers for the technical course of embroidery, and two who teach the various subjects included in the curriculum of primary schools. There is a management committee of five people, who assist the founder of the *atelier*, a former priest of Maldeghem.

d) Saint-  
Trond. . .

There is, lastly, an *atelier d'apprentissage* for lace-work,\* founded in 1899 and attached to a primary school at Saint-Trond. The intention is to provide the children at the same time with primary education and with a means of earning daily bread, and the institution is especially intended for children whose education has been neglected by their parents in order that they may go to work too soon.

Pupils attend the primary school in the morning from 8.15 till 11.30; in the afternoon they learn lace-making from 1 till 4.30. There are three teachers and thirty pupils (1901). Seven ladies form a "patronage" committee.

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\* There are in Belgium 160 schools for lace-making and embroidery, of which three-fourths are managed by nuns.

IV.—TECHNICAL EDUCATION.

SPECIAL HOUSEWIFERY INSTITUTIONS.\*

A.—ORIGIN AND DEVELOPMENT OF THE ÉCOLES ET CLASSES  
MÉNAGÈRES.

The *écoles ménagères* (housewifery schools) may be said to be the final fulfilment of that attempt to train girls for home life which, to a greater or less extent, is represented in all types and grades of schools which receive State grants, and which are, therefore, to some extent under State control.

The first special institution for housewifery instruction was founded in 1872 by M. Smits, manager of a factory at Couillet. The Prince de Chimay, at that time Governor of Hainault, was so impressed by the importance of the undertaking that, in 1874, he started an *école ménagère* at Frameries under the direction of the communal schoolmistress. Eight or ten pupils had been expected, more than forty sought admission. Not only children leaving the elementary school, for whom it was primarily intended, but girls of eighteen and twenty and married women begged to be allowed to attend the course and to be taught the most elementary household work.

The success of the school at Frameries encouraged the Prince de Chimay to make the same experiment in other parts of Hainault, and it was not long before nine other communes had each their own *école ménagère*.† The Prince de Chimay supported these schools at first entirely at his own expense, but after a time, at his suggestion, they were brought under State control.‡

In 1886 the *Commission du travail* (Labour Commission) recommended the establishment of *écoles ménagères* as one of the most important measures for ameliorating the condition of the labouring classes.

A circular issued by the *Ministère de l'Intérieur et de l'Instruction publique* in 1887, already mentioned, made suggestions for the organisation of *classes ménagères* attached to primary schools and for housewifery instruction in adult schools.§

\* A paper on the "Housewifery Schools and Classes of Belgium," by Miss K. S. Block and Miss L. Brackenbury, was published in Volume 1 of Special Reports on Educational Subjects (1897).

† The regulations governing these Schools are given in Appendix F.

‡ See *L'Enseignement Spécial en Belgique, par H. Bertiaux. 1. L'Enseignement Professionnel. (Bibliothèque Belge des Connaissances Modernes). Brussels [n.d.]*.

§ This Circular is given in Appendix A.

Ministerial  
Circular,  
26th June,  
1889.

In 1889 an arrangement was made between the above Ministry and the *Ministère de l'Agriculture, de l'Industrie et des Travaux publics*† by which the latter department undertook the direction and support of the *classes ménagères* attached to primary or adult schools for girls. This arrangement and, further, the provisions made for special *écoles ménagères*, were explained in a circular of the 26th June, 1889, addressed to the governors of provinces by the Minister of Agriculture, Industry, and Public Works.\*

The following extracts explain the aims of the department in undertaking and carrying on this work, and the principles which promote and control the domestic education of girls and women in Belgium :—

“ The *Commission du Travail* has recommended the establishment of *écoles ménagères* as one of the measures which can most rapidly ameliorate the moral and material condition of working class families.

“ It is needless to attempt to demonstrate the preponderant influence which the woman exercises on the welfare and morality of the family.

“ But it is necessary to inquire how the daughters of our working men actually prepare themselves to exercise this influence and to fulfil the mission which devolves upon them.

“ Up to the present, leaving out of account the needlework which she learns at the primary school, a girl is supposed to serve her apprenticeship as future mother of a family at home.

“ Assuredly, this system would be the best, but it is only possible if the girl can carry on, in her own home, a trade that enables her to earn her daily bread.

“ Now the exigencies of the organisation of modern labour have rendered this method inapplicable in the industrial parts of the country.

“ The girl goes out early in the morning to the coal mines, to the works, to the factory; she often stays there all day and only returns home in the evening. She has, therefore, no opportunity of adapting herself to household duties, nor of acquiring the domestic virtues which will be necessary to her when, in her turn, she founds a new home. And not only is the opportunity wanting, but there is no inclination. When her daily work is accomplished she considers herself dispensed from every other occupation. Having worked as industriously and as long as her father and her brothers, she believes herself justified in resting when they do. It is, doubtless, but rarely that the thought of a preparation for future duties enters her mind. She thus arrives at the marriage period almost a stranger to all the necessities, as to all the responsibilities, of her new social condition.

“ The girl's ignorance is still greater if, as is the case in certain industries, the mother of the family herself works in the factory and lives, for a great part of the day, separated from her children, whom she confides to strangers or to charitable institutions.

“ It is not surprising that the new home, established under these unfavourable conditions, soon presents a spectacle of the greatest moral and economic disorder. The income is squandered; the dwelling and the furniture are spoiled; the children are deprived of the necessary moral and physical care; the meals are badly and hastily prepared. Soon, the head of the family, instinctively revolted by the appearance of permanent mess which his home presents, yields to the temptations of the public-house, and to the invitations of his comrades. Then the home, morally speaking, is dissolved. Continual discussions destroy the affection, and, as they grow up, the children,

\* Now two departments, of which the Ministry of Industry and Labour is responsible for technical education, see footnote, page 46.

left to themselves and their education neglected, tend to absent themselves more and more from a home where there is nothing to cheer their eyes or delight their hearts.

"The evil inevitably increases from generation to generation, and we end by becoming accustomed to the idea that it is all normal and that we cannot change any of it.

"The family being the basis of society, the consequences of this situation are easily perceived. They are formidable. Recognising them, Mr. Gladstone said that whoever should discover the means of keeping women at home, by providing them with lucrative employment, would be one of the greatest benefactors of mankind.

"The duty, therefore, is imposed upon everyone, upon individuals as upon public authorities, of seeking the means and of making the necessary sacrifices for giving the daughters of our working men the domestic education which they cannot receive at home.

"Everything points to the school, and three principal systems can be applied.

"1.—The inductive teaching of principles of hygiene and domestic economy, which is already given in a great number of primary girls' schools in the form of object lessons, familiar talks, and reading lessons, can be extended to all schools, and this elementary course can be completed, or rather vitalized, by teaching a selection of household tasks in accordance with the instructions of the circular of *M. le Ministre de l'Intérieur et de l'Instruction publique*, dated the 1st September, 1887.\*

"2.—A special *classe ménagère* can be attached to the primary school for the pupils of the upper standard, over twelve years of age, to attend at least two half days a week.

"The nature of the *classe ménagère* is defined in the circular referred to above.

"This system is equally applicable to adult schools for girls.

"3.—Finally, special schools, *grandes écoles ménagères*, can be established for girls who have left the primary school and who are already employed in factories and workshops.

"The Government is of opinion that all three systems are capable of producing good results and that they ought to be employed simultaneously.

"The first lays the foundation of housewifery education; it leads little girls to love domestic work, to help their mothers before and after school; it gives a knowledge of the most important rules of hygiene and the most useful principles of domestic economy. But in order to ensure the preparation of girls for domestic work under favourable conditions, it is necessary to procure them the opportunity of attending either a *classe ménagère* or an *école ménagère*. It is easy to understand that regular and methodical apprenticeship in the various kinds of work connected with keeping the house and furniture clean and tidy, with washing and ironing linen, has quite a different effect from object lessons, the character of which always remains, in spite of the skill of the best teachers, more theoretic than practical.

"Two ministerial departments co-operate in putting in practice the three systems which have just been mentioned.

"The first system (instruction in the principles of hygiene and domestic economy in the primary school) has been described in the circular dated the 1st September, 1887, addressed to provincial Governors by *M. le Ministre de l'Intérieur et de l'Instruction publique*.

"The third, consisting in the establishment of special *écoles ménagères* which are real technical schools, comes within the department of the *Ministère de l'Agriculture, de l'Industrie et des Travaux publics*, in the same category as the *écoles industrielles et professionnelles* and the *ateliers d'apprentissage*.

"With regard to the second system, namely, the addition of a *classe ménagère* to the primary school or to the adult school for girls, this had

\* See Appendix A.

Ministerial  
Circular,  
26th June,  
1889—con-  
tinued.

been considered at first as belonging to the curriculum of primary education, like the first system; but as the *classe ménagère* under discussion must be furnished with special apparatus, as the pupils who attend it must apply themselves to manual work, and as this class will thus have a technical character not common to lessons in the primary school or in the adult school proper, it has seemed more rational that the application of the second system should come within the functions of my department.

"An arrangement to this effect has been made by the two departments. As a result of this arrangement the *Ministère de l'Intérieur et de l'Instruction publique* will continue to be responsible for the talks, object lessons, and other lessons which aim at inductive teaching of principles of hygiene and domestic economy in the primary school and in the adult school, as well as for the needlework lessons which, for a long time, have formed part of the curriculum of these schools. But the *Département de l'Agriculture, de l'Industrie et des Travaux publics* will be responsible for the organisation of the theoretic and practical instruction given in the *classes ménagères* attached to the higher classes of primary schools or to adult schools for girls; it will grant the necessary subsidies to aid the establishment and maintenance of these *classes ménagères* and it will put them under the supervision of the ordinary inspectors of technical education (*l'enseignement industriel et professionnel*).\*

\* \* \* \* \*

"I am prepared, *Monsieur le Gouverneur*, to second all serious attempts which may be made to establish *classes ménagères* or special *écoles ménagères*, and I count particularly upon your agency to promote them. I beg you to call the attention of communal administrations to this matter and to urge them to make the necessary provision.

"I beg you likewise to seek the co-operation of the province and to invite the provincial council at its next session to vote subsidies for this purpose.

"You would also do well to appeal to individuals, especially to ladies. It is a question of accomplishing a social duty.

"I have no intention of imposing an obligatory curriculum on the founders of *classes ménagères*. This curriculum must necessarily adapt itself to the customs and needs of the people. It will certainly be different in the *grandes écoles ménagères*; it could not be the same in agricultural districts as in industrial neighbourhoods.

"At the same time, as *écoles ménagères* have been established a long time in Hainault, and as others have been founded recently, the experience that has already been gained supplies some general data which it is well to take into account.

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"Principles of order and strict economy must govern all the instruction. It is necessary to guard against inspiring the pupils with luxurious ideas, as much in matters of dress as in the preparation of food.

\* \* \* \* \*

"The choice of a teacher is very important from the point of view of the success of the school. Not only must she be an expert in the work she is to teach, she must know how to teach in clear, simple and precise language; above all she must know how to implant in the girls the moral qualities which form, even more than practical knowledge, the housewife and the mother. If the teacher is herself inspired by the loftiness of her mission

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\* There are now special inspectresses of housewifery schools and classes (see footnote, page 47).

she will know how to make her pupils understand the importance of the rôle of the woman from the point of view of the community and by reason of the duties which devolve upon her.

\* \* \* \* \*

"As regards the time-table, a distinction must be made between the *classes ménagères* attached to primary schools and to adult schools, and the special *écoles ménagères*. More latitude, obviously, would be possible in the latter than in the former, because in the *classes ménagères* the time devoted to practical work is narrowly limited by the exigencies of the curriculum of primary education properly so called.\*

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"The freedom allowed in the arrangement of the time-table of the *grandes écoles ménagères* will enable those arrangements to be made which are most favourable to the pupils' education. Thus, it has been noticed at Liège, that the pupils profit more by the lessons and practical work in cookery when these are given, without interruption for eight to fifteen days.

"The internal organisation of the *classe ménagère* or of the *école ménagère* will also vary according to local conditions, and the opportunities for selecting teachers. For instance, if a locality possesses several primary schools for girls it is not necessary to attach a *classe ménagère* to each of them. Instruction in household work can be given in one place or by the same staff, so long as different days and hours are chosen in such a way as to make a rotation between the groups of pupils coming from different schools."

On a report to the King, presented by M. de Bruyn, Minister of Agriculture, etc., a Central Committee of Patronage for the *écoles ménagères* was established at Brussels, by an *arrêté royal* of the 26th June, 1889. This Committee was composed of ladies under the presidency of S. A. R. Madame la Comtesse de Flandre, and was formed in order to stimulate the movement for the establishment of special housewifery schools and to ensure the co-operation of ladies who would devote themselves to the performance of this social duty.

A further *arrêté royal* of the 6th July, 1890, established propagandist committees in each of the eight provinces of Belgium, and these provincial committees were authorised to appoint local committees.

Both central and provincial committees have ceased to exist. Local committees of private individuals sometimes exercise a sort of "patronage" over a school—offer prizes, help to defray expenses, and take an interest in the welfare of the girls on their leaving school.

It has been seen that the purpose in founding the *écoles* and *classes ménagères* was to train working class girls for the duties of a wife and mother in her own home, to give the working man a good housewife who manages his home properly, with order and economy.

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\* The recommendations with regard to *classes ménagères* attached to primary and to adult schools, given in the Ministerial Circular, 1887, are here quoted (see Appendix A).



Progress and General Characteristics—continued. “ We believe that if the home is kept clean and attractive, and the woman knows how to conduct the household, the man has no longer the same desire for the public-house, and that is why we encourage these schools with all our power ”\* (M. Rombaut).

Further, it is clear that all these schools and classes, without exception, give a complete domestic education; they are not cooking schools or sewing schools, but housekeeping, or housewifery schools, and every pupil in attendance is obliged to take the complete course, and not only one or two subjects.

The schools may be either under local authority (*communal*) or under private management (*libre*); in the latter case they are, as a fact, in the hands of religious (Roman Catholic) bodies.

At first the *écoles* and *classes ménagères* had little success; the principle of housewifery education was not appreciated by the working classes; the opposition came principally from the mothers who did not realise the usefulness of these institutions, and who saw no reason why their daughters should require any other instruction than they themselves had received. This opposition was only gradually overcome; in some cases years elapsed before parents cordially co-operated with the school authorities.

Little by little obstacles were surmounted. Some primary schools annexed housewifery classes, where the pupils were initiated into the work of cooking, washing and ironing. The little girls took a fancy to these occupations, and on leaving the primary school they wished to perfect their knowledge by attending the course of the *écoles ménagères*, and sometimes their elder sisters were prevailed on to accompany them. Then, when one commune had educated a few girls in a housewifery school, and realised the results with pride, the news spread to the neighbouring commune who, seized with a spirit of emulation, in their turn established similar classes.

Various methods of making the schools popular were practised. Great care was taken to place the schools in districts and streets frequented by the artisans, where they easily came to know of their existence and the advantages they offer; and many ingenious devices were—and are—used to interest parents in the work of their children, *e.g.*, the grant of small sums of money to successful pupils for the purchase and preparation of the Sunday dinner which is cooked and eaten at home, a report by the parents upon

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\* “ Belgium,” to quote an official document, “ of which such masters as Teniers and Jordaeus have symbolised the ardent ‘ joy of living,’ cannot at present, any more than formerly, pass for a land of anchorites or abstainers.”

It was officially estimated that, in 1903, 37,009,900 litres (about 8,142,178 gallons) of alcohol were consumed in Belgium, or an average of 5·37 litres (about 4½ quarts) per head of the population; in 1901 the consumption per head was 9·91 litres. This decrease is, in part, attributed to the legislative efforts of the Government: a reduction of the duty on wines certified as free from alcohol, and a progressive augmentation of taxation on alcoholic drinks.

the result being sent to the school and posted in a prominent place. If the pupils attend regularly throughout the course they receive at the end their own note-books, which are not only useful but a source of pride. In some cases small prizes are given at the end of the year; or every three months, according to their behaviour, the pupils receive little rewards, often consisting of something they have made from materials given to them at school. Again, it became the practice in some schools to give a small present to pupils on their marriage, generally some household furniture or utensil.

In some schools a leaving examination is held and a certificate awarded by the commune or other authority responsible for the school. In Hainault, for instance, the institution of this examination in several schools is said to have produced good results on attendance and work, and the certificate is highly valued by parents and pupils. To be admitted to the examination, girls must be at least sixteen years old and have attended the courses regularly for two years. The chairman of the examiners is a member of the Communal Council or of the management committee of the school.

Appeal was made in the first instance to the fathers rather than to the mothers:—

“It is the appreciation of the father which is of most importance for us in the circumstances. On Saturday, we say sometimes to the little girls: ‘How much has this meal cost you?’ 0 fr. 22 per head for instance! ‘Very well, if there are six of you at home, ask your father for 1 fr. 50 to-morrow, prepare a meal like this for him, and on Monday bring us a certificate from your father—not from your mother.’ When the father has had a good meal, he is delighted, and he becomes a warm partisan of the housewifery school.”

If at first progress was slow, when once the change had set in, it spread rapidly, and the number of schools increased from the four or five, with which the movement started, to over two hundred in six years.

One principle, that has been adhered to from the beginning, is that the initiative should in all cases come from the locality and not from the central department. No school or class receives a grant until it is in working order with at least twelve pupils, which means that the founders, whether public or private bodies, must bear the preliminary expense and organise the school, which, again, means that working class families in the locality in which the school or class is situated must be ready for it and feel the need of it. The reasons for this method of procedure are not far to seek. In the first place the spirit of freedom and individual liberty is dear to the Belgian. To exercise compulsion is to gain the body not the spirit, says the department:—“If we, the State, said, ‘you must come to this school,’ the pupils would indeed come, but as soon as our backs were turned they would depart and there would be no permanent result, and, moreover, we should be expected to bear the whole cost; but, as it is, when the pupils themselves wish to

Progress and come we, on our side, are willing and eager to help and to enable General Characteristics learn what most suits their needs." \*  
 —continued.

The increase in the number of institutions gave rise to new difficulties. The chief of these was to keep the schools to their proper function of training women to do the work of their own homes. "The great misfortune in all classes of society," to quote M. Rombaut, "is, that each always aims above its station; the working man does not escape from this fatal rule. Our girls are always tempted to go into service either in the town or in the country houses of the neighbourhood, even to work with dressmakers or in workshops. Invariably, when I notice that the teachers have a tendency to push their pupils in this direction, I threaten to have their school closed, to withdraw all grants, and, if the case should occur, I keep my word, because the result of this emigration is to leave us in the village the least intelligent girls, the refuse, in a word. I do not wish the girls to leave their village to go into the towns. I desire that they should remain at home, that they should manage their household well if they marry; that, in a word, they should preach by example. Why does the husband inevitably go to the public-house? Because at home the house is dirty and badly managed." In order to avoid this exodus to the towns of the better girls who, once there, do not want to marry working men, for whom the choice is now limited to the unprofitable, the schools must be prevented from aiming too high, the curriculum must be limited to what is really necessary for the wife of a working man to practise in her own home. So, for instance, a dinner must not cost more than 2½d. a head,† which limits the dishes to the simplest, so that the girl does not even learn enough cooking to act as servant in a middle-class family. Similarly with the sewing, only the garments ordinarily worn are made, and the training is thus suited to home and not to trade use. Again, with the washing and ironing, gar-

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\* It is, no doubt, possible to subsidise whatever new institutions of this kind may be established, partly because the cost of establishing and maintaining an *école* or a *classe ménagère*, when governed by the accepted principles, is not great. Technical schools, proper, on the other hand, are expensive institutions, and though the annual expenses are largely met by pupils' fees, the cost of installation and equipment falls partly on the State. For 1901, the total cost of maintaining 299 *écoles* and *classes ménagères* was 365,497 francs (State grants, 163,508 francs), with an average cost of 40·23 francs per pupil; whereas the total cost of maintaining fifty-two *écoles professionnelles* (of all three types) was 653,479 francs (State grants, 202,554 francs), with an average of 158·22 francs per pupil.

† This amount is reckoned in accordance with the income of a working man or artisan, whose wages may be taken, roughly speaking, as, on an average, two shillings (2 francs 50) a day; the low rents, even in Brussels, and the cheaper cost of living must be taken into account in estimating the value of the wage; moreover it seems usual for the wife to contribute a small amount to the family budget weekly, and the children often begin to earn; if only a trifle, at the age of twelve. In Brussels, where wages are higher, the housewifery school dinner may amount to 3½d. per head.

ments are made scrupulously clean and neat, but very inexpensive utensils are used and "home" methods employed. If the girls wish to learn what is beyond the scope of these schools and classes, there are the *écoles ménagères-professionnelles*, the *écoles professionnelles-ménagères* and the *écoles professionnelles* in progressive grades. Until teachers grasped this principle it was a temptation to them to push the school according to the cleverest pupil.

Experience proved that it was advisable to introduce certain modifications into the organisation of these schools, and a new circular, issued on the 21st January, 1899, embodies the revised regulations for housewifery schools and classes in receipt of State grants. An account of the general regulations governing these institutions, and of their curricula and methods of teaching, is given below, pages 73 to 87.

In 1899 there were more than 200 *écoles* and *classes ménagères*, with over 9,000 pupils in attendance. "These results," to quote the circular, "are very encouraging; they permit the hope that, in spite of the difficulties encountered at first and inherent in every new undertaking, housewifery education will continue to be more and more developed. The multiplication of these schools will help, in great measure, to ameliorate the moral and material condition of families of the working classes. It is with this aim, indeed, that the Government encourages, with all its power, the organisation of this special instruction."

In 1901, twelve years after the State had first taken steps for the special organisation of domestic education for girls, the number of institutions had reached 299 with a total attendance of 9,084, as follows:—

Number of Institutions.				Number of Pupils.		Number of Teachers.	Cost (Francs).			
Écoles Ménagères.		Classes Ménagères.		Total.	Average per Institution.		Total.	Amount contributed by the State.	Average per	
C.*	P.*	C.*	P.*						Institution.	Pupil.
24	54	93	128	9,084	30	596	365,497	163,598	1,222	40'23

The table on page 68 shows the distribution of these schools and classes among the nine provinces of Belgium.

The temper of the authorities may be gauged from the following extract from the last report on technical education:—

"Belgium is, in fact, one of the first countries which has organised this education (housewifery education) in a complete and practical way by making the school resemble, as much as possible, a working class home.

"The results obtained by the *écoles ménagères* are very satisfactory. But much remains to be done. The number of institutions of housewifery instruction is too small; there has not been sufficient response to the appeal made by the Government to promote the creation of *écoles ménagères*. Moreover, working-class families do not yet fully understand

\* C.—Communal P.—Under private authority.

SUMMARY OF STATISTICS,  
ÉCOLES ET CLASSES MÉNAGÈRES.\*

Provinces.	Écoles Ménagères.		Classes Ménagères.				Total.	Remarks.
	Communal.	Under Private Authority.	Communal.		Under Private Authority.			
			Primary.†	Adult.†	Primary.†	Adult.†		
Antwerp (population 819,169).	3	1	3	—	6	16	29	All these schools and classes subsidised by the Province as well as by the State. Total number of pupils, 600; 14 schools are directed by teachers who hold special diplomas for teaching housewifery. Since 1896, 13 new institutions have been founded, of which 7 at Malines. Antwerp town (population 286,696) possesses 7 classes, under private authority, for adults. 19 new institutions since 1896. At Brussels (including suburbs) (population 586,986) there are about 20 schools. About 750 pupils in all. 11 of these institutions are at Ghent (population 162,925). 107 teachers, 42 with special diplomas; 28 schools have no teacher with a special certificate. Three schools and 3 classes under private authority receive communal grants; the Province only subsidises communal institutions directed by lay teachers. 29 new institutions, 7 have been suppressed. There are 25 evening classes. It will be noticed that Hainaut, where movement began, still keeps first place as regards number of housewifery institutions. This Province includes the densest populations of labouring women in the country. Of these institutions, 15 are at Liège (town) (population 166,106), 7 at Verviers (population 49,248), 6 at Seraing (population 39,377). These 15 schools are all subsidised by the Province. 296 pupils (1901-2); 14 teachers, 6 with special diplomas. Province supports all these institutions. 8 schools and 1 class under private authority receive communal grants. Province subsidises all the institutions. 80 teachers, 10 with special diplomas.
Brabant (population 1,263,635).	2	9	12	9	9	12	50	
W. Flanders (population 805,230).	2	1	—	—	1	21	25	
E. Flanders (population 1,029,971).	—	—	—	7	12	12	81	
Hainaut (population 1,142,954).	11	20	25		15		71	
Liège (population 826,175).	3	12	10	22	2	2	51	
Limbourg (population 240,796).	—	2	—	—	13		15	
Luxembourg (population 219,210).	1	3	2	2	—	2	10	
Namur (population 346,512).	2	6	—	4	5		17	
<b>Total</b>	<b>24</b>	<b>54</b>	<b>98</b>		<b>128</b>		<b>299</b>	

\* A complete list of the écoles and classes ménagères, with details in each case as to the kind of institution, number of pupils, etc., etc., may be found in the latest report issued by the Belgian Department of Industry and Labour on technical education, already referred to.

† *Primary*.—Classes for pupils of 12 to 14 years of age. *Adult*.—For pupils over 14 years of age.

the usefulness of this education. The daughters of our working men should all pass through the *écoles ménagères*. We are still far from arriving at this point, and the incessant extension of these useful institutions must be the aim of our efforts." Progress and General Characteristics —continued.

The Government, at one time, had under consideration the organisation of ambulatory schools, which could give temporary courses in different parts of the country, with the view of making the advantages of housewifery education better understood and of instigating efforts for the establishment of new schools. This project, however, has been dropped; the increasing number of housewifery schools and classes in all parts of the kingdom make ambulatory courses unnecessary; moreover, the departmental authorities believe that such courses would not be in accordance with their invariable principle of always leaving the initiative to local bodies—whether communal or private.

The *écoles* and *classes ménagères* vary considerably in character. One chief distinction\* is between the classes for children under fourteen years of age (primary school children) and the schools and classes for adults (over fourteen years of age). Inspectors' reports state that the best results are obtained in classes and schools attended by pupils over fourteen years of age; the adults understand better than the children the purpose and usefulness of housewifery instruction, and they are also at a better age for applying what they learn at school. But since in many districts, especially in industrial neighbourhoods, the girls work at a factory, etc., from the time they leave the primary school, it is necessary to allow them to attend *classes ménagères* from the time they are twelve years old if they are not to be deprived of the benefits of this useful instruction.

M. Eugène Rombaut does not favour the classes for primary school children. He thinks that the children are too young and inexperienced to profit by the instruction; what is the good, he says, of telling children of twelve or thirteen that something costs thirty centimes, or the economy to be realised by such and such a method when they do not know the value—the labour value—of thirty centimes; when they have to earn their living in the factory or workshop, then thirty centimes means something to them. Another ground of objection is that the children are too young really to do practical household work; what they can do is little more than playing, and the instruction is necessarily too theoretic. Further, when the girls have only one week's work every six or eight weeks, or, still more, when they have only one day a week, they have time between the lessons to forget the little they learn, and they have no opportunity of learning, what is all-important for the housewife, the wise distribution and management of work and time. M. Rombaut considers the former method—one whole week's work at a time—the preferable of the two; it is in practice at Brussels and elsewhere.

\* The main official distinction is between *classes* and *schools* (see pages 73-74).

Progress and  
General Cha-  
racteristics  
—continued.

The justice of these objections, which are based on a long experience, will be readily acknowledged. It must be remembered, however, that M. Rombaut is speaking of a country where, with a population of some 7,000,000, there are about 6,000 girls over fourteen years of age in attendance at schools (limited to the use of the working classes) giving a thorough, practical, domestic training, and that the reasons brought forward could not carry the same weight in a country where such schools are the exception, not the rule. It should be added that these primary school classes in Belgium may, and do, give the children a taste for household work,\* which is in itself of value, and they serve as an excellent foundation for future work in the *école ménagère* proper.

There is no disagreement of view as to the incalculable good done by the schools and classes for adults. If the girls come when they are older, they have experience, they know what money means, and they take a pleasure, when married, in keeping themselves and their homes orderly and clean. Old pupils often come back to thank the teachers for what they have learnt; in some cases young married women, ex-pupils, have invited teacher or inspectress to visit them and to see how they put in practice at home what they have learnt at school. In Hainault, where the mining population was notoriously given to slovenly, if not worse, habits of life, these schools have gained a firm footing and are yearly turning out girls trained to household duties, and, what is even more important, armed with an awakened and developed self-respect. That a woman should take a pride in her household work is the open door to the desire to learn, as well as to sustained effort. More than once I was told of instances where old pupils had returned to the school to ask their teacher for advice and help in the making of some garment, or in some household problem.

The adult schools, though all founded on the same fundamental principles, vary according to local conditions, the pupils' needs, and the attitude and ability of the teachers and school authorities. The day schools are naturally attended by girls who live at home and have no outside employment; in some cases preparatory to marriage, in others the course is taken by girls who will have to help in if not conduct their parents' house. The evening classes are for girls who are employed in factories, workshops, in surface work at mines,† etc., during the day and whose only free time is in the evening or on Sunday. The Circular of 1899 points

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\* There is abundant evidence that these classes, as well as those for adults, are appreciated by the pupils.

† The Belgian law fixes 12 as the minimum age for industrial labour for children of both sexes; it prohibits the employment of children below 14 years of age for more than six hours a day, broken by a rest of at least three-quarters of an hour, and the employment of women under 21 years of age in underground work in or mines, at night, except in certain industries. The average hours of labour per day for women from 16 to 21 years of age are 10½, with intervals of rest of at least one-and-a-half-hours.

out that it is desirable that heads of factories and industrial establishments should allow their work girls to attend an institution for housewifery instruction twice a week, at a fixed hour, at the time when it least interferes with the work of the factory, etc.\*

The classes and schools for adults are often large, numbering over fifty, sometimes over 100 pupils. In these schools a section of pupils, taken in turn, do household work, while the rest are occupied at needlework; a workroom, under the charge of a special teacher, or teachers, is attached to the housewifery school, and the girls often mend and make for their whole household, sometimes for others as well. In such cases needlework and elementary dress and undergarment making can be more thoroughly studied, but they are still kept to "home" and not "trade" lines. The directress of one large adult school told me that the workroom (*atelier*) attached to the school was of the greatest importance; it acted, she said, as an inducement to the girls to attend the housewifery class regularly when this was a condition of their attendance in the workroom, where they have the opportunity of realising a considerable amount by the economy of doing their household work themselves and occasionally by small outside orders, and where they are at the same time learning what will enable them to earn a modest but independent livelihood in their own homes. On the other hand, as was pointed out to me by the Mother Superior of a large convent, which included various schools, the main object of these schools is the housewifery instruction, and great care and watchfulness are needed to prevent the *école* or *classe ménagère* from developing into a sewing school only, since sewing is a passive occupation, routine work, and comparatively easy, while household work means a constant variety of occupations, daily renewal of materials, and a continual activity, without which a housewifery school cannot exist.

Some schools owe their immediate origin to a desire on the part of the founders to give girls religious instruction and to protect them from the dangerous influences of the *atelier* and factory or other surroundings, from the time they leave school till they either marry or reach years of greater discretion. Thus, some adult classes, attached to convents, admit children from the primary communal schools from the time of their first communion (about twelve years of age), although no grant is received until they are fourteen years of age; children who are not Roman Catholics may be received at the same time. In such cases an attempt is made to combat the socialistic, non-religious element, strong in many places among the working classes, to which, obviously, the system of communal schools offers less organised opposition

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\*Several factory managers in Hainault employ by preference girls who have attended or who are attending housewifery courses, and in two cases managers of mines have established housewifery classes, providing the necessary funds, and encouraging regular attendance by making no reduction in the wages of the work girls during the time they spend at the class.



Progress and  
General Cha-  
racteristics  
—continued.

than that of the *libre* schools. Sometimes influence is brought to bear by making attendance on Sunday compulsory for pupils of the housewifery school; the Sunday classes, or *école dominicale*, include some religious instruction, a choice of secular subjects, e.g., French, drawing, geography, and generally some form of amusement and games. The mere fact of the girls being kept in school during a considerable number of their free hours, under supervision and in constant occupation, is in itself a protection; the influence and example of the teachers and the good opinion of their companions are, probably, as powerful as various devices and regulations employed in individual schools, e.g., prohibition of participation at the carnival or balls, classes for girls beginning and ending half an-hour earlier than the classes or workshops for boys in the same neighbourhood. But if household training *per se* is not the primary reason for existence in the case of individual schools, it is the first consideration in practice. Certain rigid regulations must be complied with and these, combined with a close inspection, keep the schools to a certain level, while a friendly rivalry among themselves acts as an additional incentive. Moreover, the principles of domestic education are so closely allied to those of practical morals that such an education, apart from its direct usefulness, is the best means of averting evil by supplying a positive and definite form of activity. At the same time the attempt to develop moral qualities is by no means limited to a section of these schools and classes; in all alike the teachers do their best to train the girls to life-long habits of a wise economy of strength, time, money and materials, of prudence, moderation, self-reliance, adaptability and unselfishness.

The discipline is always strict, in so far that the few rules—such as those of regular attendance, punctuality—must be absolutely obeyed, but it varies in severity in different schools. In classes for primary school children it is practically the same as in the primary school—no talking over the work except what the work itself necessitates, and so forth. Adult schools and classes vary; some evening classes seemed to me to represent in tone more or less what our girls' clubs are here, others again were more formal and definitely schools. Enjoyment and cheerfulness were universal, and I often heard a good deal of merriment over the work. The amount of laxity allowed depends, of necessity, partly upon the number of teachers or assistants available for supervision.

That these schools are appreciated by parents and pupils is sufficiently evidenced by the good attendance, the parents dispensing with their daughters' contribution to the family income or with their help at home, and the girls giving up their only free time to the work. Not infrequently the girls in adult schools, more especially in evening classes, stay on after the course is finished, sometimes till they are married. Although this is a sure sign of the popularity of the school, it is open to doubt whether an indefinite prolongation of the normal course of one or two years really furthers the primary

aim of these schools. The girls are no longer learners and, though they may continue to do home washing and mending at school, they are not applying what they have learnt to actual home conditions; in these circumstances, will they not miss the companionship and interests of school evenings and find it more difficult to adapt themselves to home surroundings when they marry, and might not the mothers, on their side, claim the help and presence of their daughters at home when once the legitimate school period is over? As far as a foreigner can judge, in Belgium as here, the pupils in evening classes generally come from the more self-respecting and better homes of artisans and working men, and are not, for the most part, girls who would be in altogether unfavourable surroundings if not at school.

All the *écoles* and *classes ménagères* demand real and continuous work from the pupils, not occasional or sugared tasks, verging towards play; they require regular and punctual\* attendance for the whole course, generally of two years, either in the day time or on two, three or four evenings a week, hard manual work, and close mental application in order to understand the methods employed and the explanations of the various processes; whatever is undertaken must be carried through and no scamping or slackness are tolerated. The work consists, moreover, not so much of continual acquiring of new knowledge, as of continual practice of everyday tasks that have already been learnt, which is both more monotonous and a more real preparation for actual life. At the same time, everything possible is done to make the school and school-room attractive and to prove to the girls in practice that the conduct and care of a home may be fruitful in happiness as well as in usefulness.

#### B.—GENERAL ORGANISATION OF THE ÉCOLES ET CLASSES MÉNAGÈRES.

It has been seen that the institutions which provide housewifery education can be divided into two different categories :—

- (i.)—*Ecoles ménagères*.  
 (ii.)—*Classes ménagères*, which may be attached to the upper classes of primary schools or to adult schools, or they may form special classes for adults.

(i.)—The *écoles ménagères* are institutions for girls at least fourteen years of age. The instruction includes theoretical and practical courses. The school is open every day of the week, morning and afternoon, or at least four days a week.

All the different kinds of household work are done simultaneously: cooking and cleaning, washing, ironing, mending. Each lesson lasts at least two hours and a half to three hours. This practical work is generally done in the morning. The afternoon is devoted

\* As regards punctuality, allowances are made in evening classes for adults, for girls who are kept late at work.

more especially to theory lessons and to cutting out and making simple garments. If the number of pupils makes it necessary, however, it is possible to alternate the practical household work in the morning and afternoon for two different sections.

(ii.)—The *classes ménagères* attached to the upper classes of primary schools are attended by pupils of at least twelve years of age; the *classes ménagères* attached to adult schools and the special classes for adults are for pupils at least fourteen years old. Classes must be held at least twice a week for two hours and a half or three hours. The same work is done as in the *écoles ménagères* but dressmaking is optional for the classes while it is compulsory for the schools.

Central *classes ménagères* can be organised, where pupils from different parts of the town, from different schools or from different *ateliers* or industrial establishments assemble every day at a fixed time, either in the day time or in the evening, at least twice a week, for practical housewifery work. This system of "centres" has been adopted in Brussels, Bruges, and other towns.

Besides these two methods of organising housewifery education, the Government is prepared to consider the organisation of institutions of a different type adapted to special circumstances.

inspection.

The *Département de l'Industrie et du Travail* organises through its inspectors the theoretical and practical instruction in the *écoles* and *classes ménagères* and gives grants (see page 75). The Government has, further, instituted special inspection for the *écoles* and *classes ménagères*.\* All the institutions in receipt of State grants are inspected at least twice a year.

length of  
courses.

In the *écoles ménagères* the periods, days and hours are chosen in such a way as to offer the benefit of instruction to the greatest possible number of adult girls.

In the schools which are open four days a week, the course must last at least six months. It is generally advisable to choose the winter months for attendance. The complete course occupies two years.

In the schools which are open every day of the week and which are attended regularly by twenty-four pupils at most, all the subjects of the curriculum may be taught in one school year, if the course is held for at least six months. In schools with a larger attendance the syllabus may be carried out in one school year on condition that the practical work is alternated in the morning and afternoon for two different sections. This organisation of the course in one period of six months was instituted for practical reasons; the parents are not obliged in this way to forego, for too long a time, the benefit of their daughters' wages or of their work at home.

The freedom allowed in arranging the time-table of these schools enables those arrangements to be made which are most favourable

\* There are three inspectresses of housewifery education (see footnote page 47).

to the pupils' education and most likely to ensure a good attendance. But the department insists that in no case can the instruction be efficacious unless it is continued for a sufficient length of time, of which the minimum is a continuous course of six months. As a matter of fact, at the present time, the majority of schools have a two years' course, generally lasting nine or ten months a year.

The *classe ménagère* is open in towns for nine or ten months a year, or, if desired, during the whole year. The complete syllabus covers two years.

In rural districts the classes are open from the beginning of November till the end of May. They are supposed to give one theory lesson and three practical lessons a week, and the complete course occupies two years.

A lesson can be given on Sunday, as is the practice in certain other technical schools, and, if it is necessary and not inconvenient, evening classes can also be held.

A school or a class must not contain more than twenty-four pupils for one teacher. If this number is exceeded it is necessary to have two teachers, each of whom can undertake two branches of the instruction.

As already mentioned, pupils are not admitted to schools or classes for adults before they are fourteen years old, or before the age of twelve to the classes attached to primary schools.

All the *écoles* and *classes ménagères* are free. It has been found a good plan, however, in cases of irregular or non-attendance, to charge a small fee, if only of two francs, to be returned to the pupil at the end of the course if her attendance has been satisfactory. Wherever this plan has been tried it has proved successful in saving the school, by securing the regular attendance of a sufficient number of pupils. I believe that it is now no longer necessary to have recourse to any such means.

Grants are given to schools, whether under communal or private authority, by the Department of Industry and Labour on the following conditions :—

(i.)—The authorities or the individuals who establish the *classe* or the *école ménagère* provide the school premises, the ordinary school material, and, further, part of the special apparatus. They are responsible for the maintenance of the school premises and material and also for part of the annual expenses of the school.

When the institution is in working order and is attended regularly by at least twelve pupils, a request for subsidy can be addressed by the founders or the managers to the *Département de l'Industrie et du Travail* and also to the communal and provincial authorities.

If the communal administration takes the initiative in establishing an *école* or *classe ménagère*, it applies for financial assistance to the province and to the department.

(ii.)—The draft organisation, the time-table, the syllabus of the theory and of the practice lessons, as well as the regulations, must

Grants—  
continued.

be submitted to the *Département de l'Industrie et du Travail* for approval; further, a list giving the names and ages of the pupils, and the occupations of their parents, must be added to the request for subsidy. The time-table shows the length of holidays, days of absence and also the work and rotation of the groups of pupils.

(iii.)—The composition of the teaching staff and any changes it undergoes must be notified to the *Ministère de l'Industrie et du Travail*.

(iv.)—Every year the estimate of receipts and expenditure must be submitted beforehand to the *Ministère de l'Industrie et du Travail* for approval. Accounts of receipts and expenditure are likewise submitted for approval, at the latest two months after the close of the school-year to which they relate.

(v.)—The *classes ménagères* and the *écoles ménagères* are inspected by officers, appointed by the Government, who must always be admitted.

If these conditions are observed and if the organisation of the institution offers reliable guarantees of success, the *Département de l'Industrie et du Travail* gives two kinds of grant:—

(i.)—A special grant, given once, for the acquisition of part of the special apparatus. The part of the apparatus acquired by aid of the State grant remains the property of the State, and the school managers are held responsible for its preservation or replacement. This grant amounts, on presentation of the receipts, to half the total expense necessary for the whole of the special apparatus.

If this apparatus is adapted to the necessary conditions of economy, the cost of acquisition should not amount to more than 500 francs.

(ii.)—An annual grant which amounts to two-fifths of the ordinary expenses, both for the *classes ménagères* and for the *écoles ménagères*.

If the school is communal, the commune grants two-fifths and the province one-fifth, of the annual expenses; if founded by private bodies or individuals these defray two-fifths and the commune generally one-fifth of the annual cost.

### C.—CURRICULA AND METHODS OF TEACHING IN THE ÉCOLES ET CLASSES MÉNAGÈRES.

Depart-  
mental  
Suggestions  
for Syllabus.

The department does not impose a compulsory syllabus on *écoles* or *classes ménagères*. It is felt that the instruction should be adapted to the particular customs and needs of the people in each locality; it could not be the same, for instance, in agricultural as in industrial districts. At the same time experience furnishes certain general results which it is wise to take into account, and there is always a minimum of instruction in order to meet the requirements

of inspection. In practice the founders of a school, or the teacher, draw up the syllabus and submit it for criticism and suggestions to the inspector.

It was one of the difficulties in starting these schools and classes, and the first subject of consideration, to draw up a syllabus which should make the *école ménagère* attractive. It was not pedagogic, but practical results that were sought. "Our aim," to quote M. Rombaut, "was to teach the working women to do wholesome, strengthening and economical cooking, to mend, to wash and iron linen, to nurse an invalid, to clothe a baby. Nothing but that."

The 1899 circular makes the following suggestions :—

"The syllabus must be simple and practical; it is useful to include:—

"1.—As a *theoretic course* :

"A.—*Hygiene Lessons*, treating first aid in cases of slight accident, the symptoms of children's illnesses, the proper means of preserving health, the care of children, of the sick and the old, the preparation of some herb teas, the knowledge, use and healing properties of some remedies which form a small domestic medicine chest, the care of a sick room, etc.

"B.—*Principles of domestic economy*.

"C.—*Some principles of domestic accounts*.

"D.—*Explanation of the method of washing*.

"E.—*Explanation of the method of ironing*.

"F.—*Explanation of the method of cleaning*.

"G.—*The nutritive value of certain foods, the properties of certain vegetables, and principles of cookery*."

2.—As *practical work* :

"A.—*The care of a house*, its different parts and the furniture. Care of bedrooms, parquets, floors, tiles, etc. The household work to be done each day, each week, each season.

"B.—*Washing linen*, garments, stockings, etc. How to remove stains of ink, tar, paint, fruit, etc., as well as the precautions to take before, during, and after washing. Washing flannels, woollen materials etc.

"*Bleaching*.—The precautions to take respectively with freshly mown grass, the fall of leaves, of buds and of soot.

"C.—*Ironing*.—Recommendations on the subject of the table, the irons, and the fire. Folding and gauffering linen, etc.

"D.—*Cooking*.—Series of cheap meals, keeping within the limit allowed by the modest income of a working-man or an artisan, and providing *healthy and strengthening* food by means of *nourishing, varied and inexpensive* dishes. How to treat advantageously scraps, or remains, of vegetables, meat, etc. Provisions.

"E.—*Needlework*.—Mending and care of all kinds of clothing and of linen. Various kinds of darning, and patching stockings. Special attention should be paid to the utilisation of old garments. Lessons should also be given on purchasing, ordinary cutting out, and the making of bed-linen, women's chemises, simple garments, working garments, etc. It is advisable to have the cost price of each article calculated.

"F.—Finally, for *rural communes, kitchen gardening*, and attending to the poultry yard."

The syllabus of instruction drawn up for each school must be submitted to the department.

Lessons are given in French or Flemish according to the locality.

Theoretic  
Instruction.

Theory lessons are given to all the pupils together; they occupy about two hours a week, and must always precede the practical work to which they refer. The pupils keep notes of these lessons, and thus gradually form a manual of work which they have personally tested.

The theoretic instruction deals with simple scientific facts applied to daily life. The girls learn a few technical terms, with which, by constant repetition and explanation, they become as familiar as with the name of a new household utensil. The lessons are made as inductive as possible, that is, the pupils are taught to acquire new knowledge by the application of what they already know. Starting with an explanation of the day's work,—e.g., the menu, removing stains, lighting a fire—they are led to evolve some further reason for an everyday process and to apply it practically to different uses,—e.g. from lighting a fire, to the need of artificial heating, methods of heating, advantages and disadvantages, risks and so forth. The method of question and answer often makes these lessons more like familiar talks between teacher and pupils than a formal lesson, and the girls show eagerness in discovering what are to them new facts.

I found that the following book was much in use among teachers as a basis for lessons: *Manuel d'économie domestique, d'alimentation et d'hygiène*. By M. du Caju.

On leaving school the pupils are sometimes given a small textbook. The directress of one convent school, for instance, gave me a little manual which the pupils receive when they have finished the course, and which follows the lines of their school lessons;\* the town of Brussels issues a small manual for pupils.†

The scope of the theory lessons is indicated in the suggestions for the syllabus given above; the syllabus for Brussels communal classes is given in the table facing page 93, and an outline of the subjects taught in the Mons communal school is given on page 99. It will be seen that, in addition to the lessons which are directly connected with the practical work—cooking, laundry work, cleaning, sewing, general household management—classified generally as domestic economy, a certain number of lessons devoted to what is called hygiene are always included.

Hygiene is an elastic term, and the amount of attention devoted to the subject depends more or less upon the individual teacher. In every case the instruction is made as simple and practical as

\* *Petit manuel résumant le conseiller de l'humble ménagère, ou notions succinctes d'économie domestique et d'alimentation, de travaux à l'aiguille, d'hygiène . . . à l'usage de la classe ouvrière*. Par Mme. Voituron-Liénard et Mlle. L. Devienne. (3rd Ed., 56 pp. sm. 8vo. Namur, 1902).

† *Manuel à l'usage des élèves*. (Ville de Bruxelles—Écoles Ménagères). (28 pp. 8vo. Brussels, 1903).

possible. As in all this instruction, the aim is that a few general principles, based on scientific facts, should be thoroughly mastered, by constant repetition and application, so that they become rules of conduct, rather than that any quantity of knowledge should be acquired, of importance in itself, but not directly applicable, in the girls' own lives. For these girls a little theoretic knowledge is indeed a dangerous thing; they cannot have a background of sufficient general knowledge and cultivation to assimilate easily new information, to see the relationship and due proportion of scientific formulæ and theoretic facts, whereas practical knowledge, and practical skill test themselves and act as their own best check.

The condition and care of the body in health, with very simple physiological explanations, elementary principles and practice of first aid and home nursing, the preparation of some simple remedies, symptoms of certain illnesses, the care of infants and infant hygiene, hygiene of the dwelling, and similar subjects, are included in the hygiene lessons.\*

It may be added that some temperance teaching is introduced in these lessons when dealing with foods and drinks, without an unduly prominent position being thrust upon it. The teaching is based rather upon physiological facts than upon moral disquisitions; it is not the intention that these schools should take part in anti-alcoholic leagues or act as temperance propagandists, although they are inherently, in their whole tone and character, the strongest opponents of alcoholic excess.

Some lessons bearing on income and expenditure are always included: the income of a working-man, what to use, how to distribute the expenses on dwelling, food, clothing, etc., saving, pension fund, savings-bank, insurance, friendly societies, co-operative societies, the intervention of the State in these various directions, domestic accounts to be kept by the girls for the day, the week, the year, and so forth.

There are no definite demonstration lessons. From the first the girls are given practical work to do, beginning with simple occupations preceded by theoretic explanations; when necessary, the teacher demonstrates before the class, though, more often she calls up one or two pupils who demonstrate under her direction. Practical Work : —

The pupils are expected to do all the practical work included in the syllabus. Each pupil in an ordinary *classe ménagère* or a central *classe ménagère* must attend at least two practical lessons, of two hours and a half to three hours, a week. In the schools, practical work is generally done in the morning, a theory lesson and needlework in the afternoon; if the school is large, the pupils may be divided, some doing practical work in the morning, others in the afternoon, or, if there are sufficient teachers, they may

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\* The Brussels Syllabus on the care of infants (*économie maternelle*) is given in Appendix H.



work in double groups. When the school or class is too large for either of these plans, the girls take it in turns to form a section for practical work, for one to three weeks at a time, while the rest do needlework.

System of  
"Groups."

The twenty-four girls who form a class are divided into four groups of six pupils, and the groups work simultaneously under the direct supervision of a teacher who gives individual help and correction; there are a certain number of repetition lessons, when the pupils are expected to do, entirely alone, work they have already learnt. The group of six pupils was instituted because the Belgian family generally consists of six members—father, mother, four children.

The general arrangement of groups is (1) cooking and cleaning; (2) washing; (3) ironing; (4) mending. If there should be less than twenty-four pupils in the school, two groups, *e.g.*, for washing and ironing are combined.

The same group of pupils works for a week at a time, that is to say for the two or more days in the week when the school or class is open; in this way, in the course of a month every pupil works for two, three, or more consecutive school days at each household occupation in turn. In cases where the pupils do practical work for one whole week every four or eight weeks, a different arrangement may be adopted, each group working for one or two days a week. Similarly in each group of six pupils there is a rotation of work, certain duties being consigned to each pupil, or to each pair of pupils in turn; so that, for example, if for one, or two, days pupils *a* and *b*, in the cooking group, purchase provisions and cook the meat, *c* and *d* put the kitchen in order, peel the potatoes, prepare the vegetables, and lay the table, *e* and *f* make the soup and do some cleaning; on the following day (or days), *a* and *b* will do what *c* and *d* did on Monday, *c* and *d* what *e* and *f* did; *e* and *f* what *a* and *b* did. The lessons are not varied daily, in order that each child may learn a complete process thoroughly.

The above is the most usual arrangement, but there are occasional exceptions (*cf.* La Providence, Marchienne-au-Pont, page 103).

Older and younger girls are generally mixed in each group; this serves the double purpose of assisting the teacher and of training the girls to help each other, as the older girls can help the younger in lifting and doing the heavier work, and by being, in a measure, responsible for them, acting as it is called, as "little mothers"—a much appreciated function.

Cooking.

Cooking is held to be the basis of the instruction given in these schools. At each practical cooking lesson a complete meal is cooked for six people, representing a working man's family—father, mother and four children—or sometimes, if the teacher joins the pupils, for seven people; if a pupil is absent, a girl from another group takes her place or some other arrangement is made, but the meal should always be prepared for at least six people.

Each meal consists of soup, vegetable, meat or fish, or some other food used in the neighbourhood, and often a milk pudding is added; there are thus at least two courses. It is explained to the girls why these dishes form a complete meal, containing all the nourishing qualities necessary to the human body. The principles of cookery taught are based on the following facts:—That there are three constituents necessary for complete nourishment—reparative, calorific and mineral; why they are necessary and what functions they perform; in what foods in ordinary use they are to be found; what are the special qualities of foods in ordinary use, and the relative value of different kinds and parts of the same food; that good nourishment depends upon quality, quantity, variety, digestibility of foods; process of digestion, digestive organs. Only a few scientific terms are used, and these are repeated so often that they become quite familiar to the girls, who are required to be able to explain their meaning and derivation. Diagrams are freely used. The girls must think out the practical applications of a principle as well as the theoretic reasons for a practical process.

The menu of the meal, the cost of which must not exceed twenty-five centimes \* a head, or one franc fifty centimes for six people, is written upon the blackboard, together with the length of time taken for preparing each dish, the quantities, names and prices of ingredients, the cost price of the meal and the cost per dish and per head, arranged in columns (*see* Appendix G.). The pupils copy this into their note books, which, as well as the blackboard, are often ruled for the purpose; they also copy the recipes and a *résumé* of the explanation of the menu.

The specimen menus in Appendix G. give an idea of the quantity and quality of food that is provided for about twopence halfpenny a head. The quantity of meat is necessarily small, but more than the girls are generally accustomed to have at home. It must be remembered that the food is intended for manual and not head-workers, for people who are accustomed to eat little meat, and who, therefore, need larger quantities of food than those who eat much meat and the best quality of meat; hence large dishes of potatoes, carrots, etc., are generally prepared. A plate of soup, a plate of meat and vegetables, bread, sometimes pudding, makes an excellent dinner, as I more than once had the opportunity of appreciating personally. With regard to drink, I most often saw water taken, but in some cases a glass of beer is included, or may be had by girls who desire it, at cost price.

Special attention is devoted to an economical use of materials—

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\* M. Rombaut had noticed, after long personal observation of working-class homes, that potatoes were the staple article of diet; hardly ever soup—that takes too long to prepare; rarely fresh meat—that costs too much; constantly the meal consisted of potatoes, and often badly cooked potatoes. The aim of the cooking instruction, therefore, is to show women how they can prepare an excellent and substantial meal for twenty to twenty-five centimes a head: a slightly higher limit is allowed in Brussels communal schools.

Cooking  
—continued.

economical from the point of view of nutritive value as well as of cost; the girls are always shown how to use up what is left over from a meal, a matter that is considered to be of the greatest importance. The same series of weekly menus are repeated by each group in turn for a month, so that every girl in the class learns the complete set of meals.

The girls themselves do the day's shopping, at first under the charge of a teacher and afterwards alone; one girl is given the purse and they are told what to buy, and explanations are given at the school with diagrams and charts showing the most suitable article to purchase for the particular occasion and why. They are also taught when and how to buy and store provisions—potatoes, onions, etc.

The girls who cook, sit down at the table they have laid and eat the meal themselves, free of charge, generally in company with their teacher. They are taught to dish up in an appetising way and to make the table look as pretty as possible without extra expenditure. One of the girls, "mother" for the time being to the group, serves the dishes, and they are either handed down the table from hand to hand or two girls are told off to wait; the former of these methods seems more in accordance with the aim of these schools, since an artisan's wife would hardly contribute to her husband's and children's comfort by walking round the table, placing the plates with punctilious propriety from the left and removing them from the right.

The meal is an opportunity for teaching the girls manners; sometimes when they come to school they are unused to sitting round a table laid with a cloth in orderly fashion, or, again, they are ignorant of how to handle knife and fork. After the meal, the table is cleared, the utensils washed up and put away and the room set in order.

During the course of the lesson each girl, or every two girls, are apportioned definite tasks, *e.g.*, two to dust and prepare the room, two to buy provisions, one to peel the potatoes, one to prepare the soup, later on two to cook the meat, one or two to lay the table, afterwards one to clear away, two to wash and dry glasses, knives and forks, etc., two to wash the plates and pans, one to clean the stove, and so forth.

Cleaning.

Cleaning is generally grouped with cooking, and two or more girls are apportioned tasks which include: cleaning the school premises, walls, windows, floors (if the children are old enough), sweeping, dusting, cleaning kitchen utensils and metal ware (candlesticks, teapots, etc.), and articles brought from home.

Washing  
and Ironing.

Laundry work is generally done by two groups of pupils, one group washing, the other ironing. When possible the girls wash one week and iron the same things the following week, so as to follow the complete process; sometimes they also mend the same articles, an excellent preparation for future work in their own homes.

Table

Description of the Articles.†	Choice of Material	the Article worn out.**
Sheets - - - - -	Unbleached calico - or coarse unbleached	rs to serve as linen ; pocket- kerchiefs for en.
Pillow-case - - - - -	Coarse linen or calico	
Woman's Working Apron - - -	Blue linen - - - cotton - - -	or Dusters.
Man's Working Apron - - - -	Blue or grey linen -	"
Child's Apron - - - - -	Cotton - - - - -	"
Woman's Chemise - - - - -	Coarse linen - - -	rs for baby-linen.
Girl's Drawers - - - - -	Twill or longcloth flannelette -	
Man's Working Blouse - - - -	Blue or grey linen	
Man's Shirt (for work) - - -	Cotton flannel - -	rags for dusting.
	drill, striped or with	" " "
Man's Shirt - - - - -	Ordinary white linen and fine linen (front	- handkerchiefs; children, neck kerchiefs.
Man's Working Trousers - - -	Corduroy - - - -	r cleaning stoves.
	drill, twill - - -	r dusting.
	blue or grey linen -	"
Man's Trousers - - - - -	Cloth - - - - -	rs for one of the ren.
Waistcoat - - - - -	Cloth - - - - -	r cleaning stoves
Knickerbockers for small Boy -	Cheviot, thin cloth- twill, drill, etc.	rs for a younger ld.
Man's Round Jacket - - - -	Cloth - - - - -	for one of the ren.
	drill, twill - - -	
Jacket for little Boy (about ten years of age).	Cheviot, thin cloth twill, drill, etc.	for a younger ld ; lining.
Woman's Loose Blouse or Morning Jacket (for work)	Coloured Cotton - twill, drill, etc. union flannel -	or rags for dust- " " " " " "
Ditto - - - - -	Thin cloth - - -	or cleaning stoves
Bodice - - - - -	Cheviot or serge -	at every day after s been mended.
Skirt - - - - -	Ditto - - - - -	then make a ticoat or a skirt he of the children.

\* From the *Petit manuel résumant le conseiller de l'humble ville . . . à l'usage de la classe ouvrière. Par Mme. Voituron-Liénard et F., 1902 (50 cent.).*

† The various articles are classified according to the difficulties, buttons, &c.

‡ Under mending only the principal methods are indicated

\*\* The linen which is most used is supposed to be kept for

NEEDLEWORK.

Table recapitulating Lessons in Cutting-out and Making.\*

Description of the Articles.†	Choice of Material.	Width.	Length required and Price per Metre.‡	Cost Price with Extras.§	Mending.	Use of the Article when worn out.**
Sheets - - - - -	Unbleached calico - - - - - or coarse unbleached linen -	1.70 m.‡	5 m. at 1 fr.§ 5 m. at 1.50 fr.	5 fr.§ the pair - 7.50 fr. the pair.	Turn the hems to the centre ; darn ; patch.	Wrappers to serve as baby - linen ; pocket-handkerchiefs for children.
Pillow-case - - - - -	Coarse linen or calico - - - - -	0.70 m.	1.50 m. at 0.60 fr.	0.95 fr. each -	Turn two pillow-cases into one.	Dusters.
Woman's Working Apron - - - - -	Blue linen - - - - - cotton - - - - -	1.10 m.	1 m. at 0.90 fr. 1 m. at 0.85 fr.	1.10 fr. - - - 0.85 fr.	Turn the bottom and put it into the waist-band ; patch.	Lining or Dusters.
Man's Working Apron - - - - -	Blue or grey linen - - - - -	1.10 m.	1.20 m. at 0.90 fr.	1.18 fr. - - -	Patch - - - - -	" "
Child's Apron - - - - -	Cotton - - - - -	1.10 m.	1 m. at 0.90 fr.	0.95 fr. - - -	Darn and patch - - -	" "
Woman's Chemise - - - - -	Coarse linen - - - - -	0.80 to 0.90 m.	2.50 m. at 0.60 fr.	1.75 fr. - - -	Darn and patch, or make one chemise out of two.	Wrappers for baby-linen.
Girl's Drawers - - - - -	Twill or longcloth flannelette - - - - -	0.80 m.	1.40 m. at 0.70 fr. 1.40 m. at 0.40 fr.	1.15 fr. - - - 0.75 fr. - - -	Darn and patch. - - - " " - - -	Dusters. Rags.
Man's Working Blouse - - - - -	Blue or grey linen - - - - -	1.20 m.	1.60 m. at 1 fr.	1.80 fr. - - -	" " - - -	Towels.
Man's Shirt (for work) - - - - -	Cotton flannel - - - - - drill, striped or with squares -	0.80 m.	3.20 m. at 0.70 fr. 3.20 m. at 0.70 fr.	2.35 fr. - - - 2.35 fr. - - -	" " - - - " " - - -	Lining, rags for dusting. " " " "
Man's Shirt - - - - -	Ordinary white linen - - - - - and fine linen (front and cuffs)	0.80 m. 0.80 m.	3.20 m. at 1 fr. 0.70 m. at 1.50 fr.	3.35 fr. - - - 4.40 fr. - - -	" " - - - " " - - -	Pocket - handkerchiefs for children, neck handkerchiefs.
Man's Working Trousers - - - - -	Corduroy - - - - - drill, twill - - - - - blue or grey linen - - - - -	0.70 m. 0.70 m. 1.30 m.	2.20 m. at 2.50 fr. 2.20 m. at 1.10 fr. 1.10 m. at 1.10 fr.	1 fr. (with ½ m. twill lining). 2.40 fr. - - - 1.20 fr. - - -	" " - - - " " - - - " " - - -	Rags for cleaning stoves. Rags for dusting. " "
Man's Trousers - - - - -	Cloth - - - - -	1.30 m.	1.10 m. at 3.75 fr.	4 fr. - - -	" " - - -	Trousers for one of the children.
Waistcoat - - - - -	Cloth - - - - -	1.30 m.	0.70 m. at 3.75 fr.	(with 1.30 m. twill lining).	" " - - -	Rags for cleaning stoves
Knickerbockers for small Boy - - - - -	Cheviot, thin cloth - - - - - twill, drill, etc. - - - - -	1.20 m. 0.70 m.	0.70 m. at 3 fr. 1.40 m. at 1.10 fr.	(with 1.30 m. twill lining). - - - - -	Darn and patch - - - " " - - -	Trousers for a younger child.
Man's Round Jacket - - - - -	Cloth - - - - - drill, twill - - - - -	1.30 m. 0.70 m.	1.50 m. at 3.75 fr. 3 m. at 1.10 fr.	ning and - - - - -	Unpick the garment and turn it. Darn - - - - -	Jacket for one of the children. Lining.
Jacket for little Boy (about ten years of age).	Cheviot, thin cloth - - - - - twill, drill, etc. - - - - -	1.20 m. 0.70 m.	1 m. at 3 fr. 2 m. at 1.10 fr.	the - - - - -	Turn the garment. Darn and patch.	Jacket for a younger child ; lining.
Woman's Loose Blouse or Morning Jacket (for work)	Coloured Cotton - - - - - twill, drill, etc. - - - - - union flannel - - - - -	0.80 m. 0.70 m. 0.80 m.	2.25 m. at 0.60 fr. 2.25 m. at 0.70 fr. 2.25 m. at 0.40 fr.	1.45 fr. - - - 1.70 fr. - - - 1 fr. - - -	" " - - - " " - - - " " - - -	Lining or rags for dusting. " " " " " " " "
Ditto - - - - -	Thin cloth - - - - -	1.20 m.	1.25 m. at 2 fr.	2.70 fr. - - -	" " - - -	Rags for cleaning stoves
Bodice - - - - -	Cheviot or serge - - - - -	1.20 m.	1.50 m. at 1.75 fr.	2.80 fr. (old cotton aprons for lining)	" " - - -	Wear it every day after it has been mended.
Skirt - - - - -	Ditto - - - - -	1.20 m.	3 m. at 1.75 fr.	6 fr. (with the lining for the bottom).	" " - - -	Ditto, then make a petticoat or a skirt for one of the children.

\* From the *Petit manuel résumant le conseiller de l'humble ménagère ou notions succinctes d'économie domestique et d'alimentation, de travaux à l'aiguille . . . à l'usage de la classe ouvrière. Par Mme. Voituron-Liénard et Mlle. Louise Detienne, Directrice de l'École Moyenne de l'État, à Boom. 3rd edition, Namur, 1902 (30 cent.).*

† The various articles are classified according to the difficulty of making. ‡ 1 metre = 3.28 feet. § 1 franc = 93d. ¶ "Extras" include thread, strings, buttons, &c.

|| Under mending only the principal methods are indicated ; it is not possible to summarise in a few words the various processes.

\*\* The linen which is most used is supposed to be kept for illness and accidents.

**Needlework** patching a father's working (blue linen) trousers or coat ; making  
 —*continued.* a father's old trousers small for a little brother ; altering a mother's old dress to fit a sister ; similar treatment of an apron ; relining a father's Sunday coat sleeves ; making dusters out of old undergarments ; turning up and facing the hem of a skirt ; mending their own underclothes (the most usual).

The only new garments made are those ordinarily worn by the wives and children of working men. These are not always made from new materials. As with mending, great stress is laid on the wise use and adaptation of old garments, of scraps of material, of odds and ends of wool, silk, etc. Undergarments (chemises, drawers, etc.), aprons, skirts and simple bodices are made, and sometimes a workman's linen blouse and trousers. The girls measure, draft, cut out and make. In the schools, the girls are generally taught to use a sewing machine.

The table facing page 83 gives a general idea of the aim and scope of the instruction in cutting out and making as given in these schools and classes, but it must not be taken as a statement of what is actually done in any particular school ; much depends upon the teacher, upon the girls, upon the locality, and as there is no compulsory syllabus, it will be understood that such a table is valuable, not for definite details, but as an indication of the methods pursued.

The actual sewing varies considerably. It is generally good in classes attached to primary schools. In schools and classes for adults, the standard depends partly upon the teacher and the amount of undivided attention she is able to give to the girls who are doing needlework, and partly upon the class of girls and the previous training and practice they have had. Sometimes it is nearly, if not quite, up to the standard of a technical school ; in evening classes it is not always as neat or "finished" as, for example, would be demanded in a London elementary school, but it always serves its practical purpose for strength and durability, and is probably quite as good as what a busy housewife would be able to do. In large schools, where only a section of the girls can do practical work at a time and the rest are occupied in needlework, this subject naturally receives special attention and development.\*

\* A word may be added with regard to dresses, etc., made out of old garments, altered and arranged to look neat, but necessarily plain, though I noticed that, whenever possible, the latest frill or flounce was introduced. It struck me that we might often find it difficult to persuade girls of thirteen and fourteen to wear such dresses. It seems that the same difficulty is experienced in Belgium, especially with older girls. The Mother-Superior of a large institution in Brussels, containing various types of school for girls of all classes, where especial ingenuity was shown in the adaptation of "old clothes," said that "*Luxe est ce qui nous perd*," and that the girls always liked to copy their betters and to wear the most elegant frippery ; she instanced the case of the "patronesses," who help to entertain the girls on Sunday, some of whom come in trailing delicate-coloured garments and picture hats, with the result that in a fortnight's time the girls appear in cheap facsimiles, while other wiser ladies dress with simplicity and at the same time with elegance.

The ruling principle in the equipment of these schools and Equipment. classes may be stated as follows:—The pupils should not use utensils or apparatus that are not within the means of ordinary working class homes. As stated above, if the choice of apparatus is governed by principles of strict economy the total cost of equipment should not exceed 500 francs (£20).

The accommodation is generally an adaptation of existing premises, *e.g.*, class-rooms, or an ordinary house; but in some cases special premises have been provided. The number of rooms required depends upon the size of the school; where the school contains more pupils than can do practical work at the same time, special sewing rooms are necessary.

For practical housewifery instruction there is generally at least one large room, which serves as kitchen and dining-room, often as ironing room and mending room as well; if it is the most suitable, it is also used for theory lessons, which are generally given to all the girls together, when, therefore, no practical work is proceeding at the same time. When there is only one teacher to twenty-four girls it is an advantage to her to have two or three groups working in the same room, under her immediate supervision. There is almost always a separate wash-house, and a yard, or section of playground. In newer schools the lighting is arranged on the most approved system, but in some cases the light, especially at night, seemed to me insufficient. The wash-houses open straight on to the yard (or playground) and as, sometimes, there is no window and the door must therefore remain open, this must be a very cold arrangement in winter, especially as the floors are necessarily stone. The conditions, in many cases, in the girls' own homes would probably be the same, and obviously the premises available must be used for the purpose if they are at all adaptable, as otherwise the cost would be excessive.

The floors of kitchens and class-rooms are sometimes wood (when they are sprinkled with sand), often stone; the walls are washed down in white or colour, or sometimes they are tiled, an arrangement which favours cleanliness.

The room, or rooms, used for cooking, ironing, mending, are made as bright and attractive as possible, with plants on the window-sills, neatly arranged cupboards, small ornaments on the mantelpiece and so forth.

The rules and regulations of the school or class, and the timetable are hung up where they are easily visible. Blackboards also occupy a prominent position; one is generally ruled for the menu, including the recipe, cost per head, etc. (as given in Appendix G).

The plan, or butcher's chart, of an ox, showing the whole animal, its different parts numbered and named, and the various joints and pieces of which it is composed, always hangs on the wall; there are sometimes similar charts of a sheep and a calf.

Mottoes, which the girls copy into their note-books, are hung round the walls, either printed, or written by hand on small black-

Equipment  
—continued.

boards; the latter plan is preferable as it enables them to be varied from time to time. Very usual ones are: "Where the sun does not enter the door is open to the doctor."—"The mended coat does honour to the wife of him who wears it."—"Order has three advantages; 1, it aids the memory; 2, it preserves things; 3, it economises time."—"Try to impose upon yourself some privations in the present in order not to lack what is necessary in the future."—"A place for everything and everything in its place."—"Never buy what is useless on the pretext that it is a good bargain."

There are also domestic and hygienic coloured prints of which the art is not on a level with the moral force. These often deal, in series, with the dangers of pouring petroleum on the fire in order to make it burn up, of pouring petroleum into a lighted lamp, of playing with fire, or with some other similar danger; the first-mentioned appears to be a very common practice in Belgium and the cause of frequent accidents. Other prints represent the dangers of alcoholic drinks, though the representation of the disastrous results of alcoholic excess—dramatic scenes from the lives of the abstainer and the drinker contrasted, coloured representations of the liver in health and in disease, etc.,—seem to be less common in these than in some other schools. The treatment is generally realistic and somewhat lurid, *e.g.*, *picture 1*, the hasty housewife pours oil on her slack fire, the hands of the clock above pointing to the hour of the mid-day meal; *picture 2*, burnt to a cinder, she is lying on a bed of indescribable agony.

For cooking, ordinary pans and utensils are used. Scales are generally to be found, but as they are expensive the girls are taught both how to use and how to dispense with them; at first, for instance, three pounds of potatoes may be weighed and the pupils will be made to observe how many there are or how much room they occupy, so that for the future measure can be approximately taken by eye. Similarly the girls are taught to use the kitchen range for heating irons as long as possible, but a special gas stove is also provided. It is obvious that when six girls are cooking, though they do not all work at the stove at the same time, more space is needed at the range than when one person cooks a meal for the same number of people. The same remark applies to the choice of cooking stove; more often than not I saw a large range with one or two ovens, which is too expensive for working-class homes; sometimes, as at Courtrai (*see* page 109), there is a small stove exactly the same as that used in the girls' own homes. The grant for apparatus is not increased according to the actual cost, but is given in accordance with what would have been expended for a simple article that could be afforded by the class of people whose daughters attend the school, though there is no prohibition if the founders of the school prefer better and more expensive apparatus. Ironing boards are generally used because these can be easily



and cheaply made, but I also saw a table with flannel and blanket laid over it used for ironing.

For mending, long tables, chairs and footrests are provided in the schools, and, generally, sewing machines. Footrests are a necessity in rooms, often with stone floors, opening straight on courtyard or playground. Each girl has her own work-bag or box, with thimble, scissors, needles, etc., and, sometimes, a little screw holder to fix her work to the table, which may be bought for a few pence.

The wash-house, which often serves as cleaning room as well, is of the simplest. Stone floors and white washed walls are common; two or three tubs on trestles and a copper are practically all the apparatus required. I never saw a mangle; once or twice in schools I visited, a long stone trough was used for rinsing.

For cooking and ironing the girls always wear white aprons and sleeves. In the wash-house they wear sabots, which in some cases belong to the school, and large overalls; sometimes they keep old frocks at the school, to wear for washing and rougher work, so that they need neither sit in damp clothes, nor soil their neat dresses.

When possible, the girls make the necessary preparations for work themselves—dust the room, lay the fire, heat the irons, put ready the utensils—as well as leave everything in order before going home, but this is more difficult in evening than in day schools, on account of the limited time and late hours, combined with the uncertainty of girls from factories, etc., being able to arrive punctually.

#### D.—TEACHERS IN ÉCOLES ET CLASSES MÉNAGÈRES.

The choice of a teacher is felt to be a matter of great importance, since she is not only to have practical skill and to be a good teacher, but, as a primary qualification, she must know how to train in the girls those moral qualities which are essential in the mother of a family.

General  
Qualifi-  
cations and  
Conditions.

The department advises teachers who "desire to devote themselves to the social and humanitarian work of housewifery education," to visit a model institution, which the department will always point out, where they can attend the theory and the practice lessons. They should, further, study the habits and customs of the people in the neighbourhood where they wish to settle, and draw up, in conjunction with the school committee, a syllabus, to be afterwards submitted to the Department, of the subjects which they think it would be most useful to teach in this locality.

The teachers keep regularly a register of the number of pupils on the roll, an attendance register, a housewifery note-book, and a class journal giving day by day a summary of the lessons given and an account of the work that has been done.

General  
Qualifica-  
tions and  
Conditions—  
*continued.*

A teacher who has a special diploma earns one and a half to two francs an hour; a teacher who has not a diploma earns one to one and a half francs an hour. The commune or private authority who founds the school pays the salary, but the minimum, as above, is fixed by Government.

The town of Brussels has issued the following regulations with regard to teachers in its housewifery schools: There must be at least two teachers who have the diploma in each school, one being the housewifery mistress, and the other, the assistant. The housewifery mistresses receive a minimum salary of 2,000 francs, and a maximum of 2,500 francs a year, and the assistants a minimum of 1,000 francs, and a maximum of 1,900 francs; an increase of 100 francs is made every two years. In addition to these teachers, who are responsible for all subjects connected with household management, teachers who have not a special diploma may be employed for instruction in washing and ironing; the latter receive a salary of 600 francs (minimum) to 1,200 francs (maximum).

At first the selection of teachers presented considerable difficulties. Trained school-mistresses who had not made a special study of the theory and practice of household work did not succeed in giving their teaching a sufficiently practical character; on the other hand, women with practical experience in household duties, but not trained as teachers, failed in discipline, and in making the theory lessons of value.\* The temporary courses organised by the Ministry of Industry and Labour (*see* page 90) for teachers in housewifery schools and classes have done much towards remedying these evils, and the majority of schools have now at least one mistress who has obtained the special diploma and is in a position to teach practically, methodically, and with understanding, the principles and practice of domestic economy. The Department strongly urges teachers to take the special course and diploma,† and the local school authorities to appoint these specially trained teachers. The number of diplomas granted is steadily on the increase but the latest official report (1901), already quoted, records that: "much remains to be done in this direction, and we still attribute, in large measure, the indifference that we remark in certain neighbourhoods to the small amount of confidence which the housewifery teachers inspire in the parents of the pupils."

At the same time, the greatest honour is due to the teachers, as a body, in *écoles* and *classes ménagères*; they often carry on evening work under discouraging conditions, after teaching all day, and

\* I may mention that of the three teachers I came across in these schools who struck me as least successful, one was a mistress in an *école moyenne* who had taken neither the temporary course nor the special diploma in domestic economy, and another was an elderly woman who taught the girls washing, and who had practical knowledge but no training or experience as a teacher; the last mentioned, however, worked under the supervision of a teacher.

† The special diplomas granted by the Ministry of the Interior and of Public Education are recognised as well as those granted by the Ministry of Industry and Labour.

they persevere with unflinching courage and patience, sometimes for years, without apparent result. When once opposition and indifference have been overcome, there is, I believe, no case on record of a relapse, a fact which speaks for itself.

The small remuneration practically obliges teachers in evening classes to have some other means of livelihood, and it may be, in some measure, responsible for the limited number of available teachers. Some mistresses, who are specially trained housewifery teachers, teach in both day and evening schools of a town or district; in other cases, the directress or teachers of primary schools have taken the temporary course, sat for the special diploma, and teach in the primary school in the morning and afternoon and in the housewifery school in the evening.\* The latter teachers would appear to have the advantage that the girls are accustomed to submit to their authority, especially if actually the same girls who have been their pupils in the primary school attend the housewifery school.

It is obvious that, under these conditions, the work is hard, often exacting. As has been mentioned before, there must be one teacher for every twenty-four girls, or practical class of four groups; in the majority of schools there are two teachers to twenty-four girls, and it would seem that the ideal minimum would in every case be one teacher to twelve girls.† When some girls have taken one year's course they can be mixed with the new pupils and so act in co-operation with the teacher; moreover, it can generally be arranged that at least one group is doing a repetition of work that has already been learnt. Even so, however, the task of supervising individually twenty-four girls, engaged in different practical operations, is no light one; the amount of labour involved depends partly upon the accommodation, *e.g.*, when all the work, except washing, is done in one room, the teaching is less fatiguing than when there are separate kitchens and ironing rooms, even if they are, as is usual, on the same floor. From this point of view the addition of gardening as a school subject, valuable as it is in itself, seems to make the work of instruction altogether too heavy for one person, especially as gardening must generally mean coming early and staying late, as well as the actual work during school hours.

It is difficult to see how such a widespread organisation, dependent upon the localities even more than upon the central authority, could be carried on without some such support as

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\* It should be added that in the former, as in the latter, case it is the accepted rule that the teacher should have one half-holiday a week.

† For obvious reasons, more assistance, whether trained or untrained, is generally available in schools and classes conducted by conventual communities than in those administered by public authorities. In one large convent class I visited, for instance, there were eight nuns engaged in teaching, one of whom was furnished with a diploma; in another, equally large school, ladies from the town gave the nuns voluntary and regular help in the work of supervision.

that given in Belgium by the religious orders. It is a work which must always be, in its true sense, a work of charity and which, therefore, demands the skill, enthusiasm and knowledge of the best trained teacher. Since the supply of the professional teacher who has to earn her own living is, from the circumstances of the case, limited, it is necessary to have recourse to so-called philanthropic effort. The convent trained nun, like her professional sister, works and is trained to the work, and this is just one of the cases where spasmodic, undisciplined effort, even inexperienced enthusiasm, would defeat its own ends and render the most wisely planned scheme abortive.

Temporary  
Courses.

The *Département de l'Industrie et du Travail* instituted, in 1898, a temporary course of domestic economy and household work for women who intend to teach these subjects in the *classes* and *écoles ménagères* subsidised by the Department. This course is held during the summer holidays at the sanctioned Training College of Wavre-Notre-Dame. The course is given in French and Flemish, and lasts four weeks.

The following classes of people are admitted to the course :—

- (i.)—Housewifery teachers who have been teaching for at least a year in a *classe* or *école ménagère* subsidised by the Department of Industry and Labour.
- (ii.)—Women who possess the primary school teacher's diploma (*diplôme d'institutrice primaire*).
- (iii.)—Women who have the leaving diploma (*diplôme de sortie*) of an *école professionnelle* or an *école moyenne* and who have had at least one year's probation in a housewifery institution subsidised by the Department of Industry and Labour.

No one under twenty-one years of age is admitted to the course, and the maximum number of students admitted is forty.

The course is under the direction of the directress of the Training College.

Examens  
de Capacité.

Examinations (*examens de capacité*)\* are held, in French and Flemish, during the Easter holidays; the examiners are appointed by the *Ministre de l'Industrie et du Travail* and are presided over by the inspector-general.

The rules for admission are the same as those for admission to the course. Not more than fifty people may sit for the examination; if more than fifty candidates apply, preference is given to those who have attended the temporary course of domestic economy and household work organised by the department. The examination fee is ten francs. The examination may be taken, at the choice of the candidate, in French or Flemish.

The examination consists of a *written* paper, *practical* tests, and a *test of teaching*.

The *written examination* includes: hygiene, domestic economy and horticulture. The examiners ask at least one question bearing on each of the three subjects.

\* *Examens de capacité pour l'enseignement de l'économie domestique et des travaux du ménage dans les classes et écoles ménagères subsidisées par le Département de l'Industrie et du Travail.*

In the *practical examination* the candidates :

- A.—Do some cleaning.
- B.—Wash one or more articles (linen or garment).
- C.—Iron four or five articles :
  1. Single linen, not starched.
  2. Single linen, starched.
  3. Double linen, not starched.
  4. Double linen, starched.
  5. A garment.
- D.—Mend or patch some garment or an article of *lingerie*.
- E.—As cooking test they prepare a menu for a family of the working-classes or of the *petite bourgeoisie*, with a calculation of the cost price.

The special tests in each of the above groups is chosen by lot.

The *teaching test* consists of a lesson to be given by each candidate ; the subject of this lesson is chosen by lot 1½ hours before the test, and the candidates prepare their lessons alone, under the supervision of the examination secretary. Of the twenty-five marks allotted to the complete lesson, three are offered for speech and bearing, ten for subject matter, ten for method and results, and three for writing on the blackboard.

For the practical examination and the teaching test the candidates are divided into groups of four; the groups work simultaneously in the following order :—

Group A.	Cooking and cleaning.	Washing.	Ironing.
Group B.	Washing.	Ironing.	Cooking and cleaning.
Group C.	Ironing.	Cooking and cleaning.	Washing.

The syllabus of the examination is given in Appendix J. The written examination lasts 2½ hours; the practical work, five hours for each candidate. The mending precedes all the practical work. The teaching test lasts half an hour for each candidate.

The maximum number of marks for the whole examination is 100, distributed as follows :—

	Marks.
A.—Written examination :	
(i.) Principles of hygiene . . . . .	10
(ii.) Principles of domestic economy . . . . .	15
(iii.) Principles of horticulture . . . . .	5
	30
B.—Practical examination :	
(i.) Cooking . . . . .	16
(ii.) Washing . . . . .	8
(iii.) Ironing . . . . .	8
(iv.) Mending . . . . .	8
(v.) Cleaning . . . . .	5
	45
C.—Teaching test . . . . .	25
	100

No pupil can receive a certificate (*certificat de capacité*) unless she obtains at least 60 per cent. of the total number of marks, and at least 50 per cent. of the marks respectively assigned to the written examination and the teaching test and to the whole practical examination. The examination may be passed satisfactorily (60 per cent. of the marks for the whole examination); with distinction (75 per cent.); with great distinction (85 per cent.).

#### E.—SPECIMEN ÉCOLES ET CLASSES MÉNAGÈRES.

I visited various *écoles* and *classes ménagères*, which were recommended to me as giving a representative idea of the whole system, by M. Rombaut, inspector-general of technical education, and by Mlle. Van Gehuchten and Mlle. Henckels, inspectresses of housewifery schools and classes. These schools and classes may be classified as follows:—

##### *Classes for primary school children.*

Communal day classes—Brussels; Mons.

Private \* day classes—St. Josse-ten-Noode (Brussels).

Private evening classes—St. Josse-ten-Noode (Brussels); St. Gilles (Brussels).

##### *Schools and classes for adults. †*

Communal day schools—Marchienne-au-Pont; Monceau-sur-Sambre; Vorsselaer.

Communal evening class—Frameries.

Private \* day schools—Marchienne-au-Pont; Ostend.

Private day class—Malines.

Private evening classes—Courtrai; La Louvière.

These institutions are, further, typical of the work that is done in a city (Brussels), in coal and iron districts (Hainault), in an outlying agricultural district (Vorsselaer), in a seaside town (Ostend), and in industrial towns in the provinces (Courtrai and Malines). I have placed them in the following order: Brussels and suburbs of Brussels, Hainault, Antwerp (province), West Flanders. In giving the following short account of the most noticeable or typical features of each school, the mention of a fact in connection with one institution does not necessarily imply its non-existence in other cases.

Brussels  
(Rue Locquenghien).

The town of Brussels has adopted the system of housewifery centres for its primary girls' schools. There are three of these centres, and nineteen communal primary schools. The girls of the sixth school year (twelve to fourteen years of age) attend the *classe ménagère* for a week at a time every two months; each girl has, therefore, five weeks' domestic training during her last school

\* Private (*libre*) means under private authority.

† Adults are girls over fourteen years of age.

SYLLABUS OF THE CLASSES MÉNAGÈRES ATTACHED TO PRIMARY SCHOOLS. VILLE DE BRUXELLES. (1904).

FIFTH SCHOOL YEAR.		SIXTH SCHOOL YEAR.						EVENING COURSE.  (5-7 p.m., twice a week.) Intended for pupils 13 and 14 years of age, who are in the 5th School Year.		
THEORY COURSE.  To be given at the Primary School.	THEORY COURSES.		PRACTICAL WORK.							
	To be given at the Primary School.	To be given at the école ménagère. 3 lessons of 40 minutes a week.	Day Course.	A.—COOKING.		B.—WASHING AND IRONING.	C.—CLEANING.		D.—HEATING AND LIGHTING.	
				6th School Year. Lower Course.	6th School Year. Higher course. (For pupils who take another School Year).					
<p>I.—Indispensable qualities of the good house-wife: order, economy, foresight, cleanliness, love of work, even temper. General and practical knowledge of all that concerns the science of the home.</p> <p>II.—Good use of time. Regulated occupations for each day of the week.</p> <p>III.—<i>The Dwelling</i>: Considerations regarding the choice of a dwelling. Position as near as possible to the father's place of work or provided with easy and cheap means of communication. Neighbourhood of the shops, rent in relation to the income of the household (h.). Sanitary conditions: aspect, ventilation, cleanliness, drainage.</p> <p>IV.—<i>Furniture</i>: Choice of furniture; beds and bedding, keeping beds in good condition, destruction of injurious insects.</p> <p>V.—<i>Heating and Lighting</i>: Choice of the fireplace, fuel, chimney sweeping, chimneys on fire. Various systems of lighting, substances used, precautions to take. Insurance against fire.</p>	<p>I.—<i>Rôle of the Woman in the Family</i>: Her duties, her part in the administration of the house.</p> <p>II.—<i>The Dwelling</i>: Revision of the principles taught in the 5th year.</p> <p>III.—<i>Heating and Lighting</i>: Revision of the subjects taught in the 5th year.</p> <p>IV.—<i>Household Budget</i>: Income and expenses, necessary expenses, useless expenses. Very simple book-keeping of a working-man's household, income and expenses for the week. The same of a <i>bourgeois</i> household, income and expenses for a month.</p> <p><i>Alcoholism</i>: Heredity (Table of Galtier Boissière).</p> <p>V.—<i>Saving</i>: Savings bank under the guarantee of the State. Pension fund. Mutual Help Societies. Economical Stores.</p> <p>VI.—Care of the sick. Sick-room, cleanliness. Qualities of the nurse. Special knowledge indispensable to the nurse. Table of ordinary medicinal plants and of the ailments for which they are used. Application of certain remedies.</p> <p>VII.—Assistance in cases of indisposition and of accidents. Small household pharmacy.</p>	<p>1ST WEEK. <i>Personal Cleanliness</i>: Baths, washing, care to take of the mouth, the head, the hair, etc. Physical exercises, work, rest.</p> <p>2ND WEEK. I.—<i>Cleanliness of Clothes</i>: Of linen, washing and ironing linen, substances used. N.B.—To inspect the linen before and after washing, to mend it, in case of need. II.—<i>Hygiene of Clothes</i>: Material, colour, shape; corsets, head-dress, foot-gear, choice of garments, according to age, to the seasons; cleanliness, preservation of garments, advice on the toilet.</p> <p>3RD WEEK. <i>How to bring up Children</i>: 1. Cleanliness, clothing. } Prejudices 2. Nursing, weaning. } to com- 3. Teething, vaccination, } to com- exercise, walking. } bat.</p> <p>4TH WEEK. <i>The Dwelling</i>: Its maintenance, causes of bad sanitation, use of disinfectants, keeping the bedroom in order. <i>Washing</i>: Use of liquid chlorides, drawbacks to their use. <i>Removing Stains</i>: substances used, their dangers. <i>Kitchen Utensils</i>: their preservation, dangers of kitchen utensils of copper, tin and lead.</p> <p>5TH WEEK. <i>Food</i>: Functions of food, necessity for good food. Nutritive value of foods, their digestibility, simple classification of foods, complete diet, régime. <i>Lessons on the Course of Practical Work</i>: 8 lessons. { Food, practical advice. Qualities of foods, their preservation and the principal adulterations: bread, potatoes, meat, fish, eggs, butter, milk, cheese, fat, vegetables, fruits, spices. Provisions. 2 lessons. { Drinks, water, beer, wine, milk, coffee, tea.</p>	<p>1.—Purchase of foods. Provisioning at the vegetable market, fish market, meat market, etc.</p> <p>2.—Preparations of food. Cheap sweet dishes.</p> <p>3.—Some cheap preparations of preserves.</p> <p>4.—Store of coal, apples, onions, carrots, etc.</p> <p>5.—Order and composition of meals. Menus.</p> <p>6.—How to lay the table. Behaviour at table.</p> <p>7.—Preparations for invalids: egg-flip, herb teas, poultices, mustard poultices.</p> <p>8.—Soups and bread soups for children.</p>	<p>10 dinners, 5 suppers, and various preparations.</p> <p>MEATS. 1.—Viande sautée, porc. 2.—Viande bouillie, bœuf. 3.—Viande rôtie, mouton. 4.—Viande étuvée, carbonnades flamandes. 5.—Viande étuvée, ragôût, de mouton (aux navets et pommes de terre, ou aux carottes et pommes de terre, ou aux oignons et pommes de terre). 6.—Viande sautée et grillée, bifteck.</p> <p>FISH. 1.—Poisson bouilli, sauce au beurre fondu, sauce au beurre brun ou sauce blanche. 2.—Poisson sauté. 3.—Poisson rôti. 4.—Morue ou stockfish.</p> <p>SOUPS. 1.—Soupe aux légumes, liée aux pommes de terre. 2.—Bouillon. 3.—Soupe verte. 4.—Purée de pois ou de haricots. 5.—Soupe julienne, liaison vermicelle. 6.—Lait battu, liaison farine. 7.—Soupe aux légumes, liaison riz. 8.—Soupe au lait, liaison pain ou biscottes. 9 et 10.—Répétitions.</p> <p>VEGETABLES. Pommes de terre bouillies. Pommes de terre étuvées aux oignons. Pommes de terre frites. Pommes de terre en purée. Légumes étuvés: carottes. Légumes blanchis, accommodés à la sauce blanche: choufleur, endives, chicorées. Légumes accommodés à la graisse ou au beurre; choux verts, épinards, haricots, coupés.</p> <p>SWEET DISHES. To be prepared with the dinner of the 2nd day of each series. 1.—Gâteau de semoule (à la vanille ou au citron sans raisins). 2.—Riz au lait. 3.—Compote de fruits: pruneaux, pommes. 4.—Gâteau sec. 5.—Tarte aux fruits (pâte levée).</p>	<p>MEATS. <i>Revision of types of cooking</i>. 1.—Bœuf à la mode. 2.—Rôti de veau. 3.—Lapin en gibelotte. 4.—Boulettes au pain de hâchis, sauce piquante. 5.—Blanquette de veau</p> <p>FISH. <i>Repetition of certain preparations of the 1st Year</i>. Harengs frais grillés, sauce moutarde. Anguilles aux herbes.</p> <p>SOUPS. <i>Repetition</i>. En modifiant la composition de certaines soupes. Soupe aux tomates. Soupe aux choux.</p> <p>VEGETABLES. Pommes de terre. Répétition. Gâteau de pommes de terre. Chou rouge étuvé. Jets de choux. Choucroute. Scorsonères. Salade de laitue, sauce mayonnaise.</p> <p>SWEET DISHES. Coques de Suisse. Biscuit 4/4. Beignets de pommes. Crème. Flan.</p>	<p>1.—DAY AND EVENING COURSES. <i>Preparations for the Second Meal</i>. <i>Suppers</i>. 1ST WEEK: Accommodé de bœuf ou miroton. 2ND WEEK: Viande froide, salade de pommes de terre et de légumes (princesses, céleris) au lard et au vinaigre. 3RD WEEK: Moules, tartines. 4TH WEEK: Harengs à la daube et salade de haricots, huile, vinaigre. 5TH WEEK: Café, crêpes.</p> <p>B.—<i>Preparations for Friday or Saturday</i>. Lait de poule. Panades. (Œufs brouillés, au miroir. Omelette.</p> <p>2.—DAY COURSES (1ST AND 2ND YEAR). Confitures. Conserves au sel: princesses, tomates, légumes pour soupes. Conserves au vinaigre. Cornichons.</p> <p>3.—DAY COURSE (2ND YEAR). Accommodé de restes de poisson au gratin. De restes de viandes en salade. Macaroni au lait, au fromage. Pain. Galettes. Gaufres. Chocolat.</p> <p><i>Familiar Remedies</i>. Herb tea. Poultice. Solution of boracic water at 4 p.c. Application of a simple bandage. The same with tincture of iodine (iodine and glycerine for little children). Cold compress.</p> <p>NOTES. 1.—The cost price of the menus can be from 25 to 35 centimes (beer and bread included). 2.—In the preparation of meat, 5th lesson, the pupils should be shown the best way to use up scraps and remains for each preparation. 3.—The theory of food should be explained in a very simple way in the cooking course itself, in the first year. The pupils should learn the simplest classification of foods, in the 2nd year.</p>	<p>Washing, 5 lessons; Ironing, 5 lessons.</p> <p>1.—Washing white linen, coloured linen. 2.—Removing stains from linen. 3.—Washing stockings, flannels, woollen materials. 4.—Cleaning, removing stains of mud, grease, oil, ink, rust, fruit, wine. <i>1st lesson</i>. 4 handkerchiefs, 2 towels, white or coloured, 1 napkin (this can be replaced by a towel). <i>2nd lesson</i>. Pillow case, coloured apron (preferably cotton), 1 flannel-cotton garment, stockings and socks. <i>3rd lesson</i>. 2 girls' chemises, 1 garment of woollen material, petticoat, merino apron or shawl. <i>4th lesson</i>. 1 girls' chemise, 1 drawers, stockings and socks. <i>5th lesson</i>. 1 drawers and 1 girl's chemise, 1 jacket or a girl's apron with cuffs.</p>	<p>1.—Cleaning floors, tile flooring, wood-work. 2.—Cleaning furniture of deal, of varnished wood, and of polished wood. 3.—Cleaning windows, glass. 4.—Dusting. 5.—Washing crockery, water-bottles, glasses and kitchen utensils. Washing crockery is taught in the 1st lesson. The group of pupils who cook will be taught to clean some of the kitchen utensils during the morning. Dusting will be done every day by half the group of cooking pupils, while the others make the purchases. The most important cleaning will be done on Friday or Saturday afternoon: stove, deal furniture, doors, windows, floors, tiles, attending to the bedroom, etc.</p>	<p>1.—Preparation, lighting and keeping up a fire. 2.—Cleaning stoves. 3.—Cleaning, filling and trimming lamps.</p>	<p><i>Cooking</i>.—20 lessons of two hours. These 20 lessons will include 10 dinners, 5 suppers and the various preparations which are taught in the afternoon lessons of the day course. The 10 dinners will include the 6 principal preparations of meat, 4 of fish, 10 soups, the vegetables and the sweet dishes, mentioned in the syllabus of the 1st year of the day course. <i>Washing and Ironing</i>.—20 lessons of two hours. That is 10 of washing and 10 of ironing, for each group of pupils. Subjects of the 5 lessons enumerated in the syllabus of the day course and repetition of these lessons. <i>Cleaning</i>.—Syllabus of the day course. Two hours. The heaviest cleaning will be done on the days when the cooking preparations are of shorter duration, and <i>vice versa</i>. Certain kinds of cleaning can be done in the washing course. <i>Mending</i>.—20 lessons of 40 minutes. 1.—Mending stockings. Putting in heels, soles and feet of stockings. The last can be begun at school and finished at home. 2.—Mending linen: (a) putting a rectangular patch in a girl's chemise; (b) triangular patch in drawers or some other article of lingerie. 3.—Mending the bottom of a skirt. Samplers (or pieces of work devoted to the study of the various stitches) should not be made, they are included in the primary school syllabus. <i>Theory Lessons</i>.—10 lessons of 20 minutes. To be alternated with a lesson for taking notes. 1.—Aim and utility of instruction in domestic economy. 2.—Qualities which a girl should possess in order to be a housewife; to insist on the importance of economy and foresight. 3.—How to light a stove. Risks to be avoided. Firing to be used. 4.—How to light a lamp. Risks to be avoided. 5-6.—Daily care of garments, of foot gear. 7-8-9-10.—Infant hygiene.</p>

year. There is a course of theory lessons in domestic economy during the fifth school year, and there are optional evening classes for pupils of the fifth primary school year who are prevented from attending the sixth year's course at the primary school. The syllabus for day and evening classes is given in the table facing this page. A short manual on the lines of this syllabus is issued for the use of pupils.\*

Brussels  
(Rue Locquenghien)—  
*continued.*

At least thirty children attend the centre in the rue Locquenghien at a time, and there is a total attendance of 120 pupils. Each class is divided into three groups, for cooking, washing and ironing, and mending. The mending group also write out cooking receipts and notes of the theory lessons. Younger and older pupils are mixed in each group so that the latter may help the former in lifting heavy weights, etc., and also by setting a good example.

It will be seen from the time-table on page 94 that every pupil has about two days' work at each household occupation during the week. On Monday morning the girls bring cooking aprons and sleeves, and articles to mend, wash and iron, which they take home again at the end of the week; they also wash and iron the small linen—towels, table-napkins, dishcloths, etc.—belonging to the school. The school provides sabots, so that the children may change their shoes on leaving the wash-house and need not stand in wet feet; rough overalls are used for cleaning, washing, etc., and the girls also wear old frocks for this work, so that they can change immediately afterwards to their unsoiled and dry clothes. The pupils are taught to keep the kitchen cupboards, linen-cupboard, the cupboard where their clean clothes are kept during the week, etc., clean and in perfect order.

In the cooking group, half the pupils go with the teacher to purchase the necessary provisions, while the other five girls dust and tidy the kitchen, peel the potatoes, etc. Afterwards the cooking proper begins; the menu of the day of my visit, with cost price per dish and per head, is given in Appendix G. It will be noticed that the limit of cost for the school dinner is higher in Brussels than elsewhere, *i.e.*, thirty-five centimes per head.

At 11.30 two tables are laid, but before the girls who have cooked the meal sit down with their teacher, all the smaller vessels and utensils used in cooking are washed up and the room is put tidy. This is considered an essential feature in home-management, as a good meal in an untidy room loses half its efficacy for husband and children. After dinner the table is cleared, the pots and pans cleaned, and the dinner service washed up.

The school is situated in a three-cornered house, standing back from the road and originally built for a convent. The rooms are large, airy and well-lighted. One room is used for theory lessons and mending and another serves as kitchen and dining-room; there are also a cloak-room, an ironing-room and a wash-house. There

\* *Ville de Bruxelles.—Écoles ménagères.—Manuel à l'usage des élèves.* (28 pp. Brussels, 1903.).



**TIME - TABLE.**  
**CLASSE MÉNAGÈRE CENTRALE, RUE LOCQUENGHEN, BRUSSELS.**  
(Pupils of the Sixth Primary School Year).

	Monday.				
	8.30 to 9.45 9.45 to 10. 0 10. 0 to 11.30	} Delivery of the linen—Purchasing provisions. Sorting and soaking the pupils' linen. Cooking.	} Delivery of the linen—Sorting and soaking pupils' linen—Washing the school linen. Recreation. Mending.	} Delivery of the linen—Sorting and soaking the pupils' linen—Mending. Recreation. Washing the school linen.	
	8.30 to 9.45 9.45 to 10. 0 10. 0 to 11.30	} Purchasing provisions. Cooking.	} Mending. Recreation. 1st washing of pupils' linen—Tidying the room.	} 1st washing of pupils' linen. Recreation. Mending.	
	8.30 to 9.45 9.45 to 10. 0 10. 0 to 11.30	} Mending. Recreation. 2nd washing, rinsing, blueing, starching.	} Purchasing provisions. Cooking.	} Bleaching—2nd washing, rinsing, blueing, starching. Recreation. Mending.	
	8.30 to 9.45 9.45 to 10. 0 10. 0 to 11.30	} Mending. Recreation. Mending.	} Purchasing provisions. Cooking.	} Ironing pupils' linen. Recreation. Ironing.	
	8.30 to 9.45 9.45 to 10. 0 10. 0 to 11.30	} Mending. Recreation. Mending.	} Sorting and soaking school linen—Ironing. Recreation. Ironing.	} Purchasing provisions. Cooking.	

is no garden at the school, but at the neighbouring *hospice des veillards* there is a garden which the pupils are allowed to use for drying the linen, which they carry out in baskets and spread on the grass. An interesting feature of this school, which I did not come across elsewhere, are the bathrooms. Two bathrooms, fitted with hot and cold water, looking-glass, chair and bell, are partitioned off in the washhouse; each girl is obliged to have a bath once a week,\* a regulation that is now regarded with great favour by the girls. On the walls of the kitchen, besides the usual plans and diagrams, were hung little collections made by the pupils in connection with their work,—tea, coffee, chocolate, etc.; for tea, for instance, there are pictures of the plant and specimens of the different kinds of leaf and of the leaf in its various stages of growth and processes of preparation, until it is ready for use. There are also diagrams, made by the directress, of different kinds of fish which the children can study in connection with their marketing.

Brussels  
(Rue Locquenghien)—  
continued.

In the same building as the housewifery school is a communal kindergarten for children from three to six years of age. During the winter months soup is distributed daily among the kindergarten children; it is made by a helper and served by pupils of the *classe ménagère*. The soup is provided by the town and the *Comité des Dames protectrices* of the school.†

There is an evening class for girls of the fifth primary school year at the school in the rue Locquenghien; it is open two days a week, from 5 to 7 p.m., during the winter and has a two years' course. In 1901 there was an attendance of sixty-nine pupils. The total expenses for both day and evening classes are estimated at 5,550 francs. There are three teachers, two of whom hold the special diploma from the Department of Industry and Labour.

The *Filles de la Sagesse* have a large institution, in the rue du *Mérimos* (in a suburb of Brussels), including infant, primary, secondary and technical schools. A housewifery class is attached to the primary school and children of the first, second, and third classes (fourth, fifth and sixth school years) in the latter attend the *classe ménagère* once a week; both class and school are free. The *classe ménagère* is held three days a week, Monday, Tuesday and Friday, from 8 or 8.30 to 11.30, and from 1.30 to 4, in a large, light room, with, in addition, a wash-house. In the morning the girls do practical work in groups; in the afternoon they have a theory lesson all together, and do needlework.

St.-Josse-  
ten-Noode  
(Rue du  
Mérimos)  
(Brussels).

\* Swimming is obligatory for both boys and girls in the second and third standards (third to sixth school years) in schools of the town of Brussels.

† From the 16th November, 1903, to the 26th March, 1904, 318,699 portions of soup and 307,609 rations of bread were distributed among 2,691 primary school children and 679 kindergarten children of the *Ville de Bruxelles*. Part of the cost was defrayed by the communal administration, and part by private charity. There is a *comité scolaire*, a sort of school management committee, for each primary school belonging to the town of Brussels.

St.-Josse-  
ten-Noode  
( Rue du  
Mérinos)  
(Brussels)—  
*continued.*

I visited the school on a Friday (fast-day) and the dinner consisted of: *Potage aux choux rouges, chicorée à la sauce blanche, pommes de terre au naturel.* I was told that the children are sometimes given about one and a half francs to buy and prepare for their parents at home a dinner they have learnt at school. I heard an interesting theory lesson on meat; the teacher led the pupils to evolve new facts for themselves from what they already knew, or, so to speak, to rearrange their knowledge, by the system of question and answer usual in these schools. Constant reference was made to the large chart of beef, and the girls were required to verify every fact stated. Generally speaking, the questions were as follows:—Why is food necessary? What functions does it perform? What constituents are necessary for complete nourishment? Which of these does meat ordinarily possess? What are the distinguishing qualities of beef? What parts of beef are of the first quality? Where are they found in the ox? What do they look like when in good condition? How can they be prepared? How can what is left over of the cooked meat be used up? What is the relative utility of the pieces of the first quality from the point of view of nourishment, digestion and cost? Similar questions follow with regard to parts of beef of the second and third quality. Of course the foundation of the lesson is well known to the pupils before they reach this stage, and the greater part of the questions deal with what they have already learnt; it should be added that the question: "How do you (or we) know this?" is constantly applied.

In the needlework lessons, in the afternoon, for the first three months of the year the pupils do mending, afterwards they are allowed to learn to cut out and make simple garments.

A most ingenious use is made in this school of old garments given to the school by friends, and of books of patterns given by shops; everything is turned to some practical use. I saw some little vests, for instance, made of the upper parts of old stockings, joined together, feather-stitched down the seams and neatly finished off inside; these vests are often worn over the child's dress when in the laundry, etc. There were shirts for boys, made of odd pieces of flannel, and a child's skirt, also made of old pieces of blue material. Stuffs of the same colour and of similar material are united in one garment and they are generally put together in a definite arrangement so that the result does not have a patchwork effect. In a similar way shop patterns of white cotton and linen had been utilised for cooking sleeves and small aprons. White muslin and finer white materials are used for pretty collars, embroidered simply with coloured wool or cotton and edged with scraps of lace, or coloured muslins are used to ornament the white. The seams are arranged under tucks, or in such a way as not to show, and the result is often pretty and elegant. Every three months the children, according to attendance and behaviour, are given a little present, consisting of something they have made themselves; the muslin collars, for instance, serve as first prizes.

In the *chaussée de Louvain*, the *Dames de Sainte-Julienne* hold a *classe ménagère*, three evenings a week, from 4.30 to 8. On Monday the class is for girls (ages varying between thirteen and thirty) who work in factories, workshops, etc.,\* on Wednesday and Thursday for children from primary communal schools. About 150 pupils attend the classes, and there are four teachers; the course lasts two years. The total expenses for 1901 were estimated at 3,070 francs. The menu prepared on the day of my visit is given in Appendix G.

Here as elsewhere the school is made as attractive as possible; flowers, pictures, and little ornaments are introduced to give it a bright appearance.

The same convent holds another evening *classe ménagère* in the suburb Saint-Gilles (*rue de l'Église*). The class is held on Monday from 8.30 to 1.30 a.m. and from 4.30 to 7 p.m. for older girls, and on Thursday (a half-holiday in the primary school) from 11.30 till 7 o'clock for children from twelve years of age. There are about 200 pupils, and four teachers. The school is in a workmen's quarter of Brussels and many of the older girls are dressmakers, tailoresses, etc., but they are not, as a rule, factory workers. The course lasts two years. Prizes, consisting of household utensils, are given to pupils who work satisfactorily. The budget for 1901 was 3,958 francs.

The menu, for seven people, on March 16th, consisted of: *Soupe à l'oseille*, *Lard rôti*, *Pommes de terre étuvées avec choux*, *Flan*; the total cost was fr: 1, 35, or 19 centimes a head. The directress told me that the children often make at home some dish which they have learnt at school, and she has many letters of appreciation from fathers of the pupils.

On Monday afternoon the older girls are taught *pédagogie maternelle*, or the care of infants, using a doll for practical illustrations. Lessons are also given in first aid to the injured.

Mons, the capital of Hainault, is the centre of the Borinage, the great coal-mining district of Belgium; it is also the educational centre of the province, and contains the school of mines and other large technical and commercial schools.

The communal *école ménagère* serves at the same time as the school for adults and as the central class for children from the two primary communal schools.† The school is situated in the communal school buildings in the *Rue Achille Legrand*. The large class-room, lighted from both sides, is used for cooking, ironing, sewing, and theory lessons. A wash-house adjoining is on a level with the playground which is surrounded by the various school buildings. The door of the wash-house opens on to a covered section of the play-ground, where there is a tap, etc., and opposite,

\* At Brussels all the *ateliers* are closed at 4.30 p.m. on Monday, which is, therefore, the most convenient day for girls to attend the *classe ménagère*.

† The total expenses for 1901 were estimated at 1,650 francs for the *école ménagère* and 1,000 francs for the *classe ménagère*.

Mons (Hainault)—*continued.* in front of the kindergarten, is a narrow stretch of grass, protected by railings, which is used for drying clothes.

The school is in the charge of the Directress, who possesses the diploma of the Department of Industry and Labour; she has an assistant for the class for primary school children, which includes two sections of pupils working at the same time.

The regulations and syllabus \* are practically the same for the school and for the class, and are modelled on the suggestions given in departmental circulars referred to above. In order to be admitted to the *école ménagère* the pupils must (1) be resident at Mons, (2) have been vaccinated, (3) be at least fourteen years of age. Attendance at the *classe ménagère* is compulsory for all pupils, over twelve years of age, of the upper classes (5th and 6th school years) of the communal primary schools for girls.

The pupils, who numbered sixteen last spring, attend the *école ménagère* three days a week, Monday, Tuesday and Thursday, from 8 to 12 a.m., and from 1.30 to 4 p.m., and on Wednesday and Friday afternoon. On Wednesday and Friday morning the classes for primary school children are held from 8 to 12. As usual, the girls who cook stay to dinner and they must clear away and have everything clean and in order for the afternoon school to begin at 1.30.

The communal council grants a certificate to satisfactory pupils who have attended the school regularly for two years and who are at least sixteen years of age. Prizes are given each year to the pupils who have behaved satisfactorily and shown aptitude for the work during the past school year (September 17th to August 3rd); the prizes consist of domestic economy books, household utensils, and garments made by the pupils from materials furnished by the school.

The theory lessons include hygiene and domestic economy lessons, principles of domestic accounts, and explanations of the practical work. The table on page 99 is the scheme of work in domestic economy and hygiene, drawn up by the Directress for her own use, and based on the authorised syllabus; it serves here as an outline of the theory lessons for the year.

The practical course includes the usual subjects. At the time of my visit, a Wednesday morning last March, the class for primary school children was being held. There were two sections of pupils from two schools, who worked separately at two ranges and with different utensils. Sewing is not taught in the *classe ménagère*, as the girls learn this at the primary school; the arrangement of groups is, therefore, slightly different from usual, i.e., six girls cook (twelve altogether in the two groups), six wash, six iron, six clean.

The day opens, 8 to 9 a.m., with a theory lesson given to all the girls together. After this they separate into groups and begin the practical work; the groups alternate week by week.

\* See *Ville de Mons.—Écoles Ménagères et Classes Ménagères.—Règlement organique et Programme d'Études.* Mons, 1901.

## ÉCOLE MENAGÈRE COMMUNALE. MONS.

## HYGIENE AND DOMESTIC ECONOMY (THEORY LESSONS). OUTLINE SCHEME OF WORK.

OCTOBER.	Food.	Necessity of good food : varied, sufficient, well prepared.—Cases of indigestion : what to do.—Talk on meat ; nutritive value, digestibility. Preservation.—Talk on vegetables. Their importance in diet. Preservation.—Talk on flour.—Making of bread. Adulterations.—Talk on condiments.
NOVEMBER.		Talk on fish. Rôle in diet, preservation.—Talk on milk, on butter. Preservation, adulterations.—Talk on eggs. Nutritive value, digestibility, preservation.—Talk on fats, oils. Use, adulteration.—Talk on fruits : use, preservation.
DECEMBER.		Drinks, rôle in the system.—Principal drinks.—Method of making herb-tea.—Pernicious effects of alcohol.—Qualities of drinking water. Choice. Dangers of contaminated water. Diseases that it may transmit. Methods of purifying drinking water, boiling, filtered water. Best filter.
JANUARY.	Personal Cleanliness.	Necessity of personal cleanliness.—Washing. Baths.—Precautions to take.—What to do in cases of drowning.—Prejudices to oppose.—Talk on the hair. Diseases of the scalp. Cleaning of articles used for the hair.—Talk on the mouth.
FEBRUARY.	Clothes.	Clothes.—Keeping in order and preservation.—Removing stains. Substances employed. How to use them.—Linen. Washing and ironing linen. Substances employed.—Wool, linen, and cotton used as materials. Hygienic advice.—Corsets : advantages and disadvantages.
MARCH.	Heating.	Heating.—Firing.—Economic choice.—Heating apparatus.—Asphyxia : what to do.—How to light the fire. Dangers of air too hot, too cold.—Burns, scalds. What to do in these cases.
APRIL.	Lighting.	Hygiene of lighting.—Substances used.—Methods of lighting. Choice : oil, gas. Dangers they present. Precautions to take.—Keeping in order and cleaning a lamp.
MAY.	Ventilation.	Rôle of air in man's life.—Impurity of the air ; causes of vitiation. Germs of diseases which can be transmitted by the air. Dangers of vitiated air and of confined air.—When, why, and how to ventilate.—Suffocation : what to do.—Disinfection. Principal disinfectants. Method.
JUNE.	Dwelling.	Choice of a dwelling.—General arrangements.—Sanitary conditions.—Cost. Rent.—Precautions to take.—Lease.—Cleanliness.—Methods of keeping clean : sweeping. Keeping in order and cleaning floors.—Bedroom.—How to make a bed.—Keeping the dwelling room in order.
JULY.	Furniture.	Principal furniture.—Choice.—Purchase.—Arrangement.—Keeping furniture of deal, of varnished wood, in repair.—Furniture-paste.—Cleaning crockery, knives, plate, glasses, china.—How to lay the table, to serve, and to clear away.—Keeping in good condition and cleaning utensils of tin, zinc, non-plated copper, etc.
AUGUST.		Dangers of using utensils of lead, non-plated copper, etc. Numerous accidents. Remedies to use against poisoning caused by these metals.—Use of common pottery.—Precautions.—How to clean the hearth.

Mons  
(Hainault)—  
*continued.*

The girls wash and iron the school linen,\* and also garments which they bring from home as the teacher directs, according to a scale of graduated difficulty, from handkerchiefs and towels to starched collars, etc., including woollen articles, dresses, covers, etc. The pupils who do washing, do the entire washing of whatever they have in hand, during the two mornings—soak, wash, rinse, starch, etc., so that each girl has a complete idea of the whole process; what they wash one week they iron the next.

Each cooking lesson includes a theoretic section, when the menu is explained; the girls copy a *résumé* of this lesson into their cooking notebooks, side by side with the menu, which is always written on the blackboard in the same form. The menu and notes on the menu, on the day of my visit, are given below, as copied for me from one of the pupil's notebooks. Besides the preparation of soup, fish, meat, vegetables, eggs, rice, etc., the girls learn to make bread, coffee, chocolate, etc., and to preserve certain fruits and vegetables.

Wednesday, March 22nd, 1905.

MENU FOR SEVEN PEOPLE.

Length of Preparation.	Dishes.	Ingredients.	Cost Price † Per		
			Kilog: or livre.	Dish.	Head.
	Carrot soup.				
	Veal balls.				
	Carrot and potato stew.				
	Soup.				
1½ hours.	½ kg. of carrots	- - -	0.08	} 0.27	0.04
	1 kg. potatoes	- - -	0.09		
	Fat, spices, onions	- - -	0.10		
	Veal balls.				
¾ hour.	1 livre of veal	- - -	1.00	} 1.10	0.16
	Butter, spices	- - -	0.10		
	Carrot and potato stew.				
1½ hours.	½ kg. carrots	- - -	0.08	} 0.39	0.06
	1 kg. potatoes	- - -	0.09		
	Fat, spices	- - -	0.10		
	Bread	- - -	0.12		
			1.76	—	0.25

METHOD OF PREPARATION.

*Carrot Soup.*

*Method of Preparation.*—1. Cut up the onions finely; leave them in the fat until they are coloured. 2. Add the necessary quantity of water, then the carrots and potatoes coarsely cut up. Leave to cook; strain and reboil at the moment of serving; add the parsley chopped small. Length of cooking: one hour.

\* The aprons used in the school and in the class belong to the commune. The school authorities also supply the sabots worn in the wash-house for the adult school pupils but not for the primary school children.

† Francs.

*Properties of the Carrot.*—The carrot has a sweet flavour, which makes it an agreeable food and easy of digestion. The carrot is not very nourishing, but it is more so than cabbages and turnips. The carrot is refrigerative and mildly laxative; it keeps in the cellar in dry sand.

#### *Veal Balls.*

*Method of Preparation.*—Chop the veal very finely, season with pepper, salt, and mustard; add a little moistened bread and a whole egg; the egg may be replaced by a little flour; mix the whole well. Shape the mixture into balls, roll them lightly in the flour. Melt some butter in a stewpan, brown the balls in it, then leave to cook gently. A cake, which is browned in the oven, can also be made with this mixture, instead of making balls. This way of preparing meat enables one to use up scraps; in that case a little fresh pork is added. Length of cooking: three-quarters of an hour.

*Characteristics of Good Veal.*—Good veal is white, veined with very white and transparent fat.

*Nutritive Value.*—Veal is gelatinous, consequently less nourishing than beef.

*Digestibility.*—Veal is light and easy to digest. It is suitable for invalids, children, and delicate digestions.

#### *Carrot and Potato Stew.*

*Method of Preparation.*—Brown an onion or two in the fat, add the carrots finely cut up, with parsley, pepper, salt; cover with boiling water. When the carrots are almost cooked, add the potatoes, then let the cooking continue. Length of cooking: One to one and a half hours.

The above menu was intended for six pupils and their teacher; I was invited to share the meal and, as it happened, took the place of one of the girls who was absent. The meal was, in part, repetition and the girls had prepared it practically alone. The dishes were well cooked and served hot. One of the girls stood at the end of the table and served the dishes, which were handed from one to the other. Everything was deftly, quietly and promptly done. It must be remembered that the girls attend the class on Wednesday and Friday mornings, and that, therefore, there are more limitations in the arrangement and choice of dishes than if they attended every day, or even on two or three consecutive days. For instance, there can be no making use one day of what is left from the day before; the dish of meat, which was intended to teach this very thing, was necessarily made with fresh meat. Another reason for keeping the menu on the simplest possible lines is that the pupils were primary school children taking this subject as one lesson among others, with, actually, only two mornings (but long mornings) cooking a month.

The tables were laid at 11.30, and decorated with a few flowers. During the meal careful attention is paid to the behaviour and manners of the girls, but in this case very few directions were needed. Dinner over, the directress named to each girl her special duty in washing up and clearing away—one to clean the knives, another to wash the dishes, a third to dry the dishes, two to clean the stove, etc. The girls of the cooking group, who stay to dinner, take these duties in rotation, so that there is no difficulty about the less agreeable tasks when they come in due order.



Monceau-  
sur-Sambre  
(Hainault).

Monceau-sur-Sambre is a small commune in the midst of the "black country" of Hainault. The *école ménagère* has been taken over by the communal authorities from the *Sœurs de Sainte-Marie*, to whom it formerly belonged, and of whom the staff is still composed.

The school has existed since 1900; it is a day school for adults (girls over fourteen years of age). The course lasts two years, and the school year is from October 1st to August 15th. Practical work is done on Tuesday, Wednesday, Thursday and Friday mornings, from 8.15 to 11 o'clock. The afternoons are devoted to sewing and theory lessons; Thursday afternoon is a holiday. Girls who like may attend the school on Monday and Saturday for sewing, but this is not part of the regular course; the reason for this arrangement is that Monday and Saturday are the busy days in the girls' own homes when they generally help their mothers with washing (Monday) and house-cleaning (Saturday).

There are about sixty pupils in the school. Eighteen girls at a time do household work while the others form a large needlework class under the charge of a separate teacher. The housewifery class consists of three groups, of six pupils each, for cooking and cleaning, washing, ironing; each class of eighteen girls works for three weeks at a time so that every girl has a week's work in each group. At the end of three weeks these girls return to sewing and a fresh eighteen girls, who have been occupied at needlework, do practical household work for three weeks.

There is an exhibition of work at the end of each school year. The commune grants certificates to satisfactory pupils at the end of the two years' course; girls who have gained the certificate are allowed to attend a course in dressmaking which is held privately by the *Sœurs de Sainte-Marie*.

The school, as distinct from the needlework class, is in the charge of one teacher, who has her diploma from the Department of Industry and Labour. One large bright room is used for cooking and ironing, and there is a wash-house adjoining. Some plants on the window-sills are in the charge of the pupils. The total expenses for 1901 were estimated at 1,950 francs.

Marchienne-  
au-Pont  
(Hainault).

The commune of Marchienne-au-Pont adjoins that of Monceau-sur-Sambre, in fact the two together form a small district of mining and ironwork industries. The place looks dreary and is black with coal-dust, and the adult population, I was given to understand, is difficult. The communal housewifery school at Marchienne-au-Pont is for girls who have left the primary school. The course lasts two years; the school year is from October to August. School is open every week day, from 8.30 to 11.30, and from 1.30 to 4 except Saturday and Thursday afternoon. The school is in the charge of one teacher, who has obtained her special diploma. There are sixteen pupils.

As usual, practical work is done in the morning; in the afternoon from 1.30 to 2 a theory lesson is given to all the pupils together, and

from 2 to 4 the girls do needlework, on Monday they have a lesson in cutting out simple garments. The girls bring their own materials for sewing, dressmaking, mending and washing, but they also wash linen belonging to the school. Friday is cleaning day; the pupils sometimes come before 7 a.m. and the whole house is washed down and cleaned. For practical work in the morning, the pupils are arranged in the usual four groups.

Group A.—Wash, to iron the following week;

Group B.—Iron, to mend the following week;

Group C.—Mend, to cook the following week;

Group D.—Cook and clean, to wash the following week.

The school is situated in a house not built, I imagine, for a school. Kitchen, dining and sewing-room, laundry (for both washing and ironing) are on the ground floor; there is a bedroom upstairs where the pupils occasionally have a lesson in elementary sick-nursing and first aid, and where they also learn the ordinary care of bed and bed-room.

A large garden, with a fowl run, is attached to the school; the garden is almost exclusively used for vegetables. At the seasons when gardening can be taught, a special group of pupils is formed, composed, as is most convenient, of girls from the other groups.

An exhibition of work is held at the end of the school year; the commune grants diplomas to satisfactory pupils at the end of their course. Every three or four months the communal Director of Education and the councillors come and dine at the school. I was invited to join the teacher and pupils at dinner and the following menu was prepared at short notice; it will be seen that special dishes were added on this occasion.

*Menu.—March 21, 1905.*

1. *Potage aux carottes.*
  2. *Rosbif.*
  3. *Pommes de terre rôties.*
  4. *Sautés de veau.*
  5. *Salade de pissenlits.*
  6. *Pommes de terre sautées.*
- Café. Dessert.*

There is another housewifery school, called *La Providence*, which Marchienne-au-Pont (Hainsault) (*La Providence*) was established and is supported by a private association of ladies, but which also receives grants from the commune.\* The school was founded in 1889 for the purpose of giving girls an apprenticeship and an opportunity of working under supervision and away from the *atelier* where the moral influences are ordinarily dangerous for growing girls. The school is worked on somewhat different lines from others; it is called an *école ménagère-professionnelle*, but it is

\* The total expenses for 1901 were estimated at 3,825 francs.

treated by the department as an *école ménagère*, that is to say it fulfils the necessary conditions, not of the former, but of the latter type of school, hence it receives State grants as an *école ménagère*.

The course of the *école ménagère* lasts three years, the technical course of dressmaking four years. There are also technical courses in commerce and laundry work. In the fourth year there is a fee of thirty francs, but the pupils may begin to earn from the third year onwards. There are ninety pupils in the school and five teachers. Pupils are admitted at the age of twelve, after they have left the primary school. The school is open every day of the week, except Saturday and Sunday, morning and afternoon. From 8.15 to 8.45 a.m. the girls all receive a religious lesson; from 8.45 to 9.45 theory lessons (hygiene, domestic economy, commercial arithmetic, etc.), are given; from 10 to 11.30 and from 1 to 4 is devoted to technical and practical work. Girls whose turn it is to cook come at 7.45 in order to prepare for the day's work for half an hour before school begins.

The girls in the housewifery class do not work in four groups, each group devoted to one household occupation for a week at a time, as is usual in the *écoles ménagères*. It is felt that this method does not enable the girls to acquire one of the most important virtues of the housewife—the wise economy of time by the methodical distribution of her work. The school authorities think that the girls should be taught how to do a complete week's work, that is, all the various branches of household work which a woman in her own home would have to include in her weekly duties. It is an interesting experiment and I think much may be said for it.

In the first two years the girls work in two groups. One group does washing, ironing and mending; the girls bring linen from home or from neighbours, which they wash, mend and iron during the week, as a woman would have to do with her own household washing. The other group does cooking and cleaning. The practical work is distributed over the whole day, a further deviation from the usual practice. In the third year the girls work in one group for a fortnight at a time; the whole work of a household has to be done during the week—daily cooking, washing, mending, ironing, cleaning. The girls thus have about two weeks of household work every six weeks, each year, for three years.

La Louvière  
(Hainault).

La Louvière is a small manufacturing and mining town. I visited an evening school connected with a large faience factory there. The directors of the factory supplied the premises and invited the *Sœurs des Filles de Marie* to establish the school in 1892; the premises are used during the day for a school for paying pupils. It is practically compulsory for girls working in the faience factory to attend this housewifery school; they are admitted to the factory at twelve years of age. The course lasts two years but many girls stay longer, often till they marry. I saw a considerable number who had already gained their diplomas, which are given by the school.

The school is open five days a week from 6 to 8 p.m. ; practical work is done on Monday, Tuesday, Wednesday and Thursday, and on Friday all the girls have a theory lesson. The school year is from October 1st to August 15th. There are between seventy and 100 girls in the school, under eight teachers. The total expenses for 1901 were estimated at 3,935 francs. As there are so many girls they work in double groups, *i.e.*, twelve in each group, at cooking, washing and ironing. The older and younger girls are mixed in each group ; this serves the double purpose of assisting the teacher and of teaching the girls to help each other ; it is a very usual practice. All the girls who are not occupied in household work do needlework ; there are two sewing classes, one for beginners, the other for more advanced pupils.

Frameries, a straggling settlement for mines, factories and workmen's dwellings, was the scene of the first *école ménagère* founded in Belgium. The school I visited in Frameries has existed since 1890 ; it is a communal evening class for adults. Frameries has also possessed, since 1900, an evening class, under private authority, with an attendance of about forty pupils.

The communal evening class has an attendance of about 150 pupils ; it consists of two divisions, a junior and a senior, in charge of three teachers, one for each division and one for needlework. The total expenses for 1901 were estimated at 2,535 francs (£101 8s. 0d). The course lasts three years, from October to August ; one year is passed in the lower division, two in the upper division. School is open five days a week. In the upper division on Monday, 7 to 9 p.m., is a theory lesson ; on Tuesday, Wednesday, Thursday and Friday, practical work is done from 6.30 to 9. The work is organised in the usual way ; in the second year, for instance, where there is a double set of pupils, three groups of six each do practical work, while the fourth group of six pupils is employed at needlework together with the other twenty-four pupils. The two sets of girls alternate week by week, that is to say, the twenty-four who do needlework one week, do housework the next. The menu that was being prepared by the upper division on March 22nd last, is given in Appendix G. The girls who cook also do cleaning ; on Thursday no washing is done but the premises are thoroughly cleaned.

The school is a rather remarkable instance of what may be done in a difficult neighbourhood by an energetic teacher with an inexhaustible fund of patience. That an evening school, with a three years' course, open five evenings a week for 2½ hours should have an attendance of 150 factory girls, speaks for itself, when work means real work and discipline, with regular routine, and regular attendance, after eight or nine hours in the factory (often 7 a.m. to 5.30 p.m. including free time for meals).

The village of Vorsseleer is situated in what is known as the *Vorsseleer Campine*, a flat, sandy district of considerable extent, lying in the North and East of the province. The country immediately

Vorsseleer  
(Antwerp)—  
continued.

surrounding the village is chiefly stretches of low pine forest, interspersed with sandhills; the land is being gradually cleared and prepared for agricultural purposes, though it is at best a difficult soil.

The *Sœurs des écoles chrétiennes de Saint-Joseph de Calasance*, a teaching order who have eighty convents in the provinces of Antwerp and Brabant, have a large institution, for eighty-five nuns, at Vorsseleer, containing a training college for primary teachers (*école normale adoptée*), a primary school, an infant school, and an *école ménagère*.

Two teachers have charge of the *école ménagère*, which is for girls over fourteen years of age and is subsidised by the State and the province. The budget for 1901 was entered as 1,575 francs. The school is open four days a week, Monday, Tuesday, Wednesday and Friday, from 8.30 to 11.30 a.m. for practical work, and in the afternoon for sewing, cutting out, and making simple garments. The course lasts two years of nine months each, but there are pupils who, as a sort of reward, are allowed to attend a third year. Since the school was opened in 1898 there have been 130 pupils; the ordinary attendance being twenty-four, *i.e.* one complete class. The following neighbouring communes send their girls to the *école ménagère* at Vorsseleer, distances of 6–8 kilometres:—Bouwel, Grobbendonck, Pulle, Casterlee, Bulderbosch. Some of the pupils are the daughters of small farmers, others are peasant girls, one is the daughter of a schoolmaster, another of a railway employé and so forth; when I saw them they presented a particularly pleasant and well-cared for appearance in their neat stuff dresses, blue aprons, shawls and sabots.

The lessons are given in Flemish. In addition to the usual subjects, a few lessons on gardening are given and the children put these into practice at home. The menu on the day of my visit consisted of, *Potage aux haricots secs*, *choux rouges* (prepared with potatoes), and *Pain perdu* (*see Appendix G.*). The theory lesson was on the menu, which was new to the girls except the soup, which was repetition. Besides some small school linen several pupils were washing and ironing linen from home, for various members of the family, *e.g.*, a brother's shirt, a sister's apron, a little sister's frock, curtains, etc. Similarly in the mending group, one girl was putting innumerable patches in a pair of workman's blue linen trousers, another was patching a shirt, a third darning a cloth; in another group pewter vessels brought from home were being cleaned.

I think this school may be taken as an example of equipment. One long room serves for cooking, ironing and mending, as dining-room, and as class room for theory lessons. This is a very usual arrangement. There are windows along one wall and plants on the window-sills. Two tables on one side of the room, at which six girls can work comfortably, sitting with their backs to the wall, are used for needlework. There are also a large black-

board, a cupboard, a small kitchen table and a large ironing table, covered with an old blanket. Round the walls are hung the usual charts of beef, mutton, etc., and mottoes. There is a kitchen range at one end of the room, and, near it, an iron heater. The range was an ordinary large one, with two ovens, etc., and less in accordance with the aim of these schools (*i.e.*, not usually to be found in a working man's cottage or dwelling) than the Flemish stoves at Courtrai (*see* page 110).

Opening out of the large room is a sort of passage-room from which steps lead to the cellar; there is a pump, with rain and well water here and the girls clean utensils, wash up, etc. The small cellar, whitewashed, is utilised as a larder for provisions and also for storing household utensils, brooms, etc. The passage is also used for washing in the winter; a glass door leads from it to a small enclosed yard, where, in fine, warmer weather, the girls do washing. The simplest apparatus is used—two or three large tubs on low trestles; three or four girls work at each tub. Upstairs, a large attic or loft is used as a drying room. The cellar, attic, wash-house and yard are, I was told, just like a peasant's cottage.

The table-cloths here, and in other Flemish districts, are checked calico, which is generally used in working-class homes of the neighbourhood; sometimes pillow-cases are made of the same material.

In Malines, a town of about fifty-seven thousand inhabitants, Malines there are no less than seven *classes ménagères*, all under private (Antwerp) control, and in receipt of grants from the province as well as from the State. All these classes except one are for adults; four, including one attached to a primary school, are conducted by the *Sœurs de Notre Dame de la Miséricorde*, and of these one is attached to a school of needlework and another to a workshop; two are attached respectively to the *Dames de Marie Institut Colonna*, and the *Sœurs de la Charité*.

Lastly, in the *rue des Chevaliers* is the convent of the *Sœurs des écoles chrétiennes de Saint-Joseph de Calasance*, including a primary school, a boarding-school, an *atelier de lingerie*, and a workshop for machine-made lace, lace curtains, etc. To the last of these—the *atelier* for curtains, etc.—a *classe ménagère* is attached. Girls of fifteen years of age and upwards, if unmarried, are admitted to the *atelier*, where they work from 6.30 a. m. in summer, 7 a. m. in winter, till 6–30 or 7 p. m., or, in busy seasons, even later, with intervals of about one hour and a half during the day; they attend chapel for half-an-hour before work begins (*i.e.*, 6 to 6.30 a.m. or 6.30 to 7 a.m.). Work is paid for by the hour, by the manufacturer who supplies the raw material, from five centimes for beginners to about twenty-five centimes an hour for skilled machine-workers. Every week ten centimes per head is put aside for the pension fund (*caisse de retraite*), which is a practical way of enforcing a principle taught in all the housewifery schools.

Attendance at the *classe ménagère* is compulsory for two years for the workers in the *atelier*. There are two classes of twenty-

four pupils, each of which works alternate weeks, for two mornings, Tuesday and Thursday, from 8.15 or 8.30 till 11.30 or 12. A theory lesson occupies one hour, and for the rest of the time the girls work in the usual four groups of six pupils. The class is held in a room opening out of the *atelier*, where there are more than two dozen machines at work.

The total annual expenses for the class were estimated at 884 francs for 1901.

Ostend (W. Flanders). There are three housewifery schools and classes in Ostend: an *école ménagère communale*, with an attendance of thirty-six pupils, open October 15th to June 15th; *classes libres*, with an attendance of fifty-six, and an *école libre*, with an attendance of seventy-one.\* All three are held in the day-time, are for girls over fourteen years of age, and have a two years' course.

The last named, in the *rue Longue*, was founded in 1888 for the daughters of fishermen †; it is held in a large house belonging to the *Filles de Saint-Vincent de Paul*, by whom the school is conducted. There is a large *ouvroir* for needlework and dressmaking attached to the *école ménagère*; girls who take the course in the *ouvroir* (or *atelier*) are obliged to attend the housewifery class and the Sunday classes.‡

This school was established in order to afford protection to girls during a difficult period of their lives, and to help them to develop and acquire lifelong habits, as well as to give them the practical skill of the housewife. The discipline of the school is strict, but numerous instances seem to prove that it is not only necessary but successful; no girl attending the school, for instance, is allowed to attend balls or to wear a mask during Carnival; small rewards are given every three months to pupils who attend regularly, but a girl who is not present on Sunday is not admitted on Monday and if a girl is late for school on a week-day she is not admitted, and if she is suspended from the housewifery class she is not allowed to come to the *ouvroir*. The opportunities the *ouvroir* offers of saving and earning money are appreciated alike by parents and daughters.

During the season (1st June to 15th October) there is a great deal of outside help required in hotels, etc., and, at all events in the case of girls at this school, it appears to be the mothers who do the day's charring, etc., while the girls make and mend for the whole family, and sometimes take outside orders as well, so that they often realise a considerable amount by home economy and earnings. After leaving school they are themselves much valued for daily work at hotels.

\* Figures are for 1901.

† Ostend is an important seaport as well as one of the most frequented watering-places of Belgium. It is said to possess about 300 fishing boats and trawlers, manned by 1,300 men, being at least one half the number belonging to the whole kingdom.

‡ The Sunday classes, or school, usually combine some religious instruction with some form of games; in this case, the girls are taken to Mass and then from 5 to 9 p.m. amused in the school-house.

Last Spring there were ninety girls attending the *ouvroir* and *école ménagère*, and I was told that there are always girls waiting to be admitted. About 150 girls attend the school on Sunday, as many of those who have left the week-day school continue to come on Sunday, and, often, they return to ask their former teachers for help in the making of some garment, etc. The course is two years (September to July) for the *école ménagère*, and three or four years for the *ouvroir*. The school, as mentioned above, is exclusively for the daughters of fishermen; pupils are admitted at fourteen years of age and upwards. There are six teachers for the whole school. The budget for 1901 was 4,050 francs.

The housewifery class is held on Tuesday, Wednesday, Thursday and Friday mornings, 8.30 to 11.30; girls who are doing washing come at 8 a.m. Twenty-four girls form the class, and work for one week at a time, when another set take their place. They are divided into four groups, who work in the usual way; of the six girls who form the cooking and cleaning group, two cook and purchase the provisions, two clean and tidy the house, doors, cupboards, etc., and two clean the utensils; all six sit down to table together. The kitchen of the house is used as the school kitchen, and there are also an adjoining room used for ironing, a wash-house and a small garden, or yard, with a strip of grass enclosed by railings, which is used for drying.

Upstairs there are two large rooms for needlework, and a small ante-room is used for fitting and for sewing machines. All the pupils do needlework every afternoon, except Saturday, and those who are not occupied in the housewifery class sew in the morning as well. Mending is learnt first, and afterwards cutting-out and making ordinary garments. Several girls on the morning of my visit were making children's pinafores out of larger aprons; some were making aprons for their mothers for the spring-cleaning at hotels; some were mending or making their fathers' fishing shirts; one was re-lining her father's Sunday coat sleeves; another was patching a pair of trousers; many were mending their own under-linen, some reducing, others enlarging garments; one was making herself a black Sunday skirt, preparatory to Easter, and one girl was making a blouse to order. The girls in the ironing group also had household and personal articles, and they took home large bundles of the work that had been done during the morning.

Courtrai, a town of about 33,000 inhabitants, is famous for its Courtrai (W. linen and flax industry; it is estimated that between 5,000 and 6,000 women are employed in linen and lace manufacture. Fian lers)

In the *Rue du Fort* is a large institution—*Couvent Notre Dame des Anges*, belonging to the *Sœurs de la Charité de Jésus et de Marie*—where two *classes ménagères* were established in 1899, at a total annual cost of about £90 to £100. Girls are admitted from the age of fourteen years; there are 130 pupils enrolled, in the charge of seven teachers who are assisted by voluntary helpers from the town. The girls for the most part work in the factories (linen and flax), where the hours



Courtrai (W. are from 5.30 a.m. to 7 and 8 p.m. in summer, and the earnings from Flanders).— five to seven francs a week. The *classes ménagères* are held three evenings a week, from 7.30 to 9.30 p.m.; and the course lasts two years.  
*continued.*

The pupils form two distinct classes who work quite separately with separate utensils. Tuesday and Thursday are devoted to practical work; on Wednesday a theory lesson is given in each class;\* on Friday those who like come for a thorough cleaning of the premises, etc. For practical work each class works in groups as usual, but each group works at one subject, not for a week, but for a day at a time; so that those who do washing on Tuesday iron what they have washed on Thursday; similarly, girls who mend on Tuesday cook on Thursday, and *vice versa*. Girls not occupied in household work learn needlework. An interesting feature of the needlework here is that girls who have brought no work from home are given something to make for a Christmas present for poorer children—a little frock, a child's chemise, a baby's cap, etc.

There is one large, well-lighted room for needlework, etc., and there are two small kitchens, fitted up like the actual interior of a workman's or peasant's home. The real Flemish stove is used. One stove consists of a globe for coals, covered by a removable round iron plate, with a pipe, some two or three feet long, leading from the fire to the chimney, and covered with a flat slab of iron, used for boiling, stewing, etc. The other stove is similar, but represents a rather more well-to-do household, as it has an oven fitted below the pipe leading from the fire to the chimney.

Prizes are given to the pupils at the end of the school year, according to attendance and industry; the first prize consists of black material for a best dress, and all the prizes are either garments or kitchen utensils. When a pupil from the class marries, she receives a present to the amount of ten francs in the shape of furniture or utensils for the new home according to her own choice.

In connection with this school it is not inappropriate to refer to the effect of these institutions in raising the general tone of the girls and of developing and maintaining their self-respect; this is sometimes apparent as between the newer and the older pupils, sometimes in relation to girls and women in similar positions and employment in the same neighbourhood. It was in this case a real pleasure to look down the rows of girls and to see the uniformly neat appearance and the prettily dressed hair, in spite of the fact that certain of the operations in preparing the flax produce a heavy pallor that suggests, though I am told it is not, disease.

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\* A special theory lesson was given during my visit; the subject was milk, and how to detect adulterations, with practical demonstrations. The teacher in charge of the theory lessons very kindly gave me her M.S. note-book and outline journal of these lessons, which may be seen at the Board of Education Library.

## V.—AGRICULTURAL EDUCATION.

The Ministry of Agriculture subsidises courses in agriculture Ministry. attached to primary and secondary schools, special courses for adults, and various special schools for men and women.\* The schools for girls consist of agricultural and housewifery schools, peripatetic dairy schools, and two special schools for cheese-making.

## A.—ÉCOLES ET SECTIONS MÉNAGÈRES AGRICOLES

## (AGRICULTURAL AND HOUSEWIFERY SCHOOLS AND COURSES).

The *écoles ménagères agricoles* are intended to give to country Raison girls, farmer's daughters, etc., the practical education for their d'Être. future lives which the *écoles* and *classes ménagères* under the Department of Industry and Labour provide for the daughters of working men and artisans. The scope and methods of instruction are based on the belief that a farmer's wife should be a good house-keeper and should be able to take her part in all the work of the farm.

The first school of this kind was established at Virton, in Luxembourg, in 1891. Since that date, similar schools have been founded in almost all the other provinces; all the schools, except one (at Bouchout), were organised by private bodies and are attached to private institutions.†

Instead of paying a proportion of the actual expenses of a school, Grants. the Department of Agriculture estimates the probable expenses and gives a certain proportion of grant accordingly. The usual amount of State grants to *sections ménagères agricoles* is 750 to 1,000 francs, and to *écoles ménagères agricoles*, 1,000 to 2,000 francs.‡ A private institution which desires to receive State grants, applies to the Minister of Agriculture, submits its syllabus, and is open to inspection. No syllabus is strictly imposed, provided that the instruction includes a certain number of subjects considered essential and that it is of a nature in accordance with the aim of the institution. A minimum number of pupils is compulsory. Great stress is laid upon the efficiency of teachers.

\* The triennial report on the "*Situation de l'Enseignement Vétérinaire et Agricole*," and other publications relating to the work of the Belgian Department of Agriculture, may be consulted at the offices of the Board of Agriculture and Fisheries, 4, Whitehall Place, London, S.W., on any weekday between the hours of 11 a.m. and 5 p.m. (Saturdays 11 a.m. and 2 p.m.).

† It may be interesting to note that a *Scuola Pratica Agricola Femminile* in Niguarda, Milan, has been started on the basis of the Belgian *écoles ménagères agricoles*.

‡ A table of the *écoles* and *sections ménagères agricoles*, including particulars as to State grants, numbers of pupils, teachers, and so forth, is given in Appendix K.

Bursaries are awarded by the Department of Agriculture to a certain number of poorer students; the sum varies in *écoles ménagères agricoles* from 50 to 120 francs yearly.

Sections  
Ménagères  
Agricoles.

The aim of the *sections ménagères agricoles* is to develop in the girls the love of agricultural pursuits. The special instruction must include principles of agriculture, of dairy work, of zootechny and of accounts. One hour a week at least must be given to theoretic instruction, and two hours to practical work. Pupils must be at least thirteen years old before admittance. There are four courses in receipt of State grants. (See Appendix K.).

Écoles  
Ménagères  
Agricoles.

The *écoles ménagères agricoles* are intended to give a solid technical education to girls destined to lead an agricultural life. For admittance, pupils must be at least fourteen years of age. The number of pupils in a school is generally limited to twelve. The schools are inspected twice a year. The course lasts one year, sometimes two. Most of the schools are resident; in some cases both resident and non-resident pupils are received. The school fees, including residence, generally amount to about £12 to £16 a year; in some cases the instruction is free. (See Appendix K.).

In addition to the dwelling, or rooms, devoted to the school, furnished with the necessary equipment for theory lessons, experiments and household work, there are special farm buildings (cattle-sheds, fowl-runs, yard, garden, etc.), and dairy with complete fittings and utensils for the various processes connected with the treatment of milk and the making of butter and cheese. In each school there are collections of specimens and of raw materials with such of their products as are in common use, e.g., food stuffs, linen, wool and other materials, substances used for cleaning furniture, washing linen, etc., wood, leather, etc., diagrams and tables showing the relative value, composition, digestibility and price of foods, the principal parts of meat, a domestic medicine chest (for the country), as well as grains, manures, dairy utensils, injurious insects, botanical specimens and tables, and so forth.

General and special instruction is provided. The special instruction is theoretic and practical. It includes the following compulsory subjects\* :—natural history [1½ th., 1½ p.]; principles of agriculture and of gardening [1½ th., 2 p.]; elementary zootechny [1½ th., 1½ p.]; dairy-work (including cheese-making) [1½ th., 3 p.]; domestic economy [1 th., 2 p.]; principles of pedagogy and hygiene [1 th., 3 p.]; book-keeping [1 th., 1 p.]. Optional subjects, taught in most schools, are: principles of constitutional law and social economy; in addition, needlework is generally included in the curriculum. The minimum time to be devoted to special instruction is, therefore, ten hours a week for theoretic instruction, twenty hours for practical work. General instruction includes, as compulsory subjects :—religion (1 hour); arithmetic (1½ hours); writing (1 hour).

\*The figures in brackets indicate the minimum number of hours a week to be devoted to theoretic instruction and to practical work in each subject.

The syllabus issued by the Department has been generally adopted. The Department publishes a list of text-books, recommended for use in the schools in connection with each subject included in the curriculum.

Groups of pupils often take it in turn, *e.g.* for a week at a time, to do the cooking and household work of the school. School walks or excursions are taken, as a rule once or twice a week (visits to model farms, co-operative dairies, etc.).

At the end of the course an examination, at which a Government delegate is present, is held by the teachers; 300 marks are assigned to theoretic and 300 to practical work, and the same number of marks is distributed over the work done by the pupils during their course. Diplomas are awarded to candidates who obtain 60 per cent. of the total number of marks (1,200).

There are ten *écoles ménagères agricoles* subsidised by the State, and one *école supérieure d'agriculture* for girls at Héverlé (see Appendix K.). The curriculum of the school at Héverlé is similar to that of the former schools, but more advanced; the course lasts two years, and special training is provided for intending teachers.

The majority of the pupils who have left these institutions appear to have put in practice in their own homes what they learnt at school; some ex-pupils have become teachers, others are employed in co-operative dairies.\*

#### B.—ÉCOLES TEMPORAIRES DE LAITERIE (PERIPATETIC DAIRY SCHOOLS).

There are two permanent dairy schools for men, and temporary, General or peripatetic, courses are held for women. The aim of these courses is to spread in country districts the best methods of treating milk and of making butter and cheese. Since on Belgian farms the farmer's wife looks after the cow-shed and the dairy, the feeding and hygiene of cattle and the elements of dairy-farming are taught in these schools. General Organisation.

The courses are generally held either in a farm or in a private dwelling offering the necessary accommodation. The Department of Agriculture furnishes the necessary apparatus. The milk is furnished by farmers in the neighbourhood of the school, and each takes back the products due to him—a system adopted to show practically the benefits of dairy co-operation. A library for the use of pupils is attached to each school.

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\* In 1900, 187 girls altogether had passed through the school at Virton, the oldest of the *écoles ménagères agricoles*; of these 6 taught in peripatetic dairy schools, 3 in agricultural housewifery schools, 4 were occupied in co-operative dairies and the rest had returned to their own homes.

A course lasts three or four months, and costs about 2,000 francs, of which the Department defrays about 800. The courses are generally held at the request of the *comices agricoles*, and are supported by grants from the State, the province, the commune and the agricultural society of the district. Attendance at the courses is free. All the pupils are non-resident.

In order to be admitted to the peripatetic school a girl must be at least fifteen years old; have had a good primary education, attested by a certificate; have the necessary physical strength and give a written promise to attend the school regularly. The number of pupils must not be less than ten nor exceed sixteen. When more than sixteen girls apply for admission, a competitive examination is held, bearing on the subjects taught in primary schools.

Each school is placed under the supervision of delegates of the local agricultural society and is inspected by officers of the Department of Agriculture. The staff consists of a director, who teaches agronomy and zootechny and superintends the general organisation of the school, and of two dairy mistresses, who live at the school and teach dairy work, cheese-making, accounts and practical work.

Curricula.

The courses are held every week day. Two hours a day are devoted to theoretic instruction and three hours to practical work. The theoretic instruction includes theory of dairy work and cheese-making, zootechny, agronomy, keeping accounts. For practical work, every day 150 to 200 litres of milk are made, partly into butter, partly into cheese. All the pupils take part in the work; they are divided into four groups which perform the different operations alternately for a week at a time; one of the groups is occupied in cleaning the utensils and the premises. In addition, domestic economy, poultry-keeping and gardening are taught. The Government syllabus is intended to be adapted to the needs of localities.

Diplomas.

At the conclusion of the course, an examination, bearing on all the theoretic and practical work, is held. A *diplôme de capacité* is awarded to pupils who obtain half the marks allotted to the different tests; a certain number of marks is given according to the aptitude shown by the pupils in the daily practical work. The examiners consist of three delegates, representatives of the Department of Agriculture, the province and the local society, and of the director of the school and the dairy mistresses.

Number of Courses and Pupils.

Since these dairy schools were first founded, in 1890, 1,786 pupils have obtained the diploma. Most of these pupils have applied their knowledge in their own homes, some have become dairy teachers, others direct co-operative dairies. The schools have spread the use of improved machinery, and encouraged the establishment of co-operative dairies.

At the present time ten schools are working regularly. The

following table shows the number of temporary dairy courses held in 1902, with the number of diplomas delivered :—

Provinces.	Number of Courses.	Number of Pupils who obtained Diplomas.
Antwerp . . . . .	3	30
Brabant . . . . .	1	6
W. Flanders . . . . .	2	33
E. Flanders . . . . .	3	24
Hainault . . . . .	1	15
Lidge . . . . .	4	41
Limbourg . . . . .	1	14
Luxembourg . . . . .	2	24
Namur . . . . .	2	15
	19	202

**C.—TEACHERS IN AGRICULTURAL SCHOOLS FOR GIRLS.**

Many of the women teachers in the agricultural schools and courses for girls, described above, hold diplomas; the most usual appear to be the primary school teacher's diploma, a leaving diploma from an *école ménagère agricole*, a diploma for dairy work.

A *cours de perfectionnement* for women teachers in agricultural and housewifery schools and in peripatetic dairy schools was held during the summer holidays in 1902 and 1903 at the *école supérieure d'agriculture* for girls at Héverlé. In 1902 twenty teachers attended. Three or four lessons were given every day on the subjects of domestic economy, education, the scientific principles upon which dairy-work and cheese-making are based, book-keeping, poultry-farming and horticulture. Temporary Courses.

In 1903 an examination was instituted for intending teachers in peripatetic dairy schools. The examination includes: A.—a theoretic test on the subjects taught in the special course at Héverlé; B.—a practical test in domestic economy and dairy work; C.—a teaching test, consisting of two lessons to be given by each candidate, followed by questions on pedagogic principles, and on the special methods of teaching the subjects which are included in the temporary dairy courses. Candidates must obtain at least half the marks allotted to each test (A.—50 marks, B.—20 marks, C.—30 marks), and two-thirds of the total number of marks. In order to sit for the examination candidates must be at least eighteen years of age, must have a primary school teacher's diploma, and the leaving diploma from an agricultural and housewifery school or a dairy school. Special Diploma.

**D.—SPECIAL COURSES FOR FARMERS' WIVES.**

The Department of Agriculture subsidises adult courses in many branches of agriculture for men. In 1902 an experiment was made, with great success, to hold adult courses for women. The subjects included in the courses were: domestic economy, hygiene dairy-farming, household and farm accounts, poultry-keeping, gardening, the making of preserves. The total number of lessons was 281, the total number of women who attended 16,312, making an average attendance of fifty-eight per lesson.

## CONCLUSION.

In the preceding pages an attempt has been made to outline the general aims and methods of the domestic education of girls in those Belgian schools which, to a greater or less extent, are under State control.

It will have been seen that some training for home life is given in all primary, secondary and technical schools, in proportion to the age and capacity of the pupils and to the claims of their general education and all-round development; and further, that, beginning with informal talks and the practice of good habits—as much moral as domestic training—this instruction is gradually developed, with constant co-ordination with other subjects and applications to daily life, and always with the one fundamental and guiding principle, until it finds complete development in the special housewifery schools.

Although great attention is paid to methods of teaching, to the necessity for pedagogic as well as practical training of the teachers,\* to the broad intellectual and moral education of the children, it is primarily and avowedly as an effort towards social reform that this education is promoted and encouraged.

Education is not considered to be a pedagogic training of the faculties as an end in itself, but a direct preparation of children for their actual future lives; hence girls as well as boys require a basis of general education and, in addition, some special teaching for what will, in all probability, be their life occupations or careers. The normal life of the woman being wifehood and motherhood, the girl's future needs, her future opportunities, demand, in addition to sound health of body and mind, practical ability and manual skill.

The aim, therefore, is to train and develop the character and ability of girls, to help them to become upright, capable and adaptable women, to show them how attractive and fruitful their daily opportunities and duties may be, to prove to husbands and fathers how happy the home can be under the hands of a capable and good woman, and by these means to lessen attendance at the public-house, to ameliorate the material conditions of existence, to increase family affection,—in a word, to help to

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\* It will have been noted that there are no special training schools for teachers of domestic economy. Holiday courses to some extent meet this want, especially when they are taken by teachers who are already trained and experienced in primary or secondary school work.

build up home and family life which is, after all, the basis of national life.\*

It is not so much by moral disquisitions as by example, not by filling the girls with vague ideals of their future mission but by training hand and mind to be alert in the performance of daily duties, that the desired end is sought. It is not only, if primarily, in the housewifery school that this is to be accomplished; there is no branch of education that may not be brought to bear upon the end in view.

If it is asked how far the anticipated results have already been realised, there is sufficient evidence that in individual cases, and in localities where schools have existed for some years, the aim of the founders has been amply fulfilled. The organisation is, comparatively, of too recent a date, the evils it seeks to combat of too great a magnitude, for a marked national reform to have been accomplished; for this we must wait at least another generation. In estimating progress it must always be remembered, moreover, that although the movement receives its inspiration and support from the central department, it depends, in fact, upon local effort. In no case has the Department of Industry and Labour taken the initiative in establishing schools and classes; this has been left to communes, local committees, private bodies, and individuals. It is believed that technical and housewifery schools should always be established in neighbourhoods where their need is felt, that they must be organised according to local requirements and in response to local demands. The difference of race enters into this question of local requirements. The characteristics of the Flemish and the Walloons are still distinctively maintained, and a line can be drawn between the predominantly Flemish and Walloon districts; the co-existence of these two races, each with its own peculiar difficulties and individual standards and needs, must present a problem of considerable difficulty, if it is also a source of national strength.

Progress is, for many reasons, likely to be continuous. The enthusiasm, experience, and untiring labours of the chief authorities concerned,—the gradual raising of the standard of teaching,—the increasing desire for education and improvement among the working

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\* I have not dealt with the instruction in hygiene, as specially applied to temperance teaching, which is given to both boys and girls in Belgian Schools, as this teaching, important as it is from the point of view of home life, is not properly speaking a branch of housewifery instruction. Lectures on the subject are given in schools, temperance leagues formed, prize essays written, and so forth. As has been mentioned, in the *écoles ménagères* some teaching on the subject is included, naturally and without effort, as a normal part of the theory lessons, but it is by practice rather than precept that the attempt is made in these schools to combat the evil, and, of set purpose, this instruction is not thrust into the foreground, nor is there any avowed anti-alcoholic campaign among the pupils.

It may also be mentioned here that a paper on "School Hygiene in Brussels," by Miss J. D. Montgomery, was published in Vol. 2 of Special Reports on Educational Subjects (1898).



classes themselves,—the socialist movement on the one hand, with its claim for privileges and its gradual realisation of its own need of improvement before these privileges can be grasped,—the strong religious party, on the other hand, with its experience and knowledge of the use of practical means to attain spiritual ends,—the fact that Belgium, as a nation, is still young, with a position to maintain among older and greater neighbours, — are all forces making for progress.

In conclusion, the following extract gives once more the aim and ideal of the domestic education of girls in Belgium; the quotation is from M. Rombaut, who is virtually responsible for the origin and development of the special housewifery schools. There is no need to apologise for returning to what has already been emphasised in these pages; not only is it the mainspring of the work in Belgium and the guiding principle with teachers and authorities at every turn, but it is precisely, so it seems to me, what makes the experience of Belgium in this direction of peculiar interest and value to England.

“*Vous savez que dans ces dernières écoles [écoles ménagères] nous avons le ferme désir de former de braves filles qui tiendront, lorsqu’elles se marieront, leur petit ménage avec ordre, propriété et économie.*

“*Je caresse une idée, et je mets tout en œuvre pour la réaliser : c’est de former dans nos écoles industrielles et professionnelles des hommes instruits, aptes, réfléchis, rangés, artisans de la prospérité générale, et d’autre part, d’obtenir, par l’enseignement pratique que nous donnons dans nos écoles ménagères, des femmes économes, prévoyantes, éclairées et renseignées sur leur mission familiale, pouvant par le mariage assurer le bonheur du foyer et servir d’exemple aux autres travailleurs. . . Ce n’est peut-être qu’un beau rêve mais j’espère cependant qu’il se réalisera bientôt.”*

I desire to express my warm thanks for the help and kindness I received, to M. Eugène Rombaut, *Inspecteur Général de l’enseignement Industriel et Professionnel*, Mlle. C. Van Gehuchten and Mlle. E. Henckels, *Inspectrices de l’enseignement ménager*; also to officers at the *Ministère de l’Intérieur et de l’Instruction publique*, especially M. le *Directeur Général, Administration de l’enseignement moyen*, M. le *Directeur Général, Administration de l’enseignement primaire*, and M. Charles Remy, *Directeur*; to M. C. Mestdagh-Beaucourt, *Inspecteur Principal de l’enseignement primaire* (Brussels); Mlle. M. Gilijs, *Inspectrice de l’enseignement des ouvrages manuels*; M. L’*Échevin de l’Instruction publique et des Beaux-Arts, Administration communale de Bruxelles*; Madame Claeys, *Directrice de l’école Bischoffsheim*; and to all those directresses and teachers whose schools I visited for their invariable kindness and courtesy.

Finally, I may mention that, unless otherwise mentioned, the official reports and other literature to which reference is made in this paper may be consulted at the Board of Education Library, St. Stephen’s House, Cannon Row, London, S.W.

August, 1905.

HELEN E. MATHESON.

## APPENDIX A.

MINISTERIAL CIRCULAR, SEPTEMBER 1ST, 1887,

ON

THE TEACHING OF DOMESTIC ECONOMY AND HOUSEHOLD WORK  
IN PRIMARY SCHOOLS AND ADULT SCHOOLS FOR GIRLS.\*

Brussels,

September 1st, 1887.

*Monsieur le Gouverneur,*

I have the honour to send you herewith an order concerning the teaching of domestic economy and household work in primary schools and adult schools for girls.

I beg that you will bring this order, by means of the *Mémorial administratif*, to the knowledge of the communal administrations, and that you will take the necessary measures for communicating it to (women) teachers in communal and adopted schools.

Inspectors and inspectresses will receive it through me.

I count on your active co-operation, *Monsieur le Gouverneur*, in encouraging communal administrations to undertake the preparation of girls in our communal schools for household work.

The Minister of the Interior  
and of Public Education,

THONISSEN.

*Order concerning the teaching of domestic economy and household work in primary schools and adult schools for girls.*

## I.—GENERAL CONSIDERATIONS.

The necessity of associating the school with the family in the work of domestic education is recognised generally to-day. In Belgium, as in England, in Germany, in France, in Switzerland, it is understood that if it is necessary to make girls intelligent and good; to teach them reading, writing and arithmetic, it is also indispensable to make them love and practise household work. Differences of opinion begin when it is a question of deciding how far the primary school should intervene.

Some people confine themselves to demanding that the teacher should accustom the children to order and cleanliness, that she should make them familiar with the principles of prudence, of domestic economy and hygiene by means of talks given occasionally in connection with reading, dictation, writing, etc.

Others are not content with these simple talks: they demand that the primary school should teach actual household occupations, principles of feeding and cooking.

It is obviously a misconception of the mission of the primary school to wish to turn it into a housewifery or a cookery school. The demands of general education, the variety of compulsory subjects, the small number of school years, the irregular attendance, the insufficient preparation of the teachers, the difficulty of organising the practical part of household work

\**Ministère de l'Intérieur et de l'Instruction Publique.—Administration de l'Enseignement Primaire.—Enseignement de l'Économie Domestique et des Travaux du Ménage.—Circulaire à MM. les Gouverneurs de province.*

in large classes, the expense—all these are reasons against the teaching of practical household work in schools where the pupils are generally under twelve years of age.

But there is a reform which could be introduced at once into many primary schools, and which would easily become general at no distant date by means of some administrative and pedagogic measures: it is the substitution of regular instruction in the principles of domestic economy and hygiene for the occasional lessons which are given to-day. The new course ought to be based on a clearly defined syllabus and to be allowed a suitable time in the curriculum.

It is not an education of *words* that is needed, but a real education of *things*. The teacher should give inductive and practical lessons with practical demonstrations; she should explain and demonstrate not only in the schoolroom, but also, as far as possible, in the kitchen, dining-room, bedroom, and in the garden. She should try to inspire the children with a taste for manual occupations, and should encourage them to help their mothers in those domestic tasks which are not beyond their powers.

Taught in this spirit, the principles of domestic economy and hygiene would prepare the girls for apprenticeship in household occupations under their mother's direction.

The teaching of needlework, of the most important laws of hygiene and the most useful principles of domestic economy, the application of the methods which are most likely to develop in the pupils the moral qualities of the good housewife, this is the contribution which the primary school can make to the domestic education of girls.

It will be necessary in many communes to go farther in the direction of practical instruction in household work, and to have recourse to one of the three following methods of organisation:—

- (1) The housewifery class (*classe ménagère*) attached to the primary school, open two half-days a week for girls of the upper standard (children of 11½ or 12 to 14 years of age).
- (2) The adult school;
- (3) The special housewifery school (*école ménagère*).

We will speak later of these institutions.

## 2.—THE PRIMARY SCHOOL PROPER.

It will only be possible to draw up a syllabus of instruction in the principles of domestic economy and hygiene for primary schools after numerous experiments and some years' experience.

In giving advice on the subject, the Government does not intend to present a model syllabus which is to serve as a guide under all conditions, but only to offer suggestions that may be helpful to communal authorities and schoolmistresses, reserving the further consideration of the syllabus till the experimental period can be considered closed.

Let us examine what it is advisable to teach in the three standards of the primary school.

### *Lower Standard.*

As the children in this standard are so young (6 to 8 years old), it is not possible to give them special lessons in domestic economy and hygiene. But as in the first days of spring the seeds are sown which produce the summer flowers, so in the mind and heart of children, from the lowest class onwards, should be set the germs of good habits and moral qualities.

The familiar talks about school and home subjects, of which the principal aim is to teach the children correct speech, as well as various school occupations, should provide the teacher with numerous opportunities for teaching the little girls habits of order and cleanliness.

Inspired by Froebelian ideas the teacher should try to invent household games, and games with a doll, which are both instructive and entertaining, especially entertaining. These games, accompanied by little songs, would create a liking for household occupations, and would prepare the way for instruction properly so-called.

*Middle Standard.*

The first series of object lessons or familiar talks on simple, interesting and practical subjects should be given in the classes of this standard.

The subject will supply the teacher with abundant opportunities of introducing variety into these talks and lessons. The teacher must avoid anything which could result in the children attempting at home to do work that would be dangerous at their age. Thus, for instance, she would not explain, in the middle standard, how to light a fire, or how to light and extinguish a lamp.

The following syllabus, proposed as an experiment, can be adapted by the teacher to the needs of the locality.

A.—Object lessons or familiar talks preparatory to instruction in domestic economy and hygiene.

I. *Order and cleanliness.*—Personal cleanliness. Care that the little girl should take of her clothes, of her school belongings.

II. *Cleanliness of the dwelling.*—Brooms and brushes. To show how to sweep and to clean the school, the kitchen.—To dust; danger of using a feather brush.

III. *Ventilation.*—Why rooms should be ventilated. When and how to ventilate the schoolroom and the different parts of a house.

IV. *Hygienic advice for the child.*—Danger of exposing oneself to a draught of having wet feet, of being too near the fire, of wearing woollen scarves and caps in rooms, of eating unripe fruit, of drinking when perspiring, etc.

V. *Furniture and utensils.*—Names of the principal pieces of furniture necessary for each part of the house.

Talks on the use and care of some kitchen utensils.

Scales; exercises in weighing.

VI. Very simple talks on some food substances.

VII. Talks on the principal vegetables.

VIII. To lay the table for breakfast and dinner. To serve, to clear away.

B.—Little Household Duties to be done at Home.

The teacher should try to gain the co-operation of the mothers in encouraging the children to perform various little duties at home, such as the following:—

1. To sweep the kitchen, the room;
2. To dust the furniture;
3. To prepare the vegetables;
4. To peel the potatoes;
5. To help to lay the table;
6. To wash cups and plates;
7. To practise dressing themselves and doing their hair without help from others;
8. To help to dress their younger brothers and sisters;
9. To do little things in the garden: to weed, water, cut vegetables, make bunches of flowers to decorate the dresser, the table, etc.

*Upper Standard.*

In the upper standard it is essential that this instruction should be extended. While continuing to give it in the form of object lessons and familiar talks, the whole series of talks should form a little course in hygiene and domestic economy. The teacher must not confine herself to showing things and explaining their use; she should also do a certain number of domestic tasks before the pupils and make them repeat these tasks at home, under the direction of their mothers. In order to make these lessons more effective, she should make use of reading, writing and dictation lessons; she should apply arithmetic to household accounts; above all, she must take care that the educative opportunities of daily occurrence develop the moral qualities of the housewife and prepare for the accomplishment of domestic duties.

The following syllabus could guide her in the performance of her task :—

A.—Principles of Hygiene and Domestic Economy.

Talks and readings on the most interesting and the most practical subjects of the following categories :—

- I. Personal cleanliness ; washing, baths ;
- II. Clothes ; care of them ; hygienic advice. Simplicity in dress ;
- III. Healthy conditions of the dwelling. Causes of vitiation of the air. Ventilation. Cleanliness ;
- IV. Care of furniture ;
- V. Heating and lighting ; practical advice ;
- VI. Drinking water ; filter ;
- VII. Very simple ideas on the nutritive value of the principal foods, on their properties and their preservation. Drinks. Pernicious effects of narcotic drinks ;
- VIII. Ideas on some substances used for washing and ironing linen, for taking stains out of garments.

B.—Household Occupations.

The mistress should teach inductively a selection of household occupations. She should explain the work and do it herself before the pupils, whom she should urge to practise in their turn at home. Every fortnight each pupil ought to give an account of the practical work which she has done at home under her mother's direction.

The following is a list of occupations to be taught as completely as local circumstances permit :—

- 1. To clean the stove ;—2. to prepare and light the fire ;—3. to clean and trim the lamps ;—4. to sweep and clean the kitchen, the living room ;—5. to dust ;—6. care of the bedroom ;—7. care of wooden furniture ;—8. cleaning kitchen utensils, table service, etc. ;—9. washing small articles of lingerie and of dress ;—10. to lay the table.

*In addition, for rural schools* :—1. Work in the vegetable garden ;—2. preservation of vegetables ;—3. care of the dairy ;—4. advice on the making of butter, how to adapt it for provisions ;—5. advice on the making of bread, etc.

It is not possible to insist too much upon the teacher making use in her lessons of the opportunities offered by the furniture and utensils of her own home, by the work and products of her garden, by the daily incidents of domestic life. This practical method once adopted, she will easily find new methods of induction and demonstration.

By preserving great simplicity in all her lessons the teacher will not forget that she must communicate ideas that are instructive, useful, directly applicable to the management of a home, and reject from her teaching everything purely theoretic, as well as things which the girl knows already or which she learns for herself without the least effort.

She must not lose sight of the intellectual culture of the pupils. She should encourage them to observe, to compare, to reason for themselves, to express their observations and reflections in clear, precise and correct speech.

C.—Needlework.

Needlework is an essential part of instruction in domestic economy and hygiene. The Government has already taken, as regards this subject, the measures necessary to ensure success.

It is for communal authorities, inspectors, inspectresses, to see that the syllabus is properly carried out. They are entitled to demand that the teachers devote to practical work at least the time indicated in the model syllabus ; that they teach according to the simultaneous method, especially when demonstrating, explaining, working before the pupils ; that they use largely inductive methods and drawing ; that they pay particular attention to lessons and exercises dealing with cutting out and mending clothes,

### 3.—THE CLASSE MÉNAGÈRE TO BE ATTACHED TO THE PRIMARY SCHOOL.

The simplest and the least costly way of organising practical instruction in domestic work, is to attach a *classe ménagère* to the primary school proper, under the following conditions:—

Two afternoons a week, Wednesday and Saturday for instance, the pupils of the upper standard, or of the highest class of this standard, when it includes two school years (children from 11½ or 12 to 14 years of age), could learn practical household work in the school-mistress' house or in some other place containing at least a kitchen and a laundry provided with the necessary appliances. The furniture and apparatus ought to be as simple as possible, for it is a question of training future housewives, chiefly for working-men's and labourers' families, and not cooks for rich people.

The hygiene and domestic economy lessons could be given according to the syllabus laid down above for the upper standard of the primary school.

The practical work would include keeping the dwelling and furniture clean and tidy, washing, bleaching, and ironing linen, and cooking; in the country, making bread and care of the kitchen garden must be added.

Whenever circumstances permit great services would be rendered by teaching the girls also the care of children and sick persons.

By preference, the practical instruction would be given by the primary schoolmistress or the assistant mistress, *provided that she is competent*. She would know better than anyone else how to maintain discipline, to hold the children's attention, to make the lessons interesting and agreeable, to explain clearly and precisely and to make the work educative.

The expenses for kitchen and laundry apparatus would amount to about 400–500 francs.

The girls should bring from home the linen to wash and iron, but the commune or the school managers would pay the expenses of cookery instruction, which could be restricted annually to a sum of about 150 francs for very twenty pupils, if a wise economy is practised.

Great importance should be attached to the question of economy; the future housewife must learn to prepare, with the modest family means, better and more nourishing food; the cost price of each dish per person must always be calculated.

Instruction in cooking should include the preparation of meals suitable for a working man's family, and some for a middle-class household.

It will only be possible to formulate a more or less definite syllabus for the cookery course after an experimental period of some years.

Nothing will be easier than to use the dishes prepared. In the institution there will be little cooks endowed with an excellent appetite, who will be glad to have some refreshment or supper before going home. Often also, side by side with the primary school, there is an infant school where the food prepared in the *classe ménagère* would be received with pleasure. It would also be an excellent way of reducing the expense of cooking instruction to buy the food prepared by the girls and to distribute it among the infant school children. It would also be possible to use it, in certain communes, for the old people supported by the *administration hospitalière*.

In the communes where there are several primary schools for girls it is not necessary to organise a *classe ménagère* for each school. If necessary, a single class of this kind could be used by the pupils of five primary schools; each of the five upper standards receive two half-days' practical instruction a week. The housewifery teacher should have one whole day's rest, Thursday for instance.

### 4.—TIME TO BE DEVOTED TO INSTRUCTION IN DOMESTIC ECONOMY AND HOUSEHOLD WORK.—SOME SIMPLIFICATIONS TO INTRODUCE INTO THE GENERAL CURRICULUM OF THE PRIMARY SCHOOL.

*Middle Standard*.—Two weekly lessons, of half an hour each, should be given, and the teacher could connect these with the lessons in mother-tongue.

*Upper Standard.*—To obtain good results, at least two half-hours—three would not be too much—must be devoted to domestic economy every week.

As in the middle standard, one of these lessons would be attached to the mother-tongue course; the second half-hour could be taken from the time appropriated to history and geography; the third, from the time for optional subjects.

*Classe ménagère.*—Domestic economy and practical work should be taught twice a week, from 2.30 till 4.30 in the afternoon, for instance, in the summer half-year, and from 2 till 4 o'clock during the winter six months. From 1 o'clock till 2 or 2.30 there would be a lesson of general instruction and a recreation.

In the interests of the children's and the teacher's health, the Thursday afternoon half-holiday ought to be retained.

The teaching of housewifery would therefore occupy four hours a week, which would be deducted from the time at present devoted to various subjects.

The following reductions would be made:—

One hour from the time devoted to mother-tongue;

Half-an-hour from the time devoted to arithmetic;

Half-an-hour from the time devoted to geography and history;

Two hours from the time devoted to optional subjects.

It is not sufficient to take the time necessary for domestic economy and household work from the hours devoted to certain subjects in the curriculum of the upper standards. The introduction of a new subject of instruction entails, as a necessary consequence, the modification of the syllabus of some other subjects, in order to avoid overburdening the children.

[Here follows an account of the simplifications which it is considered advisable to introduce into the syllabus for arithmetic, geography, Belgian history, geometric forms; as regards natural science the circular proceeds]:—

*Principles of natural science*—These principles often serve as a foundation for, and almost always as auxiliaries to instruction in domestic economy and hygiene.

It does not seem possible to curtail the actual syllabus, which is very simple, of the principles of natural history; for girls, however, there would be no objection to concentrating the teaching of the first principles of physics on the most important subjects mentioned below:—

1. Some general properties of bodies: divisibility, porousness, compressibility and elasticity;
2. Lever of the first kind; balance;
3. Atmospheric pressure; barometer; suction-pump;
4. Expansion of bodies; thermometer;
5. The solar spectrum;
6. Simple explanation of the principal meteors.

#### 5.—CLASSE MÉNAGÈRE FOR ADULT GIRLS.

Instruction in household work is, by its nature, much more appropriate for adult pupils than for primary school children. Towards the age of 12 to 14 the girls possess, if they have been well directed, suitable general knowledge; their physical powers have developed, they have acquired the taste for manual work: it is the moment to finish their preparation for domestic life.

The following shows what, in its main features, could be the organisation of a *classe ménagère* for adult girls:—

#### A.—Rural Communes.

The class would be held during the whole school year, except at the times of hay-making, harvest, the potato crop, etc.

The complete course would occupy two years.

#### First Year.

*One day a week, for one hour* (Sunday, for instance): Hygiene and domestic economy lesson,

*One day a week, for two hours* (Thursday, for instance):—

A.—*In winter*.—Keeping the dwelling and furniture clean. Washing and ironing linen. Needlework, principally cutting out and making ordinary garments and mending linen and clothes;

B.—*In summer*.—Work in the kitchen garden. In bad weather the pupils could do needlework.

#### Second Year.

*One day a week, for one hour* (Sunday, for instance): Hygiene and domestic economy lesson.

*One day a week, for two hours* (Thursday, for instance):—

A. *In winter*.—Practical cooking;

B. *In summer*.—Kitchen gardening and practical cooking.

#### B.—*Towns*.

The *classe ménagère* would be open for nine or ten months a year, from October to July.

The complete course would occupy two years.

#### First Year.

*Sunday or another day, for one hour*: Hygiene and domestic economy lesson.

*Thursday or another day, for two hours*: Keeping the dwelling and furniture clean. Washing and ironing linen. Needlework, principally cutting out and making ordinary garments and mending linen and clothes.

#### Second Year.

*Sunday or another day, for one hour*: Hygiene and domestic economy lesson.

*Thursday or another day, for two hours*: Practical cooking; care of children and sick persons.

The hygiene and domestic economy lessons should be based on the syllabus for the upper standard of primary schools, which could be developed according to need.

The pupils should bring the linen and articles of clothing to be washed.

Great care should be given to the mending of linen and clothes.

Lessons would be given on cutting out and making the following articles: bed linen, ordinary apron with cuffs for a girl, woman's chemise, girl's drawers, dressing-gown, child's dress, workman's blouse, man's shirt, little boy's trousers and shirt, girl's dress.

As in the *classe ménagère* attached to the primary school, cooking suitable for a working class home should generally be taught, as well as a certain number of preparations for a middle-class household.

In the country, practical instruction should be given in gardening, the choice of vegetables and fruits, the care of them and methods of preserving them. By keeping a good vegetable and fruit garden the intelligent housewife should create varied resources for the family's meals. It is, therefore, suitable to teach the care of a kitchen garden, where these resources are created, before teaching the art of cooking which makes use of them.

The Ministerial Circular of the 29th July, 1887, concerning adult schools, provides for the organisation, by the communes, of *special courses*, among which appear courses of domestic economy, needlework and other household work. The provisions of the *règlement-type* annexed to this circular are therefore applicable to *classes ménagères* for adults.

■ The Government, upon whom the duty of ensuring the pedagogic preparation of communal teachers is legally imposed, will take the measures necessary for the organisation, in good conditions, of the teaching of household work in



training colleges.\* It will hold, as it has already done for needlework, temporary normal courses of domestic economy and of household occupations for women teachers already in office. It will also consider the possibility of granting special support to communes which attach *classes ménagères* to their girls' schools, or which establish *classes ménagères* for adults.

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This is not the place to discuss the *grandes écoles ménagères*, which have their own organisation and a development beyond the scope of primary education. These institutions are by nature technical schools (*écoles professionnelles*) and belong, as regards State inspection and grants, to the *Ministère de l'Agriculture, de l'Industrie et des Travaux publics*.

Brussels, 1st September, 1887.

The Minister of the Interior and of Public Education,

THONISSEN.

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\* "*Instruction relative à l'enseignement de l'économie domestique et des travaux du ménage dans les écoles normales d'institutrices*" was issued by the Minister of the Interior and of Public Education, on the following day (Sept. 2nd, 1887).

## APPENDIX B.

## HYGIENE SYLLABUS FOR PRIMARY SCHOOLS.

Principles of hygiene are included among the compulsory subjects for primary schools receiving State grants. The following syllabus, to which one hour a week is supposed to be given in each school year, is that given in the model course issued by the Department of the Interior and Public Education in 1897, and largely adopted by the communes.

It will be remembered that each standard (or *dégré*) covers two school years.

## PRINCIPLES OF HYGIENE.

*Lower Standard.*

*Very simple and very elementary talks on the following subjects :*

Cleanliness in the dwelling.

Renewal of the air in rooms, etc.

Danger of drinking river or rain water;—of drinking while in a state of perspiration.

Precautions to take against great heat or against intense cold.

Cleanliness of garments and of school materials and books.

Care of the organs of sight and hearing.

Some rules concerning the use of foods and drinks.

Cleanliness of the skin, the mouth, the head.

Precautions to take in games and recreations.

First aid in cases of burns.

*Middle Standard.*

Danger of damp dwellings.

Necessity of suitable ventilation in the various parts of the dwelling;—danger of draughts.

Boiling and filtering suspected water.

Some precautions concerning the heating of rooms.

Choice of garments according to variations of temperature.

Choice and use of a good lamp.

Necessity of sufficient nourishment, varied and taken regularly.—Use of beer and coffee.—Adulterations of milk and butter.

Danger of alcoholic drinks: (Alcohol does not nourish;—it is a poison;—it leads sometimes to crime and madness).

Washing and baths.

Salutary influence of moderate work.—Conditions of beneficial sleep.

First aid in cases of burns, stings, hemorrhage, asphyxia, indigestion.

Precautions to take against measles, small-pox, scarlet fever.

Some methods of disinfection in epidemics.

*Upper Standard.*

1. *The Dwelling.*—Soil, materials, general conditions.

2. *Air.*—Atmospheric air; vitiated air; confined air; airing and ventilation.

3. *Water.*—Drinking water; contaminated water; boiling and filtering; use and abuse of water.

4. *Heat.*—Firing and heating apparatus; clothing; foot-gear.

5. *Light.*—Natural and artificial lighting.

6. *Food.*—Rules essential to good nourishment; use of drinks; corruption and adulteration of foods and drinks.—Alcoholism; its ravages from the physical, intellectual, and moral point of view.

7. *Excretions.*—Care of the skin, the mouth, the head, etc.—Baths.

8. *Exercise.*—Work, games, gymnastics, rest.

9. *Accidents.*—First aid to give in cases of wounds, sprains, hemorrhage, poisoning.

10. *Contagious illnesses.*—Preventive measures; disinfectants.

## APPENDIX C.

EQUIPMENT FOR NEEDLEWORK AND DOMESTIC ECONOMY  
COURSES IN SECONDARY SCHOOLS.

(From the departmental circular to the directresses of the State *écoles moyennes* for girls, March 31st, 1898).

## A.—DOMESTIC ECONOMY COURSE.

List of articles necessary in a school with an average of forty pupils.

## 1.—Premises.

The school ought to be able to provide at least two rooms, of which one would serve as kitchen, the other as bedroom, and, if necessary, as dining-room.

## 2.—Furniture.

	Names of the Articles.	Number of Articles.	Approximate Price of one Article.	Estimated Expense.*
1.	Brush for sweeping (cocoa-nut fibre), with handle	1	1·50	1·50
2.	Brush for sweeping (bristles), with handle	1	3·50	3·50
3.	Scrubbing brush, with handle	2	1·25	2·50
4.	Scrubbing brush (for the hand)	4	0·45	1·80
5.	Crescent brush	1	3·25	3·25
6.	Brush for cleaning stoves	2	1·50	3·00
7.	Wool brush for cleaning lamp glasses	2	0·50	1·00
8.	Dust-pan	1	0·60	0·60
9.	Zinc pail	4	0·75	3·00
10.	Dust sheets	2	3·75	7·50
11.	Dish cloths	6	0·25	1·50
12.	Sponge	4	1·20	4·80
13.	Wash-leather	3	1·50	4·50
14.	Polishing cloths	4	0·30	1·20
15.	Soap-dish	3	0·50	1·50
16.	Sheet of emery-paper	12	0·10	1·20
17.	Pair of soissors	1	1·20	1·20
18.	Small clothes-horse for towels	1	1·50	1·50
19.	Large clothes-horse for various articles of <i>lingerie</i>	1	6·50	6·50
20.	Tub	2	2·50	5·00
21.	Trivet	2	2·50	5·00
22.	Steps (six steps)	1	12·00	12·00
23.	Copper caldron	1	6·50	6·50
24.	Wooden chair	10	4·00	40·00
25.	Shelf with bracket and six hooks	2	1·60	3·20
26.	Dresser	1	30·00	30·00
27.	Kitchen table	1	15·00	15·00
28.	Dining-table	1	30·00	30·00
29.	Small kitchen table	1	10·00	10·00

\* Francs.

	Names of the Articles.	Number of Articles.	Approximate Price of one Article.	Estimated Expense.
30.	Cooking stove, with accessories	1	70.00	70.00
31.	Spices box	1	2.50	2.50
32.	Wooden spoons of different sizes	—	—	2.00
33.	Knife-board, etc.	1	1.60	1.60
34.	Frying-pan	1	1.55	1.55
35.	Dish stand	2	0.55	1.10
36.	Saucepan stand	2	0.30	0.60
37.	Salt-box	1	0.90	0.90
38.	Fireproof china-ware dish	1	2.00	2.00
39.	Tartlet mould	6	0.15	0.90
40.	Tart dish	2	0.60	1.20
41.	Mould with a cover for <i>bain-marie</i>	1	3.25	3.25
42.	Mould for various cakes	1	1.40	1.40
43.	Grater	1	0.30	0.30
44.	Wooden pestle	1	0.90	0.90
45.	Soup strainer	1	1.75	1.75
46.	Strainer for sauces	1	0.65	0.65
47.	Coffee-mill	1	3.75	3.75
48.	Coffee measure	1	0.25	0.25
49.	Set of five liquid measures	1	3.00	3.00
50.	Gridiron	1	1.00	1.00
51.	Ladle and skimmer of enamelled iron	2	0.45	0.90
52.	Dripping-pan (enamelled)	1	1.45	1.45
53.	Enamelled coffee-pot	1	2.35	2.35
54.	Ring with bag for the coffee-pot	1	0.50	0.50
55.	Soup kettle	1	3.10	3.10
56.	Saucepans of different sizes (enamelled iron)	6	3.00	18.00
57.	Enamelled pan, for frying	1	4.00	4.00
58.	Teapot (fireproof)	1	1.25	1.25
59.	Salad utensils (of box-wood)	1	1.25	1.25
60.	Corkscrew	1	2.25	2.25
61.	Table knives	12	0.70	8.40
62.	Dessert knives	12	0.65	7.80
63.	Bread knife	1	1.60	1.60
64.	Knife for paring vegetables	4	0.25	1.00
65.	Spoons and forks	12	0.75	9.00
66.	Coffee spoons	12	0.35	4.20
67.	Nickel knife-rests	12	0.50	6.00
68.	Enamelled bowl for vegetables	2	1.50	3.00
69.	Enamelled tea-kettle	1	3.85	3.85
70.	Mincing board	1	1.20	1.20
71.	Mincing knife	1	2.50	2.50
72.	Scales (5 kilog.), with weights	1	12.00	12.00
73.	Cruet-stand (oil, vinegar, salt, mustard)	1	4.00	4.00
74.	Gridiron for Brussels <i>gaufres</i>	1	2.00	2.00
75.	Gridiron for Brussels <i>gaufrettes</i>	1	2.50	2.50
76.	<i>Tableau de boucherie</i> * on varnished linen	1	5.50	5.50
77.	Complete crockery table service, twelve people	1	25.00	25.00
78.	Complete coffee service	1	7.50	7.50

\* This chart is a large wall sheet on which are displayed an ox, and the various joints and portions of beef, named; similarly for a sheep, etc.

Names of the Articles.		Number of Articles.	Approximate Price of one Article.	Estimated Expense.
79.	Beer glasses - - - - -	12	0·20	2·40
80.	Wine glasses - - - - -	12	0·20	2·40
81.	Water bottle - - - - -	2	1·50	3·00
82.	Crumb tray with brush - - - - -	1	2·25	2·25
83.	Pastry board with roller - - - - -	1	2·25	2·25
84.	Glass pots for jam - - - - -	6	0·30	1·80
85.	Irons - - - - -	4	1·00	4·00
86.	Stands for irons - - - - -	4	0·20	0·80
87.	Ironing board - - - - -	1	2·25	2·25
88.	Cover for ironing board - - - - -	1	4·75	4·75
89.	Linen basket - - - - -	1	3·00	3·00
90.	Kitchen towels - - - - -	12	0·50	6·00
91.	Dusters - - - - -	12	0·25	3·00
92.	Table linen (one table-cloth, twelve napkins) - - - - -	1	12·00	12·00
93.	Linen cupboard - - - - -	1	30·00	30·00
94.	Spring bedstead - - - - -	1	25·00	25·00
95.	Mattress, bolster and pillow - - - - -	—	25·00	25·00
96.	Sheets, blanket, and coverlet - - - - -	—	20·00	20·00
Total estimated expense - - - - -				600·85*

## B.—NEEDLEWORK.

## 1.—Premises.

The school should provide a special room of which the lighting leaves nothing to be desired.

## 2. Furniture.

1. Four tables with drawers (2m. 50 x 1 †) at 30 francs -	francs.	120
2. Two cupboards at 50 francs - - - - -	-	100
3. One sewing machine - - - - -	-	150
4. One dressmaker's dummy - - - - -	-	12
5. Twenty chairs at 4 francs - - - - -	-	80

Total expense for furniture - - - - - 462‡

\* 600·85 francs=£24 0s. 8d. † 1 metre=3·28 feet.

‡ 462 francs=£18 9s. 7d.

APPENDIX D.

TABLE OF THE ÉCOLES PROFESSIONNELLES FOR GIRLS.

(From the latest Official Report (1897-1901).)

	Address.	Whether Communal or under Private Authority.	No. of pupils 1900-01.	No. of Teachers	Annual School Fee.	Budget 1901.	Remarks.
1	<i>Antwerp</i> - - - - (rue St. Willebrord)	P.	33	7	60	3,375	{ Hygiene and domestic economy are included in the theory courses. The technical courses are for lingerie, dressmaking and drawing. Principles of education, hygiene and domestic economy taught. Technical courses are: lingerie, dressmaking, corset-making, millinery, artificial flowers, commerce, drawing, painting on porcelain, etc. Founded in 1900. 30 pupils in 1901-2. Domestic economy and hygiene included in theory courses. Technical courses: Lingerie, dressmaking, technical drawing. (Called the "École Risschoffsheim"*) See Appendix D Hygiene, domestic economy, manners. Technical courses: dressmaking, lingerie. Technical courses: dressmaking, lingerie, millinery, artificial flowers. Hygiene and domestic economy, sewing. Technical courses: dressmaking, lingerie. Theory courses include domestic economy, hygiene, morals and manners. Technical courses: commerce, dressmaking, lingerie, technical drawing. Hygiene and domestic economy. Technical courses: dressmaking, lingerie. Hygiene and domestic economy. Technical courses: dressmaking, lingerie, flowers, millinery, drawing. Theory courses include principles of hygiene and domestic economy, sewing, morals. Technical courses: commercial science, technical drawing, lingerie, dressmaking, millinery, painting.
2	<i>Antwerp</i> - - - - (rue des Architectes)	C.	303	27	60	54,500	
3	<i>Bruges</i> - - - -	P.	12	4	20	2,555	
4	<i>Brussels</i> - - - -	P.	203	20	144	39,200	
23	<i>Molenbeek-St. Jean†</i> - - - -	P.	43	5	60	5,555	
24	<i>Mons</i> - - - -	C.	115	13	24	23,500	
25	<i>Saint-Gilles†</i> - - - -	P.	51	9	60	8,500	
26	<i>St.-Josse-ten-Noode†</i> - - - -	P.	40	13	80	8,100	
27	<i>Schaerbeek†</i> - - - -	P.	145	8	24	10,610	
28	<i>Uccle</i> - - - -	P.	37	8	50 or 30	7,810	
29	<i>Verviers</i> - - - -	C.	168	12	48	20,320	
	TOTAL - - - -	—	3,184	345	—	435,508	

\* The subjects in this course are enumerated here as being representative of the Theory courses generally in the Écoles Professionnelles for girls.

† Suburb of Brussels.

## APPENDIX E.

## ÉCOLE BISCHOFFSHEIM.

(*École Professionnelle, Rue du Marais, Brussels.*)

The *École Bischoffsheim*, or as it is better known, the *École professionnelle* of the *Rue du Marais*, was the first technical school for girls founded in Belgium, and it is now the most highly developed school of its type. The founders hoped that this school would supply a long-felt want in the education organised by public authorities. It was recognised that women who have to earn their own living are often placed in the most unfavourable conditions. They have to undergo a long apprenticeship, and are not seldom under the direction of those whose interest it is to keep them in an inferior and dependent position. They frequently receive insufficient wages for heavy work. Chance, moreover, often decides their choice of a career, which may not be at all suited to their abilities. Last, but not least, it was felt to be a duty to protect poor girls from the dangerous influences of the factory or workshop. The aim of the founders, therefore, was to provide good conditions in which girls could learn, methodically and systemically, a trade or profession which would enable them to support themselves, preferably by work in their own homes, and, at the same time, to bear in mind that the girls should not only be trained as intelligent and capable workwomen, but also as future wives and mothers. Hence practical, technical education in various occupations was offered, the pupils were directed to study the special subjects related to their trades or professions, the instruction already acquired at the primary school was completed and developed; the pupils were offered, in a word, a better equipment for the struggle of existence. The following notes give a short outline of the origin and organisation of the school.

The school owes its existence to private enterprise. In 1865 the *Association pour l'enseignement professionnel des femmes* was founded, with headquarters at Brussels. The aim of the Association was to provide girls with the opportunity of obtaining the necessary knowledge, theoretic and practical, for taking up occupations which would enable them to earn their living. To this end it was proposed: (1) to found technical schools for girls at Brussels and in the suburbs; (2) to assist girls leaving these institutions to obtain suitable posts. Eighty-four people (*membres fondateurs*) undertook to pay an annual subscription equal to the school fee (at that time, 36 frs.), for at least two years, and several members subscribed larger sums. The Brussels Communal Council subscribed an annual sum of 3,600 frs. The amount thus collected was considered sufficient to meet the ordinary expenses of the school. In order to defray the initial cost of installation, etc., the late M. le Sénateur J. R. Bischoffsheim, after whom the school is named, put 7,000 frs. at the disposal of the administrative council of the Association, of which in 1871 he made a free gift to the school.

The school was opened April 25th, 1865, and was at first entirely under private authority. In 1868 the Communal Council of the town of Brussels decided to adopt the school. From that time, also, the Government has granted an annual subsidy, subject to the usual conditions. The school is governed by a Committee of fifteen, chosen by the Association from among its members, five members being elected every year. This Committee appoints the teachers and controls the finances, subject to the approval of the Communal Council and of the central department, and superintends the courses of study and the discipline.

The expenses of the school, estimated at £1,568 in 1901, are met by members' subscriptions, grants and school fees. The State and the town of Brussels each give two-fifths of the total expenses, after the amount covered by school fees has been deducted; the province grants about one-tenth or one-eighth, and the remainder is covered by subscriptions of members of the Association. The town of Brussels is responsible for the premises. The grants named above were not always given in the same proportion; since the school was founded many similar institutions have arisen, and this has made a difference, not only to the numbers of pupils attending the school, but also to the grants of suburban communes, which are now given to their own institutions. The school fees have been raised considerably, and now amount to 144 frcs. (about £5 15s. Od.), per pupil per year. The estimates and accounts are submitted annually to the Communal Council and to the Department of Industry and Labour.

The school is situated in spacious buildings, provided with large and well-lighted class-rooms, a playground, and a covered playground for recreation and gymnastics. The class-rooms are furnished with modern desks and the special equipment necessary for each course. There are collections, a small museum containing some beautiful specimens of the pupils' work, and a school library.

The school opened with sixty pupils, of whom fifteen were paying. At the present time (1905), there are 266 pupils, of whom 110 hold scholarships. Scholarships are given by the town of Brussels and by members of the Association. Pupils are admitted, when they are at least twelve years of age, after an examination bearing on subjects taught in the primary school.

The staff consists of a Directress, Madame Claeys, and twenty teachers, all of whom hold diplomas. Every three months a conference, with an inspector as chairman, is held among all the members of the staff; a theoretic and a technical lesson are given by two teachers, chosen by lot, followed by discussion and criticism.

The course lasts four years. The school year begins on October 1st, and lasts for ten and a half months. Lessons are given every week day from 9 a.m. to midday, and from 1.45 to 4.30 p.m.; Thursday afternoon is a holiday.

At the end of the course diplomas are awarded for the technical courses to pupils who pass the leaving examination. Up to 1901, 740 diplomas had been granted.\* An exhibition of the pupils' work is held at the end of each school year. An annual school excursion has taken the place of prize-giving.

The instruction includes general or theory courses and special or technical courses. The theory courses are compulsory for all pupils except those whose general education is sufficiently advanced; in 1902-3, 28 per cent. of the pupils were excused from these courses. The courses include French, Flemish, arithmetic, principles of book-keeping, history, geography, principles of natural science, hygiene, domestic economy, the care of infants, drawing, singing, gymnastics, cooking, mending.

There are eight technical courses from which the pupils may choose which one, or occasionally two, they will take. These courses are: commerce, dress-making, *lingerie*, artificial flowers, millinery, industrial drawing and designing, painting, artistic embroidery.

Drawing is the most important subject taught; it forms the basis of all the technical courses. Beginning with the study of elementary drawing, the various stages are taught up to, but excluding, figure drawing from the life, which is considered as beyond the scope of the course and not in accordance with the technical character of the instruction given in the school. The drawing course prepares the pupils for apprenticeship in the various

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\* During the years 1896 to 1901 the following diplomas were gained:—Dressmaking, 33; *Lingerie*, 8; Artificial flowers, 10; Millinery, 3; Drawing, 13; Commerce, 42.



trades and occupations, and includes freehand drawing, designing applied to various industries (e.g., lace, embroidery, wall-papers, stuffs, faïence), drawing from casts and from nature.

Painting includes courses for painting on china and faïence, fans, stuffs, and glass. In 1902-3, twenty-three pupils attended the drawing and painting courses.

The dressmaking course has the largest attendance; in 1902-3 there were 123 pupils. Two diplomas were gained in the final examination held July, 1903. Originally this course was taught in a work-room under the direction of a dressmaker. This inevitably led to unfortunate results, in exact contradiction to the aims of the founders of the school; it was difficult, for instance, to give a progressive and complete course to each pupil, and the ablest pupils in one branch of work were apt to be confined to their speciality. This character of a professional work-room has now entirely disappeared. The course is divided into three classes, beginning with simple sewing and including all the different kinds of work connected with taking measurements, cutting out and making up, until finally the most elaborate robes and costumes are made. The pupils make garments for themselves, for members of their families or for friends. In connection with this course, there is what is called *l'Œuvre des vieux vêtements*, which provides garments, to the number of five or six hundred, for poor pupils attending the communal schools, and at the same time ensures sufficient work for the pupils.

The *lingerie* course had an attendance of nineteen pupils in 1902-3. The work done in this course is of the finest quality, and must demand very good eyesight as well as the greatest accuracy and neatness. There is no difficulty in finding posts for the pupils when they leave school.

In 1902-3, fifteen pupils attended the course for making artificial flowers, and in 1903 four diplomas were gained. The flowers are copied from nature, and the work is of a very artistic quality. A specimen may be seen at the Board of Education Library. This is the only course where a manufacturer provides the materials and receives the products; in this case the girls themselves could not find a sufficient use for them.

Sixteen pupils attended the millinery course in 1902-3; one diploma was gained in July, 1903.

Commerce includes applied arithmetic, book-keeping, commercial composition, commercial law, commercial geography, English, German, typewriting and shorthand. In 1902-3, forty-five pupils attended the course, and ten diplomas were granted in 1903.

Sixteen pupils studied embroidery in 1902-3, and one diploma was gained in 1903.

## APPENDIX F.

## REGULATIONS OF THE FIRST ÉCOLES MÉNAGÈRES, HAINAULT.

The following were the regulations of the *écoles ménagères* founded, in 1874, by the Prince de Chimay in Hainault.\*

" Article 1.—The aim of the school is to give girls all the knowledge which a good housewife ought to have. The primary condition for admission is a knowledge of reading, writing and arithmetic.

" The pupils are principally, and preferably, girls from the primary school.

" Article 2.—No pupil can be admitted if she is not twelve years of age.

" Article 3.—The pupils must engage to remain at the *école ménagère* for two consecutive years.

" At the age of fourteen they leave the school finally and are given, if there is occasion, a *certificat de capacité*.

" The pupils are obliged to attend the Sunday classes.

" Article 4.—The pupils will be taught the various kinds of household work in turn and they will be divided for this purpose into groups. A timetable will indicate the order and arrangement of the work, which is divided as follows :—

" 1. Cookery.

" 2. Washing and ironing.

" 3. Hand-sewing, machine-sewing, etc.

" 4. Knitting.

" 5. Medical care, bandaging, hygiene. Several groups could be employed exceptionally for the same work, if the directress of the school thinks it advisable.

" Article 5.—Each pupil should have some knitting on hand in order to take it up each time that the work of the group is interrupted.

" The pupils must bring their knitting when they come to school.

" Article 6.—The classes will be held every day of the week except Sundays and holidays, from eight o'clock in the morning till mid-day, and from one o'clock till five o'clock in the evening. These hours, however, can be modified according to different periods of the year.

" Article 7.—The pupils of the sewing group will be allowed, once a week as appointed by the directress, to bring linen and garments to mend during the class hours.

" In the absence of old articles, they will be allowed to make new garments. If other groups are at liberty the directress could extend the same privilege to them.

" Article 8.—The pupils must abstain from all conversation outside the needs of the work ; they must confine themselves to speaking exclusively of the work confided to them.

" During each class, a quarter of an hour's recreation will be granted.

" Article 9.—The pupils must follow with the strictest accuracy the instructions given by the directress for the execution of work ; every infringement of her orders will be punished.

" Article 10.—The discipline of the pupils must be good, and they must behave in an exemplary manner both in and out of school.

" Article 11.—If the pupils do not attend school regularly or do not observe the rules, they will be first called to order, then punished, and finally, in case of a second offence, dismissed from the school."

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\* See Bertiaux (H.).—*L'Enseignement Spécial en Belgique*. 1.—*L'Enseignement professionnel*. (Brussels, n.d.).

## APPENDIX G.

## SPECIMEN MENUS.

## ÉCOLES ET CLASSES MÉNAGÈRES.

I have selected the following four menus from among those I saw prepared in various *écoles* and *classes ménagères*. They represent the usual meals cooked at: (i) a centre day class for primary school children (with which may be compared the menu of the *classe ménagère* (centre) at Mons, given on page 100); (ii) an evening class for primary school children; (iii) an evening class for adults; (iv) a day class for adults. Menus (iii) and (iv) are examples of dinners for fast days. It will be noticed that menus (i) and (ii) are from schools in Brussels, (iii) from the "black country" of Hainault, (iv) from a rural school.

Further typical menus will be found in Mlle. Van Gehuchten's *Guide de la Jeune Ménagère* (Lierre, 1894), from which the following suggestions as to a few methods in which remains or scraps of food may be profitably used up, are also taken.

Having given the general direction that cooked food left over from the mid-day meal (i.e., the principal meal of the day) can be used up in the evening, Mlle. Van Gehuchten concludes her chapter on cooking as follows:—

"Remains of cooked meat: a. Cut up and mixed with salad; b. Stewed again; c. Cut into slices and fried in fat with slices of apple; d. Chopped up, re-stewed with onions, vinegar, etc., left to cool and eaten with bread, etc.

"Remains of cooked potatoes can be: a. Cut in slices and eaten with salad; b. Re-stewed with fat or butter, milk or water and salt; c. Fried, similarly with fat, butter or lard and salt; d. Mixed with other vegetables, etc.

"Remains of stewed rice: a. In soup; b. Eaten cold with sugar, etc.

"Remains of kidney beans: a. Mixed in soup; b. Re-stewed with or without vegetables, etc.

"In order to prevent provisions from spoiling, the housewife will cover from the air: butter, eggs, milk, fat, meat, etc., and keep food that is left over, in summer, in a cool, but not damp place."

(i.) *École Ménagère Communale (classe centrale).*

*Rue Locquenghien, Brussels.*

MENU FOR TWELVE PEOPLE.

16th March, 1905.

Length of preparation.	Dishes.—Ingredients.	Cost Price* per		
		Ingre-dient.	Dish.	Head.
During the cooking of the sauerkraut.	<i>Soupe- aux cèleris</i> { Bones, salt - - - - - Celery, turnips - - - - - Potatoes, 1 k. at 0·08 fr. the k. -	0·01	0·27	0·02
		0·18		
		0·08		
2 hours.	<i>Chou- croute garnie</i> { Sauerkraut, 1 k. at 0·30 fr. the k. Sausages, 1 k. at 1·80 fr. the k. Lard, $\frac{1}{2}$ k. at 0·90 fr. the $\frac{1}{2}$ k. - Butter, 50 gr. at 1·60 fr. the $\frac{1}{2}$ k. German sausage - - - - - Salt, thyme, laurel - - - - -	0·30	3·57	0·29
		1·80		
		0·90		
		0·16		
		0·40		
From 20 to 25 minutes.	<i>Pommes de terre</i> { 3 k. at 0·08 fr. the k. - - - Salt - - - - -	0·24	0·24	0·02
		0·00		
	Bread, 250 gr. at 0·26 fr. the k. - Beer, 2½ litres at 0·13 fr. the l. -	0·07	0·40	0·03
		0·33		
	Total - - - - -	4·48		0·37

\* Reckoned in francs.

## Custard.\*

$\frac{1}{2}$ litre of milk at 0.20 fr. the litre	-	-	-	-	0.10
75 gr. of sugar at 0.80 fr. the kilo.	-	-	-	-	0.06
4 eggs at 0.09 fr.	-	-	-	-	0.36
Vanilla	-	-	-	-	0.05
					0.57
	Per person	-	-	-	0.05

## Crème.\*

$\frac{1}{2}$ litre of milk at 0.20 fr. the litre	-	-	-	-	0.10
75 gr. of sugar at 0.80 fr. the kilo.	-	-	-	-	0.06
4 eggs at 0.09 fr.	-	-	-	-	0.36
Vanilla, flour	-	-	-	-	0.06
					0.58
	Per person	-	-	-	0.05

(ii.) *Classe Ménagère Libre.*

*Chaussée de Louvain, Saint-Josse-ten-Noode, Brussels.*

## MENU FOR SIX PEOPLE.

15th March, 1905.

Length of Cooking.	Menu.	Ingredients.	Cost		
			per dish.	per head.	
2 hours.	<i>Potage au Cerfeuil</i>	{ Chervil - - - - 0.10	0.20	0.03	
		{ $\frac{1}{2}$ kilo. potatoes - - - 0.05			
		{ Bread, salt, fat - - - 0.05			
$\frac{1}{2}$ hour.	<i>Foie de bœuf sauté</i>	{ 600 grs. liver - - - 0.60	0.68	0.11	
		{ Fat, flour, salt, pepper - 0.08			
$\frac{1}{2}$ hour.	<i>Pommes de terre bouillies</i>	1 kilo. potatoes - - - 0.10	0.10	0.02	
$\frac{1}{2}$ hour.	<i>Compote de pommes</i>	{ 1 livre apples - - - 0.10	0.13	0.02	
		{ 50 grs. sugar - - - 0.03			
$\frac{1}{2}$ hour.	<i>Croquettes de riz</i>	<i>Supplément. †</i>		1.11	0.18
		{ 100 grs. rice - - - 0.06			
		{ $\frac{1}{2}$ litre milk - - - 0.08			
		{ 50 grs. sugar - - - 0.03	0.38	0.06	
		{ 2 eggs ‡ - - - 0.16			
{ Frying - - - 0.05					
Total - - -			1.49	0.24	

\* The custard and crème were served as one dish, an extra. As the directress pointed out, it is only possible to have such a dish at a time of year when eggs are cheap.

† I was told in this school that there is always a *Supplément* unless the meat dish is expensive, e.g., beefsteak.

‡ These eggs were not fresh, but preserved.

(iii.) *École Ménagère Communale.*

*Frameries, Hainault.*

MENU FOR SIX PEOPLE.

22nd March, 1905

(Menu maigre).

Length of Cooking.	<i>Soupe Verte.</i>	<i>Pain doré.</i>	Cost per		
			Ingredient.	Dish.	Head.
2 hours.	<i>Soupe Verte</i> {	Vegetables, chervil, sorrel, spinach, leeks - - - -	—	0·10	—
		Potatoes, 1 kilo. - - - -	0·10	0·10	—
		Butter, spices - - - -	—	0·10	—
			—	0·30	0·05
½ hour.	<i>Pain doré</i> {	Bread, 1 kilo. - - - -	0·25	0·25	—
		Milk, 1 litre - - - -	0·10	0·10	—
		6 eggs - - - -	0·10	0·60	—
		Beer, 1½ litres - - - -	0·12	0·18	—
			—	1·13	0·19
			0·30	—	
		<b>Total</b> - - - -	—	1·43	0·24

(iv.) *École Ménagère Communale.*

*Vorselaer (Province of Antwerp).*

MENU FOR SIX PEOPLE.

27th March, 1905.

(Menu maigre).

Length of Preparation.	Indication of the Provisions.	Cost per			
		Ingredient.	Dish.	Head.	
2 hours.	<i>Potage aux haricots secs</i> {	½ litre dried beans - - - -	0·10		
		Bread, pepper, salt - - - -	0·04		
		Onion or leek - - - -	0·04	0·36	0·06
		Butter or fat - - - -	0·08		
		Toast squares - - - -	0·10		
1 hour.	<i>Choux rouges</i> (prepared with potatoes) {	1 red cabbage - - - -	0·10		
		2 kgr. potatoes - - - -	0·12	0·38	0·06
		Vinegar, pepper, salt, fat - - - -	0·16		
½ hour.	<i>Pain perdu</i> {	4 eggs, 3 slices of bread - - - -	0·44	0·70	0·12
		Milk, butter or fat, sugar - - - -	0·26		
		<b>Total</b> - - - -	—	1·44	0·24

## APPENDIX H.

## SYLLABUS ON THE CARE OF INFANTS.

## BRUSSELS.

The following is a translation of the authorised syllabus on the care of infants for the *écoles ménagères* of the *Ville de Bruxelles*,\* drawn up by Mme. Clays, *Directrice de l'école Bischoffsheim*.

## THE CARE OF INFANTS AND INFANT HYGIENE.

## COURSE OF THE ÉCOLE MÉNAGÈRE.

## BABY GARMENTS.

The garments of babies must be: (1) warm, (2) ample, in order not to impede the function of any organ and not to embarrass the movements in any way.

There are two methods of clothing babies: the *French method* and the *English method*.

These two methods include the same garments for the upper part of the body.

1.—A chemise, a flannel or cotton vest, a vest of piqué or some other material, a triangular kerchief and a robe (these garments are fastened at the back).

The *French method* includes for the lower part of the body: a linen diaper and a wool or soft flannel swathing band in which the baby's legs are wrapped and enclosed.

*Old-fashioned baby-clothes*.—Formerly these *baby-clothes* were completed by a flannel band which was rolled firmly round. In certain countries even the child's head was made immovable by means of a piece of linen which was fixed to the clothes on each side of the neck. This is still used in the southern provinces of our country.

*Popular error*.—The child's body will be warmer and straighter if it is tightly bound in its clothes.

The *English method* includes for the lower part of the body: 1. linen diaper folded into a triangle, a pilche of flannel of triangular shape, woollen stockings, and little woollen shoes.

The point of the diaper and that of the pilche are brought together by a pin between the baby's legs, in order to leave them complete liberty.

The *English baby-clothes* are the better, because they allow the child to move and to develop freely.

The *French baby-clothes*, if they are well-applied, have the advantage of preserving the baby's warmth better; their use may also be recommended during the night and during the first days which follow the child's birth, especially in winter.

*Cap*.—If it is used, the cap should be made lightly, either of muslin or in crochet. It is wiser to accustom the child to do without it.

## CLEANLINESS.

*Care of the skin*.—The different parts of the child's clothing must be frequently renewed; the chemises and the vests at least once every two days; the swaddling band every time that it has been soiled, at night as well as in the day.

\* *Ville de Bruxelles*.—*Économie Maternelle, Hygiène de l'Enfance*. (Cours de l'École Ménagère). Brussels, 1898.

Each time that the child has soiled its swaddling band, that part of the body must be washed, dried with a soft linen and then powdered with powder of amydon or lycopodium.

It is the only way to avoid the chapping and excoriations which cause the child so much suffering.

*Washing and baths.* A general rapid washing should be done every day over all the parts of the body; it is preferable to replace it by a very short bath in tepid water of 30° to 35° during the first months; the temperature of the water should be lowered gradually. The temperature of the room in which the bath is taken should be from 15° to 16°.

Refined soap must be used for the child's toilet: marshmallow or glycerine soap.

If the child's skin is irritated, he (she) should be given baths of amydon water or bran baths.

*Care of the head.*—The child's head should be the object of special care; it must be brushed every day with tepid water, well dried, then brushed with a fine brush. Inflammation of the head—milk-scab, incrustation—is frequent with babies and causes them much suffering; this inflammation must be attended to without delay in order to avoid the risk of grave difficulties.

*Popular error.*—It is not permissible to cure scalp eruptions lest convulsions or meningitis should be induced.

NOURISHMENT.

Milk is the first and the only nourishment proper to a baby; everything in a child's mouth shows that it should suck, not eat. Nothing can replace milk for the child, but, of all milk, that which suits it best is the mother's.

When the mother is ill and cannot nurse her child, when her occupations do not permit her to do so by day as well as by night, she has recourse to *artificial feeding*, unless she can give the child a nurse, which is preferable.

In *artificial feeding* the child is given the milk of an animal; cow, ass, sheep, goat, by means of a bottle.

Cow's milk is generally used in our towns; it differs from that of the woman, but by the addition of water and sugar its composition approaches that of mother's milk.

	Fluids.	Nitric Matter.	Fat.	Sugar.	Salts.	Total.
Woman's milk	- 87.39	2.48	3.90	6.04	0.19	100 parts
Cow's milk	- 87.41	4.41	3.26	4.22	0.70	100 "

The milk is diluted by adding:

During the first month	-	-	-	-	1/2 litre* of boiled water.
" second and third months	-	-	-	-	1/3 " " "
" fourth month	-	-	-	-	1/4 " " "

Afterwards cow's milk should be given undiluted.

Milk ferments rapidly, it can also contain dangerous microbes which communicate diseases to children; therefore it is necessary only to give well-boiled milk.

The feeding-bottle which is easiest to keep clean should be used; bottles consisting of a bottle closed by the india-rubber teat, without a tube, are the best.

*Careful usage of the bottle.*

1. Only boiled milk to be used;
2. The milk should be pure, not skimmed;
3. The addition of water and of sugar to be made in the required proportions;
4. The milk in the bottle should be tepid, 35° to 37°;
5. The bottle should only contain the milk for one meal, the surplus must be thrown away;
6. After each meal the bottle must be well cleaned in all parts by means of a brush and hot boiled water.

\* 1 litre—1.76 pinta.

Feeding with a bottle demands special supervision and careful understanding, for the majority of diseases of the digestive passages—thrush, infant cholera, enteritis—generally attack children brought up by hand, and are a frequent cause of mortality.

These illnesses can also be caused by inappropriate food.

In order to simplify artificial feeding, by diminishing the causes of mortality, the "*Société protectrice des Enfants Martyrs*" has instituted a *laiterie maternelle*, rue des Comédiens, 25, at Brussels. The milk sold there is humanized, or sterilized milk, which approaches very closely to mother's milk, and is purified from the injurious germs which it may have contained. This preparation is made on the spot under the supervision of Dr. Lust. The new milk sterilizer of this doctor has been adopted here as feeding-bottle. Deliveries are made for cash; ten centimes the bottle.

A distribution of milk at reduced cost, ten centimes a day, or free, is made daily to poor mothers who are prevented from nursing their babies themselves, or especially to mothers whose children are already suffering from bad feeding, sickness, diarrhoea.

#### Popular errors.

1. To believe that when a child is brought up by hand it is necessary always to give it the milk of the same cow.
2. To believe that barley water is a food which suffices for the needs of a baby and that it can advantageously replace milk.
3. To believe that a child should be fed with pap from the time its first teeth appear.

#### Number of meals.

Whether a child is nursed by its mother or fed with a bottle, it is necessary to observe strict regularity in the times of feeding.

#### First half-year.

*First three months.*—By day, feed once every two hours; at night, once every four hours.

*Following three months.*—By day, once every three hours; at night, once every six hours.

#### Second half-year.

By day, one meal every three hours; replace one by soup; at night, food once only, to be completely suppressed finally. We disapprove of the use of any kind of indiarubber teats which are given to children between meals. This bad custom forces a child to make efforts in sucking which are often tiring.

#### WEANING.

During the *first six months* the child can only take milk, any other nourishment, being badly digested, is injurious. It is only during the *second half-year*, and while continuing the use of milk, that the child should be given either pap or light soups, consisting of farinaceous foods prepared with milk. These paps and soups should be prepared fresh for each meal.

To begin with, the milk meal must be replaced by one of soup during the day and, in proportion as the teeth become more numerous, the number of these soups will be gradually increased and the number of milk meals must be reduced.

*After the age of one year*, while maintaining milk as the principal nourishment, the child could be given eggs, bread soaked in meat juice, and, eventually, meat chopped fine.

*Until at least two years of age, milk should remain the child's principal food.*



*Rules for weaning.*

It is important :

1. Never to wean a child who has no teeth;
2. Never to wean a child who is teething;
3. Never to wean a child during the course of an indisposition or of an illness;
4. Never to wean a child during the very hot weather;
5. Never to wean a child suddenly.

**TEETHING.**

Teething is a cause of digestive trouble for a child, that is why nursing must not cease at the moment of cutting the teeth.

The first teeth appear in the following order :—

Front teeth	- - - - -	4 to 6 months.
Side teeth	- - - - -	4 „ 9 „
First small double teeth	- - - - -	4 „ 12 „
Eye teeth	- - - - -	4 „ 15 „
Second small double teeth	- - - - -	4 „ 18 „

**GUM RINGS.**

The child's first toy, the teether, is often intended to soothe the irritation of the gums caused by teething.

A bone or india-rubber ring serves this purpose very well ; orris or marsh-mallow roots, which easily turn sour, must be avoided. Coloured or angular shaped rattles must not be used, as they might cause serious accidents.

**SLEEP.**

Children have an imperative need of sleep, especially during the first days. Babies should be allowed to sleep as much as they wish ; towards the age of six months a child's sleep can be regulated.

Sleep generally follows feeding ; a child should sleep in a cradle, and not in the arms or on the knees of its mother.

The child, in its cradle, should always be laid on its side in order that, if sickness occurs, the liquid flows easily and does not enter the respiratory channels.

The child must not be allowed to sleep with anyone (asphyxia), must not be accustomed to rocking, and use must not be made of narcotics, which have often caused deplorable accidents.

It is necessary to accustom a child to get up early and to go to bed at the hour when, from fatigue or by habit, it goes to sleep immediately.

After the child's sleep, the cradle should be aired.

**GOING OUT.**

Pure air, like nourishment, is a food which sustains life.

A child must have air baths by being exposed as often as possible to the open air ; in this way it will be submitted to the influence of full light, which is as necessary for it as air.

A child can be taken out without harm in hot weather (summer) at the end of a week ; in mild weather (spring, autumn) at the end of a fortnight ; in cold weather (winter) at the end of a month.

**PERAMBULATORS.**

Perambulators are not good for quite little children, whom they expose to tiring and sometimes dangerous jolting ; the arms of the mother or the nurse are much more suitable for them until they have the strength to sit up and to change their position

**WALKING.—EXERCISE.**

Under our conditions of climate and race, a well-nourished child begins to walk when it is a year old. All methods intended to force the act of walking must be avoided, straps or reins, wicker-baskets, wooden carriages; nothing is more inclined to deform the legs, the pelvis, and the spine. It is preferable to assist the baby in its first attempts by supporting it under both arms.

When it is necessary to lift a child over an obstacle, care must be taken to hold it with open hands, under the arms, otherwise there is a risk of dislocating its shoulder or wrist.

The child should be made to do some well regulated gymnastic movements favourable to its development.

**VACCINATION.**

Vaccination is the best preventive of small-pox.

Except in case of an epidemic of small-pox, a child can be vaccinated from the age of two months.

From the third to the tenth day which follows vaccination the child cannot go out, because it is then more sensitive to variations of temperature.

Baths will be suppressed during the same time. The vaccinated part must be protected by a little shield with cotton wool.

\* \* \* \* \*

**DANGEROUS REMEDIES.**

Certain very dangerous substances are sometimes used by ignorant mothers. Such are: decoction of poppy seeds, laudanum, to induce sleep; an emetic to produce sickness. These remedies have often caused accidents, sometimes fatal accidents.

Nor must mustard poultices be applied to the calves of a child's legs if it is threatened with convulsions; it is well known that the pain caused by the mustard poultice may itself provoke convulsions with little children.

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## APPENDIX J.

SYLLABUS OF THE EXAMINATION FOR TEACHERS IN ÉCOLES ET  
CLASSES MÉNAGÈRES.

*Syllabus of the examination\* for obtaining the special certificate for teaching domestic economy and household work in the classes et écoles ménagères subsidised by the Département de l'Industrie et du Travail:—*

## WRITTEN EXAMINATION.

## A.—Principles of Hygiene.

I. *Air*.—Necessity, composition, properties of oxygen, carbon and carbonic acid; rôle of air in the breathing of animals and plants; causes of the vitiation of the air; methods of properly ventilating dwellings; impurities of the air in and round dwellings; indication of the illnesses of which the germs are transmitted by the air; ventilation; lighting and heating from the point of view of hygiene; choice of appliances.

II. *Water*.—Composition of water; different kinds of water; drinking water; characteristics of drinking water; various kinds of drinking water; spring-water, river-water, well-water, rain-water, cistern-water; methods of purifying drinking water; boiling, filtering; indication of some illnesses which are propagated by the use of impure water.

III. *General conditions of health of the dwelling*.—Situation, aspect, drains, closets, ventilating shafts, cleanliness, disinfection.

*Country*.—Stables, cattle-sheds, pig-stys, fowl-runs.

*Classified specification of the furniture of a house for a working class family.*

IV. *Personal cleanliness*.—Washing, baths, garments and their preservation, hygienic advice, bed and bedding.

*Hygiene of food*.—Necessity for good food, short summary of man's digestive apparatus, principal phenomena of the digestion.

V. *First aid in cases of small accidents, etc.*—Wounds, burns, sprains, bites or stings of insects, poisoning, nose-bleeding, foreign bodies in the nose, the ears and the eyes, etc. Fainting, rubbing, how to administer a gargle, a purgative, to prepare lemonade, herb tea, tea, a poultice, to apply a blister, leeches, cupping, to put on a simple bandage, etc.

VI. *Hygienic precautions*.—Symptoms of some children's ailments, the care of children, sick persons and old people, disinfectants, how to disinfect and to keep in order sick-rooms, right means of preserving health, composition of a small domestic medicine chest.

## B.—Principles of Domestic Economy.

I. *Qualities of the good housewife*.—Keeping the dwelling and its different parts, as well as the furniture, in repair and in order; kitchen utensils, materials and care of them; keeping tidy and in order bed and bedding, foot-gear, lamps, windows, wood-work, parquets, brick floors; arrangement of cupboards and keeping them tidy; household budget of a working-class family, household accounts, provident institutions.

\* Syllabus of the Examination held Easter, 1905.

II. *Food*.—Qualities of the following foods, their purchase and preservation: bread, potatoes, vegetables, fruits, meat, fish, eggs, butter, cheese, fats; spices and condiments: sugar, chocolate, honey, vinegar, oil, salt, rice, etc.; composition of menus for working-class families, their justification from the point of view of cost, of nutritive properties and of digestibility, cheap dishes, keeping within the limits allowed by the modest income of a workman or labourer, service at table; some rules of good manners; nutritive and digestive value of meat, fish, vegetables, bread and foods in general; practical ways of recognising adulterations of certain food substances and how to distinguish those which are damaged.

III. *Drinks*.—Qualities and composition: milk, beer, wine, coffee, tea, chocolate; pernicious effects of strong drink.

IV. *Heating and lighting*.—Substances used: coal, coke, anthracite, wood, peat, petroleum, oil, gas; advantages and disadvantages, cost, apparatus, precautions.

#### C.—Principles of Horticulture.

Formation of a kitchen garden: situation, shape, extent, arrangement, succession of crops, tillage and manure, methods of multiplication, of cultivating and preserving the most useful vegetables of the country, care of seed-bearing plants, gathering and preservation of seeds, knowledge of the best kinds of fruit trees, some indoor plants.

#### PRACTICAL TESTS.

The practical tests include for each candidate:—

1. Some piece of *mending* to be chosen by lot.
2. *Cleaning*.—Some cleaning work: part of the dwelling, furniture, or household utensil.
3. *Washing and ironing* articles of lingerie, or a garment, to be chosen by lot.
4. *Menu*.—The preparation of a menu for a working-class or lower middle-class household, composed of soup, vegetables, meat or fish, and dessert or sweets.
5. *Washing, bleaching and ironing linen*.—Working garments: woollen materials, flannel, cloth, covers, rinsing, blueing, starching. Some substances used for removing stains, ironing, washing and cleaning linen and garments. Precautions to take in using liquid chloride, naphtha, salt of sorrel, ammonia, etc. Keeping linen and bedding in condition.
6. *Needlework*.—Ordinary cutting out and making of simple garments: mending, making use of old clothes, simple darning and darning according to the web; approximate estimate of the amount of material necessary for various articles of lingerie and for usual garments.

#### TEACHING TEST.

A lesson to be given by each candidate on a subject chosen by lot from among those which are included in the syllabus.

N.B.—During the week, the candidates are called upon to give explanations of their method of proceeding. They must give reasons for the culinary or other operations which they perform, justify the choice of the menu with respect to cost price, nutritive value, digestibility, etc.; further, they must indicate how to use to the best advantage remains or scraps of food.

Name of School.	Date of Founding.	Length of Course.	No. of Pupils, 1901-2.	No. of Diplomas obtained, 1902.	No. of Teachers* 1901-2.	State Grant, 1902. †	Remarks. ‡
<i>École Supérieure d'Agriculture pour jeunes filles :—</i> Héverlé (Brabant) - - -	1897	2 yrs.	17	10	11	4,000	This school is attached to the <i>Institut du Sacré-Cœur et de l'Immaculée Conception</i> . Curriculum includes, besides the usual subjects, more advanced science, mechanics, etc., drawing, bee-keeping, methods of teaching (for intending teachers). Some pupils have stayed a third year. Annual school fees (including residence), 300 francs. Pupils direct the household in turn for a week at a time; they cook wash, iron, clean, and do needlework.
<i>Ecoles Ménagères Agricoles :—</i> Bastogne (Luxembourg) - -	1893	1 or 2 yrs.	19	8	7	1,000	
Bouchout (Antwerp) - - -	1893	1 yr.	12	10	4	5,399	The school forms a separate section of a boarding-school for girls and a training college. School fees (including residence), 400 francs a year. The pupils work in four groups, alternately, at housework, cooking, needlework, washing and ironing, dairy-work and gardening. Special attention given to mending, cutting-out and making clothes. Drawing, gymnastics, manners, and lectures on various subjects given, as well as usual syllabus.
Brugelle (Hainault) - - - Gooreind (Wuestwesel, Antwerp) - - - - -	1891	1 yr.	6	5	8	2,000	School was founded and is supported by the State, the Province and the Provincial Society of Agriculture; managed by a committee of representatives of these authorities. Instruction is free; pupils who are resident only pay for their food (on an average fr. 0.72 per pupil per day). Maximum number of pupils admitted is 12, aged at least 15 years. Pupils in turn prepare the meals; they wash, iron, and mend their clothes, and keep household accounts.
	—	3 yrs.	6	6	2	2,000	
Gysegem (E. Flanders) - -	1891-2	1 yr.	9	7	4	2,000	Attached to the training college and boarding-school of the <i>Sœurs de l'Enfant Jésus</i> . Pupils are resident. School year begins October 1st—1st year, 9 months; 2nd and 3rd years, 7 months. Day pupils attend 8 a.m. to 5 p.m. Attached to the boarding-school for girls of the <i>Sœurs de Saint Vincent de Paul</i> . Maximum number of pupils, 15; minimum age, 14. Resident and non-resident pupils. Great importance attached to practical work—cooking, purchasing provisions, preserving fruits and vegetables, washing and ironing, making and mending clothes, etc., as well as to practical experiments in farm and garden.

\* The number of teachers given includes the director or directress, staff teachers, visiting teachers and lecturers, and the teacher of religion (generally a priest).

† Francs.

‡ All these schools, except that at Bouchout, are under private authority.

TABLE OF THE ÉCOLES MÉNAGÈRES AGRICOLES—continued.

Name of School.	Date of Founding.	Length of Course.	No. of Pupils, 1901-2.	No. of Diplomas obtained, 1902.	No. of Teachers* 1901-2.	State Grant, 1902.†	Remarks.‡
Herve (Liège) - - - -	1893	2 yrs.	12*	9	3	2,000	<p>Annual school fees, 400 francs. Pupils who have sufficient primary education admitted from age of 15 to 16. Drawing, manners, needlework, taught as well as usual subjects. Instruction free; board and lodging 28 francs a month. School year, October 15th to August 15th. Minimum age for admission, 15; school-day, 5 a.m. to 9 p.m. The pupils, with two teachers, form a separate household; they do the practical work alternately, divided into three groups—dairy-work, gardening, housework, cooking; they draw, cut out, make, wash, iron, and mend their clothes, keep dairy, farm and household accounts, etc.</p> <p>Pupils are all resident. Dairy course and cheese-making course each last a year; in addition, there is a preparatory course for pupils who enter during the year. Pupils divided into two groups, who alternately do domestic work and work connected with dairy. Drawing and temperance taught.</p> <p>Pupils are all resident. In turn, by groups, they do household and dairy work for two weeks at a time.</p> <p>First school of the kind established in Belgium. School directed by the <i>Religieuses de la Doctrine Chrétienne</i>. Fees, 400 francs a year (including residence); 100 francs for non-residents. Pupils admitted, if sufficient primary education, at age of 15 to 16. For practical work pupils work in groups of 4 or 5 for a week at a time.</p> <p>Attached to a boarding-school. Syllabus the same as in the peripatetic dairy schools.</p> <p>Attached to boarding-school directed by the <i>Ursulines</i>. Course given out of school hours to pupils who desire it. Syllabus as in the <i>écoles ménagères agricoles</i>.</p> <p>Attached to a boarding-school. Instruction given in agriculture, gardening, zootechny, dairy-work, cheese-making, accounts.</p> <p>Attached to <i>Pensionnat des Sœurs de Saint-Vincent de Paul</i>. Instruction given in principles of agriculture, gardening, zootechny, commerce and book-keeping, and in dairy-work.</p>
Oosterloo (Antwerp) - -	1892	1 or 2 yrs.	11	8	7	2,000	
Overyssche (Brabant) - -	1893	2 yrs.	19	15	4	4,500	
S'Gravenwezel (Antwerp) -	1898	1 yr.	11	11	3	1,000	
Virton (Luxembourg) - -	1891	1 or 2 yrs.	32	6	8	2,000	
<i>Sections Ménagères Agricoles:—</i>							
Cortemark (W. Flanders)-	—	1 or 2 yrs.	16	9	3	750	
Haute-Croix (Brabant) - -	1896	3 yrs.	37	—	5	750	
Heule (W. Flanders) - - -	—	—	10	—	2	1,000	
Moorslede (W. Flanders) -	1895	—	10	—	1	750	
Totals - - - - -	—	—	227	104	72	31,149	

\* The number of teachers given includes the director or directress, staff teachers, visiting teachers and lecturers, and the teacher of religion (generally a priest).

† Francs.

‡ All these schools, except that at Bouchout, are under private authority.

# THE TEACHING OF DOMESTIC ECONOMY IN SWEDEN.

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## THE TEACHING OF DOMESTIC ECONOMY IN SWEDEN.

### INTRODUCTION.

In Sweden, as in some other countries, the "ologies" were much worshipped in the schools during the last thirty or forty years of the nineteenth century. As has been remarked: "the theory seemed to have been adopted that the intellectual and the theoretical was that which was most useful for children; books became both the means and the end, and for a long time the children entertained the idea that they, having imbibed the wisdom of books, need not share in the daily work of the home; *that* could be left to parents and servants. The youthful mind was full of mental pride."\*

Introduction  
of Domestic  
Economy as  
a school  
subject.

Not least was this the case in regard to girls. Those who belonged to the poorer classes went to work in factories on leaving school; they grew up and married, and had not the least idea of managing their new homes, which were, as a rule, left to manage themselves.† The girls from the middle and higher classes pursued their studies; freedom of choice in their life's work was, and in many cases still is, the promised end of their endeavours; they wished to be able to compete with men in numerous branches of occupation, and for such posts book-knowledge alone was necessary, and therefore book-knowledge alone was studied.‡ Did these girls marry, they hoped that their servants (girls from the primary schools, who had also learned to forget manual work) would be able to manage the house, a hope which was, as a rule, unpleasantly but most properly disappointed. Many girls of the middle-classes, however, hastened before marriage, either to go for a few months to a married clergyman's house in the country to learn something about housekeeping, or to pass through a "lightning" course at a so-called "cookery-school," where the instruction given was entirely practical, and where the meals prepared were eaten

\* Mrs. A. Hierta-Retzius.—"Workshops for Children." 1897.

† "It is very typical of the state of things that, amongst the working classes, farm-labourers and farmers, a young man often marries an elderly woman. However unnatural such marriages are in some respects, it shows that importance is rightly ascribed to the economical capability of a wife."—("Domestic Economy as a School Subject"—Stockholm.)

‡ During the last thirty years about 600 young women have matriculated for entrance to the Swedish universities. Having regard to the difference in population this would correspond to a total of about 4,000 in the United Kingdom. It would be unjust to say that ambition and a desire for freedom were the sole causes that led to the pursuit of study and the neglect of domestic occupations. The great decrease in the number of marriages, a decrease disproportionately large in many parts of Sweden, is a factor that should also be considered.

by young clerks, students, travellers, and members of families where there was no one at all in the home who could cook. These "cookery schools" are gradually developing into household schools of which Nos. 5, 20 and 22 in Appendix K and the Ekebyholm course\* may be taken as types of the best of their class.

It is easy to imagine how much knowledge of, and liking for, household matters was to be found in the generation succeeding the one just described. The boys in the primary schools were now being rescued from the tyranny of books, and were being taught to use hands and mind together in the Sloyd schools, which the munificence of some, and the educational zeal of others, had been the means of introducing throughout the country. The girls, too, were given liberty to use the needle, though as yet the work was done without plan, but other household work seemed to be banished farther from the schools than ever. "Such work should be learned at home," was the reply given to those who, seeing what was now being done in other countries, thought that some steps should be taken to save the *homes* of the people. But "at home" there was, only too often, no one who could train or develop the innate sense of cleanliness, and though the womanly desire to look nice did something in some directions, the art of "making a little go a long way" was almost a lost one.

When I spent a Christmas among the peasants of Dalecarlia, living in their cottages and sharing their meals, the fare for three weeks consisted of coffee five times a day, badly prepared porridge night and morning, and wretched American bacon and potatoes for the daily dinner, although Christmas is a time when a Swedish table is more than usually crowded with good things. The girls of the family often expressed to me their desire that cookery could have been taught them at school instead of one of the other subjects, or at a special course, for such knowledge would have enabled them to prepare better and more varied food at a smaller cost.†

How domestic economy has come, in many of its branches, to be a special subject of study in various schools, and a subject which is a very popular one when the girls are taken at the right age—for there are few children who do not like to be "up and doing"—will be told in the following pages, and mostly, and best, by the pens of those who have been foremost in the work of instruction. Should it seem to the reader that undue importance is given to the subject of cookery and the allied branches, it must also be remembered that a country, like an army, "marches on its stomach," and further that, "while the household expenses of a well-to-do

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\* See page 163.

† Mrs. Hierta-Retzius points out that this is rather an exception in Sweden. "Dalecarlia," she says, "is known for the people living upon such poor food. They are all, nevertheless, very strong and healthy; the women are nearly as strong as men from other provinces. In the South of Sweden the people get very good food. In the Northern provinces many live extravagantly upon tinned and preserved food, and they are there very ignorant about cooking."—Ed.

family in Sweden amount to but 20-30 per cent. of the whole income, the middle classes expend about 50 per cent., and the very poor as much as 80 per cent. and 90 per cent. of their income in food.”\*

The subject can be best introduced by giving the information contained in the article “Domestic Economy,” which forms part of the “Guide to the Educational Exhibit of Sweden,” written for the Exposition in St. Louis (1904):—

The great need of a more practical form of education for girls has long been felt and spoken of in Sweden. In the Riksdag of 1867 a Bill was brought in by Dr. Meyerberg, an eminent pedagogue, requesting that something should be done in this respect at the Government Training Colleges for teachers. The committee formed to consider this question proposed the addition of needlework to the teachers' course, but they thought that cookery was impossible as a school subject. Later on, in the eighties, experiments were made by private persons as to the possibility of teaching cookery and other household work at school,† and as these experiments proved successful, domestic economy has been gradually introduced as an important subject in a large number of our schools.

The aim of the instruction in domestic economy is indicated by the following words of one of its advocates. He declares “the teaching of domestic economy to be absolutely necessary for the economic, social and moral well-being of the nation.” Another reason given for such teaching is that it “will act as a greatly needed counterbalance against the one-sided intellectual education which endangers the healthy and harmonious development—physical and mental—of our girls, and that it will be a help to the study of natural science, both subjects gaining by being studied in connection with each other.”

The first attempt to make cookery and housework a school subject was made at a Secondary Girls' School (Miss Rudebeck's) at Gothenburg. Since commencing this in 1887, Miss Rudebeck has arranged two or three courses a year, each lasting six weeks, for the girls belonging to the highest class in the school.

As regards the common schools (“folkskolan”),‡ Stockholm takes the lead, the first cookery class having been started there in 1889, in the Nicolai School. Owing to the interest and liberal support of Mrs. Hierta-Retzius, a Stockholm teacher was sent to England to study the teaching of domestic economy in the London Board Schools, and on her return to Stockholm another cookery class was begun, in the Maria School, and, in connection with this class, the first training course for teachers, 1890. Mrs. Sofi Nilsson, herself for many years a teacher in the Stockholm Primary Schools, has also been an energetic advocate of this cause, and there are now in Stockholm nine large kitchens attached to the common schools, each fitted up for eighteen to thirty-six pupils.§ The girls work in the school kitchen once a week during two to four terms (each term of a half-year's length)||.

\* J. A. Lundell, “On the School Kitchen in Country Districts.” The last of these groups of figures can hardly be correct for Stockholm, where the average working man's family has to pay from 25 per cent. to 33 per cent. of the yearly income for rent alone, and where poorer families must pay a still larger proportion.

† One of the first experiments was made by Mrs. Anna Hierta-Retzius in 1882. The first regular school kitchen was founded in 1890 by the same lady, and her mother's benevolent institution “Lars Hiertas Minne.” (Cf. page 177 ff.).

‡ Common Schools, “folkskolan,” are Primary Schools (See Appendix A).

§ At the time of going to Press, there are ten of these kitchens in Stockholm, each fitted up for eighteen to forty pupils.

|| Cf. page 180.—Supplementary Notes (b).—Ed.

The next important development in this movement was when, in 1892, the Stockholm Higher Training College for Women Teachers opened a special department, with a year's course of study, for those wishing to qualify as teachers of domestic economy. Here also Mrs. Hierta-Retzius had taken the initiative and had given pecuniary support to the new department. In 1891 a teacher was sent, with a grant, to study the teaching of domestic economy in Germany, Belgium, England, and Scotland, and in the following year, as before mentioned, the work was begun in the new training school for teachers of domestic economy. . . . The training also includes practice in teaching younger pupils. Sixty-five teachers have successfully passed an examination in this course since the beginning.\*

A Secondary Girls' School in Stockholm ("Ateneum") has also organised a department for domestic economy, working on the same lines as the above, and the same number of pupils have been trained there.\*

The Upsala Training School of Domestic Economy, opened in 1894 on the initiative of Mrs. Jane Norrby, has gradually developed into several departments, the chief being a higher and a lower course for teachers, lasting respectively one year and a half and one year. These courses also include gardening. One hundred and three teachers have successfully passed an examination here. The school has six kitchens, where seventy-two to a hundred pupils may be taught; they work in groups of four or six at each stove.†

The first cookery class in the Gothenburg common schools was opened in 1891, at the incentive of Miss Eva Rodhe, a member of the School Board. At the expense of Consul Oscar Ekman, the wealthy philanthropist, a teacher had been sent the year before to study domestic economy in the Scotch schools, and on her return the work was begun in Gothenburg. Two of the schools now have kitchens attached to them, each for twenty-four pupils. A training-course for teachers was started here in 1893, where six to ten pupils are received every year; fifty-six teachers have been trained at this course.‡ . . . It is chiefly in the common schools, "folkskolan," that domestic economy has been introduced, the School Board, as a rule, giving liberal support to this subject.§ A good many industrial companies || have also showed great interest in this branch of education for girls. No Government grant has as yet been awarded for the teaching of domestic economy in common schools, but it is to be hoped that the modest request for a sum of about \$13,000\*\* a year, made in the "Riksdag" of 1902, will soon be granted, especially as the Bill has warm supporters in both Chambers, and as the boys' "slöjd" receives a yearly grant of about \$66,000††. A further

\* See Appendix J., II. and III.

† See Appendix J., I.

‡ See Appendix J., IV.

§ A note on the Financial Support of the Stockholm Primary School-Kitchens, will be found in the Supplementary Notes (c) (page 181).—Ed.

|| The Managing Directors of the Kopparberg Mine at Falun, the Degerfors Iron Works in Vermland, the Huskvarna Iron Works, etc., have generously done much to establish such kitchens in the schools at these various centres.

\*\* About £2,600. Early in 1906 the Minister of Education will lay before the Swedish Riksdag a proposal to grant 90,000 kronor (£5,000) for the support of instruction in cookery in the primary schools, higher primary schools, and people's high schools. I am informed that about one-tenth of the total number of primary schools would be immediately affected by the adoption of this measure. (1905).

See Note, page 210.

†† About £13,002

reason for a similar grant being awarded as a means toward the practical education of girls belonging to the *unmoneied* class, is that every secondary girls' school that arranges a practical and theoretical course of domestic economy receives a grant of \$140.\*

Most of the girls' schools (in all about twenty), that have availed themselves of this grant have arranged instruction in domestic economy in the highest class. A few have distributed this teaching over the last three years of the school course, on one forenoon in the week, the pupils being about twelve to sixteen years old. Two or three schools have, so far, preferred to place the new subject in a special course, of one year's length, *after* the ordinary school classes.†

The domestic economy classes mentioned above have as yet benefited only the town population; for the country girls very little had been done until the year 1901, when peripatetic classes were started by Miss L. Lagerstedt, following the example of Norway and Finland, where such a scheme has been worked to great advantage for several years. Consul Oscar Ekman gave the money needed to start the first peripatetic classes, and now ten out of the twenty-two counties of Sweden have each one or two teachers giving four or six courses a year. The teacher brings a stove and the necessary kitchen utensils; the course lasts six weeks and is intended for sixteen girls of thirteen to sixteen years of age. The greater part of the expense is borne by the "Hushållningsällskap," a society existing in each county for the improvement of agriculture, fishing, dairy, etc. The girls pay 1½ dollars (6 shillings), the cost of their dinners.

One aim of these travelling classes is to encourage the growing of fruit and vegetables and to teach their value as an adjunct to ordinary diet, also to make use of the wild berries that grow so abundantly in most parts of the country. Simple rules of hygiene, the dietary of infants, and the truth about alcohol, constitute further branches of this course of training.‡

Thus far, the official account of the matter deals, as may be seen, principally with the teaching of cooking. Those parts of the same report which treat of needlework, hygiene, etc., will be quoted in their proper places.

To avoid repetition and unnecessary division, it may be said at once that millinery is not taught in Swedish schools and that very little laundry work is taught in any type of school.§ As some of the other subjects of instruction included under the term "domestic economy" form part of one and the same school-course, I have found it advisable to group my materials under the following heads:—

- I. Cookery, with housewifery and laundry-work.
- II. The elements of personal and domestic hygiene.
- III. Women's Sloyd (needlework and dressmaking).
- IV. The care of infants.

Further, a short account of school gardening will be found in Appendix B.

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\* About £28. A corresponding amount is usually received from the communal authorities or some other source.

† See page 164, and Appendix K.

‡ See page 159 *f*.

§ See, however, Appendix K<sub>4</sub>

Subjects  
included  
under  
Domestic  
Economy.

## I.—COOKERY, WITH HOUSEWIFERY AND LAUNDRY WORK.

## A.—Primary Schools.\*

It will be seen by a glance at Appendix K. that, in proportion to the number of schools, there is more domestic economy teaching in Secondary Girls' Schools than in the Primary Schools.

General  
organisation. The following extract is from the Code of 1900 for Primary Schools in Sweden :—

When possible, instruction shall be given in Domestic Economy to girls, according to the following scheme :—

- I. Cookery, baking ; the intention being to prepare every-day food for peasants' or workmen's homes, which shall be at once nourishing, healthy and palatable, while necessary economy, cleanliness and wise calculation shall also be observed.
- II. Exercises in the care of the kitchen-range, its heating and cleaning ; the care and cleaning of kitchen utensils ; scullery work, scrubbing, tidying.
- III. Practical-theoretical lessons† in Domestic Economy, giving short accounts of the science of foods, and their care, together with their suitability and importance for the household.

Out of a total of more than 7,000 Primary Schools (in 1902), it was only in Stockholm, Gothenburg, Malmö, Helsingborg, Jönköping, and in a few other places of lesser note, that instruction in cookery was given in Primary Schools‡. But it should be noted that the School Boards of the cities and towns just named have liberally and thoughtfully done much—one might almost say, as much as they can—to enable the girls who leave their Primary Schools to do so with at least an elementary knowledge of a matter so important for the comfort of their present and their future homes.

The Primary School cookery courses are directed, for the most part, by women teachers who have been specially trained for this work alone ; the girls receiving instruction are about twelve to thirteen years of age, and belong to the highest and, in some cases (*e.g.*, when there are but few pupils in the highest class), to the highest class but one. When possible, girls who have just left the primary school proper, and who belong to a Continuation Class, are allowed to take part in the lessons. In Gothenburg almost one half, and in Jönköping all of the pupils belong to this last category ; the children in the highest class in the Primary School in the latter town leave school before completing twelve years of age.

Stockholm. In Stockholm, the course *should* last one year, with one lesson per week, that is, forty lessons in all, each of five hours' duration,

\* A brief outline of the system of primary education in Sweden is given in Appendix A.

† An account of the general organisation of education in Sweden will be found in volume 8 of Special Reports on Educational Subjects (1902).—(3) Education in Sweden.—Ed.

‡ The term "practical-theoretical" lesson is a literal translation of the Swedish expression. It means a lesson in which theory and practice are employed to about the same degree.

‡ For new proposals, see page 210.

10 a.m.—3 p.m.,\* but owing to the great number of children in the higher classes, the average number of lessons enjoyed by each pupil varied, in 1903, between 13·2 in the overcrowded schools to 21 in those in more favourable circumstances. Some girls, however, went through a second course, and thus had from 26·4 to 42 days' instruction. During 1903, the number of pupils instructed was 2,128. The pupils in these cookery classes have to prepare dinner for themselves and, in some cases, for a certain number of poor children also, to whom a meal is given gratuitously, or for a nominal sum. In some of the kitchens, the pupils wash and mangle the towels, caps and aprons they have used, while in others this work does not enter into the scheme of instruction. At the Katarina (South) school-kitchen, where the pupils also prepare dinner for the school staff, the table-cloths, napkins, towels, etc., are washed and mangled by the girls. The scullery-work and scrubbing of the kitchen is, of course, done by the pupils.

Among the exhibits from Stockholm, at the St. Louis Exposition, was a school-kitchen with one range and all the ordinary utensils.† On the walls hung a couple of cards printed in large type, and it may be as well to print here the information these contained, as it gives a very good idea of the aims and the method of teaching in most of the cookery schools in Sweden :—

#### Cookery School.

The aim of the cookery school is to impart to the girls an interest in, as well as a knowledge of how to manage a home with wisdom, economy, and order; and at the same time to afford them a change in their sedentary school-work during school hours.

To attain this aim, the school-girls are allowed to perform all the various duties belonging to the kitchen, such as cooking, laying the cloth, serving, washing-up, scrubbing, sweeping and dusting, baking, laundry work, etc.

In every cookery school, instruction is given to half a class at the same time, or to about eighteen girls from twelve to fourteen years of age. The other half of the class is meanwhile instructed in the ordinary school subjects.

The time devoted to the work in the cookery school is one day a week, usually from 10 a.m. to 3 p.m. As a rule, the girls take part in the ordinary school-work one or two hours a day, before going to the cookery school.

The girls are divided into groups or households in the cookery school, usually three girls in each. Every household has its own kitchen range, its own kitchen and table, and its own cupboard with pans, crockery, and kitchen utensils; each group cooks the dinner for six to ten children.

The instruction every day begins with a lesson on the menu, the quantity of materials, with wholesale and retail prices, how the food is to be prepared; its nutritious properties in relation to the cost, etc.

Then follows immediately the practical part of the work, which the teacher superintends to see that the instruction given is correctly put into practice.

\* Mrs. Hierta-Retzius is of opinion that 10 a.m. is too late, and that the lessons ought to begin at eight or nine o'clock. She quotes two examples of these early hours :—In the *Katarina* "folkskole" the girls begin at 8 a.m.; in the *Marta*, at 9 a.m.; practical work in the latter case begins at 10.30 a.m. and dinner must be ready by 1.30 p.m. (Cf. page 180).—Ed.

† A similar model of the school kitchen (and one of the needlework room), may be seen during the summer months at Stockholm, 19 Fredsgatan, second floor (to the right), on Tuesdays, Thursdays, and Saturdays, from 10 a.m. to 12 noon.

The division of work in the school kitchen.\*

In the different households every girl has a number given for the day, and all the girls who have the same number in the different households have to perform similar work in the following order:—

No. 1 is to make a fire in the kitchen range and keep it up; she sees that there is water in the boiler, is responsible for the soup, cleans the kitchen stove and stewpans, and is in charge of the household cupboard.

No. 2 prepares the first course, keeps the dresser clean, helps to lay the cloth and serve, scrubs the floor.

No. 3 bakes, cleans the rooms, lays the cloth and serves, dishes up the food, splits sticks for making fires the next day.

The following rules are observed for the day.

To see that all the provisions required for the day's work are at hand:

That the girls (No. 1) who are to attend to the kitchen ranges, make the fires, and have ready the stew pans that are required;

That the girls (Nos. 2 and 3) fetch from the cellar and larder, weigh and measure all that is necessary for the bill of fare for the day, according to the indications on the black-board.

When everything is ready at the kitchen ranges and tables, the girls sit down at their respective tables and the demonstration lesson begins.

Immediately after the lesson, or somewhat later during the course of the afternoon, some of the following subjects are treated: the kitchen, the kitchen range, making fires, sweeping and cleaning the kitchen range, ventilation of the kitchen, cleaning the dresser, copper pans, enamelled pans, iron pots, tin pans, wooden utensils, and—for the most part under the guidance of the book, "The First Rudiments of Instruction in Housekeeping"†—dishing up, putting the rooms in order, scrubbing, attending to the lamps, the laundry, milk, eggs, meat, fish, vegetables, coffee and tea, baking, the storage of meat and provisions, accounts and economy.

In the Cookery School the following objects are exhibited:

A kitchen range with oven and water reservoir. Two such ranges are usually placed together in a Cookery School.

A kitchen table for three girls. In the drawers there are knives, forks, spoons, etc.

A black-board on which is written the bill of fare for the day,‡ the ingredients to be used, and their price.

On both sides of the black-board, hang shelves with glass pots, containing specimens of food preserves, spices, etc., etc.

A cupboard with crockery, and glass, pots and pans, kitchen utensils, etc.

Baking trough, with appliances, a stand for iron plates used in baking. Dressers, wash-stands, and towel-horses. Plates, or pictures, for object lessons, planned by *Sof Nilsson*. The pictures represent: cutting up of an ox, a calf, sheep, and pig; parasites in meat; the chemical component parts of food.

Gothenburg. In Gothenburg a system has been adopted which seems an excellent one.§ It enables a class of twenty-four girls to receive a course of instruction lasting thirty consecutive school days, each school-day, or lesson, being of seven hours' duration. In Gothenburg, too, the dinner is prepared for none but the young cooks themselves and for their teachers,|| which permits of the arrangements and

\* Cf. Appendix F.

† This book, by Mrs. Sof Nilsson, is often read by the class one term before it has to take part in the practical lessons.

‡ A specimen school-kitchen menu, Stockholm, is given in Appendix E.

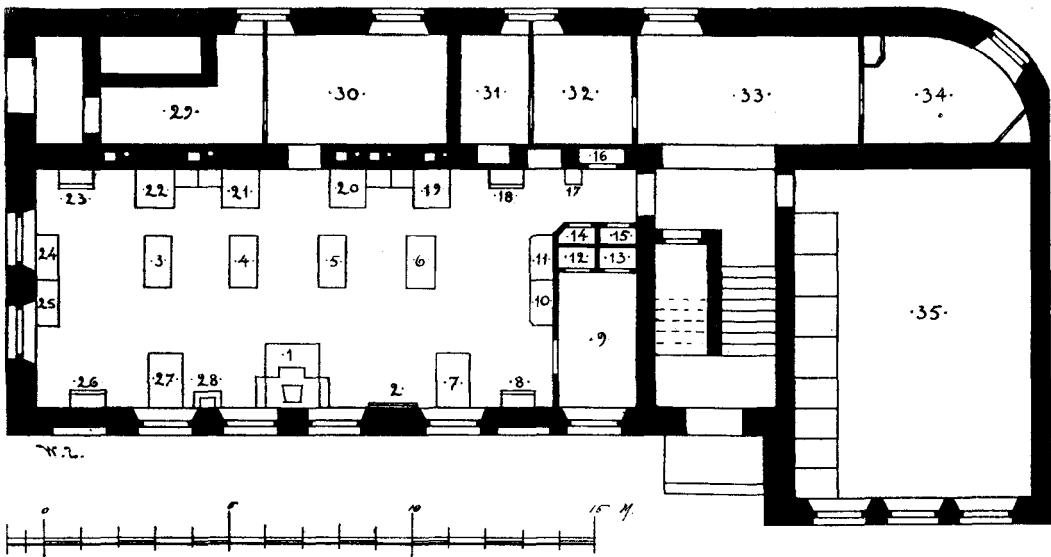
§ See Appendix G.

|| Cf. Appendix D., Supplementary Notes (b) pp. 180-181 and p. 210.—Ed.



A.—PLAN OF SCHOOL-KITCHEN IN THE ANNEDAL SCHOOL-HOUSE, GOTHENBURG.

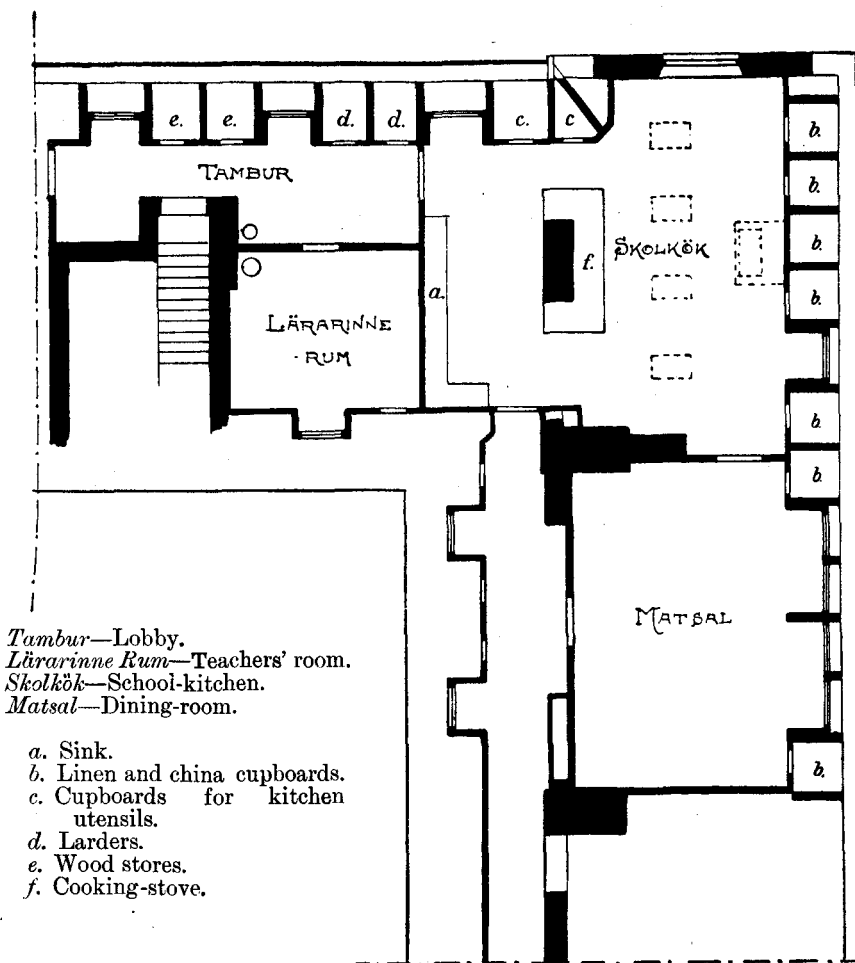
From : Göteborgs Allmänna Folkskolestyrelsens Berättelse för år 1899. (Gothenburg, Wald. Zachrisson Boktryckeri, 1900).



- |                                   |                              |                   |
|-----------------------------------|------------------------------|-------------------|
| 1. Platform and Blackboard.       | 14, 15. Linen cupboards.     | 30. Wash-house.   |
| 2. Blackboard.                    | 16. Cupboard (with shelves). | 31. Store-room.   |
| 3-6. Work tables.                 | 17. Wash-stand.              | 32. Larder.       |
| 7, 27. Ironing and baking tables. | 8, 18, 23, 26. Sideboards.   | 33. Vestibule.    |
| 9. Room.                          | 19-22. Cooking-stoves.       | 34. Pupils' room. |
| 10, 11, 24, 25. Sinks.            | 28. Grocery cupboard.        | 35. Hall.         |
| 12, 13. Cloakrooms.               | 29. Bathroom.                |                   |

B.—PLAN OF SCHOOL-KITCHEN PREMISES, THIRD FLOOR, IN THE EAST PRIMARY SCHOOL, JÖNKÖPING.

(From : Berättelse om Folkskoleväsendet i Jönköping under år 1903. (Jönköping, Gustaf Lundin, 1904)



Tambur—Lobby.  
Lärrarinne Rum—Teachers' room.  
Skolkök—School-kitchen.  
Matsal—Dining-room.

- |                                    |
|------------------------------------|
| a. Sink.                           |
| b. Linen and china cupboards.      |
| c. Cupboards for kitchen utensils. |
| d. Larders.                        |
| e. Wood stores.                    |
| f. Cooking-stove.                  |

0 1 2 3 4 5 6 7 8 9 10 METER

(The above plans are published through the courtesy of Herr Wald. Zachrisson, Gothenburg, and of Herr Robert Johansson, School-Inspector, Jönköping, to whom cordial acknowledgment is made for the loan of the blocks.—ED.)

the choice of dishes being determined exclusively with regard to the instruction in cookery. In the two school centres at Gothenburg, the text-book employed is that of Miss Lagerstedt.\*

At Malmö and Helsingborg the number of pupils in a class is eighteen and sixteen respectively, while the pupils at Jönköping are specially favoured, as arrangements have been made for them to be divided into two groups, each group consisting of but eight to twelve pupils; the groups in the town last mentioned have kitchen work alternately for two or three days a week during a period of about six months.

No instruction in this subject is given in the Training Colleges for Primary Schoolmistresses, but Miss L. Lagerstedt has expressed the opinion that the students at these colleges should be taught the subject, as they could base the teaching they might give in Domestic Economy upon other subjects of school-instruction.

This lady informs me that "housewifery"—as meaning the care of rooms—is not, as far as she knows, taught in Swedish schools as a special branch of domestic economy, but the kitchen, the cloak-room, and the pantry are thoroughly cleaned once a week in the school-kitchens, and rules are given (theoretically only) in the lessons devoted to the teaching of domestic hygiene for cleaning and putting a bedroom in order. In the peripatetic classes in the country the pupils get more practice in cleaning a room, by having to do this for the teacher every day, that is, if she has a room in the house where the kitchen is situated, which should be the case if possible.

After stating, in addition, that nearly all the teachers of domestic economy (*here cookery*) interested in their work desire a regular, official inspection by women trained for, and thoroughly at home in this important branch of female education, Miss Lagerstedt gives the following full and interesting account of the teaching of domestic economy in the peripatetic classes:—

#### B.—*Peripatetic Cookery and Domestic Economy Classes.*

"The programme for these classes, drawn up by the committee for Bohuslän, who first took up this course of work, expresses the aim thus: "To awaken love and respect for household work and home duties, to teach the rules for the proper nutrition of the body, and to impress on the pupils the need of cleanliness, thrift and order for building up the health, comfort and happiness of the private individual and the community."

"The first class began in April, 1901. During a visit to Finland the year before, I had learnt that the active "Finnish Women's Association" had started such classes, and I also knew that the same

\* *A Cookery Book for the Home and the School.* Other text-books for use in Primary School-kitchens are:—*Cookery Book for the School-Kitchen and for Small Homes*, by the same author; *Cookery Receipts for the Primary School*, issued by the Upsala Training School of Cookery; *A Collection of Cookery Receipts*, published by the Högre Lärarinneseminarium, Stockholm.

thing had been tried in Norway with great success. In order to try how our Swedish country people would receive such classes, a friend offered me a furnished room and a nice kitchen on her estate in Bohuslän on the river Göta, about fifty English miles north of Gothenburg. She also gave me a helping hand in all the arrangements, and provided us with fuel, milk, etc. A sum of £14, sufficient for the most necessary utensils, was presented by Consul Oscar Ekman who already, by liberal gifts for similar aims, had shown his great interest in the practical education of women.

“Thirteen pupils at the age of 13–16 came to the class, and worked eagerly during the six weeks the course lasted. Each pupil paid 5 kronor (5s. 7d.), being the cost of plain dinners of two courses, which were prepared five days a week—2½d. the meal. On Saturdays the girls came, some in the forenoon and others in the afternoon, to do the cleaning and tidying, and on that day they prepared no dinner. Other days they began work at eight o'clock and then finished about three or five, sometimes even later on washing, baking or brewing days. Their breakfast, which they took about nine o'clock, consisted of bread and butter which they brought from home, and oatmeal gruel or some other milk food that they prepared in the class. It has unfortunately become the habit among our country people, as well as in working-men's homes in town, to have coffee three or four times a day, and the children, therefore, need to be taught to take milk food. We therefore make a point of having this for breakfast; the children soon learn to like it and not a few introduce it for breakfast in their homes. Some of the pupils get quite fat and rosy during the six weeks' course.

“Interest spread; mothers came to inspect their daughters' work, and soon two neighbouring parishes applied for similar courses. I therefore asked the Bohuslän Agricultural Society—a society organised in all the counties of Sweden, for helping agriculture, cattle-breeding, fishing, etc.—if they would undertake to pay a teacher and to provide for the necessary extra and travelling expenses (about £6 for each course of six weeks). The application was granted, the first year for two courses, and the following years for four courses from April to October. The village or estate where a course is wanted has to give, free of charge, one or two rooms and a kitchen, and to provide fuel, and also, if possible, to fetch the teacher and the utensils from the station. Among the kitchen furniture is a portable stove, presented to the first peripatetic class by an iron manufacturer interested in the work.

“Other counties soon followed the example, and earliest among them Östergötland, where the first course was started the same year, at the request of Consul Oscar Ekman, on his son's estate, Bjärka Säby. I have generally been asked to start the first course in the new county, and to find a suitable teacher, whom I have tried to help and to initiate, for this kind of work offers exceptional difficulties; at the same time it is most interesting and encouraging, the pupils being so eager to learn and the parents so grateful.

Existing  
courses.

"The counties where such work is now going on are :—

	Courses a Year;	Total Number of Courses held,
1. Bohuslän, one teacher ; begun 1901 - -	4	15
2. Östergötland, one teacher ; begun 1901 - -	4	13
3. Norra Elfsborgslän, one teacher ; begun 1902	4	12
4. Örebro, one teacher ; begun 1903 - -	4	7
5. Wermland, two teachers ; begun 1903 - -	8	8
6. Halland, one teacher ; begun 1904 - -	3-4	3
7. Dalarne, one teacher ; begun 1903 - -	7	14

"Single courses have been held at the Arnäs glass factory in Västergötland, also at the request of Consul Ekman ; one course has been held in Blekinge at a horticultural school for women ; four in Västergötland, in a busy industrial district, through private enterprise, I believe. In addition, two courses a year have been sent out from the "Ateneum" since the summer of 1901 ; this high school receives a government grant for the purpose, and arranges the work chiefly at factories, and for married women (cf. p. 198). The Upsala School of Cookery has also begun to send out an ambulatory kitchen, which has had six or eight courses (see App. K., 34.). Altogether the number of classes has been about 100 during these last four summers, and, taking the average number of pupils in each at fifteen (some—as the last courses in Bohuslän—have had nineteen or twenty pupils), the total number of pupils amounts to upwards of 1,500.

"A great step towards spreading this work in still wider circles was taken, when the old Swedish Temperance Society decided also to start peripatetic cookery classes. This Society have fitted up four kitchens, and two of these have been at work this summer in Lapland, and two in the south of Sweden, with altogether ten courses. Next year the society will extend their sphere of labour, arranging six or eight courses in Lapland and two in Gottland, besides some in the south. They have engaged four teachers to carry on the work.

"In the first seven counties I have mentioned, the means for supporting the work are derived from the Agricultural Societies, or else from the Landsting (the "county council"), and the conditions for carrying it on are about the same. The yearly sum granted varies, however, from £20-£65 a year. (Cf. *Note*, p. 210.). Grants.

"The necessary utensils—costing about £22—are, as a rule, intended for sixteen pupils, and include pots and pans, glass, china and stone ware for the kitchen and the dinner table, knives, forks, spoons, wooden spoons and other tools, kitchen towels, a black-board, three large boards for kitchen tables, baking plates, etc. All these are packed in three large and strong boxes, which, when unpacked, can be used as cupboards.\* Equipment.

\* "The peripatetic cookery classes sent out from the *Upsala Enskilda Läroverk*," says Mrs. Hierta-Retzius, "are very careful to bring only *le juste nécessaire*—the most necessary utensils, and only cheap ones, packed in one box which can be used as a cupboard—in order not to spread any luxurious ideas, and to teach the peasant girls how to cook with very cheap, plain and simple utensils. This has always been the leading principle in teaching domestic economy by peripatetic classes in Finland."—Ed.

Pupils' appreciation of courses.

“ Next year, the government district of Södermanland intends to start two teachers for eight courses a year, and it is proposed to take the same step in Angermanland, and in the government district of Kristianstads. The number of pupils, therefore, next year—counting the old and the new courses that we know will be at work—will amount to about 2,500. It is a rapid growth from the first small class started in 1901, and shows that such teaching is appreciated. This is seen also from the fact that the pupils have come from great distances, walking daily 1-3 hours, rowing from the little islands on the coast or across inland lakes, or trudging along lonely forest roads. In Lapland, where the distances are so great, the girls had to come from 15-50 English miles from their homes, and consequently they had to live at the school, where they prepared three meals a day all the seven days of the week for the large household of twenty pupils, which was sometimes increased by passing travellers to a total of more than fifty persons. The cost for each girl amounted there to £1; about half of the number received their course at the expense of the Temperance Society.

“ Letters are frequently received from former pupils, telling what they have tried at home, how they now like to work in the kitchen, which they did not care about before, and asking advice about one thing or another. And whenever there is a chance, old pupils, some of them now married, come to visit the teacher and to spend a day at the peripatetic kitchen, where old and new pupils then have a happy time together.”

### *C.—Continuation Classes and Schools.*

#### *1.—People's High Schools.*

There are one or more People's High Schools in every Government district or county. The pupils in these schools usually, but not always or necessarily, have previously passed through the Primary Schools; the instruction given is intended chiefly for those young people whose lives will probably be spent in the more rural districts. These schools are very often for both men and women, men being in attendance in winter and women in summer. It appears from the Swedish Primary School Lists for 1904, that of twenty-eight such schools where there are women students, there are twenty where domestic economy, apart from women's sloyd, is taught, in nine of which, it is expressly stated, instruction in cookery also forms part of the curriculum—which is not to say that it is not taught at the remaining eleven schools. In two of these twenty schools, household book-keeping is taught, and in one, ironing, whilst the latter subject is taught in three People's High Schools where cookery does not form part of the instruction. The instruction in cookery is here, too, given by specially trained teachers, and the number of pupils in a class appears to be about seventeen or eighteen. (*See also page 210.*)

## 2.—Practical Schools for Men and Women.

Besides the People's High Schools, there exist, in several smaller towns and in country districts, private schools which work on much the same lines, and which are called "Practical Schools for Men and Women." Such, for example, are those at Kristinehamn and Nora, at Karlskoga, and elsewhere. In these institutions much importance is attached to the practical training in domestic economy for women students.\*

An institution intended to give girls who have finished their schooling at Secondary Girls' Schools a thorough knowledge of household work, is the *Practical Course at Ekebyholm*, in Uppland. This school only receives twelve pupils at a time (the length of the course being probably from September to June), and not more than six girls work at once in the kitchen. In addition to very thorough instruction in cookery, housewifery, the care of infants and of the sick, needlework and weaving are also taught. Ekebyholm is one of the very few boarding-schools in Sweden.

## 3.—Higher Primary Schools.

Besides the People's High Schools just mentioned, there are also Higher Primary Schools, such as the one in Stockholm, established by the Society for the Promotion of Popular Education. From the Report of the Stockholm school, for the period 1894-1903, we find that the school is intended to give an extended course of instruction, both practical and theoretical, to young girls of about fourteen to sixteen years of age, most of whom have passed through a Primary School, and some of whom mean to enter a Training College for Schoolmistresses but are too young for admission to these establishments. The instruction given provides a very thorough course in cookery and the allied branches, as may be seen from Appendices H. and K.|| An examination is held in the presence of censors, and a certificate given by the head-mistress of the school. Higher Primary Schools exist also at Huskvarna, Mölndal, Lysekil and Gudmundrå, and domestic cookery seems to be taught at the first and last of these.

## 4.—Continuation Classes at Secondary Schools.

Of Secondary High Schools (to which we presently come) possessing Continuation Classes in which instruction is given in cookery, we find the *Secondary Girls' School* (Högre Elementarskola) at Lund†; that at *Falun*—for teaching cookery only—where the course, intended chiefly for girls who have passed through the school, lasts three-and-a-half months, for four days a week and seven-and-a-half hours daily;‡ that at the *Women's Society's Girls' School* at Gothenburg, where the Continuation Class is divided, for the purpose of instruction in cookery, into two groups, the first

\* See Appendix K., 20, 22.

|| See also page 210.

† See Appendix K., 24. ("Elementarskola" means Secondary School).

‡ See Appendix K., 14.

working five days weekly for seven weeks, the second, six days weekly for six weeks in succession, each day's work lasting 7-8 hours;\* and finally, at the *Lower Course of the Household School* at the Higher Training College for Women Teachers at Stockholm (Appendix J., II., shows the scheme of instruction at this institution). For some time there had been a Continuation Class of much the same character as this last-named school, at Dr. Schwartz's Secondary Girls' School in Stockholm, but the experience gained led the Principal of the school to adopt the system of teaching the subject as a voluntary one in the last three classes of the school proper.

#### D.—*Secondary Schools.*

The work begun in 1887 at Miss Rudebeck's Secondary Girls' School at Gothenburg has been vigorously taken up in many similar institutions throughout the country. The pupils in these schools are some years older—being between fourteen and seventeen years of age—when they begin their course of cookery, and they are fewer in number in each class, than the girls in the Primary Schools; the longer course enables these pupils to obtain a more thorough grasp of the subject, but experience seems to show that girls of from twelve to fourteen years of age make the aptest pupils.† In addition to three Secondary Girls' Schools where the subject is treated theoretically only, and to the four where it is taught to a Continuation Class, there are no less than twenty-one or twenty-two such schools where cookery is taught in accordance with the methods described when speaking of Primary Schools. There is, of course, a difference in the utensils used and the dishes prepared in the two classes of schools, for a much greater variety exists in the number and quality of courses of the dinners cooked in the Secondary Schools; care is always taken, however, to restrict the cost of the meals prepared to the supposed incomes of those preparing them. Thus, for example, in the Lower Course of the Household School mentioned above, the pupils have to arrange their various bills of fare in accordance with what is thought suitable for families with widely different incomes—£120, £150, £200, £250, £300, and so on. And, while baking forms part of the curriculum of all school-kitchens, the making of pastry and other finer kinds of food is added to the course in the Secondary Schools, where, too, "trial" dinners and suppers are prepared in turn by groups of the pupils, who have permission to invite their friends to share the meal. The theoretical instruction also is more thorough in the Secondary Schools, being connected with the lessons in natural science, hygiene and book-keeping; and washing, ironing and scullery work are given much more attention as well, these latter subjects having now triumphed over the shortlived opposition of a few parents.

\* See Appendix K., 11.

† See Appendix D. for Miss I. Norrby's experience in this respect.

In most of these Secondary Girls' Schools the course lasts one year with one lesson a week, but in some the course is two and even three years long, in which case the weekly lesson is a shorter one.\*

E.—Workshops for Children.†

In many parts of Sweden and especially in Stockholm, in which Origin. city the school-day in the Primary Schools is from 8 a.m. to 1 p.m., the children have many hours free to spend as they like. As both fathers and mothers are often away at work the whole day, and as school-children in Sweden—in the capital especially—do not (or at least, until within this last year or two *did* not) play games out of school hours, much time and many opportunities were given for the gradual moral ruin of the poorer children. "To prevent the demoralisation of the young, rather than first to let them fall and then to erect expensive institutions for their reformation, and in order to inspire them with a love of work,"‡ workshops for children have been founded in Stockholm by Mrs. Anna Hierta Retzius, where children from seven to fourteen years of age are taught to employ their leisure in handiwork of many descriptions. Similar institutions, to the number of 65, now exist in different parts of Sweden.

In the fifteen workshops now (1904) existing in Stockholm, Cookery. cookery is taught to the girls, and the little cooks prepare the dinner and the evening meal of the other workers. Some of the children go through a second course. The workshops in Stockholm have to use the kitchens, utensils, etc., belonging to the primary schools, as they have no kitchens of their own. In twelve of the many similar schools elsewhere in Sweden (1897), both boys and girls take part in the kitchen work, the boys helping to carry wood and water, etc.

In the workshops for children, in Stockholm, the girls repair Mending and their own clothes and those of the boys. Tailoring is learnt by Tailoring. some of the boys (in 1903-4 by nearly one hundred). The lads work three times a week, under the direction of a lady in each school. These ladies, who are already skilled in needlework, go through a one month's course of tailoring (some take a second, even a third course), held in Stockholm every year under the auspices of the Lars Hierta Foundation. Professional tailors were at one time engaged, but they were not a success. Cloth is purchased direct from the manufacturer, and the boys cut out, baste and sew the clothes themselves, using the sewing machine. Even lads of nine are allowed to do so if, like the others, they can first use the needle well.

\* See Appendix K.

† A "Note on Children's Workshops in Sweden," by Mr. J. G. Legge and Mr. M. E. Sadler, will be found in Special Reports on Educational Subjects, vol. 8, p. 143. (1902).—Ed.

‡ Mrs. Anna Hierta-Retzius.—"Workshops for Children," Stockholm, 1897.



Philipsenska  
Skola, Stock-  
holm.

Amongst the number of schools which may be classed as benevolent institutions working in the same spirit as the workshops for children, I have been able to visit one—the *Philipsenska Skola* in Stockholm, where instruction in cookery, simple laundry work (washing of kitchen towels, caps and aprons), and needlework (mending old clothes and making new ones—for the pupils themselves), is given to thirty girls; while twenty boys are taught carpentry-sloyd, shoemaking and tailoring. The ten girls who are the cooks for the day, work in the kitchen from 9 a.m. till 4.15 p.m., preparing dinner (taken at 1.30 p.m.) and supper (6.30 p.m.) for themselves and their comrades. After dinner the other children work at their carpentry or needlework, etc., until 4.15 p.m. when *all* the children, after fifteen minutes' rest, learn the lessons for the next day's school. After supper the ten cooks wash up, etc. Although each of the three divisions of girls lose almost two days' schooling every week (they spend only one hour in the Primary School on the days when they have to do the cooking), it is considered that, as these children belong to the very poorest classes, what they learn in a practical way more than compensates for their ignorance of history or geometry. The kitchen is under the direction of Miss Nordstedt, and though little theory is taught there, I can testify to the excellence of the dishes made, and to the order and cleanliness that prevail.

#### F.—Schools for Defective Children.

I have received information from some of these schools, from which it seems that not much systematic instruction in cookery, etc., is given; in a few the children give what help they can in the kitchen. For the course given at the *School for the Dumb*—"Tysta skolan"—in Stockholm, see Appendix K, 8.

#### G.—Private Cookery Schools and Household Schools.

These schools were mentioned at the beginning of the paper, and are found in almost every town. Very often the only teacher is an ordinary cook, and no theoretical instruction at all is given, nor, as a rule, is anything but cookery taught. The pupils are young women from almost all ranks of life, who find it necessary to acquire rapidly some elementary acquaintance with the kitchen. There are some of these schools, however, which aim at giving a more thorough course of training. Such a one is *Elizabeth Ostman's School* in Stockholm,\* the directress of which was for some time assistant at the Upsala Training School of Cookery.†

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\* See Appendix K, 5.

† See also Supplementary Notes (c) (page 183). Ed.

## H.—Teachers and Training Schools of Cookery.

Miss Ida Norrby, Directress of the Upsala Training School of Cookery, which is under the patronage of H.M. the Queen of Sweden, says\* that:—

The teacher in Schools of Cookery must be one who has been pedagogically trained for the purpose. The work requires a plan; the steps taken must proceed from the easier to the more difficult; each step taken being based upon what has been learned in previous hours. There must be an intimate connection between the theoretical and practical instruction, there must be a pedagogic insight into what belongs to the age and capabilities of the pupils; a theoretical knowledge is required of physiology, hygiene, economic botany and zoology, applied physics and chemistry, and all of this presupposes study and, as a rule, not private-study only. The teacher should, taken all round, stand above her pupils in general knowledge, so that at least her view of things is not narrower than theirs. And the object of the instruction in domestic economy is not only to give aptitude in, and a knowledge of the subject, but it is equally intended to impart interest and respect for the employments of the home. Thus, a clever cook or housewife is not a suitable teacher for a school kitchen unless she be also a teacher, and of this teacher shall be required at least as much training of the mind and heart as is demanded from another teacher.

Such being the demands made upon those who are to teach this one branch of domestic economy, it may be conceived that special training schools for these teachers become a matter of necessity, and that the curriculum of the schools must be a comprehensive one. Training schools of Domestic Economy are established at the Higher Training College for Women Teachers, at Stockholm; at Upsala—the Technical School of Domestic Economy; at the Ateneum for Girls, in Stockholm, and at Gothenburg.† A similar school has also been established at the August Abrahamson Foundation, Nääs, an institution already widely known in England for its training of teachers who intend to give instruction in *loyd*.‡

\* "What experience has been gained during the course of teaching Domestic Economy?" (Stockholm, 1902). See Appendix D.

† Mrs. Hierta-Retzius has kindly supplied the following information:—

‡ The Swedish Parliament has recently (March, 1905) granted a yearly sum of 11,100 kronor (about £620) to the following institutions for training teachers of Domestic Economy:—

	Kronor.
To the Upsala Fackskola för Huslig Ekonomi . . . . .	7,000
To the Ateneum in Stockholm . . . . .	2,500
To the Allmänna Folkskola Styrelsen i Göteborg . . . . .	1,600

Kronor 11,100

Besides this, the Higher Teachers' Seminarium in Stockholm receives a yearly grant of 5,000 kronor for training teachers in domestic economy, and for teaching the highest class of girls in the Normal-skola attached to the Seminarium, Cooking and Domestic Economy."—Ed.

‡ Some details of the work of these training schools will be found in Appendix J. (See also Appendix K and Supplementary Notes (d) p. 182). Two or three well-known teachers of the subject, and other persons interested in the development of the movement for the instruction of girls and young women in Domestic Economy, consider that altogether too much time is devoted to the theory of the subject, the elaborate schemes of instruction proving a great hindrance to the attainment of a thorough, practical knowledge of the work.

It should be noted that the teachers of cookery in Primary Schools are granted pensions (varying between £35 to £45 per annum) on reaching the age of sixty. (Cf. footnote page 184, and a note on proposed salaries, page 210).\*

## II.—THE ELEMENTS OF PERSONAL AND DOMESTIC HYGIENE.

### A.—Primary Schools.

Some elements of hygiene are learned by boys and girls in all the schools of Sweden, whether Primary, Continuation or Secondary, when studying that part of natural science which treats of the human body. The Code of 1902 for Primary Schools in Sweden provides that natural science is to include an account of the structure, functions and care of the human body; in this account, instruction is to be given as to the nature and effect of intoxicating and narcotic substances. This instruction often takes the form of lessons and lectures on the nature and effects of alcohol; in each class-room may be seen printed warnings against the use of spirits, and a Royal Ordinance prescribes that during the lessons in Christian doctrine and in history, the question of the use of intoxicating substances should be treated, vigorously and seriously, from both an ethical and an economical point of view. Apart from this indirect teaching, hygiene does not appear as a subject of instruction in Primary Schools.

School baths. There is, however, a very practical way of teaching hygiene in the Primary Schools of many towns in Sweden, where the children, in turns, are given free, warm baths every third or fourth week. Indirectly, this has led to the better clothing of the children, as many were ashamed to take the baths before they had been provided with cleaner and tidier underclothing than they had before possessed. In the summer, free or cheap baths and swimming lessons have been arranged for the same children in many parts of Sweden. The following figures may be of interest:—

In 1902, 176,390 baths were given to children attending the Primary Schools of Stockholm. This gives an average, for a total of 24,231 children, of rather more than seven baths per child per year. For 1903, the figures were respectively, 193,466 baths given to 25,000 children, an average of 7·7 baths per child per year.

In only two schools has it been possible to calculate the cost per bath. In 1902, in the *Maria* school, 13,560 baths cost about 1d. each; in the *Katarina* school, 24,928 baths cost about 2½d. each. The difference in the cost of warming the water accounts for the greater part of the difference in price.

\* The "Union of Swedish Teachers of Cookery in School Kitchens," was formed January 8th, 1906.

Corresponding figures for other towns are :—

	School Year.	No. of Children at School.	No. of Children who bathed.		Average No. of Baths per Child who Bathed.	Cost of One Bath.
			Total.	Percentage.		
Gothenburg -	1901-2	14,069	5,881	41.8	5	—
			(warm baths)	(w.b.)		
			2,311	16.42	6 to 7	—
			(swimming baths)	(s.b.)		
	1902-3	14,214	5,962	41.94	5	—
			(w.b.)			
Helsingborg -	1902-3	1,230	1,841	12.9	—	½d.-1½d.
			(s.b.)	925		
Jönköping -	1902-3	—	—	83.45	8	—
				of boys		
				76.43		
				of girls		
Malmö . .	1902-3				10 to 13	½d.
	Spring term	6,695	5,507	82.25		
	Autumn term	6,855	5,352	78.07	10 to 13	½d.

Miss L. Lagerstedt, to whom I must express my special thanks for the thorough way in which she has assisted me in compiling this Report, says on the subject of teaching Hygiene :—

There certainly is great need of teaching personal hygiene to our people, and I soon found this out, when beginning my work in the Primary Schools of Gothenburg. I therefore urged the necessity of having a bathroom attached to the kitchen where, by adopting the English system of heating the water from the kitchen fire, we might easily get a liberal supply of bath water. My plan was acted upon when, after the first year's work, the kitchen had to be enlarged so as to receive eighteen instead of eight pupils at a time. Every day two or four girls, who stayed behind to clean out the kitchen, had a warm bath, and were taught how to make themselves clean. In most new school-houses there is now a large bathroom fitted up, to be used by a great number of children by turns, and the need of a bathroom in connection with the kitchen therefore disappears. However, the British motto: 'Cleanliness comes next to godliness' I have put at the head of our printed rules for cleaning the kitchen and its utensils, and we seek to give it a wider application—applying it to personal as well as domestic hygiene and general sanitary reforms. My experience from many different towns and districts has made me look upon this rule as the great fundamental principle for our work, if it is to act—as it ought to do—as a power for economical, sanitary, and social reforms. Cleanliness preserves health, and thus increases our working power, prevents epidemic diseases, and last, but not least, helps to break down a great barrier to social intercourse with the working classes, an intercourse which educates and enriches the wealthy and the poor together. And, therefore, cleanliness has to be preached to our rising generation.

B.—Secondary and Continuation Schools.

As usual and, perhaps, as is quite natural, it is in the Secondary Girls' Schools, in the People's High Schools, and in Higher Primary Schools, that a subject which is of such practical necessity for the

well-being of mankind has been added to the curriculum. In many of the schools named hygiene is studied in connection with anatomy and physiology, but in many others it is taken as a subject by itself, often with special reference to sick-nursing in the home, and sometimes, but more seldom, that branch of it is studied which has special regard to women.

Among the schools which pay particular attention to this branch of study, two or three may be mentioned, with examples of the scheme of instruction followed in the Secondary Girls' Schools:—

**BORÅS.**—*The Secondary Girls' School*—One hour weekly in two classes.

VII. Class.—A short account of the anatomy and physiology of the human body; the first stages of the study of hygiene; alimentary substances, their composition, preparation and use (no further instruction in cookery is given).

VIII. Class.—Conclusion of study of hygiene: lighting, dangerous occupations, educational hygiene; causes of illness; short course respecting the care of the sick (the treatment of wounds, bleeding, fractures, burns, frost-bite, poisoning; contagious diseases, etc.).

**JÖNKÖPING.**—*The Secondary Girls' School*—One hour weekly.

Physiology; hygiene; climate; changes in the atmosphere; warming, lighting and cleaning dwellings; water; baths; clothes; educational hygiene; work and rest; bodily movements; causes of diseases; short course respecting the care of the sick.

**STOCKHOLM.**—*The Normal School for Girls*—VIII. Class.—Two hours weekly.

The general elements of anatomy and physiology, and hygiene based upon this knowledge.

In connection with the teaching of hygiene, reference may be made to the Swedish system of school gymnastics, which is taught in all types of educational institutions in Sweden, and to outdoor games. A "games-course" has been established at Nääs since 1895, for the study of the theory and practice of out-door games. In different parts of Sweden the children are now systematically taught games.

A considerable number of text-books are used in the study of this subject. Amongst them we find:—*Göransons*, Hälsovård-och sjukvårdslära; *Berg*, Hälsolära för folkskolan; *C. Wallis*, Hälsovårdslära; *Dr. Ellen Sandelin*, kvinnokroppens byggnad och hygien; *Lindén*, Människokroppens byggnad, förrättningar och vård, etc.

## III.—WOMEN'S SLOYD (NEEDLEWORK AND DRESSMAKING):

## A.—Primary Schools.

The Swedish word "sloyd" has gained a footing in the English language under the modified form "sloyd." The word means handiwork in general, whether it be that of women or men, and is more especially applied to work—the making of things—done in the home. The scheme for women's (or girls') sloyd, described below, is the one adopted in the Primary Schools of Stockholm, but it is also used, with modifications, in most Swedish Primary Schools and in the lower classes of many Secondary Girls' Schools. It owes its origin and its adoption to the energy of Miss Hulda Lundin, who is now about to leave her post as Inspectress of Women's Sloyd in the Primary Schools of Stockholm, after twenty years of service.

The following information is taken from the "Guide to the Educational Exhibit," already so much quoted:—

## Girls' Sloyd.

*Common Schools.*—Instruction in girls' sloyd is not obligatory in the schools of our country. A subvention from the State was first obtained for girls' sloyd in 1897, though boys' sloyd had already enjoyed that advantage some twenty years earlier.

Girls' sloyd has nevertheless been taught, and during the two last decades, it has even succeeded in acquiring a place in the curriculum of many schools, where it was previously not included.

The cause of this is, that we begin more and more to see the significance of manual work as a means of education. In connection with this, the necessity has arisen of having a *system* for the subject in question. Such a system already existed in Germany, viz., the so-called Schallenfeldt method.\* In the beginning of the eighties this method was naturally introduced here, but was soon found to be less suitable to our circumstances. The question now was to work out of this, so to speak, a Swedish method of our own. An attempt, in this direction is "*The Stockholm method*" (Common School method), planned by Miss Hulda Lundin, which, in a comparatively short time, has gained an extensive practice both in our Training Colleges, and in the Secondary Schools for girls.

The aim of the instruction in girls' sloyd, according to the above-named method, ought to be to *exercise hand and eye; to quicken the power of thought; to strengthen love of order; to develop self-activity; to inspire respect for carefully and intelligently executed work; and at the same time to prepare girls for the execution of their domestic duties.*

The solution of this problem is in no wise easy, but the experience of years has taught us that it can be attained by applying the following principles:

I.—The instruction should be given as much as possible by practical demonstration of the subject. In sewing this is accomplished by means of a sewing frame, and in knitting, by means of large wooden needles, and balls of thick, coloured yarn—at the same time, black board drawings are constantly made.

II.—The exercises are planned and carried out in the most strictly progressive order, and in such a way as to enable the pupils to execute well the work required of them.

\* See footnote, page 254.

III.—When the pupils enter on a new phase of the work, the instruction should be given to the whole class collectively, otherwise the time which the teacher could devote to each pupil separately would be insufficient for thorough instruction.

According to this method, the instruction should comprise knitting, plain needle-work (under-clothing and other garments), darning, mending, marking, tracing pattern designs, cutting-out under-clothing and other garments.

What has been said above will show that the teacher in manual work and sloyd has not only to instruct, but to educate her pupils, and besides technical ability, she should also possess pedagogic skill.

There is no longer any lack of efficient teachers. Instruction in sloyd, as already mentioned, has been introduced in our training colleges for women teachers. Besides this, of late years, a number of courses have been held, for training teachers in methodical instruction in sloyd. During 1882-1903, more than 1,000 teachers have been trained in girls' sloyd at Hulda Lundin's "Course of Sloyd."\*

Scheme of Instruction in Women's Sloyd in the Primary Schools of  
Stockholm.

Scheme of  
Instruction,  
Stockholm.

The aim of the instruction in girls' sloyd is: To exercise hand and eye; to quicken the power of thought; to strengthen love of order; to develop independence; to inspire respect for carefully and intelligently executed work; and at the same time to prepare girls for the execution of their domestic duties.

The instruction has two objects in view: It shall be an educational medium; it shall fit the girls for practical life.

Experience has proved that the desired results can be best reached by (a) practical demonstration of the subject; (b) progressive order with regard to the exercises, and class instruction.†

*Standard I*: Plain knitting with two needles: a slate-eraser and reins.

Plain knitting: a cosey for the teapot, a needlework bag and a pair of warm wristers.

*Standard II*: Plain knitting: a towel.—Practice in the different kinds of stitches: running, stitching, hemming, and overcasting a lamp-mat.

The application of the stitches already named: one small and one large needlework bag.

*Standard III*: A needlework case. A slate-eraser, a cosey for the teapot, a towel and a pair of socks.

An apron. Simple darning on canvas: a mat for a candlestick.

*Standard IV*: Plain and purl knitting: a pair of mittens.

An apron.

*Standard V*: Knitting: a pair of stockings: a playing ball.

Drawing the pattern, cutting out and making a chemise.‡

*Standard VI*: Patching. Plain stocking-darning. Buttonholes. Buttons made of thread. Sewing on tapes, hooks and eyes.

Drawing the pattern, cutting out and making a pair of drawers.

*Standard VII*: Fine darning and marking. Drawing the pattern for a dress. Cutting out articles such as are required in standards II-IV.

Drawing the pattern, cutting out and making a dress.

*Standard VIII*: Drawing the pattern, cutting out and making a night-dress. Drawing the pattern, cutting out and making a dress.

\* See page 173.

† Class instruction has been departed from in many of the schools of Sweden, the schools of Stockholm being the most notable exception.

‡ The girls in the upper classes have a text-book—"Klädsömnad" ("Making clothes"), by Miss Lundin; the teachers have a special text-book—"Handledning i Metodisk Undervisning i Qvinnlig Slöjd" ("Guide to Methodical Instruction in Women's Sloyd"), by the same author.

The time given to girls' sloyd :—

Standard I.-II. :	3 hours a week.
Standard III.-IV. :	4 " " "
Standard V.-VII. :	5 " " "
Standard VIII. :	4 " " "

The exhibits in the sloyd room for girls are :—

Two cupboards containing a complete set of models, executed by the pupils, and arranged according to the course of instruction, and also specimens of the material used during the instruction.

Work-tables, with sewing-cushions, fastened to a flap. In drawing patterns the flap is let down, so that the surface of the table may be even. Chairs.

Two frames for demonstrating needlework and darning.

Blackboards on which, after taking measurements, the pupils draw patterns.

In the sloyd room, similar blackboards are placed round the whole room.

Model plates, and plates showing a correct and incorrect position of the body when at work.

Photographs of sloyd rooms for girls Sewing machine.

With reference to the work in Primary Schools it should be mentioned that, during the first three years of their school life, the boys who attend these schools in Stockholm (and probably elsewhere, too), take part in the girls' sloyd, i.e., sewing, darning, etc. Miss Lundin has assured me that not only has this plan increased the love of neatness in the lads, but that it has inspired them with an actual love of the work, and of work in general; that any feeling of shame at doing "girls' work" soon passed over, and that the goodwill of the parents for the work was also very soon gained.

Miss Hulda Lundin's Sloyd Courses for the training of women teachers of needlework, etc., in accordance with the Stockholm (or Primary School) method, are arranged in Stockholm twice a year; in the Spring, 6th February—6th May, and in the Autumn, 6th September—6th December, each course thus lasting three months.

The qualifications for admission to the courses are ordinary school education and skill in needlework and knitting. The fee is 30 kronor (about £1 13s. 4d.). The cost of materials amounts to about 15 kronor (16s. 8d.).

A certificate is given to competent pupils.

### B.—Secondary Schools.

*Secondary Schools for Girls.*—The instruction in needlework in Secondary Schools for girls, aims at giving the pupils technical skill in plain needlework, knitting, hemstitch, embroidery, patching, darning, marking, etc. The different kinds of stitches are introduced in series, increasing gradually in difficulty, and are applied to objects of plain work, such as aprons, chemises, petticoats, pillow-cases, etc.

In some schools a course of plain dressmaking is also given. In addition, the pupils in most Secondary Schools have the opportunity of learning art-embroidery, as during the autumn term they are allowed to do different kinds of fancy-work, special consideration being given to the development of their sense of colour and of beauty. Swedish patterns and national needlework are chiefly chosen for this purpose.\*

\* From the "Guide to the Educational Exhibit of Sweden," 1904.



In the Secondary Girls' Schools there is usually a Preparatory Division of three classes with, as a rule, both boys and girls. The very young children\* in these classes have much sloyd in their daily school-work, and part of this sloyd consists in doing some elementary sewing. The number of hours devoted to Women's Sloyd in Secondary Schools decreases with the progress of the pupils into higher classes. I append one or two examples:—

Name of School.	Preparatory School.			Middle or Higher School.								
	I. G.B.	II. G.	III. G.	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	
GÄFLE, Högre Flickskola .	- 6	6	4	3	3	2	1	1	1	1	1	hrs. wkly.
STOCKHOLM, Wallinska Skolan .	- 1½	2.	2	2	2	2	2	2	2	1	1	„ „
UPSALA, Enskilda Läroverk (Co-educational)	- 80	80	90	2	2	2	2	2	2	-	-	hrs. wkly.

The teachers of needlework at most of the Secondary Girls' Schools receive some of their training at least at the "School of Needlework and Weaving," established in Stockholm by the Society called "The Friends of Handiwork" (*Handarbetets Vänner*). Instruction is here given by well-trained, well-educated and capable teachers in most of the many kinds of sewing which exist—the Certificate of Proficiency in Needlework enumerates no less than nineteen of these—and in sixteen different methods of weaving.

The society named has done much to encourage the love of weaving, an art which has been re-born of late years in Sweden, and many of those who have studied at the school mentioned above are now engaged in teaching the art to the women-students at most of the People's High Schools throughout the country.

### C.—Schools for Defective Children.

Amongst the most skilful of the scholars who do women's sloyd are the weak-minded pupils, and those otherwise afflicted—the deaf and dumb inmates of the several schools for such children in Sweden. They develop in many cases a most wonderful manual dexterity, which is not least exhibited at the weaving-loom, and the consciousness they often have of this skill recompenses them, in no small degree, for all that other knowledge which is not theirs.

Grants of  
Agricultural  
Societies for  
women's  
sloyd.

The Agricultural Societies already mentioned in connection with the school-kitchens in different parts of the country do yet more to aid the development of women's sloyd. Thus they give grants for two weaving-classes in the government-district of Upsala, for similar schools in the districts of Kalmar, Blekinge, Skaraborg, Västernorrland, and they also support numerous schools of needlework in many parts of the country.

\* In Swedish Primary Schools the children first go to school in the year when they complete their seventh year; in Secondary Schools they often begin at a tenderer age.

IV.—THE CARE OF INFANTS.

Besides the theoretical instruction given in the above subject at the Technical School of Domestic Economy at Upsala and in Class II. of the Higher Primary School at Stockholm, practical instruction is given at two establishments in Sweden:—at the Home of the Society for the Care of Infants (*Sällskapet Barnavård*) at Stockholm, and at a somewhat similar institution at Lerum, near Gothenburg.

The first of these two institutions has a Home for Infants, situated in the south of Stockholm, which is under the patronage of H.R.H. Princess Ingeborg, and is directed by Miss Anna Törnqvist. Mothers in needy circumstances, who have to be away from home at work during the day, can leave their infants here for the very small payment of about 1½d. per day. When the children come at 8 a.m., they are bathed, and dressed in clothes belonging to the home. In the evenings when the mothers return, the babies are dressed in their own clothes again and are taken home. As a rule only two or three children remain at the home all night. On Sundays, when the mothers are supposed to have time to see to their infants themselves, they receive children's milk, properly prepared in bottles, and sufficient for the day, for the same small sum. The number of infants received is ten, all under two years of age.

At this Home for Infants, which I have seen and am inclined to name "the Paradise for Infants," eight young women, not under seventeen years of age, are received to be trained as babies' nurses. Some of these pupils have been about to marry, others have expected shortly to become mothers, but the greater number intended to seek employment in homes where the services of a trained nurse for infants would be needed. Most of the pupils have come from homes of the better class, although girls who have passed through the Primary Schools can also obtain entrance to the Home.

The course lasts three months, and includes a series of theoretical lectures, eight or ten in number, given by a children's physician, Dr. Fürstenberg. These lectures treat of the hygiene, food and illnesses of children. In practice, the pupils learn to wash and dress the babies, to prepare and give them their food, to attend to their wants in general and to take them out for airings. During the last month of the course, the students have the entire charge of one or two babies. The washing, mangling and ironing of the baby-linen is done by the pupils, who are also responsible for the condition of the rooms.

The pupils live in the Home and pay about 34s. per month, for instruction, board and lodging.

Instruction in the care of infants and the education of young children is also given at the People's High School (co-educational) in the province of Jämtland.

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I desire to express my thanks to the following ladies and gentlemen who have, in one way or another, assisted me in my labours:—

Mrs. Anna Hierta-Retzius, Miss Aug. Andersson (*Lady Principal of the Higher Primary School, Stockholm*), Miss L. Lagerstedt, Miss Hulda Lundin (*Inspectress of Woman's Sloyd at the Primary Schools of Stockholm*), Miss Ida Norrby (*Lady Principal of the Upsala Technical School of Domestic Economy*), Miss Karin Schermanson\* (*of the Primary Schools, Stockholm*), and Miss Anna Törnqvist (*Lady Principal of the Home for Infants, Stockholm*), Mr. G. G. Bergman, Ph.D.\* (*Inspector of the Primary Schools of Stockholm*), Mr. Cl. Gustafsson, Ph.D., and Mr. Ivar Lyttkens, Ph.D. (*both of the Statistical Division of the Swedish Ecclesiastical Department*), Mr. Otto Salomon (*Director of the August Abrahamson Foundation, Nääs*), Mr. L. M. Wærn, Ph.D. (*Principal of the Higher Training College for Women Teachers*); and to the following societies: Fredrika Bremer Förbundet, and Föreningen Handarbetets Vänner (Stockholm).

EDWARD ADAMS-RAY,

December, 1904.

Stockholm.

#### BIBLIOGRAPHY.

The figures and tables given are taken from the latest available *Annual School Reports* (Berättelser and Redogörelser) of the *Primary Schools of Stockholm, Gothenburg, Malmö, Helsingborg, and Jönköping* (no others were at hand); of many of the *Secondary Boys' Schools*; of all of the *Secondary Girls' Schools*; of all those at hand of *Schools for Weakminded or for Deaf and Dumb Children*; of the *Higher Primary School* and of the *Workshops for Children* (both in Stockholm); of two *private Practical Schools* (Karlskoga and Kristinehamn), and of the five *Technical Training Schools of Domestic Economy*; and also from the *Primary School Lists, 1904* (Folkskolematrikel)—with reports from the *Training Colleges, People's High Schools, and Higher Primary Schools*; the *Summary of Primary Reports from the Elementary (Primary) Schools* (Sammandrag af primäruppgifterna om folkskoleväsendet), 1904, and the *Report of the Agricultural Department* (Landtbruksstyrelsens Berättelse), 1903, respecting the support given by the various Agricultural Societies to the People's High Schools and to women's sloyd.

Information and copious extracts have also been taken from the following publications:—

*Guide to the Educational Exhibit of Sweden, Stockholm, 1904.*

*Huslig ekonomi som skolämne* (Domestic Economy as a school subject), by the Upsala Private Secondary School, Stockholm, 1895.

*Hvilka erfarenheter har man vunnit vid undervisningen i huslig ekonomi?* (What Experience has been gained in the teaching of Domestic Economy?) by Ida Norrby, Stockholm, 1902.

*Nääs*, by Otto Salomon, 1904.

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\* Now deceased. (1906).

## SUPPLEMENTARY NOTES.

BY MRS. HIERTA-RETZIUS.

(1905).

[Mrs. Anna Hierta-Retzius, Vice-President of the International Council of Women and President of the National Council of Women of Sweden, who has been so instrumental, as will have been seen from the preceding pages, in promoting the domestic education of girls and women in her own country, has kindly furnished us with the following observations in connection with Mr. Ray's report.

Mrs. Hierta-Retzius' intimate connection with much of this work since the beginning lends peculiar interest to any expression of opinion from her, and these supplementary notes will be read with interest, even if some slight repetition of facts that have already been given in the body of the Report is involved.—ED.]

(a) *Lars Hiertas Minnes Matlagningsskolan.\**  
*The first Cookery School in Sweden.*

In former days the Swedish wives of the upper, as well as of the lower classes were very clever at housekeeping, cooking, baking, washing, needle-work, embroidery, dressmaking, spinning, and weaving. They were a healthy, strong race of women, active in their homes, and very capable in every kind of practical work, which they taught their daughters to take an active part in at an early age. Neither mothers nor daughters were nervous, nor longing for pleasures and a "change," which is so characteristic of our age.

But as industries were developed many things, formerly manufactured at home, were bought ready-made. The girls' day-schools for the upper classes developed, higher studies were pursued. The Primary Schools became more numerous, and were made obligatory; the daughters had to leave home early in the morning and did not return until dinner was ready; they had no time even in the afternoon to help their mothers, for the lessons had to be learnt, and the mothers, who admired their children's "great learning," did not want them "to slave" with practical work, which came to be considered as "lower work." The young thus became more and more unable and unwilling to help their mothers in household duties. The same state of things has existed in the provinces and the country since the general introduction of the Primary Schools, and has become worse, as the age has been heightened at which the children are kept at school or sent to Continuation Schools.

It is easy to imagine how much knowledge of, and liking for, household duties and practical work was to be found in the generation succeeding the one just described.

Another motive for establishing the first Cookery School was that young servant girls of fourteen to twenty, if ignorant, get at first bad situations, and may morally be ruined in their teens, but if they knew how to cook well they might easily get into good families. This has been proved to be true.

It was in consideration of these facts that the Institution of "*Lars Hiertas Minne*" gave 7,500 francs, and founded, in order to help the working-classes to get better wives and more useful daughters, the first Cookery School in Stockholm in October, 1882. This school was intended to teach young girls of the working-classes from fourteen to twenty years of age, who still attended or who had just left the "*Folkskola*," domestic economy, namely: cooking, baking, marketing, preserving, cleaning, scrubbing, etc., the programme being: to prepare everyday food for workmen's homes, making it palatable, nourishing and still as cheap as possible. † Mrs. Retzius undertook the organisation and financial responsibility of the school. A very clever, practical cook, who had a natural gift for teaching, gave the practical instruction. The course

\* The Lars Hierta Memorial School of Cookery.

† The Swedish nation altogether very much needs to be taught economy.

lasted three months, and the school hours were 9.30 a.m. to 6 p.m., and from six to nine different dishes (soups, fish, meat, puddings, cakes, etc.) were cooked every day. The number of pupils varied from eight to twelve (later fourteen). Before leaving, every pupil was expected to be able to undertake the whole responsibility for all the food prepared for three days. Single ladies, and later also gentlemen, were allowed to dine *à la carte* in separate dining-rooms belonging to the school. The pupils, by turns, baked daily all the bread used in the school and also learnt to make cakes of different kinds, preserves, etc. They had lessons on: how to cut up the meat of an ox, a sheep, or a pig; how to use every part; the different value of each part; how to use up the remains, etc. They each wrote in a book the recipes of the dishes made, with the prices, as well as the quantities used, thus obtaining a cookery-book, which was revised by the teacher.

Besides the practical work, the first lessons of scientific Domestic Economy were given (for the first time in Sweden) at this school by *Professor E. Heyman*, Professor of Hygiene at the Medical School of Stockholm. These lessons were given with demonstrations on the science of foods, their nourishing qualities, their care, how to prepare them, etc. One of the pupils of these theoretic lessons was *Mrs. Sofi Nilsson*, who afterwards continued them in this school, giving the lessons herself.

By and by a married lady and one who was going to marry asked to be allowed to take part in the instruction (there being then no other opportunity for ladies to learn cookery) by paying the double fee, 20 kronor a month, later 30 kronor a month, without any dinner. The other pupils in the beginning paid 10 kronor (9 kronor = 10s.) a month for the instruction and their dinner and breakfast; later the price was augmented to 15 kronor, and the pupils then appreciated the school of cookery more than when it was so cheap.

The two ladies were admitted, and for the following reasons:

- (i.) Their presence improved the discipline. Henceforth two young ladies (from the upper classes) being always present amongst the other pupils, the discipline of these became excellent.
- (ii.) It raised the value of learning to cook and of practical work in the estimation of the parents and of the daughters of the working-classes,\* when ladies wanted to learn domestic economy.
- (iii.) It contributed towards the maintenance of the school, which did not pay its expenses at first; several thousand kronor a year had been expended for its support during the first years.

In founding this first cookery school it had all the time been the wish of *Mrs. Retzius* to train teachers there and to introduce cookery in the Primary School itself. Experience soon taught her that it was too late to take the pupils of the highest classes in the *Folkskola*, or those who had just left the *Folkskola*, and teach them cookery, for at the age of fourteen to sixteen the girls were often too spoiled by their parents and unused to practical work, for which they had no respect; they did not value cookery and domestic economy as highly as the other subjects learnt in the *Folkskola*. *Mrs. Retzius*, therefore, in 1887, proposed to the Institution (of her mother's) "*Lars Hiertas Minne*," to send a teacher to England and Scotland to be trained, and to introduce regular school-kitchens in the Primary Schools. *Mrs. Sofi Nilsson* was asked to go to England, but as she was unable to go away from her family, a *Miss Brolinson* from the *Maria Folkskola* was sent to London and Scotland. On her return the curious fact was discovered that, though a very nice new school-kitchen, in hired premises, was arranged near the *Maria Folkskola*, it was a long time before she could get any children to teach.

\* There was in Sweden, as in Finland and several other countries, opposition from the teachers to the introduction of domestic economy for the working-classes, in the *Folkskola*. When the first methodical, properly arranged school-kitchen was founded in the *Maria* parish (in 1890) by the institution "*Lars Hiertas Minne*," the school board teachers in the other parishes were not convinced of its usefulness.

In the meantime *Mrs. Sof Nilsson* and her husband, *Dr. S. Nilsson*, who was head teacher in the *Nicolai School*, took the eldest girls of his classes and made them cook the food that was given away to the poor children in his school. He sent a lay teacher from the "*Arbetsstuga*" for training to the above-mentioned School of Cookery (*Matlagningsskolan*), arranged the kitchen nicely, and he and his wife, both warmly interested in this practical teaching, supervised the whole; a school-kitchen was thus started in the *Folkskola* for the first time in Sweden, but no Domestic Economy was taught there theoretically.

In November, 1890, the *Maria* school-kitchen was opened with a practical cook in the kitchen, and *Miss Brolinson* as a teacher for training teachers, and a class of young girls, ten to thirteen years old, from the *Maria Folkskola* as pupils. They prepared and cooked the food and baked the bread for five or six teachers, who dined at the school. All these *Folkskola* children received excellent instruction, and began at once to help their mothers at home, cooking the Sunday dinner for the family. Nine teachers were trained and passed an examination; they afterwards obtained good posts, one coming to the Gothenburg school-kitchen, which was just founded by *Miss Lagerstedt* (who was a teacher of languages), another to the *Östermalms Högre Läroverk för flickor* (*Dr. Schwartz' Girls' Secondary School*), a third to the great *Carnegie Company Household School* near Gothenburg, etc.

One of the cleverest trained teachers offered to instruct the children of the *Adolf Fredrik Folkskola* in cooking. *Mrs. Retzius* arranged a school-kitchen in connection with the *Adolf Fredrik "Arbetsstuga"* (workshop) which is situated next to the above *Folkskola*, and she offered to take upon herself the whole financial responsibility, for at that period not a farthing was given from the community for teaching cookery. But the common school teachers would not allow their children to be taught cookery! "Why should our children learn cooking?" one of the head-mistresses said. No pupils came, and the school-kitchen had to be given up.

It was from this experience that *Mrs. Retzius* found it necessary to introduce cookery in the Higher Girls' Schools, and thus to raise the value of practical work in the general estimation. Having spoken to the Minister of Education, *Mr. Gunnar Wennerberg*, she resolved to give the first School of Cookery (which had now become self-supporting) to the Higher Training College for Teachers at Stockholm (the *Seminarium*). *Mr. Wennerberg*, M.P., proposed in Parliament that a sum of 5,000 kronor a year should be granted by the Government "for training teachers for the Higher Girls' Schools," and thus the *Högre Lärarinne Seminarier Hushållsskola* was established, a teacher having been sent to Belgium, Germany, England and Scotland to be trained at the expense of the Queen of Sweden and *Mrs. Retzius*.

After a year the Cookery School, *Matlagningsskolan*, under the direction of the *Seminarium*, proved to be situated too far from the pupils of the *Seminarium*, so *Mrs. Retzius* agreed to give the *Seminarium* money for arranging a new school-kitchen within their locality or quite near it, but as her first Cookery School was excellent in working and most useful, it would have been a pity to discontinue it; *Mrs. Retzius*, therefore, gave 1,500 kronor to the *Seminarium* for a new school-kitchen, and gave her first Cookery School to one of the best pupils of the *Maria* Training Course for Teachers — *Miss Selma Johansson*, who had taught the first year at *Miss Lagerstedt's* school-kitchen in Gothenburg. *Miss S. Johansson* and her two sisters have since then been at the head of this first practical Cookery School (at No. 22, *Hamngatan*), which is still doing good work. About six such Cookery Schools, *Matlagningsskolor*, are now in existence in Stockholm, and all are self-supporting. Young ladies who are going to be married pass a course of three to five months, and innumerable young women of the working classes, from the country and from Stockholm, have learnt practical domestic economy and cooking in these schools.

The Cookery Schools of *Falun*, *Malmö*, *Westerås*, etc., were founded afterwards, and, following the example of Sweden, cookery was introduced in

Finland and Norway, first in cookery schools and then in the *Folkskolor*; afterwards Training Colleges for teachers were founded in Helsingfors, in Finland and in Kristiania.

(b) *Some Observations about the Teaching of Domestic Economy.*

The age of twelve is considered to be the best for Primary School girls to receive instruction in cookery, but even at eleven many will profit by the practical course.

It is better that the girls work two consecutive days in the school-kitchen than only once a week, and for the following reasons:—

1. They will then be able to learn marketing. This has been practised for ten years in the *Maria* Primary school-kitchen. The art of buying fresh, good food (fish, meat, etc.) is not an easy one, particularly if one does not want to spend much money. Marketing cannot be learnt theoretically alone. The pupils ought sometimes to go to the butchers and see with their own eyes the different parts of an ox, a sheep, etc., and to learn the different value and price of each part, and the use that can be made of it for different dishes. This can be done at school first, but the girls ought to learn it practically as well as theoretically.

In 1891 Mrs. Retzius had indications printed on cards with large letters, to teach the pupils: "How to use beef"; "how to use mutton"; "what can be done with the different parts of a pig"—(literally translated, "How to use an ox," etc.).

2. Another reason for two consecutive days' work in the school-kitchen is that working-women's wives need to learn how to use up remains and scraps of food from one day to another, and to make them into nice and palatable dishes.
3. The girls can prepare the dough for baking the next day. *Mrs. S. Nilsson* introduced the excellent custom that the children bring from home the materials for baking bread, and the next day return with a basket full of loaves, to the pride of their parents. This is now practised in all our Primary School-kitchens with the best results.

It is necessary for the girls to arrive at eight o'clock if they go to market. In any case the pupils of a school-kitchen ought to arrive as early as eight or nine o'clock, instead of ten a.m. At eight, as in the *Katarina Folkskola*, in Stockholm, the girls will be able by turns to go to market, and there will be time to explain and look through the bill of fare on the blackboard. In the *Maria* school-kitchen the pupils arrive at nine o'clock, but this is too late to go to market. They arrange everything, the bill of fare is explained, and at 10.30 the practical work begins.

One of the most important arrangements if the pupils are really to learn cooking well in a school-kitchen, is to have guests, or teachers, who dine there. In the *Katarina Folkskola* fifteen lady teachers have their dinner served in a room next to the kitchen, where the table is laid by the pupils, who also wash and mangle the napkins, etc., used in the school. These teachers pay 40 öre (5½d.) for their dinner, consisting of two good courses, meat or fish, soup, or pudding, etc. In the *Maria* school-kitchen, fifteen factory girls used for ten years to have their dinner of two dishes (courses), paying 1s. 4d. a week for it, but the present teacher has abolished this, and forty-eight poor children, each paying 5 öre (nearly a penny), dine there instead.

It is not good (as *Miss Ida Norrby* says\*) "that only the children themselves should eat the food they prepare." They need the daily control of others; they need the lively interest felt when other grown-up people will eat what they cook. I have gained this experience from more than ten years in the

\* See Appendix D.

*Maria Folkstola* kitchen. At that time a practical woman taught the girls, and she not only taught them, she educated them,—taught them to love work, to do it quickly, to be self-reliant. The food was excellent, prepared under her direction; if the pupils spoilt it (burnt the rice for instance), they had to pay for new material. All the children then began very soon, after a few lessons at the school-kitchen, to cook at home for their parents on Sundays, and to bake at home as they had learnt to do at school. This teacher had never passed any examination, and was not trained in any training college for cookery, but there never has been a more excellent, clever, orderly, economical teacher, with innate, original, pedagogic genius, to educate the girls, who were a little afraid of her but loved her dearly; she is now at the head of a great establishment for the education of working-men's daughters, a rich and excellent institution—a cookery school with a large kitchen and six stoves. During these ten years the pupils attended the kitchen on two consecutive days. They learnt washing, cleaning the rooms and the copper, mangling, preserving fruit and berries, baking bread and cakes, etc. Twenty-five poor children used to have their dinner at the school-kitchen, besides the fifteen factory girls and the ten or twelve pupils. A printed report (for ten years) of this school has been published in Swedish. The girls themselves were able to manage the whole school-kitchen, with the guests and all the children, for a fortnight when the teacher was absent on account of illness, and they did it extremely well, some of them having gone through a term before. It was at that period difficult to get a substitute.

Nowadays so many young girls are yearly trained for being cookery teachers that it has become the custom always to have one, or even two, young assistant-teachers, who thus pass through a practical course, after having been trained at a Training College for Domestic Economy Teachers, before they get posts as Head Teachers. They usually get free dinners at the school, but no payment. They are a great help to the head teacher and learn much themselves. After three months or more they get a certificate.

The position of head-teacher at a cookery school is very trying and fatiguing, but it is healthy work.

There is no superintendent of these teachers of cookery in Stockholm, and one may hope that none will be appointed.

There is at present a healthy emulation among the different parishes, and one school-kitchen takes up the improvements introduced in another. Every country must beware of having every school alike. It kills the life, the very soul of the institution.

The parents highly appreciate the cookery instruction. A mother living in the parish of *Klara* once told the head-teacher: "It is such a comfort at home since my little Mary learnt cooking at school. If I have work to do away from home, I can tell her to have dinner ready when we return home—father and I. And when I arrive home at dinner-time (noon), dinner is ready, the bread is baked, and often the floor is scrubbed." One of the lady teachers (who was opposed to cooking lessons), on hearing this, said: "I daresay Mary would have been able to do this all the same, even if she had never visited the school-kitchen." "By no means," exclaimed the mother, "if I had asked any of her *elder* sisters, they would have been neither willing nor able to prepare dinner, and do all this for our home." This happened some years ago.

(c) *Financial Support of Primary School-Kitchens, Stockholm.*

Every school-kitchen in the Primary Schools of Stockholm receives 1,000 kronor (£55) from the Higher School Board of the Primary Schools ("*Öfver Styrelsen för Stockholms Folkskolor*"), to support the kitchen, and twenty or more poor children have their dinner (from the same sum). When more children dine, special money is given by the parish, or from other funds for "feeding poor children" ("*Fattiga barn bespisning*").



The children in several of the Stockholm school-kitchens (in the parishes of *Klara, Nikolai, Maria* and *Adolf Fredrik*), pay 5 öre (7 öre= 1d.) each for their dinners; this is an excellent custom and prevents the children and parents from being pauperized. In one of the newest and largest primary schools, this fee amounted to an income of no less than 800 kronor during last winter term.

The parish gives to the head teacher a salary of 800 kronor (£45), and £10 more if she does not get free rooms at the school-kitchen. In 1902 the salaries of the teachers of Sloyd (men) in the Swedish Primary Schools amounted to 240,000 kronor (18 kronor=£1), and to the female teachers of Sloyd, 90,000 kronor.

(d) *The Upsala Fackskola för Huslig Ekonomi*.\*

(From the latest report, 1903-1904).

During this period there were, not counting those in the peripatetic classes, 226 pupils in the autumn term, 1903, and 244 pupils in the spring term, 1904.

The different courses are:—

- (a) For training teachers in Domestic Economy (particularly for school-kitchens), some for Primary Schools only, others for Primary and Secondary Girls' Schools. Autumn term, 1903, *eighteen pupils*; Spring term, 1904, *forty pupils*.
- (b) For girls who have finished school, and want to be thoroughly trained, practically and theoretically, to become good housewives (two parallel groups):—Autumn term, 1903, *thirty-four pupils*; Spring term, 1904, *thirty-six pupils—seventy pupils*.
- (c) Special courses for higher training in cooking, sewing, and nursing of infants:—Autumn term, *eleven pupils*. (Cooking only two mornings and one afternoon, from 9 a.m. to 2 p.m., and 4 p.m. to 9 p.m.).
- (d) Continuation courses for girls, in two courses with different instruction. *Twenty-three pupils*.
- (e) Practical professional course for training cooks and housekeepers:—Autumn term, *twelve*; Spring term, *eighteen—thirty pupils*.
- (f) For pupils from the Secondary Schools:—Autumn term, *twenty-nine*; Spring term, *twenty-six*.
- (g) Children from Upsala Primary Schools (Class IV.-V.):—Autumn term, 1903, *ninety-nine*; Spring term, 1904, *101—200 pupils*.
- (h) Peripatetic School in *Dalsbo*:—Three courses of six weeks each. *Forty-two pupils* (in all).

The Upsala *Fackskola* for Domestic Economy in 1902 received a Government grant of 3,200 kronor (18 kronor=£1); in 1904 Parliament was asked for 7,000, but granted 5,000 kronor; the grant for 1905, however, has been increased to 7,000 kronor (*see* footnote, p. 167). From the town of Upsala the school receives 1,000 kronor as a grant for instructing thirty girls from Upsala town in their Continuation courses, and not charging more than five kronor for each of these pupils.

A kitchen has been added for the professional course.

Fifteen women students from the University dine at the school, where a large dining-room has been arranged.

The school has a shop where foods of all kinds are sold.

Many outside orders for suppers and dinners are received from the inhabitants of Upsala.

In the training course for teachers there are only three days' *practical* work (one of them is teaching the Primary School children). Innumerable different studies are theoretically pursued; even the *History of Arts* is studied.

\* Technical School of Domestic Economy at Upsala. *See also* Appendices J, and K.

(e) *Private Cookery Schools.*

In private cookery schools there is always a lady manager or directress, a trained teacher, who directs the whole school and teaches the pupils, but besides her there is a practical cook who also teaches cooking, and very nice varied food is prepared every day. Baking and preserving food is also taught. Dinner is served *à la carte*.

These cookery schools are now all self-supporting and excellent institutions for the young of the upper as well as of the lower classes. They are very well attended and much appreciated, both for the training of the pupils, and for the good dinners that are furnished at moderate prices. The pupils, who are very often engaged to be married, can become really skilled in practical cookery. Besides Sweden, these schools are to be found in Germany, Denmark, Norway, and Finland. An excellent school of this kind is *Miss Zahle's* cooking school in Copenhagen.

The first schools established in Sweden were those which now belong to *Miss Selma Johansson*, *Miss Maria Rönne*, *Miss Alberta Rönne* (all pupils from the first *Mattlagningskola*), *Miss Hedda Cronius*, and *Miss Eva Kellman*. Later, the schools of *Miss Elisabeth Östman*, *Miss Hilda Aurelius*, *Miss Lilljekvist*, the *Misses H. and T. Hauffman*, and *Miss L. Olsson* were founded; in some of these the food prepared is eaten only by the pupils themselves and no guests are entertained, but orders for dinners and suppers are received from outside.

In some of these schools, Domestic Economy is taught theoretically too, but not much time is devoted to theory. Generally three to five months' practical training in cookery is given. Sometimes married women, as well as young girls, attend the courses,

## APPENDIX A.

## OUTLINE OF THE SYSTEM OF PRIMARY EDUCATION IN SWEDEN.

The following information is taken from the official "Guide to the Educational Exhibit of Sweden, with notes on some points of educational activity in Sweden" [St. Louis Exhibition], (Stockholm, 1904) :—

## Common Schools.

Compulsory instruction at Common Schools was introduced in Sweden in 1842 and proclaimed by the first Common School Statute then published. According to its first paragraph there must be at least one Common School in every parish or town as well as in the country, with at least one teacher, male or female, in ordinary.

The Common School is generally divided in two departments: the *Infant School* for beginners, and the *Common School proper* for more advanced pupils. For pupils who have passed through the Common School and entered some trade, a so-called *Continuation School* is arranged. Those who are not engaged in earning a livelihood, and wish to acquire higher knowledge than can be had at the Common School, may continue at the *Higher Division of the Common School*, or in the *Higher Common Schools*, a few of which exist in some places in the country. For abnormal, depraved, or neglected children there are special institutions.

All parents and guardians are bound to let their children have the advantage of receiving instruction. School age is counted from the child's seventh to its fourteenth year. The compulsory school period generally comprises six years, two of which are passed in the Infant School, and four in the Common School proper. Attendance at the continuation courses is optional.

The Infant School Teachers are almost exclusively women, the Common School Teachers are partly men and partly women. The men and women teachers have legally the same rights, and the same duties. In order to obtain an appointment as teacher at the Common School an examination must be passed at one of the State Training Colleges for Common Schools. There are eight Training Colleges for men teachers and six for women teachers. The course lasts four years.

In the country, the salary for a Common School teacher is in general 700-1000 kronor\*, per annum, besides house-room and wood for fuel; in the school year comprises eight months. In the towns, where the school year is generally longer, the salary varies from 1,000 to 2,600 kronor.†

The obligatory subjects of instruction in the Common Schools are: Religion, the Swedish Language, Arithmetic, Geometry, Geography, History, Natural Science, Singing, Drawing, Gymnastics, and Gardening when a suitable piece of ground has been allotted for the purpose.

Optional Subjects are: Sloyd and Domestic Economy. In the higher department of the Common Schools: Book-keeping, Hygiene, Political Economy, and in many places even a foreign language, English or German.

All instruction in the Common Schools is free. Every community is bound to erect and to maintain a necessary number of school houses. The salaries of the teachers, and school materials are obtained by the communities from the State.

In 1902 there were 5,223 Infant Schools and 7,040 Common Schools, with a staff of 11,540 women teachers, and 5,898 men teachers. The number of children of school age was 761,814. Of these 94% received instruction in the Infant and Common Schools, and 6% in Secondary Schools, Special Schools, Private Schools, and in homes.

The total expense for Infant and Common Schools amounted to about twenty-four millions of kronor.

\* 1 krona = 13½d.

† All the regular teachers in the Common Schools, after having reached the age of 55, and after 30 years' teaching, receive a pension amounting to 75 per cent. of their former salary. The regular teachers also enjoy a fixity of tenure unknown in England.

## APPENDIX B.

## SCHOOL GARDENING.

[The following account of School Gardening in Sweden, though not strictly relevant to the subject of this paper, is included because of its relation to domestic economy and the cultivation of suitable vegetable products.]

As gardening is supposed to be taught in all rural schools, the students at all but one of the Training Colleges for Masters, and at five or six of those for School Mistresses, are taught the subject. Instruction in domestic gardening is also given at the Upsala Training School of Cookery, at Näsa, in some of the People's High Schools, and at three of the Higher Primary Schools. It will probably be sufficient to give, from the "Guide to the Educational Exhibit," the information contained in the section relating to "School Gardens" :—

At every Common School—according to the wording of § 56 of the Common School Act—there should be, if possible, a plot of ground suitable for a school garden, and the School Board should see that the garden is laid out in a practical way, with a view to the instruction of the pupils in gardening and tree culture.

Concerning the size of a school garden, and the practical distribution of the ground, the "Normal Plan of Instruction for the Common Schools" now in force (of the 7th December, 1900) states that, if possible, it should embrace an area of at least 1,000 square metres\* and be divided into separate sections, one for kitchen plants, one for a nursery garden, and one for the cultivation of fruit trees and fruit bushes, and other trees, bushes, and plants which are of importance in teaching Botany. It follows, therefore, that a perfectly ordered School Garden, should consist of a Kitchen-garden section, a Nursery section, and a Botanical Pomological section.

The Kitchen-garden section is to be divided into three equally large allotments, submitted to a *biennial rotation of crops*. In due succession one allotment is sown every year, preferably in autumn, after which it is to bear three different crops: the first year the *heated kitchen plants*, such as various kinds of cabbages, spinach and lettuce, the cultivation of which is, as a rule, confided to the children in the fourth class of a Common School in the country; the second year, *esculent root plants*, principally carrots, parsnips, turnips and herbs (common), onion, shallot, are grown by the third class children; the third year seed kitchen plants, i.e., different varieties of peas and beans, are confided to the children in the second class. The various plants should be provided with painted labels giving their different names, and other labels, placed at the head of every garden bed, should bear the names of one or several of the children who have not only to cultivate, but to harvest all that grows on the garden bed in question. The labels are to be made by the boys in the Sloyd School, if there is one. Trees or bushes may under no condition be planted in the Kitchen-plant section.

The Nursery-garden should likewise be laid out according to a settled rotation of nine years at least; principally grafted fruit trees of various kinds should be planted there, also sticklings and slips of fruit bushes, all carefully labelled, and if the space permits, park trees and ornamental shrubs. Annually, a small quantity of pips or seeds, should be planted for the cultivation of holes, which in their turn are to be improved, some by grafting, others by inoculation, after which they are left in the Nursery garden to be pruned till they are ready. All work in the Nursery garden is performed by the children under the supervision and guidance of the teacher, and finally, the children get both grafted fruit trees, and rooted slips of fruit bushes to plant at their homes.

\* 1 sq. met. = 10·75 sq. feet.

In the *Botanical-Pomological section*, as many fruit trees and fruit bushes are cultivated as the space, climate and soil will permit, but as a rule only one specimen of every kind or variety, as the object in view is to train and teach, and not to obtain any important produce. For the same purpose this section is also to contain a selection of other plants which are useful, either economically, technically or medically, or which from an aesthetic point of view are of such importance that the Common School children ought to have some knowledge of them. Every plant should be carefully labelled, the labels stating the correct Swedish name.

In accordance with the Royal Statute (of the 1st June, 1900) concerning the stipend and other advantages accruing to the teachers, it is stated that a plot of ground, "*carefully separated*" from the above mentioned school garden, should be provided at every Common School for the teacher, to be cultivated by him for his own household requirements. The aforesaid Royal Statute merely states that this plot of ground should be "*appropriate*," but experience has proved that it should not be smaller than 2000 square metres.

For the site of the house and playgrounds, etc., attached to a rural common school with four classes, 2,000 square metres are also calculated, from which it follows that such a school generally requires an area of 5,000 square metres.

According to statistics there are about 2,000 school gardens in Sweden; but in reality the number of school gardens organised in the way now described, and separated from the pieces of land allotted to teachers, does not amount to more than about 100, of which at present forty are in the Stockholm district. A garden of this kind furthest north in Sweden was laid out last spring at Haparanda. No fruit trees are cultivated there, but fruit bushes and park trees and ornamental shrubs, kitchen plants of several kinds for a triennial rotation of crops, together with annual and perennial ornamental and medical plants, etc.

The interest with which the whole country is beginning to embrace the school garden question, justifies the hope that not only the above mentioned statistical account will shortly prove to be true, but that the number of school gardens will some day be still greater. The inaccuracy of the statistics on the matter in question is easily explained by the fact that the regulations determining the laying out of the school gardens in a special way, and their separation from the teacher's plot of ground, have only recently been added, while the piece of cultivated land adjoining a common school was previously for many years called a school garden. Already in the school regulation of 1842 it was prescribed that, if feasible, there should be, by the Common School, a plot of ground placed at the teacher's disposal, partly to be used for his own household requirements, partly to afford him an opportunity of teaching arboriculture or horticulture.

Literature: *Normalritningar till folkskoleträdgårdar jämte beskrifning* (Normal Plan of Common School Gardens with written description). Stockholm, 1890.

This book is somewhat antiquated.

Laurell, F., *Skolträdgårdar och skolträdgårdsmöjligheter i Norrland* (School Gardens and School Garden possibilities in Norrland). *Tidskrift för folkundervisningen*, 1903.

Strandberg, J. A., *Handbok i skolträdgårdsskötsel* (A Manual of School Garden Culture). Stockholm, 1902. Kr. 3:25.

In connection with this subject the following translated quotation from the School Report (1902) of the town of Helsingborg, may be of interest:—

"It is undeniable that rightly ordered instruction in the care of gardens and in arboriculture is of the greatest pedagogical value. The botanical knowledge given in the Primary School is, in most cases, of very little importance, unless the opportunity exists of uniting the instruction with an acquaintance with the living realities. The school garden offers the best

means of doing this, as botanical excursions can but seldom be made by Primary School pupils and as these excursions seldom provide opportunities—as does the school garden—for observing the most important life functions of plants. . . . But the instruction in question is of far greater importance as a means of forming the character of the young and of developing them in practical directions. Interest in, and love of, nature is gradually awakened in the pupil, and he is led to observe its phenomena more closely and to mark the laws of cause and effect. He thus realises something of climatic influences, and becomes convinced of the great importance of plants in the economy of nature for the cultivation of the soil and for material profit. By this means too, love of home and of country is easily awakened. Moreover, good and practical instruction in gardening and arboriculture is calculated to inculcate industry, perseverance, accuracy, thoughtfulness, perception, and love of order.”

The Report says further that gardening was to be introduced as a school subject at Helsingborg in the following year (1903). Later on it says that the work had been begun in the spring of the year named, and that the children had devoted themselves to it with animation and pleasure, and that the beginning of the undertaking promised well for the future. The Agricultural Society for the Government District of Malmöhus had encouraged the undertaking by providing 350 young trees for planting.

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## APPENDIX C.

## "DOMESTIC ECONOMY AS A SCHOOL SUBJECT."

The following extract is translated from "Domestic Economy as a School Subject,"\* issued by the Governors of the Upsala Private Secondary School, 1895:—

Matters which should be considered as necessary knowledge for the mother of a household and as coming under her direction :

1. The warming, ventilation and lighting of the dwelling.
2. The care of the furniture; the purchase and preservation (from moths, vermin, damp, mould) of bed-clothes, carpets, curtains, linen; the purchase and care of kitchen-utensils and crockery.
3. The purchase and making (cutting-out, sewing, knitting, etc.) of clothes, especially underclothing and children's clothes; marking and mending (darning, etc.). In connection with this, decorative work (knitting, crocheting, embroidery), plaiting and weaving; the latter subject deserves to be once more taken up for greater use in the home.
4. The purchase of food and condiments (raw or prepared); preserving, making preserved meats, by smoking, boiling, baking, etc.; serving of dishes; a knowledge of the nature, amount and market value of the nourishment contained in the food, and the physiology of nourishment (cookery in an extended meaning).
5. Cleaning: washing, ironing, taking out stains; scrubbing, tidying, disinfecting.
6. The physical care and education of children.
7. The psychical care and education of children (laws for development of the soul life; formation of character, etc.).
8. Hygiene (including food for the sick) and "first aid."
9. Housekeeping in a more restricted meaning: ordering of the different work in the home, so that nothing is left undone, and that all is done in time; household accounts; calculations as to relation between expenses and income.

And, in country districts :

10. Dairying (on small scale).
11. Gardening (at least as regards indoor plants).
12. Care of small domestic animals: fowls, geese, ducks, turkeys, and even pigs and sheep.

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\* "Om Huslig Ekonomi som Skolämne. Af Upsala Enskilda Läroverks Styrelse," 1895.

## APPENDIX D.

"WHAT EXPERIENCE HAS BEEN GAINED DURING THE COURSE OF  
TEACHING DOMESTIC ECONOMY ?" \*

In her pamphlet, under the title translated above (1902), Miss Ida Norrby sums up the results of her experience in ten years' teaching as follows :—

1. The workroom—the kitchen—should be so large that each person there has about 10 cubic metres of air.
2. In building and furnishing the kitchen, care must be taken not to educate the child to other habits and needs than the home can satisfy.
3. The teaching in the school kitchen must be done by a teacher who has been specially trained for the purpose both technically and pedagogically.
4. The instruction in the theory and practice of cookery should be given by the same person.
5. The teacher in the kitchen should not have practical work more than five days a week.
6. One teacher cannot successfully teach more than sixteen children at a time. Should this number be exceeded, an assistant should be obtained.
7. The children should not begin to receive instruction at a later age than fourteen—in the higher schools in the IV. or V. Class; in the Primary Schools in the IV. Class.†
8. The course of instruction should last at least a year, with one day's lesson a week.
9. On the day the girls work in the kitchen, they should be as free as possible from other lessons.

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\* "Hvilka erfarenheter har man vunnit vid undervisningen i hushålls ekonomi? Föredrag vid Sjunde allmänna flickskolemötet i Stockholm af Ida Norrby." (Stockholm, 1902).

† The reason of this is, in the case of children belonging to the Secondary Schools, that they have not yet begun to feel the stress of home-lessons—which in the higher classes can, to my personal knowledge, keep girls of sixteen or seventeen working to one or two o'clock at night—and have not as yet felt too keenly the spur of ambition, which, at a somewhat later age, causes the pupils to look down upon home employments. But I am informed by a teacher of much experience (Miss Ostman, sometime head-teacher of the practical instruction given in one of the Courses at the Training School of Cookery at Upsala) that, while girls of twelve to fourteen years of age, belonging to the Primary Schools, always evince interest in school-kitchen work, it is usually a matter of much difficulty to awaken any love for the work in girls of about the same age who attend Secondary Schools, these latter pupils acquiring a taste for, or seeing the necessity of, a knowledge of the subject when they come to a marriageable age, or, rather, when they are later on about to be married.



10. Preparation of meals for others than the scholars, and the giving of instruction, are two things which cannot be united without harm.
11. The food should be prepared in quantities sufficient for a household of normal numbers.
12. The preparation of the *cheapest* food alone, should not be made an aim, but both cheap and dear foods should be used, within the bounds defined by the economical conditions of the parents.\*†

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\* The average cost of a meal for children at the Primary School is put at 2d. or 3d. per head, and for those at Secondary Schools at 4d.—6½d. (*cf.* Appendix E.). I was present at an examination held at a Peripatetic Primary School-kitchen, at Degerfors, Vermland, for which Mr. Odelberg, the director of the ironworks there, had called in the aid of Miss Lagerstedt. The dinner consisted of three courses, and cost 4½d. per person. At this school-kitchen, many of the workmen came to get a good and cheap dinner.

† It is interesting to compare the experience of Mrs. Hierta-Retzius with that of Miss Ida Norrby.

The former thinks (referring to the numbers of the sections given above):—

2. Very good rule.
  3. That it is not always necessary that the teacher should be technically and pedagogically trained; very often a clever cook is much to be preferred to a trained teacher, if the latter is not very gifted practically, and has not had much practical experience.
  4. That the theoretical instruction may be given in the natural history lessons at school; Mrs. Hierta-Retzius holds that too much theoretical instruction is a mistake and that the pupils themselves often realise this.
  7. That children in the Primary School should begin to receive instruction at twelve years of age.
  8. That it is better, if possible, to have lessons two days a week.
  10. That, on the contrary, there ought to be some paying guests.—Ed.
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APPENDIX E.

SCHOOL-KITCHEN MENU.

(Stockholm.)

The following is a specimen bill of fare for four people, Primary School-Kitchen, Stockholm:—

Boiled mutton or lamb, dill sauce and potatoes. soup and bread.

		Price per kilogr. or litre.	Actual Cost.	Cost per Dish.
		Kr., öre.	Kr., öre.	Kr., öre.
Sauce—	1 kilogramme brisket of mutton or lamb . . . . .	0·85	0·85	
	40 grammes margarine or butter = 2 table-spoonfuls . . . . .	1·10	0·5	
	10 grammes wheat-flour = 1 table- spoonful . . . . .		0·1	
	dill, vinegar, sugar . . . . .		0·3	
	1 egg-yolk . . . . .		0·4*	
	2 litres potatoes . . . . .	0·05	0·10	
Soup:				1·08
The soup from the boiled meat.				
1 litre carrots, turnips, onions- Salt, pepper . . . . .		0·10	0·10 0·1	
4 hectogr. hard rye-bread . . . . .		0·30	0·12	0·11 0·12
				1·31

s. d  
 1 krona = 1 1½  
 7½ öre = 1  
 1 öre = 10  
 1 kilogramme = lbs. 2·204  
 1 litre = pints, 1·76

\* I consider this price impossibly low for Stockholm

## APPENDIX F.

## "A WORK DAY AT THE SCHOOL-KITCHEN."

(Stockholm.)

The following letter is a translation of a composition written by a girl belonging to one of the Primary Schools of Stockholm:—

"MY DEAR MARTHA,

Stockholm, 20-5-1904.

Many thanks for the letter and the photograph. The likeness was very good. I have just met your brother and he asked me to send his love to you. I suppose you still go to school. I go to school and to the school kitchen as well. There you can learn a little of everything that it is useful to know. I fancy that, as you are interested in domestic work, you will be sure to like to hear what we do on kitchen-days. It is on Wednesdays that we are there, and we have to be there at ten o'clock. When we come in we at once put on our kitchen things, and then we go out into the kitchen, each one to her 'household.' When the teacher comes, she goes through the bill of fare with us, so that we know how to cook the food. There are three girls in each household and we are divided into ones, twos, and threes. The ones have to cook the potatoes and the soup, and the twos have to cook that which is to be eaten with the potatoes. The threes cook nothing, but they have to carry wood and then lay the table in the room where the school children dine. The threes also take it in turns to bake. The first household cooks the food which is to be eaten by those who prepare the children's meat. The food which we are to have must be ready by half-past twelve. The children's food must be ready at one o'clock. The kitchen is very big, and there you can see ranges, cupboards, and six of every kind of domestic utensils. Each household has its wood-box and water, and its own household things. When we take our meal, the girls of the first household have to dish up the food and wait at table. When the children dine, the ones have to dish up the food and the threes carry it in to the children and wait on them. When the children have dined, the ones have to polish the range and to scrub each her share of the floor. The twos have to wash the dishes, polish the knives and scrub the tables. The threes have to wipe the dishes. On the next kitchen day, those who were ones become twos, the twos become threes and the threes ones. It is so nice to work in the school kitchen that I wish you were in Stockholm and could do so too. The next time I write, you shall hear more about what we do in the school kitchen. Good-bye for the present. Kind regards from us all.

Your affectionate friend and cousin,

TUA."

GOTHENBURG SCHOOL-KITCHENS.

SCHEME OF INSTRUCTION IN THE GOTHENBURG PRIMARY SCHOOL-KITCHENS (30 CONSECUTIVE SCHOOL DAYS).

DAY	Lesson	Topic	Lesson	Topic	Lesson	Topic
MONDAY.	Dinner	1 The children are shown round the school-kitchen. They make a note of the division of the different employments in the kitchen.		7 Milk.		13 Peas, beans. Water.
	Lesson	Oatmeal-porridge † and milk. Sandwiches.		Salt ling with sauce and potatoes. Rice gruel.		Salt herring (fried), and green peas (stewed). Manna gruel.
TUESDAY.	Lesson	2 Hearing repetition of the employments. Making an inventory.		8 The feeding and care of infants.		14 Meat in general.
	Dinner	Minced beef-steak, unpeeled potatoes. Bilberry soup.		Fish-balls, stewed carrots. Bun and milk.		20 Potatoes, carrots, turnips and similar roots.
WEDNESDAY.	Lesson	3 Ranges and firing (mostly wood).		9 Marketing.		15 Marketing.
	Dinner	Salt herrings, broiled in small moulds; unpeeled potatoes. Wheat-flour gruel.		Stewed liver; potatoes. Apple-soup.		Boiled fish, sauce and potatoes. "Sörmlands"-porridge and milk.
THURSDAY.	Lesson	4 Pots and pans and other utensils.		10 Eggs.		16 Treatment and preparation of meat.
	Dinner	Fried pork, stewed potatoes. Wheatmeal gruel.		Pork and peas. Small pancakes and whortleberries.		Scotch collops and potatoes. Whortleberry-soup.
FRIDAY.	Lesson	5 The receipts and expenditure of our body. (Why we must eat.)		11 Meal and shelled grain.		17 Fat.
	Dinner	Liver steaks, mashed potatoes. Rhubarb soup and sago.		Strained pea-soup and toast. Manna pudding and fruit.		Cabbage-soup. Boiled cutlets, stewed carrots.
SATURDAY.*	Lesson	6 Marketing. Weekly cleaning and polishing.		12 Marketing. Weekly cleaning and polishing.		18 Marketing. Weekly cleaning and polishing.
	Lesson	General hygiene of the body.		Yeast. Fermentation, baking of bread.		Fish in general.
						19 Fish: its treatment and preparation.
						25 Washing. (Treatment of clothes before, during and after washing.)
						26 White-cabbage-soup, with force-meat balls. Rice pudding.
						27 Hints as to care of the sick and their food.
						28 Methods of lighting. Care of lamps and oil-stoves.
						29 Dolly, weekly, spring and autumn cleaning. (Cleaning day in kitchen.)
						30 Force-meat balls, stewed white cabbage. Bilberry-soup. Coffee and bread and cakes. (Dinner.)
						Conclusion of Course.

\* On Saturdays, the last excepted, the children go home to dinner.

† When each group of girls in a class have to prepare both dinner and supper, and when the supper consists of warm porridge, milk and bread, the porridge is boiled while the dinner is being cooked, in order to save time and the making of fresh fires. One girl in each group prepares the porridge and when it is ready pours it into a large deep jar, or pan, which has been previously heated by boiling water in it. When the jar is full, it is covered and placed in a barrel, or other receptacle, well lined with hay (newspapers will do as well in case of need). A layer of hay is also placed on the top of the inner vessel, and the whole is then closely covered over. The porridge thus enclosed remains almost at boiling point for many hours, I was assured, so that it can be served hot for the evening meal.

EXTRACT FROM THE RULES ADOPTED IN THE GOTHENBURG PRIMARY  
SCHOOL-KITCHENS :—

*Cleanliness.*—The girls must come to the school-kitchen well washed and combed, and with hands and nails quite clean.

*Dress.*—The girls should be neatly and plainly dressed, best in a loose cotton blouse, the sleeves of which can be rolled up.

*Aprons and caps.*—The school-kitchen provides one apron and one cap for each girl. The girls must provide themselves with others for use every other week. The school-kitchen will provide caps for those who wish for them, at 3½d. each.

*Washing.*—Every week the girls must wash, mangle, starch and iron the caps, aprons and towels which belong to the school-kitchen, in order to learn to do this work properly.

*Broken kitchen utensils.*—At the beginning of the course the girls must count the supply of china, knives, forks, spoons, etc., which belong to the school-kitchen. What is lost or broken during the term must be replaced by the teachers and pupils in common.

*Bath.*—Four to six girls can have a warm bath and a shower bath afterwards, after each day's cleaning up in the kitchen.

Each girl in turn may invite her mother to dinner in the school-kitchen.

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## APPENDIX H.

### TIME-TABLE OF THE HIGHER PRIMARY SCHOOL, STOCKHOLM, 1903-1904.

	Class.	8-9.	9.10-10.	10.10-11.	Interval for Lunch.	12-12.50.	1-2.	
Monday.	I. II.	Chemistry. Bible-reading.	Natural Science. (a) Science of Food. (b) Domestic Economy (Cooking, etc.).	History. (a) Needlework. (b) Domestic Economy.			Arithmetic. (a) Needlework. (b) Domestic Economy.	Writing. (b) Domestic Economy.
Tuesday.	I. II.	Bible-reading. History.	Natural Science. Arithmetic.	Swedish. (a) Needlework. (b) Domestic Economy.			Arithmetic. (a) Needlework. (b) Domestic Economy.	(b) Domestic Economy.
Wednesday.	I. II.	Swedish. Hygiene.	(a) Needlework. (b) Domestic Economy (Cooking, etc.). Natural Science.	(a) Needlework. (b) Domestic Economy. Swedish.			(a) Needlework. (b) Domestic Economy. Swedish.	(b) Domestic Economy. Book-keeping.
Thursday.	I. II.	Swedish. Swedish.	Natural Science. (a) Domestic Economy. (b) Science of Food.	Chemistry. (a) Domestic Economy. (b) Needlework.			Geography. (a) Domestic Economy. (b) Needlework.	Drawing. (a) Domestic Economy.
Friday.	I. II.	Singing. Singing.	History. Arithmetic.	Natural Science. (a) Domestic Economy. (b) Needlework.			Swedish. (a) Domestic Economy. (b) Needlework.	Drawing: (a) Domestic Economy.
Saturday.	I. II.	Chemistry. History.	(a) Domestic Economy. (b) Needlework. Natural Science.	(a) Domestic Economy. (b) Needlework. Swedish.			(a) Domestic Economy. (b) Needlework. Swedish.	(a) Domestic Economy. Book-keeping.

APPENDIX J.  
TRAINING SCHOOLS OF DOMESTIC ECONOMY.

I. TECHNICAL SCHOOL OF DOMESTIC ECONOMY AT UPSALA.

The *Higher Division* trains teachers of cookery for both Primary and Secondary Schools.\* The *Lower Division* trains such teachers for Primary Schools only. The "Teachers' Course" begins on January 13th each year, and would appear to last three terms for the Higher Division: January 19th-May 30th; August 25th-December 17th; January 19th-May 30th. In the spring there thus seem to be two parallel Higher Division Courses. The Lower Division Course lasts two terms only. The Higher Division of 1902-3 numbered twelve pupils, and the Lower one but five. Government Grant, about £280.† The city of Upsala gives about £55.

AUTUMN TERM—1902. (2nd term for pupils of 1902.)			SPRING TERM—1903. (3rd term for pupils of Class 1902.)			TIME-TABLE.				
	Class 1902-3 (2nd term) Higher Div.	Class 1902 Lower Division.		Class 1902-3 (3rd term) Higher Div.	Class 1903.	DAY	Class 1902. Higher Div.	Class 1902. Lower Div.	Class 1902. Higher Div.	Class 1903. Higher and Lower Div.
1 Organic Chemistry (during first half of term)	8 lessons		4 Inorganic Chemistry	—	16 lessons	MON.	4.30-5.30 p.m.	9 a.m.-8 p.m. 6-7 p.m.	11-12 a.m.	9 a.m.-3 p.m.
2 General Physiology and Hygiene . . . . .	17 lessons	2 hrs. weekly	Physiology and Hygiene	3 hrs. weekly	1 hr. weekly				4.30-7 p.m.	5-6 p.m.
Sick-nursing . . . . .	1 hour weekly		1st Aid Course (during 1st half of term).	7 lessons	—	TUES.	4-9 p.m.	9-10 a.m. 5-7 p.m.	[1-2 p.m.] <sup>1</sup> 5-7 p.m.	9-11 a.m. <sup>2</sup> 4-9 p.m.
3 Physiological Chemistry (first half of term) . . . . .	7 lessons	—	Allimentary and Food Substances.	5 hrs. weekly	3 hrs. weekly	WED.	9-10 a.m. 11-12 a.m.   5-7 p.m.		11-12 a.m.	1-3 p.m. <sup>3</sup>
Alimentary and Food Substances . . . . .	2 hours weekly	2 hours weekly	Theoretical - Practical instruction.	1 morning weekly	—	THURS.	9 a.m.-3 p.m. 6-7 p.m.   6-7 p.m.		9 a.m.-8 p.m. 5-6 p.m.	12-1 p.m. 5-7 p.m.
Theoretical-practical instruction in Cookery . . . . .	2 mornings weekly		Practical work (Cookery)	1 morning weekly	2 mornings weekly and 1 afternoon	FRI.	9 a.m.-3 p.m. 4.30-5.30 p.m. 6-7 p.m.		4.30-7 p.m.	9 a.m.-3 p.m.
Practical work in Cookery . . . . .	1 afternoon weekly	1 morning weekly	Women's sloyd (sewing, cutting-out, mending).	—	2 hrs. weekly	SAT.	10-11 a.m.		9 a.m.-3 p.m.	9-11 a.m.
4 Communal Economics . . . . .	1 hour weekly		Gardening . . . . .	—	7 hrs. weekly					
Book-keeping (latter half of term) . . . . .	5 lessons		Book-keeping (during 2nd half of term).	5 lessons	—					
General Pedagogics . . . . .	1 hr. weekly	1 hr. weekly	Communal Economics	1 hr. weekly	—					
Method (special to the work) . . . . .	1 hour weekly		General Pedagogics . . . . .	1 hr. weekly	—					
			Method (special to the work).	1 hr. weekly	1 hr. weekly					
			Method (special to women's sloyd, 2nd half).	6 lessons	—					

1. — Only for a short period—when method, special to Women's sloyd, was taught. 2.—During half the course

\* The practical work has included washing, mangling, starching and ironing.  
† The grant this year (1904) was actually 6,800 kronor (£370), but 1,800 kronor of this sum were given to cover a deficit, or to bring the total grant given in the preceding year up to 5,000 kronor (£280).  
The grant for 1905 is 7,000 kronor (£390). See Supplementary Notes (d), page 182.

During the first term of their course, the pupils give preparatory theoretical trial lessons to each other, in connection with the special method. During the second and third terms of their course, each pupil in the Lower Division gives six practical-theoretical trial lessons (to pupils from Primary or Continuation Course),\* and each pupil in the Higher Division gives ten such lessons to pupils in the different courses in the school. All the pupils assist the usual teachers in the courses for House-mothers, Continuation Course, and that for the children from the Primary School, about three times a term, during nearly the whole course. During the autumn, each pupil gives four trial dinners, *i.e.*, makes up the menu and prepares the dinner for a certain number of guests. The pupils have "the week" in turn, that is, attend to the supply, purchase, and sale of provisions, etc. The pupils listen twice a week to the theoretical instruction given to the pupils in some one of the other courses.

*Examinations.*—The Lower Division has its examinations at the end of the autumn term. The pupils are examined orally in some of the theoretical subjects in the presence of the Inspector, the Director and witnesses.

The Higher Division has its examination at the close of the spring term. In the written examination (May 1903), the pupils had to answer one question in each of the following divisions of practical work:—A.—Meat preserving; cutting up a pig, and the use of the different parts; jellies and ices, and the different ways of preparing them; B.—Scheme for a washing-day in a Primary School with sixteen pupils; scheme for two days' theoretical-practical instruction in a People's High School with fifteen pupils; in what respects should the scheme of work for a People's High School in the town and for one in the country be different? The theoretical subjects were: the occurrence and importance of proteids; ventilation; potatoes, carrots, turnips, etc., and their cultivation; lesson on baking bread, as given to a course for house-mothers; what rules should be observed by a consumptive and those surrounding him?

An oral examination in some of the subjects of instruction (on this occasion, in physiology, alimentary and food substances, and cultivated plants), is also held.

## II. THE COURSE FOR TEACHERS OF DOMESTIC ECONOMY AT THE HIGHER TRAINING COLLEGE FOR WOMEN TEACHERS IN STOCKHOLM.

The teachers trained are principally teach as afterwards teach the subject in Secondary Girls' Schools. The course lasts eight months (September to May). Those who wish to obtain admission to the course must have received a higher education, and be about twenty years of age. Eight pupils at most are accepted for each course.

The theoretical course includes the *science of education and teaching* (twelve hours during the spring-term), *physiology and hygiene*—with special reference to women, and taught by a lady doctor—(one or two hours weekly during the autumn term and great part of the spring term), *household chemistry* (three to four hours weekly), *domestic economy, book-keeping, etc.* (one or two hours weekly), *physics* (one hour weekly, during the autumn and part of the spring term).

The practical work embraces marketing, cookery, baking, scullery work and cleaning and occupies about 27 hours weekly, being given on three days weekly, from 9 a.m. to 5 or 6 p.m. Towards the end of the spring-term two days are given to the preparation of a large number of dishes suitable for the sick. During the term, too, each pupil has to cook two "trial" dinners, the one, alone, for her teachers and fellow-pupils, the other together with her companions; to this latter dinner, relations and friends may be invited.

A course in domestic economy lasting two and a half months, with two days' instruction per week, has been arranged for young pupils who have passed through the Primary Schools, and this gives the pupils at the Teachers' Course an opportunity of giving elementary lessons in the subjects.

A government grant of about £280 is made to this establishment.

\* See Appendix K., 33 and 37.



### III. THE COURSE FOR TEACHERS OF DOMESTIC ECONOMY AT THE ATHENEUM FOR GIRLS, STOCKHOLM.

This course, too, lasts a school year—September to June, and embraces the following subjects:—*Physics* (one lesson weekly), *chemistry* (two lessons), *the science of food* (one lesson), *physiology and hygiene* (two lessons), *arithmetic, book-keeping and domestic economy* (two lessons), *pedagogics and method* (one lesson), *women's sloyd* (a short course), *practical-theoretical lessons* (two lessons).

Each pupil gives in turn a preparatory lesson to the children from the primary schools who form a practising class. Each pupil gives ten theoretical lessons and three demonstrations during the year, in addition to the examination trial-lessons.

Visits to a slaughter-house, a baker's and a brewery are included in the practical course. Washing, mangling, and ironing are also taught.

The conditions for entrance to the course—which in 1903-4 reckoned seven pupils—are almost the same as those necessary for admission to the school last mentioned. For two or three years past, this school has carried on a peripatetic school-kitchen, with the aid of a grant from government, and courses have been given at half-a-dozen industrial centres. An increased government grant amounting to £172 is to be divided between this school and the next one mentioned.\*

### IV. THE COURSE FOR TEACHERS OF DOMESTIC ECONOMY ESTABLISHED BY THE SCHOOL BOARD FOR GOTHENBURG.

This course lasts from about September 4 to May 24, instruction being given in the following subjects:—*Household-chemistry* (fifty lesson-hours during the course), *physiology and hygiene* (thirty-eight hours), *general laws of hygiene, first aid* (ten hours), *science of food* (forty hours), *cookery* (twenty-five hours a week), *washing, mangling, ironing* (each pupil has three times done a two days' washing), *cleaning, tidying, scrubbing, polishing* (in turn), *simple book-keeping, special school-kitchen method, general pedagogics* (eight lectures on this subject).

Each pupil gives about seven trial lessons during the spring-term, each lesson embracing one day's theoretical-practical instruction for children.

Certificates of theoretical knowledge, practical ability and skill in teaching are given to successful pupils after examination.\*

### V. THE NÄÄS COURSE FOR TEACHERS OF DOMESTIC ECONOMY.

In 1902, courses were begun at the "August Abrahamson Foundation" at Nääs, to give instruction in *fruit-preserving and gardening*; the first was intended to familiarize male and female teachers, and the wives and daughters of teachers, with the drying and preserving of the products in question, the boiling of fruit, for the purpose of preservation, the making of syrups, the making of jams, and other methods of making preserves.

At the course for gardening, the men and women teachers from the country districts receive instruction, based on practical exercises, in the proper laying-out and care of a school garden.

The course in school-cookery (1903) is intended to impart a knowledge of the daily events in the sphere of the home and the household, and a practical skill in household duties, partly for the immediate benefit of the students in the course, and partly that those students may be able to give instruction in the subject.

The courses in needlework (1903) are intended to train women teachers from the country schools as teachers also in needlework, such as knitting sewing, mending and marking.†

\* In March 1905, the Swedish Parliament voted an annual grant of 2,500 kronor (about £140) to the Ateneum in Stockholm, and of 1,600 kronor (about £90) to the Allmänna Folkskola Styrelsen i Göteborg. (See Footnote, page 167).—ED.

† From "The August Abrahamson Foundation, Nääs." by Otto Salomon, Director of the establishment.

## APPENDIX K.

## LIST OF THE CHIEF SCHOOLS WHERE DOMESTIC ECONOMY IS TAUGHT.

(The Schools of Stockholm and Gothenburg, 1-9 and 10-12, are placed first. Unless otherwise stated, the subject is taught in the highest class.)

Name of School.	Description of School.*	Special Annual Government Grant.†	No. of Pupils in a Class.	Length of Course.	No. of Lessons.	Length of Lesson.	Subjects taught practically.	Subjects taught theoretically.	Class-Books.	Remarks.
STOCKHOLM. 1a.—Ateneum för Flickor. (Atheneum for Girls). (See also Appendix J. III., Training Schools for Teachers of Cookery.)	Sdy.	£140	9.	1 (school) year, Sept.—June. Circa 8 months.	27.	7½ hrs.	Cooking, baking, serving, scullery work, cleaning up, etc.	Qualities, occurrence, importance of alimentary substances. Quantities, nourishing value, digestive properties, preparation and preserving of food stuffs. Coffee, tea, cocoa, wines, etc., and their importance.	Almqvist and Lagerstedt. (Natural Science.)	Taught in highest class, which is divided into 2 groups of 9. Each group has 2 days' teaching every other week. Average age of pupils, 17-18.
1b.—Ateneum för Flickor. Course for House-mothers.	C. (Sdy.)	See above.	8.	1 (school) year, Sept.—June.	4 weekly.	—	As above, with addition of house cleaning, tidying, washing, mangling, ironing, needle-work (with use of sewing machine), the last subject 4 lessons weekly.	Physics (1 lesson weekly); Chemistry 2 (Inorganic and Organic, the latter especially with regard to food stuffs); Science of Food 1; Domestic Science, Arithmetic, and Book-keeping, 2 lessons weekly (arrangement of menus, making-up accounts, writing out invoices, post-office orders, etc.); calculation of expenditure according to different annual incomes); Physiology and Hygiene (personal) 2.		
2.—Arbets-stugor för barn. 15 in Stockholm and 65 in the country. (Workshops for Children.)	Spl.	—	—	Sept. or Oct. to 30 Apl.—15 May.	2 days in succession per week.	4 hrs.	Making soup and porridge, baking, washing and mangling (towels), scrubbing. Boys have sawed and carried wood, and fetched water, etc.	The Children have been informed of quality of food and its price, and have thereupon calculated cost of each portion served.	Mrs. Sofi Nilsson has conducted a class in Stockholm.	"The work in kitchen was embraced with warmest interest by both children and parents. Scrubbing seemed a special pleasure. The girls executed their tasks, even the coarser ones, easily and willingly."

\* Sdy., Secondary. Spl., Special. P., Primary. C. (Sdy.), Secondary Continuation Schools. C. (Spl.), Special Continuation Class.

† A corresponding amount is usually received from the communal authorities or some other source.

APPENDIX K.—Continued.

Name of School.	Description of School.*	Special Annual Government Grant.†	No. of Pupils in a Class.	Length of Course.	No. of Lessons.	Length of Lesson.	Subjects taught practically.	Subjects taught theoretically.	Class-Books.	Remarks.
2b.—Philippenska Skolan.	SpI.	—	3 groups of 10 pupils each.	From 1 to 5 years.	Each group 2 weekly.	7 hrs.	As in No. 1, with both plain and some fine cooking. Dinner and supper are prepared.	A few words are said now and then during the course of the practical work, so that the pupils learn to choose and prepare the food in a sensible way. They are also taught to keep household accounts.	—	The length of the course depends upon the length of time the pupils stay at the Primary School. As a rule they begin here when they are about 11 or 12 years of age, and they stay as long as they can. (See above, p. 166.)
3.—Folkskolor. (1902-3.) (Primary Schools.)	P.	—	18. (The large kitchen in Katarina (Sodra, or South) School is for 40 children and two teachers.)	1 (school) year, Aug. 15-June 15.	13-21. Should be 1 weekly.	5-6 hrs.	(See above, pp. 156-158.)	(See above pp. 156-158.)	SoS Nilsson's First Elements of Domestic Economy.	In some schools 10% in other schools 40-50% of pupils repeated their course. Age of pupils, 12-14.
4.—Högre Folkskolan. (Higher Primary School.)	C. P.	£250.	10.	2 years, Sept.-June.	1st year 1 weekly 2nd year 2 weekly.	7 hrs.	As in No. 1. Marketing, first with teacher, then alone. Pastry. Outside orders sometimes executed, for sake of practice.	1st Year.— Introduction to chemistry. Practical calculations. 2nd Year. — (a) Household (organic) chemistry, with special regard to fermentations. (b) As in No. 1 above. Arrangement of bills of fare, attention being paid to price and value of nourishment. (c) Household accounts. Simple book-keeping.		A certificate is given after practical examination at end of 2nd year. Each year's class is divided into 2 groups. Age of pupils 15-16.

5.—Ellisabeth Östmanas Hushörskolan. (Course for House-mothers).	Private.	—	(a) 20 girls. (b) 15 women. (c) circa 15 young women employed during the day.	(a) 1 Sept.—15 Dec. 20 Jan.—1 June (c) 10 weeks.	(a) 5 weekly. (b) 1 weekly. (c) 1 weekly evening.	(a) 6 hrs. (b) 6 hrs. (c) 4 hrs.	(a) As in No. 1. Marketing, preserving, care of utensils, and range. Preparation of breakfasts, dinners and suppers. (b) and (c) A shorter course.	(a) As in No. 1. Arrangement of bills of fare. (b) and (c) A shorter course.	In class (a) no girls are younger than 18. As a rule they are such as are about to be married.—These pupils do the washing up, cleaning, etc., for 5 weeks only, in order to be able afterwards to direct their servants. In classes (b) and (c) want of time prevents the pupils from washing up and cleaning. An assistant teacher is employed.	
6.—Lågre Kursen i Hushållskolan vid Högre Lärarinne-Seminarium. (School of Cookery at Higher Training College for Women Teachers).—(Lower Course.) (See also Training Schools for Teachers of Cookery, App. J. II.)	C. (8dy.)	£230.	12.	1 (school) year, Sept.—June.	5 lessons weekly.	8 hrs.	As in No. 1. Marketing. Breakfast prepared for other pupils who have a long way to go, and dinner for themselves and teachers. Outside orders for Pastry and other dishes also executed. Food for sick-room and trial dinners, prepared by the pupils in turn, by groups of 2.	As in Nos. 1 and 4. Physics (10 hours altogether, during spring-term), Swedish, German, and English (2 hours weekly) are also taught, together with hygiene, and communal matters.	Mörner (Elementary Organic Chemistry). Thunberg (Elements of Inorganic Chemistry).	The girls must have passed through the VII. Class of some Secondary School, or have corresponding acquirements.
7.—Lyceum för Flickor (Sjöbergskolan). (Lyceum for Girls.)	8dy.	—	—	1 (school) year.	1 lesson weekly.	1½ hrs.	Daily phenomena, especially such as occur in the household work in: washing, cleaning, airing, cooking, baking, brewing, explained from a natural-scientific point of view, and illustrated by means of simple experiments.	—	—	—
8.—Tysta skolan. (School for the Dumb.)	C. (Spl.)	—	2	1 (school) year.	Daily	work.	Pupils take part in daily housework: cleaning, washing, ironing, cooking, baking.	—	—	For girls who have completed their 8 years' training at this or similar schools.

\* 8dy. Secondary. Spl., Special. P., Primary. C. (ndy.), Secondary Continuation Schools. C. (Spl.), Special Continuation Class.

† A corresponding amount is usually received from the communal authorities or some other source.

APPENDIX K.—Continued.

Name of School.	Description of School.*	Special Annual Government Grant.†	No. of Pupils in a Class.	Length of Course.	No. of Lessons.	Length of Lesson.	Subjects taught practically.	Subjects taught theoretically.	Class-books.	Remarks.
9. — Östermalms Högre Läraanstalt för Flickor — (Dr. Schwartz's School.) (Secondary Girls' School in Östermalm.)	Sdy.	£27 15s. 0d.	8:6:	3 (school) years. V. } VI. } VII. } classes.	1 weekly.	4½ hrs. in each class; breakfast-time included.	V. Class. — Marketing, accounts, preparing dinner (2 courses), etc., preparation of washing-bill, etc. VI. Class.—Ditto, more difficult dishes, preserving, baking (chiefly bread). VII. Class. — Ditto, ditto, dessert, birds, scraps, jams, pastry; trial-dinner for 10 persons.	V. Class.—Fire, range, firing, combustion, water, salt, pots and pans, qualities of food, the different alimentary substances, milk, making of butter and cheese, eggs, receipts learned by heart. VI.—Vegetables, grain, baking, fermentations; fungi, fish, meat, manufacture of sugar and ale, etc. VII. — Tidying, scrubbing, washing, taking out of stains. Game, birds, crabs, crayfish, lobsters, oysters, fruit, coffee, tea, cocoa, spices. Sick-food, digestion, calculation of prices and food values; menus for 4 weeks.	Sof Nilsson's First Elements of Domestic Economy. VI. 5-23. VII. 19-35, 63-68.	A voluntary subject. The plan had here been previously tried of teaching domestic economy in a special 1 year's course. Age at commencement 13-14.
GOTHENBURG. 10.—Folkskolor. (1901-2.) (Primary Schools.)	P.	—	24.	30 days	30.	7 hrs.	(See Appendix G.)	(See Appendix G.)	Miss L. Lagerstedt's Cookery Book.	The girls have been allowed to bake bread for home use. — The lessons were given on consecutive days.
11.—Fruentimmers-föreningens Flickskola i Göteborg. (Women's Society's Girls' School in Gothenburg.)	C. (Sdy.)	£27 15s.	9.	(a) 7 weeks. (b) 6 weeks.	(a) 35. (b) 36.	7-8 hrs	As in No. 1.—Marketing, preserving.	As in No. 1.—Fire, firing, kitchen-range, etc.	—	—
12.—Sigrid Rudebeck's Elementarskola för Flickor, Gothenburg. (Sigrid Rudebeck's Secondary Girls School.)	Sdy.	£27 15s.	17 pupils in 2 classes.	7 weeks (spring).	35.	7 hrs.	Marketing, preparing and serving of breakfasts for the pupils themselves, and of dinner for about 20 persons; baking, preserving. Pupils have had charge of the money in turn, and have kept accounts.	Have gone through the receipts for dinner, and have made notes; simple book-keeping.	—	This was the first Secondary School in which the subject was taught. Age of pupils about 17.

13.—Secondary Girls' School.	Sdy.	—	10.	1 (school) year, Sept.—June.	1 week-ly.	4 hrs.	Cooking, baking, cleaning, accounts.	Composition and value of food-stuffs, and their preparation.	—	—
FALUN. 14.—Elementarlär- verk för Flickor. (Secondary Girls' School.)	C. (Sdy.)	—	10 autumn & spring.	8½ months.	4 days weekly.	7½ hrs.	Plain and finer kinds of cook- ing, baking, preserving, laying the table, serving, washing-up, tidying, polishing silver, mar- keting (Saturdays).	Simple book-keeping; diges- tive functions; general hygiene of body; food-stuffs as in No. 1. Menus; calculations of price; the kitchen; range, fir- ing; pots and pans.	—	This class is in- tended mostly for those pupils who have passed through the schools. Estab- lished by the gener- osity of two gentle- men of the town. Age over 17 as a rule.
HEDEMORA. 15.—Högre Sam- skola. (Secondary Co-educational.)	Sdy.	—	—	—	—	—	Simple cookery, baking, wash- ing-up, cleaning and other work appertaining to the household.	The alimentary value of food- stuffs, their preparation and preservation.	—	—
HELSINGBORG. 16.—(Primary Schools.) 2 School-Kitchens.	P.	—	16-17	1 (school) year.	1 week- ly.	—	Presumably the same as in the Primary Schools of Gothenburg.	Presumably the same as in the Primary Schools of Gothenburg.	—	—
17.—Ebba Lund- bergs Högre Lär- verk för Flickor. (Ebba Lundberg's Secondary Girls' School).	Sdy.	£27 15s.	14.	1 (school) year, Sept.—June.	1 weekly.	5 hrs.	Marketing, accounts, cooking, sausage-making, laying table, waiting at table, washing-up, tidying, cleaning, scrubbing.	Lesson 50 minutes. As in No. 1. Choice of diet depend- ent on age, employment, health. Cleaning. First Aid for such accidents as occur in kitchens: burns, scalding, cuts. The range.	"Cookery Book for the Home." —Uppsala.	Age about 17.
18.—Högre Ele- mentarskola för Flickor. (Secondary Girls' School).	Sdy.	£27 15s.	10.	1 (school) year, Sept.—June.	1 weekly.	—	As in No. 14; marketing by turns, both breakfast and dinner prepared. Pupils have paid for meals according to price calculated.	As in No. 1.	—	2 Classes. Age about 17.
JÖNKÖPING. 19.—Primary Schools (Continu.) 2 School kitchens.	C.P.	—	8-12.	5-6 months.	5 each fort- night.	6½ hrs.	As in the Primary Schools of Stockholm; washing, ironing, tidying.	As in the Primary Schools of Stockholm.	—	—

\* Sdy., Secondary. Spl., Special. P., Primary. C. (Sdy.), Secondary Continuation Schools. C. (Spl.), Special Continuation Class.

† A corresponding amount is usually received from the communal authorities or some other source.

APPENDIX K.—Continued.

Name of School.	Description of School.*	Special Annual Government Grant.†	No. of Pupils in a Class.	Length of Course.	No. of Lessons.	Length of Lesson.	Subjects taught practically.	Subjects taught theoretically.	Class-Books.	Remarks.
KARLKOGA. 20.—Praktiska Skolor för Qvinnor. (Karlskoga Practical School for Women).	C. Private.	—	—	5 months.	Daily every 4th week.	5½ hrs. pract., 4 hrs. theor.	The instruction is intended to give pupils skill in plain and finer cooking, in preparation of sauces, ices, jellies, jams, pastry, baking, preserving, etc.; French starching, making of beds, tidying, gardening work, brewing, marketing, accounts, trial dinners, etc.	As in Nos. 1 and 14. Weaving, sewing, French and geography also taught.		Usual age from 16-28. "A capable, well-educated, industrious, neat, careful and reliable housewife, housekeeper, or daughter, is of inestimable value for a home." <i>Præceptus.</i>
KARLSKRONA. 21.—Högre Lärverk för Flickor. (Secondary Girls' School in Karlskrona.)	Edy.	227 15s.	7.	1 (school) year, Sept.—June.	1 weekly.	7 hrs.	As in No. 1.	As in No. 1 with remarks about preserving.	Watin and Schager (Cookery Book). Sof. Nilsson's First Elements of Cookery.	2 parallel courses. Age about 17.
KRISTINEHAMNS OCH NORA. 22.—Praktiska Skolor för Män och Qvinnor. (Kristinehamn and Nora Practical Schools for Men and Women).	C. Private.	—	—	6 months.	—	7 hrs.	As in No. 20; slaughtering, cutting-up, starching, ironing, accounts.	As in Nos. 1 and 14. Weaving, sewing, writing and other subjects also taught.		Age of pupils presumably the same as in No. 20.
LUND. 23.—Lunds Fullständiga Lärverk för Flickor. (Full Secondary Girls' School).	Edy.	227 15s.	6.	1 (school) year, Sept.—June.	1 weekly.	5 hrs.	As in No. 1; marketing, making up menus (regard being paid to alimentary and digestive properties and price of food), baking, preserving, waiting at table, washing up; a little washing.	As in No. 1 in connection with chemistry and hygiene.		No school kitchen. That belonging to the Primary School of the town has been placed at the school's disposal one day a week. Age about 17.

24. — Högre Elementarskolan i Lund för Flickor. (Secondary Girls' School in Lund.) Ditto, Continuation Class in the same School.	Sdy.  C. (Sdy.)	—	6 (aut.) 4 (spring)	1 (school) year, Sept.—June.  1 (school) year, Sept.—June.	1 weekly.  1 weekly.	—	As in No. 1; marketing, calculation of prices.  As in No. 1; preserving, etc., simple bookkeeping.	As in No. 1.		This Continuation Class learned in addition, hygiene, polit. economy, communal affairs, history, English, sewing, weaving, etc. Age above 17 as a rule.
MÅRMÖ. 25. — Tekla Abergss Högre Läroverk för Flickor. (Secondary Girls' School.)	Sdy.	—	—	1 (school) year, Sept.—June.	1 weekly.	—	VIII. class goes to market; plain cookery, baking, preserving, waiting at table.	As in No. 1.		Age of pupils, 17.
26. — Primary Schools.	P.	—	18.	6-7 weeks.	1 daily	4-5 hrs.	Presumably the same as in the primary schools of Stockholm or Gothenburg.	Probably as in the Primary Schools of Stockholm or Gothenburg.		There were 10 such groups working in 2 school kitchens. The children have also had 2 hours' instruction daily in other subjects—at least 1 hour too much.
NÄÄS. 27. — Slöjd-Seminarium. (Nääs Seminary for Teachers of Sloyd). (See also Appendix J., V.)	Spl.	—	—	10 weeks.	Daily.	—	(a) A course in school cookery for the benefit of students themselves and for those who may afterwards give instruction in the subject. (b) A course in gardening for teachers of both sexes from country to enable them to lay out and take care of a school garden. (c) A course in fruit preserving, 3 weeks.	Theoretical instruction in the same subjects.		Two courses annually.
NORRKÖPING. 28. — Östra Läroverk för Flickor. (Secondary Girls' School in East Norrköping).	Sdy.	£27 15s.	—	2 (school) years, Sept.—June. VII. } Classes. VIII. }	1 weekly.	5½ hrs.	As in No. 1. In the VIII. class the pupils have, two and two, prepared trial dinners, the menu composed by themselves. During this period the other pupils in the class have prepared supper.	VII.—Elements of alimentary substances (difference between alimentary and food substances), milk, butter, cheese, margarine; micro-organisms and milk-keeping; eggs, grain, yeast and fermentation. VIII.—(a) Same as above; meat and fish, joints. (b) Do.; fruits, preserving, scraps, vegetables.	"Cookery Book for the Home."	Age of pupils, 16-17.

\* Sdy., Secondary. Spl., Special. P., Primary. C. (Sdy.), Secondary Continuation Schools. C. (Spl.), Special Continuation Class.

† A corresponding amount is usually received from the communal authorities or some other source.



34.—Ambulatory School-kitchen (at Koppberg).	Spl.		15.	16 June-26 July.	30	7 hrs.	Plain cooking (dinner for 2 persons at 2½d.), care of purse, marketing, baking (many kinds of bread included), sausage-making, washing and mangling of towels.	and its hygienic importance : first aid in kitchen accidents.	Average price 2½d. to 3d. for 2 dishes (1 person's dinner). Age of pupils 12-13
35.—Pupils from the Secondary School.	Sdy.			3 years. { Classes IV., V., VI., 10 Sept. - 10 December. Classes IV., V., 21 Jan.-27 May.	1 week-ly.	IV., V., 6 hrs. VI., 5½ hours.	For all classes, but differing in extent, as in No. 33, with exception of marketing, and with preparation of better dishes too (this during the last two years).	IV.—The kitchen in general, range and firing, pots and pans, physiological importance of food, milk and milk-products, eggs, vegetables, grain, baking, meat, fish. V.—Preserving of foods; conserves; birds and game; digestion; food for sick-room; plain menus; general management of a household. VI.—Repetition of foregoing.	Average age, 14½ years. The chief cost was borne by the commune, but similar bodies in other places have signified their inability to pay for this much-needed work.
36.—Practical Professional Course.	Spl.		10.		4½ months.	1 daily, partly on Sun-days too.	7 hrs.	As in Nos. 1 and 35. Execution of outside orders for dinners and suppers; baking of all kinds; washing, mangling, ironing on a large scale. In turn, each pupil has assisted in cooking, tidying, sewing, etc., in the household of the teachers in the Technical school.	Nothing said in Report of theoretical instruction, but is presumably as in Nos. 33 and 34.
37.—Continuation Course for girls who have already had a one year's course in Primary School kitchen.	Spl.		(a) 18 (b) 12.	1 (school) year, Sept.-June.	(a) 4 (b) 2 } w kly.	2, 4 or 6 hrs.	The weekly instruction in the two different classes has been: (a) theor- pract. instr. (2 mornings), practical work (2 half-days), hygiene (1 hour), sewing, etc. (2 hours). The practical work has been as in Nos. 33 & 34; the instruction in hygiene has included hints on the care of young children and on children's food in general. (b) theor-pract. (1 morning), practical work (1 morning), hygiene (1 hour), sewing, etc. (2 hours). As above, with the theoretical instruction concerning foods more restricted.		For those who wish to become housekeepers or cooks. Primary school education sufficient. 2 courses needed.

These classes receive, in common with the Technical School of Domestic Economy at Upsala (see App. J., I.) a grant of about £350.

\* Sdy., Secondary. Spl., Special. P., Primary. C. (Sdy.), Secondary Continuation Schools. C. (Spl.), Special Continuation Class.  
† A corresponding amount is usually received from the communal authorities or some other source.

APPENDIX K.—Continued.

Name of School.	Description of School.*	Special Annual Government Grant.†	No. of Pupils in a Class.	Length of Course.	No. of Lessons.	Length of Lesson.	Subjects taught practically.	Subjects taught theoretically.	Class-Books.	Remarks.
38.—Course for Housemothers.	Spl.	These classes receive, in common with the Technical School of Domestic Economy at Upsala (see App. J., I.) a grant of about £390.	15-18.	1 (school) year Sept.—June.	4 week-ly.	6 hrs.	The practical work has been: marketing, preparation of meals, baking, preserving, washing (clothes), serving, scullery-work, tidying.	The theoretical instruction has included all that has been mentioned in case of preceding schools: hygiene, care of sick at home, first aid. Hygiene with special regard to women has also been taught.		The course is meant for girls who have finished school education, and wish to obtain a thorough knowledge of what belongs to the care of a home.
39.—Higher Course for Housemothers.	Spl.	Do.	18.	3½ months	2 week-ly.	One in morning, one in afternoon.	As in No. 38; making of confectionery.	As in No. 38, as regards cookery; care of young children—this subject taken very thoroughly—their natural and artificial food, weaning, daily care, bath, washing, clothing, fresh air, care of important muscles; most important children's diseases. <i>Soul-development of child</i> ; will and feelings, occupations, importance of games in education; children's books.		For those who have passed through Course 38, or have corresponding knowledge, and desire further instruction. All subjects are voluntary.
40.—Eneklilda Läroverk och Privatgymnasium. (Private Secondary Co-educational School.—Private Gymnasium (preparation for matriculation)).	Sdy.		IV.—11. V.—11. VI.—15.	3 years Sept.—June.	1 week-ly.	IV., 5 hours. V., 5 hours. VI., 3 hours.	Marketing, cooking, preserving, baking, laying table, waiting at table, washing-up, tidying, cleaning, book-keeping.	IV.—1 hour. The kitchen in general: kitchen-range, fuel, utensils; physiological importance of food; milk and milk-products; eggs, vegetables, grain; flour and baking; meat, fish. V.—1 hour. Preserving of food-stuffs: fruit-preserving; birds and game; digestion; diet in general: sick-diet; menus for households with ordinary incomes; management of a household in its entirety. VI.—1 hour. Repetition of above in connection with explanation of recipes.		For the girls only. It seems as if the 1 hour's theoretical instruction was in addition to the time given to practical work. Age of girls 14-16.
VESTERÅS. 41.—Högre Elementarläroverk för Flickor. (Secondary Girls' School in Vesterås).	Sdy.	227 15s.	VI. { 8. 10. VII. { 10. 10. VIII. { 8. 10.	3 years.	VI.—1 lesson fortnight'y VII.— VIII.—1 lesson weekly (each group).		In VI.—Preparation of plain dinner (2 dishes). VII.—Ditto, 2 pupils in each household made dinner for a certain number of persons. Laying the table, waiting at table, cleaning of range, scullery-work, tidying. VIII.—Ditto, with more difficult dishes. Baking, pastry. Outside orders executed. A supper prepared.	In VIII., as in No. 1.	Walln och Schager (in VII. & VIII.)	Age of pupils 15-17.

\* Sdy., Secondary. Spl., Special. P., Primary. C. (Sdy.), Secondary Continuation Schools. C. (Spl.), Special Continuation Class.  
† A corresponding amount is usually received from the communal authorities or some other source.

*List of Schools where Domestic Economy is taught.* 209

According to the "Primary Reports from the Elementary (Primary) Schools": 1904, domestic economy (cookery) was also taught at Primary Schools at the following districts or towns:—

Norrköping (4), Vaxjö (1), Oskarshamn (1), Örebro, (1), Hudiksvall (1), Karlskrona (1), Uddevalla (1), Borås (1), Karlstad (1), Kristinehamn (1).\*

Government grants for the teaching of Domestic Economy are also given (1904-5) to the Secondary Girls' Schools at *Djursholm* (£27 15s.), *Falkenberg* (£16 15s.), *Kristinehamn* (£5 10s.) and *Mariestad* (£14),† but I find no details of the instruction given.

Thus, out of a total of 106 Secondary Girls' Schools, receiving Government aid in *general* (and this total included most of the Higher Girls' Schools in Sweden), there are about 24, or 22·6 per cent., giving instruction in Domestic Economy (Cookery).

Domestic Economy (Cookery) is also taught at nine People's High Schools and at some other Higher Primary Schools and "Practical and Household" Schools, besides those given in the above table.‡

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\* Gefle, Halmstad, Karlshamn, Landskrona, Lysekil, Nyköping, Söderhamn Sundsvall, Torsåker (Vesternorrland), should also be added.

† An article in the illustrated weekly paper *Idun* for June 8th, 1905, speaks of Mrs. Andriette Florén, the Head-Mistress of the Secondary Girls' School at Mariestad, as having done much to further the cause of cookery teaching at this School, allowing the pupils to use her private kitchen, kitchen utensils and dining-room for the purposes of instruction.

‡ Early last century a Household Training School for Girls was established at Visby, Gotland, by H.M. Queen Desideria, wife of Charles XIV. (Bernadotte). At this school a number of girls now receive instruction in cookery and domestic economy.

A movement has just begun in Gothenburg for giving instruction in vegetarian cookery. (1905).

## NOTE.

*Proposed Government Grant to School-Kitchens.*

(1906).

[The following information was received too late for insertion in the body of the report; it is, therefore, given here as a footnote to Mr. Ray's paper.—Ed.]

The following is a résumé of the Government motion referred to in a footnote on page 154, laid before the Riksdag two weeks ago:—

The proposed Government grant of Kr. 90,000 (£5,000) for the teaching of cookery in Primary Schools, Higher Primary Schools, and People's High Schools, is calculated for  $\frac{1}{4}$  of the 2,400 school districts of the country, and will give Kr. 100 (£5 10s.) towards the salary of the teacher, and Kr. 50 (£2 16s.) towards the general expenses of each of the proposed Cookery Schools. The Government grant is not to be used to defray the preliminary expenses, rent or firing of school-kitchens.

The initial cost of equipment has been calculated at about Kr. 850 (£47). The annual cost of each permanent School-Kitchen has been calculated as varying between Kr. 1,000 and Kr. 14,000 (£55 to £77), and of each course given in a peripatetic School-Kitchen as Kr. 200 to Kr. 300 (£11 to £17), excluding the cost of house rent and firing. A Primary School inspector in the Island of Gottland calculated that the annual cost of a well-managed permanent School-Kitchen there would amount to at least Kr. 2,700 (£150).

The teachers in School-Kitchens shall have been trained at one of the recognised Training Schools of Cookery. Teachers' salaries would vary between Kr. 160 (£9) for a single course and Kr. 1,500 (£83).

The pupils may be of an age varying between 12 (when they are in the 4th class of the primary school) and 18. The number of pupils in a course shall be not less than eight and not more than sixteen. The most suitable number is given as twelve, divided into three groups.

A course should embrace thirty work days, with at least four hours' instruction a day. The pupils should spend one day a week in the School-Kitchen, so that the course would last nearly the whole school year (reckoned at eight months in the country districts of Sweden). This would allow of the teacher giving six courses a year, whether the course was held for thirty consecutive days or for thirty weeks with one day's work a week.

All "fine cookery" shall be excluded from these School-Kitchens.

The number of extra mouths for which a School-Kitchen household shall prepare a meal shall not exceed one half of the number of pupils in that household. The guests may only be those who are school companions of the little cooks.

No other fee shall be taken from the pupils than the cost of the meals in the School-Kitchen, and this cost may not be estimated higher than at an average figure.

Newspapers of every shade of political opinion have given their warm approval to the proposed grant.

February, 1906.

E. A.-R.

## THE TEACHING OF DOMESTIC ECONOMY IN NORWAY.

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## THE TEACHING OF DOMESTIC ECONOMY IN NORWAY.

### I.—SPECIAL SCHOOLS AND COURSES FOR ADULTS.

#### A.—*Housekeeping Schools and Courses.*

During the first decades after the year 1814 active efforts were made to improve the education of the people. Men such as the poet Henrik Wergeland warmly advocated the cause of the working-man and the common people, and endeavoured to lighten their lot in every way. The first cookery book, by Hanna Winsnes, appeared in 1845. In 1852 Eilert Sundt, who devoted himself entirely to the education of the people, and knew their conditions of life better than most men, published his book "Om renslighedsstellet i Norge" (On Arrangements for Cleanliness in Norway), dedicating it to the Storting. During the sixties appeared "Fornuftigt madstel" (Rational Cookery) by Clemens Bonifacius, whose real name was P. Chr. Asbjørnsen, the untiring collector of our folk-tales. The Society for the Promotion of Popular Education was founded during the same period and its journal, "Folkevennen" (The People's Friend), with its supplements, regularly contained articles, particularly by members of the medical profession, on the need for greater efficiency in the ordinary conditions of life as regards sanitary and economic matters. Little by little it began to be generally realised that if there was to be any progress and improvement something must be done to instruct young women in all kinds of domestic work, a conclusion to which Wergeland's sister, Camilla Collett, the earnest pioneer and champion of the woman's question, points in several of her writings.

A beginning was most naturally made by instructing peasant girls; for in the country parishes dirt and ignorance were more obvious and glaring than in the towns. Owing to these causes the first true School of Housekeeping (*husholdningsskole*) in Norway was founded in the country by Fru Mina Wetlesen at Abildsø, near Christiania, in 1865. For sixteen years Fru Wetlesen laboured faithfully and with great ability at her school. During the latter part of this period, her undertaking received the support of the Society for the Welfare of Norway and of other agricultural societies. The school was arranged like a home in which the mother educates a number of daughters—a form of education which has been approved by experience, and which is retained by these schools up to the present day. The method, though not without its faults, is suited to our simple, democratic circumstances.

This was followed in 1876 by the founding of the so-called practical schools for girls, of which further mention will be made.

Schools and Courses of the Society for the Welfare of Norway:—  
(a) House-keeping Schools.

In 1889, our central agricultural society, the Royal Society for the Welfare of Norway, which receives large annual Government grants, placed the founding of "*Husholdningsskoler*" (housekeeping schools) upon its programme. Two schools were founded as an experiment, one exclusively practical and the other theoretical and practical. After the expiration of two years, the former had to be given up; but the other, at Berger in Asker, is still carrying on operations under the guidance of Fru Wetlesen's daughter, Fredrikke Torgersen, and her husband. It is the Society's oldest school, enjoys the highest reputation, and is attended by pupils from all parts of the country.

The Society for the Welfare of Norway entered into communication with the various provincial agricultural societies, and induced them to establish similar schools for their provinces, the central Society defraying half the expenses of erection. "*Husholdningsskoler*" were founded in Kristian's province (Kristiansamt), in 1891, in Lister and Mandal in 1892, in Hedemarken in 1893, in Jarlsberg and Laurvick in 1895, and in South Trondhjem, experimentally, in 1893 and 1897. These schools cost the Society in all the sum of about Kr. 10,000 [£550]\* annually.

The plan for all the schools is somewhat similar, this being made a condition for the Society's aid.

PLAN FOR THE HOUSEKEEPING SCHOOLS FOUNDED BY THE SOCIETY FOR THE WELFARE OF NORWAY.

1. The aim of the school is to train girls as capable housewives or housekeepers for country life.
2. The instruction is partly practical, partly theoretical.
  - A.—The practical instruction includes:—
    - (i) Housekeeping, both plain and high-class, with special attention to the teaching of good and economical methods of simple house-management, adapted to local circumstances. This includes Cooking, Slaughtering, the methods of conserving food (e.g., Salting, Drying, Canning, etc.), Baking, Fruit Preserving, Brewing and Wine-making; and also ordinary House-cleaning, Washing, Ironing and Mangling.
    - (ii) Hand-work, especially Dressmaking and Plain Sewing, Cutting out, Spinning and Weaving.
    - (iii) The care of Live Stock and Dairy, Churning and Cheese-making for domestic purposes.
    - (iv) Poultry-keeping.
    - (v) Gardening.
    - (vi) Book-keeping and practical Arithmetic.
  - B.—The theoretical instruction includes:—
    - (i) Norwegian, chiefly written accounts of what has been learnt.

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In this Report 10 Kroner are reckoned as equivalent to 11 shillings,

(ii.) Short Outlines of Chemistry, Physics and  
Physiology in their application to House-  
keeping.

(iii.) The Treatment of Domestic Animals.

(iv.) A slight knowledge of Botany, chiefly in  
connection with gardening.

When opportunity affords, instruction is also  
given in Drawing, Singing, and Gymnastics.

3. The length of the course is at least one year.

4. The number of pupils is limited to nine or twelve. The  
conditions of admission are:—

That, as a general rule, the pupil shall have completed her  
eighteenth year; pupils, however, under special circum-  
stances, are admitted at the age of seventeen.

Ordinary abilities and good health.

Certificates must be presented (1) of good moral character  
from the clergyman of the parish; (2) of sufficient  
intellectual attainment from the schoolmaster; and (3) of  
good health from the doctor. The last must specially  
certify that the candidate is not suffering from any  
infectious disease or any marked tendency to ill-health.

5. The pupils live in the school, and pay Kr. 15 (16/6) per  
month for their board, teaching included. In each course one  
pupil may obtain a free place, or two pupils places at half fees.  
In applying for these, a certificate of want of means must be  
presented.

6. There is no public final examination, but pupils on leaving  
receive a certificate of their efficiency and good conduct at the  
school.

7. Besides housekeeping, the pupils should be employed in  
suitable work in the cow-house, in farming and gardening.

8. The instruction is generally given by the manager and his  
wife, and, if necessary, by such extra assistants in teaching as the  
committee may find desirable.

9. The school is under the control of a committee of inspec-  
tion, consisting of two men and one woman, appointed by the  
directors of the Royal Society for the Welfare of Norway.

#### RULES FOR HOUSEKEEPING SCHOOLS.

(Dated October, 1889.)

1. The pupils must readily perform whatever work is  
appointed them.

2. The pupils must keep their rooms in order, clean their  
own boots, and bring in their own firing.

3. No fires must be kept up, or lights burnt in the pupils' rooms  
after 10 p.m., without special permission.

4. No pupil may leave the school premises without permission.

5. The pupils must pay in full for anything which they break  
or otherwise destroy.

6. The pupils are divided into groups which alternately take  
hand-work (see p. 214) and housekeeping. Exceptions to this rule



may be made on certain occasions, such as washing-day, slaughtering time, important gardening operations, etc., when hand-work may be omitted, so that all the pupils may take part in the above-named occupations.

7. The pupils must furnish their own bedding, including two pairs of sheets and six towels.

8. The pupils must pay the prescribed fee in advance every quarter.

9. The pupils must procure the books and materials necessary for their instruction.

10. Pupils guilty of disobedience or negligence, or otherwise misbehaving, may, with the consent of the Board, be expelled from the school.

In addition to what the pupil herself pays, the cost per annum for every pupil is from Kr. 300 to Kr. 400 (£16 10s. 0d. to £22); and this—for us—heavy expense hinders the establishment of these schools with a home-like character. Only a very small proportion of the young female population can enjoy the benefits of this instruction.

(b) Dairy Schools.

As early as 1867 the Society for the Welfare of Norway founded its first dairy-school for female pupils, and by 1888 had five such schools. The instruction in dairy-work, and other plans for the furtherance of dairy matters were then undertaken by the State.

(c) Schools for the care of Cattle.

In 1899 two schools for the care of cattle, for female pupils, were started, one for the North, the other for the South of Norway.

(d) Fruit Courses.

In the autumn of 1899 and in 1900 the Society supported courses of lectures on the uses of fruit, given by M. Aamot, Provincial gardener at Porsgrund; and it has also contributed to the cookery courses of the Norwegian Association for furthering the interests of women (*Kvindesagsforeningen*) (see page 221).

(e) Courses for Teachers.

The want of able teaching in the country housekeeping schools was felt more and more as the number of schools increased, and in 1897, at the suggestion of Fröken Helgesen, courses for teachers were given at the Berger housekeeping school. Fifteen teachers in all have been trained, one of these being from Iceland, where she has undertaken the work in the housekeeping school in Reykjavik.

Its efforts to train Norwegian farmers' daughters for their future sphere are greatly to the credit of the Society for the Welfare of Norway. It has frequently been remarked at the annual general meeting of the Society that housekeeping schools for women are quite as useful and necessary as agricultural schools for men. Great importance attaches to the fact that our central agricultural society looks at the matter in this light.\*

Practical Schools for Girls.

The Practical Schools for Girls are, as a rule, provincial schools, and one quarter of the expense is defrayed from the funds of the province and three quarters by the Government. The instruction, which is free, occupies from nine to ten months. About Kr. 15

\* Most of the schools of the Society for the Welfare of Norway are now provincial schools under the superintendence of the Department of Agriculture. (1905).

to Kr. 20 (16s. 6d. to 22s.) is paid for board and lodging, but a third of the number of pupils have free places. The school board of the province appoints the teachers, draws up their instructions, determines the arrangement of subjects, hours of study, and abode of the teachers, and decides what pupils are to be admitted to the school, and which shall have free places. The staff of teachers consists of an agriculturally trained master who is also manager of the school, a housekeeper, who teaches cooking and house management, one teacher of dairy-work and the care of cows, and another of needlework.

The object, method and plan of instruction are almost the same as those of the schools started by the Society for the Welfare of Norway, the latter, however, having the advantage of smaller numbers of pupils. The schools are arranged like homes. The Practical Girls' Schools, of which there are at present six, this year celebrate their 25th anniversary, the school in North Bergenhus having been founded in 1876. In the course of these twenty-five years five schools have been discontinued.

The Practical School for Girls at Bærby in Id, in the province of Smaalenene, though the latest in point of foundation, enjoys perhaps the highest reputation. A school of horticulture for women is attached to the school, its plan being approved by the Department of Agriculture.

The twenty pupils in each Practical School for Girls are divided into four groups which work alternately (1) in the kitchen, (2) in the garden or wash-house (washing and ironing), (3) in the cow-houses, and (4) at needlework.

The hours of study for the nine months' instruction are divided as follows:—

	hrs.		hrs.
Chemistry per pupil	- 25	Horticulture	- 24
Physics	- 32	Use of fruit	- 9
Food	- 40	Mother Tongue	- 84
Housekeeping	- 39	Arithmetic	- 50
Hygiene	- 22	Book-keeping	- 9
Zoology	- 23	Singing	- 64
Care of domestic animals	- 31	Educational lectures	- 20
Dairy-work	- 7	Sagas	- 10
Botany	- 22		

There are four combined agricultural and housekeeping schools which have been founded in the course of the last few years. From some quarters they receive praise, from others censure, according to whether there is a feeling in favour of mixed schools or against them. It is at any rate certain that in this way the instruction given is comparatively cheap. But, on the other hand, there are, of course, risks in bringing together a number of young men and women of about eighteen years of age, and no small demands are made upon the personalities of the manager and manageress. However this may be, our experience of these schools is as yet too short to permit or justify the passing of any judgment upon them.

\* Approved by the Education Department.

† Bratsbergs Amt, Nedenes Amt (Soetersdalen), N. Trondhjems Amt, Nordlands Amt.

From twelve to fifteen female pupils are admitted to each of these schools, and they keep house for themselves and for the male pupils. The plan of the schools is approved by the Department of Agriculture, and is very similar to that of the housekeeping schools given above. The following extracts from the plan of the Nordland Practical Girls' School at the Tromsø\* Diocesan Agricultural School are given as showing slight differences in organisation:—

1. The main object of the school is to give the pupils an understanding of a housewife's work.

\* \* \* \* \*

3. The course lasts one year, with admission on the first weekday in April. There are no holidays.

4. The number of pupils is limited to twelve.

\* \* \* \* \*

6. A manageress and a lady teacher to the school are appointed by the supreme board on the recommendation of the manager.

7. The duties of the manageress are:—

(a) After consultation with the manager, to make all necessary purchases.

(b) To administer these in accordance with the plan and regulations.

(c) After consultation with the manager, to engage and dismiss the female servants.

8. The duties of the manageress in co-operation with the teacher are:—

(a) To give with order and exactitude the instruction which is entrusted to them, and to keep an account of the same.

(b) To watch over the behaviour of the pupils, and, out of school hours, to exert all possible beneficial influence upon them and thus to induce in them habits of order, industry, and considerateness.

9. The school is under the control of the supreme board of the Agricultural School, and of two women chosen by the provincial council, the latter undertaking the more regular and special superintendence.

10. The supreme board shall—

(a) In co-operation with the manager and manageress, draw up the necessary regulations for the school.

(b) Engage and dismiss manageress and teacher.

(c) Receive, investigate, and settle complaints or remonstrances from the functionaries and pupils of the school.

No housekeeping schools or combined schools receive direct support through the Department of Agriculture; but as the Society for the Welfare of Norway receives a very large annual Government grant, the schools of this society as well as the

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\* Removed to Bodö. (1904).

Practical Schools for Girls may be said to be supported by the Government.\*

People's high schools (*folkehøiskoler*), schools for young people (*ungdomsskoler*), and provincial schools (*amtsskoler*)† are more advanced schools of general education for young people of the agricultural classes, of both sexes, and of the ages of fifteen to twenty. The "*folkehøiskoler*" and the "*ungdomsskoler*." are generally started by private initiative; but most of them enjoy Government support.

People's High Schools, Schools for Young People and Provincial Schools.

The provincial schools, of which there are several in each province, are all in receipt of Government aid on the following conditions:—

- (a) That out of the total sum voted by the Storting, there shall be assigned to each school three times the amount that the Provincial Council may grant from its funds for the same purpose;
- (b) That the arrangement and plan of the school shall be sanctioned by the King or by some person‡ authorised by him;
- (c) That the school shall be managed by the provincial school board, which shall also appoint the teachers.

Some of the provincial schools are stationary, some itinerant, and they work from October to May. In almost all schools of this kind the girls are generally taught ordinary needlework, darning and patching; but it is only in a comparatively small number of them that domestic economy and cooking have been introduced. The provinces of Hedemarken and of Jarlsberg and Laurvik have made the most advance in this direction.

There are in all one "*folkehøiskole*," one "*ungdomsskole*," and five or six provincial schools that have taken up domestic economy and cooking as subjects. In our country districts, with their scattered population and short school time, there is every reason to hope that the provincial and young people's schools will in the future extend their efforts towards qualifying young women in these subjects. The attempts they have already made should lead to further progress. One drawback to these schools is that, as regards cooking, for pecuniary reasons it has been necessary to give the maintenance of the pupils the first consideration, while instruction comes in the second place, thus making really methodical instruction in cooking difficult. The want of experienced, capable teachers has also been felt in these schools as in the housekeeping schools.

Of all the schools hitherto mentioned, it may be said that the instruction is given in buildings which have not been specially erected for the purpose. The kitchens and equipment of the houses on the whole are not as they should be. In many places

Accommodation and Equipment of Schools.

\* The grants given by Government in aid of the provision of teaching in Domestic Economy for farmers' daughters in country districts amount in all to Kr. 30,000 (£1,650) per annum.

† An outline of the organisation of these schools is given in the Appendix (page 239.—Further Education on the Basis of the Primary School).—Ed.

‡ Education Department.

the premises are exceedingly primitive. In the report of one provincial school for 1898-99, great complaint is made of the miserable state of the kitchen; for several weeks during the cold, wet, autumn months from October to December, boiling had to be done either at a neighbouring house or in a walled-in cauldron out of doors.

On the whole, far too little has been done, both in the towns and in the country districts, to procure good, suitable premises for cookery instruction.

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In the province of Northern Bergenhus, the Agricultural Society has appointed three itinerant teachers of Cookery and Household Management. During the winter months courses of one or two weeks are held in the various farms for from six to fifteen pupils, chiefly peasant women. The principal stress is laid upon the utilisation of the products of the farm, baking, preserving of fruits, meat and fish. The society's outlay amounts to Kr. 500 (£27 10s.) per annum for all three teachers. The teachers, who are capable, practical women, with no special training, are boarded and lodged at the farms gratis, and old and young alike express their satisfaction with the courses.

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Housekeeping schools for young ladies in Christiania were started at the initiative of Fröken F. Maurer in 1890. The course lasts three months, with hours from 10 to 2 every day, and fee Kr. 100 (£5 10s.). The instruction embraces high-class and plain cookery, baking, preserving, physiology and household chemistry (12-15 hours per course). The school premises are exceedingly well fitted up, and are connected with a dining-room for ladies.

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Women :—

At the initiative of Fru Blehr, the Chairwoman of the Norwegian Association for Furthering the Interests of Women, several lectures were held in Christiania during the winter of 1896 for the improvement of household management. To fit women for the work of a home and increase their capability for the sphere of domestic life, had hitherto not been included in the programme of the Association. In the winter of 1898 the Association gave two courses in housekeeping under Fröken Schönberg's direction, and two in dressmaking and cutting out. Several local associations in the smaller towns started similar courses. The necessary funds were procured through the profits of the municipal savings bank, the Government spirits monopoly, and benevolent societies.

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The Drammen branch of the Association for Furthering the Interests of Women\* founded its regular housekeeping school—day-school—in 1899, and obtained a Government grant of Kr. 800 (£44) on condition that a similar amount should be voted by the Drammen municipality. The school is under the control of the Education Department. The course lasts six months, the fee is Kr. 8 (about 8s. 9½d.), and board Kr. 20 (22s.) per month.

School of  
omestic  
onomy,  
ristiania.

The Christiania branch of the same Association, at the initiative of Fru Qvam, founded its school of domestic economy at 19 Wergelandsvei, in November, 1900, and obtained a Government grant of Kr. 2,000 (£110) on condition that a similar amount should be procured from the municipality. The school takes

\* Chairwoman Fru Batzy Kjelsberg.

twelve pupils, who pay Kr. 60 (£3 6s.) a month for instruction, board and lodging. The school is arranged as a home with a manageress and an assistant teacher. Two lady doctors give instruction in physiology, hygiene and household chemistry. A committee of inspection, consisting of three members and the president of the Norwegian Association for Furthering the Interests of Women, looks after the school, which is under the management of the Association, and under the control of the Education Department, which sanctions the plan of the school, and appoints the manageress and teacher. The course lasts five months, and is attended by young girls from all parts of the country. The school is prettily situated and well fitted up. In the autumn of 1901 it was enlarged.

The Association for Furthering the Interests of Women gives <sup>(d)</sup> Evening evening courses in cooking for the wives of working men, in the board school premises, a work that was first taken up by the Christiania working men's academy, for which Fröken H. Helgesen held a series of demonstrations of general cookery during the winter of 1893. These were subsequently undertaken by the Society for the Welfare of Christiania, which still continues its evening lectures and practical lessons for working women during the winter, with its own regularly appointed teachers. The instruction is free; only a small entrance fee has to be paid.

(d) Evening  
Cooking  
Courses,  
Christiania.

There is a combined school-kitchen\* and school of cookery at Fröken Bonnevie's secondary school for girls (founded 1894), at which Fröken Henriette Schönberg and Wilhelmine Schönberg hold their school of cookery with several different courses.† The school is connected with a dining-room and executes orders. Courses are also given in washing and ironing. The fees are from Kr. 10 to Kr. 15 (11s.-16s. 6d.) per month for instruction three times a week. The school premises are well fitted up.

Schools of  
Cookery at  
Secondary  
Schools for  
Girls.

There is a similar school at Fröken Eliza Roll's secondary school for girls in Christiania.

There are at present only two ‡ schools for domestic servants, Vernehjemmet's school for domestic servants in Bergen, which takes sixteen pupils, and the Eugenia Institute in Christiania. Both schools admit newly-confirmed girls (sixteen to seventeen years of age). The pupils live at the school, and receive instruction for two years. There are numerous free places.

Schools for  
Domestic  
Servants.

### B.—*Schools of Industrial Arts and Home Industries.*

Besides aiding the Women's School of Industrial Arts in Christiania, which is the property of the State and is managed by Fru Borchgrevink, the Government contributes to the support of about ten schools of industrial arts and home industries. Most of these owe their existence to private initiative.

\* For school-kitchens in secondary schools for girls, see page 232.

† Among these are courses, of ten months duration, for training teachers of cookery for secondary schools for girls. (1904).

‡ In Christiania there was for some years a School and Home for Domestic Servants, under the patronage of the Crown Princess Victoria. It has now ceased to exist.

PLAN OF THE CHRISTIANIA WOMEN'S SCHOOL OF INDUSTRIAL ARTS, 33,  
KORT ALDERS GADE (FOUNDED 1875).

Women's  
School of  
Industrial  
Arts,  
Christiania.

The aim of the school is to instruct young girls in all kinds of handiwork, making them useful in their homes, able to earn their own living by industry, or to teach practical subjects. To attain this end, both theoretical and practical instruction are given in sewing and weaving, and also instruction in literary subjects if desired.

In the principal divisions of the school (divisions A and B), new pupils are admitted about the 24th August every year, and the course concludes at the end of June the following year, with an examination in both practical and literary subjects.

The practical instruction is given from 9 to 1, and the literary from 4 to 7. The pupils' time is thus entirely taken up, and there is no opportunity of taking lessons elsewhere, except when the pupil enters only as a morning pupil for the practical instruction.

Div. A. In the weaving department instruction is given in setting up and weaving simple and compound kinds of material suitable for home and school, in the use of the couper, the leaf mechanism, and the Jacquard loom, in the theory of weaving, and in vegetable dyeing.

Div. B. In the sewing department instruction is given in plain sewing, darning and patching, making boys' clothes, dress-making, taking measurements, drawing and cutting out, and ironing.

The pupils must choose either plain sewing or weaving as their practical subject, as a whole school-year is required for proficiency in each of these subjects.

Pupils both in weaving and plain sewing can receive instruction in Norwegian, arithmetic, book-keeping, drawing and writing.

Pupils who receive literary instruction are tested on entrance in dictation and arithmetic, and are placed in classes according to their acquirements.

Marks are given for diligence, progress and order in each subject, both practical and theoretical, at the end of each quarter, and a certificate is awarded when the examination is passed. Absences are entered in the mark-book, and the total number of absences is transferred to the certificate.

The school fees for a year are Kr. 60 (£3 6s. 0d.) in addition to Kr. 5 (5s. 6d.) entrance fee. The fee is the same, even if the pupil is only a "morning pupil," and the entire fee must be paid, even if the pupil withdraws before the end of the course. The necessary school requisites, such as drawing materials, books, sewing materials, etc., cost about Kr. 30 (33s.) for the year for pupils taking up both practical and theoretical instruction, who are not already supplied with these articles.

Materials for instruction in needlework and weaving are provided by the school, and the pupils' work when finished becomes the property of the school, with the exception of certain specimens

which it is thought the pupils should keep as models. If a pupil wishes to work for herself, the work must be paid for and regarded as an order, and, like other orders, can only be accepted as such by the school if it affords the practice that is in accordance with the plan of instruction.

Pupils may enter their names from the beginning of April. The applicants are entered as pupils as long as there is room, without competition. In order to obtain admission the applicant must be confirmed, or she must have completed her sixteenth year and have received an ordinary education. A school certificate must accompany application for admission.

His Majesty gives annually four free places, preferably to pupils who wish to learn weaving and will eventually work for the spreading of this art in their native place. The school also gives fourteen free places in the needlework or weaving school for needy and well-recommended young girls from either town or country. Free places should be applied for only by such as wish to take up both the theoretical and practical instruction; and the application, accompanied by certificates of want of means, suitability and sound health, must be sent in to the school before the 15th May.

A few grants of Kr. 200 (£11) are made from the Dowager Queen Josephine's bequest, to aid in the maintenance of highly recommended, needy country girls at the Women's School of Industrial Arts. Application for a grant is made to the Education Department, and sent to the school before the end of February.

At the School of Arts and Crafts, which is owned by the State, both male and female pupils are admitted. School of Arts and Crafts.

The Norwegian Home Industry Union receives a Government grant of about Kr. 20,000 (£1,100) and is also supported by the Society for the Welfare of Norway, the Christiania Savings Bank, and the Christiania Spirits Monopoly Association. The Union holds courses in various parts of the country in weaving, basket-making, chip and straw work, wood-carving, etc., for male and female pupils. In 1899 twelve courses were held, for 192 pupils. Courses of the Home Industry Union.

Both the schools of Industrial Arts and Home Industry and of the Home Industry Union, are under the control of the Education Department, and are inspected by a male or female inspector who is appointed by and reports to the Department. Inspection Teachers

Complaints are made of the insufficient number and of the inefficiency of the teachers in these schools and courses; and endeavours are being made to obtain a central school for home industry.

*C.—Instruction in Cooking for Men.*

The first stewards' school was started in Sandefjord in 1893. In 1894 the Storthing voted Kr. 5,000 (£275) towards the training of ships' cooks, this amount being placed at the disposal of the Home Office to be paid out in sums not exceeding Kr. 600 (£33) for each stewards' school, on the following conditions: Schools for Ships' Stewards.

- A. That the school and its plan and arrangement of instruction shall be approved by the said Government office.



- B. That the school shall be governed by a Board appointed by the Municipal Board concerned.
- C. That free premises and a fourth part of the necessary expenses of the school shall be found by the municipality or in some other way.

In 1895, and subsequent years, stewards' schools were founded in several of our coast towns, more, in fact, than there was need for. In 1900, the Home Office appointed a committee to draw up a plan of instruction and regulations for the stewards' schools, with Professor Uchermann as chairman. The number of schools was limited to four, namely in Sandefjord, Arendal, Kristianssand and Bergen. Three regular stewards' courses of 2½ months are held annually at the schools; and itinerant courses are given during the summer. There are, moreover, two courses for beginners which, if the Department so determine, may be held on the school-ships. Boys who have completed their fourteenth year are admitted to the beginners' courses, the fee for a course being Kr. 30 (33s.); there are some free places. To obtain admission to a stewards' course, the applicant must be at least sixteen years of age, have been at sea for twelve months, and have sound health. Fee for the course Kr. 80 (£4 8s.) for instruction, board and lodging.

At the stewards' schools, instruction is given in the following subjects:—

1. Order and cleanliness, washing, and an economical use of provisions.
2. Cooking according to the food regulations of Norwegian ships, and bread-making.
3. The nutritive value of the various kinds of provisions.
4. The best means of preserving provisions, and the changes that should be made in diet in various climates.
5. Store-keeping, accounts, etc., calculation of stores required for voyages.

At the elementary courses, practical instruction is given in order, cleanliness, washing, boiling and baking.

Up to the present time, 732 stewards have been trained at the stewards' schools. Consul J. Bryde, Fru Christensen, and Editor Andersen have rendered great service in the founding of the stewards' schools. The manager of the first stewards' school, Mr. N. A. Andersen, was Frøken Helgesen's first male pupil. He has since trained a number of steward-teachers.

The Army Cookery courses were started on the initiative of General Keilhau, by the Commissariat Committee appointed on the 15th August, 1898, and they commenced operations in 1900. Their continuation depends upon the annual grant of the Storting. It has been suggested that this branch of instruction should be left to the schools for non-commissioned officers, but this presents so many difficulties, that it will scarcely be capable of accomplishment.

At the conclusion of this year's courses, a total of 68 non-commissioned officers will have received instruction. It is chiefly young quartermaster-sergeants who are ordered to attend the

courses, but also sergeants awaiting promotion to the rank of quartermaster-sergeant.

The two courses of last year were held in Christiania. This year one of the courses has been held in a military training camp in the north, Værnesmoen, near Trondhjem, as it appeared desirable to give the courses under conditions as nearly as possible resembling those under which the sergeants would do the work when on active service.

At the courses, instruction has been given in practical cooking, keeping mainly to dishes that can be used on the drill-grounds; but an attempt has also been made to obtain greater variety in the fare by varying the manner of preparation and changing the dishes.

During the course, the pupils, both in Christiania and in the north, have prepared food for about 200 men.

In addition to purely practical cooking, instruction has been given in the science of cookery, and in the knowledge of commodities. A very brief survey of the laws of nutrition has been given, but only in popular form.

The practical cookery—cooking on a large scale—was conducted at the first two courses by an elderly non-commissioned officer, Sergeant Öderud, who was acquainted with the conditions in the military training camps. The theoretical instruction in the science of cookery was given by a lady (Fröken H. Helgesen), who also gave practical demonstrations during her lessons. Instruction in the knowledge of commodities has been given by the manager of the courses, Dr. Reichborn Kjennerud, captain of the Sanitary Corps.

At the first two courses in Christiania, it was found that in order to secure the best possible results, the courses should be held in an actual military kitchen, if possible in a military training camp with its simple equipment, and that the theoretical instruction should embrace only what the pupils could really master with ease in the brief time allowed. An attempt has therefore been made, while retaining the former number of lessons, to give a more thorough survey of fewer details, whereby these lessons have undeniably gained in value. At the third course a further step was taken, namely, the instruction in practical cookery—cooking on a large scale—was also conducted by a woman. By this means the practical and the theoretical instruction in cooking were made to go hand in hand. This, combined with the fact that the courses were held in a military training camp, has proved to be no small gain. The practical instruction in culinary economy has thus gained considerably, as by examples from actual instances the pupils could obtain a better idea of the most practical uses of raw products than had previously been possible in the more lecture-like treatment of the subject outside the military kitchen itself.

The instruction in the knowledge of commodities has been made as practical as possible, the commodities received for the kitchen having been employed as subjects of instruction.

Finally, at all the courses three days' instruction has been given in out-of-door camp cookery. This has mainly consisted in the

making of practical cooking-places, arranged according to the nature of the ground, the weather, and other conditions. In this case the food has been prepared in the soldiers' camp cooking-utensils.

Much might be said regarding the experience gained by means of these courses in provisioning the army. The courses have this year been instrumental in producing a "Cookery Book for the Norwegian Army in Time of Peace," the fruits of the collaboration of teachers and pupils of the courses, the pupils, during conversation-classes, having had an opportunity of bringing forward their own experiences. Useful facts have been obtained from the pupils' written exercises, regarding the expediency of regulations as to meals in various parts of the country. Guidance has also been obtained in judging which branches of industry produce the most efficient regular cooks. The introduction of regular cooks into the army (1900) is one of the most important reforms in our Commissariat Department.

## II.—PRIMARY AND SECONDARY SCHOOLS.\*

### A.—Needlework.

Primary  
Schools.

The Elementary Education Act of 1890 makes needlework a compulsory subject in towns and in those rural schools where there is an assistant mistress.

In urban elementary schools much time and care are generally given to needlework. The time devoted to this subject varies from 2 to 6 hours per week throughout the school. The instruction is methodical and progressive, and is thus made useful for life. The girls are arranged in classes according to proficiency. All the teaching is practical, the girls learning to do all the work themselves. The school provides all the material, and the children are free to buy the ready-made garments at cost price. The instruction is generally given by the ordinary staff of the school. In rural schools the instruction is less methodical and more difficult to organise, the pupils being, as a rule, of very various ages.

Secondary  
Schools.

All secondary schools for girls provide instruction in needlework and knitting, some in dressmaking as well. More stress than formerly is laid on plain needlework, patching and darning.

Teachers.

Teachers are trained at the Christiania Women's School of Industrial Arts and at all Training Colleges for Teachers.

### B.—School-Kitchens.

Primary  
Schools.

As will appear from what has been said above, it was not until about twelve years ago that any serious endeavour was made in our country to bring about a better and more economical mode of household and kitchen management by means of schools for adult female and male pupils.

\* A short outline of the State organisation of Primary and Secondary Education is given in the Appendix.—Ed.

This movement grew out of the establishment of school-kitchens, of which we obtained the first models from Scotland, England, and Belgium. This work began almost simultaneously in Sweden, Finland, Germany, and Norway. From the year 1887, people interested in education began to urge, through the medium of the Norwegian daily press, that in the school instruction of girls, more attention should be paid to that which was, after all, the most important thing for them as women, viz., training for the work of the home. It was further urged that this training, if scientific and thorough, and given in the right spirit, would help to dignify the home work of women, both in their own eyes and in those of society.

The first direct proposal for the starting of a school-kitchen was made in Christiania, in 1889, drawn up by Hr. Ellefsen, head-master at the Kampen Public School, and Fröken Helgesen. The proposal was not carried, and the first school-kitchen was started in Sandefjord by Fru Dorothea and Fru Margrethe Christensen, in 1890. At that time, Fröken Helga Helgesen had obtained a travelling scholarship, and was staying at the "West End Training School of Cookery," in Glasgow, under the management of Mrs. Black, where she received a certificate as teacher of cookery and domestic economy. On her return to Norway she obtained from the Christiania municipality the means necessary for an *experimental kitchen*, which was opened in 1891. In 1893, the Christiania School Board determined to fit up school-kitchens in the schools, and there are now fifteen school-kitchens (cookery centres), where pupils from eighteen Board Schools are taught. School-kitchens have been started in almost all Norwegian towns. The best fitted up are those of Drammen, Fredriksstad and Christiania. In many of the smaller towns the premises are unsuitable, and often defective.

Several *country districts* have also introduced domestic economy and cookery as a school subject, and have erected school-kitchens in their parish schools. Most of them, and those the best, are in the Christiania district. The length of the lectures is here four hours, demonstration and practice combined, as in the German schools.

The subject is always *optional* and is given out of ordinary school hours; but efforts are being made to make the subject of domestic economy compulsory, a reform which can only be effected by a change in the school law.\* With the present optional system, only a fourth or fifth part of the pupils are induced to attend the lessons and these are principally children of the better classes. The children who most need this sort of teaching, i.e., those from the poorest homes, whence the ranks of our domestic servants are more especially recruited, do not join, as even as children they have to contribute by their earnings towards the maintenance of their family. The following figures

\* Under the existing law, the school hours per week are only 24. Until at least 30 hours per week are allowed in the upper standards, it would be useless to make Domestic Economy compulsory, as there would be no time to teach it in school hours, without neglecting other compulsory subjects.

will show the classes of society from which the school-kitchen pupils in the Christiania primary schools come:—

Daughters of day labourers (without regular work) - - -	58
"    "    labourers and labourers' foremen - - -	234
"    "    mechanics and master mechanics - - -	342
"    "    shopkeepers, office clerks, and agents - - -	63
"    "    men in various positions in life - - -	88
"    "    house-owners, master-builders, and farmers - - -	23
"    "    government officials, teachers and civil functionaries - - -	55
"    "    widows, and other fatherless children - - -	77
Total - - -	940

The age of the pupils, in all the school-kitchens, ranges from twelve to fifteen years, the normal age being from twelve to fourteen.

The length of the course is a year; when the accommodation permits, some pupils continue for two years.

#### REVISED SYLLABUS FOR OPTIONAL INSTRUCTION IN DOMESTIC ECONOMY AND COOKERY IN THE CHRISTIANIA PRIMARY SCHOOLS.

##### *Aim.*

1.—To promote a taste and respect for all domestic work which contributes to the health, economic prosperity and daily welfare of the family.

2.—To give some practical training in plain cooking, baking and washing.

For the attainment of the above, the following information and training shall be given in demonstration lessons and practical work:

I.—Management of coal and gas ranges and cooking apparatus. The composition and heating value of fuel.

II.—House-cleaning. Washing of white and coloured clothes.

III.—Practice in preparing the most usual dishes in the cheapest and most sensible way, and in combining them in suitable meals for working people.

IV.—A knowledge of foodstuffs: (1) their composition, (2) their use, (3) their nutritive value in relation to their cost.

V.—The daily requirements of the human body as regards food. The digestive process—building up and waste in the body.

VI.—Fundamental rules regarding food for infants and invalids.

VII.—Accounts, estimates of average expenditure for small families and for individuals.

This instruction is closely connected with the instruction in natural science, and constitutes a practical basis for lessons in hygiene which are given at the close of the 7th class.

NOTE.—In the *demonstration lessons* special attention should be given to the chemical composition of foodstuffs, their value, etc., and the principles for their preparation.

In the *practical work*, attention should be paid to the daily food and kitchen arrangements. In connection with these are the subsidiary tasks: preserving, baking, washing and mending clothes, and cleaning.

##### *Scheme of Work for One Year's Instruction.*

(The school year begins on the 1st April.)

*Demonstration lesson 1.*—Division of the pupils into sections and groups [families]. Table of lessons.

*D.L. 2.*—Sweeping and lighting the cooking-stove. Ordinary fuel.

*Practical work I.*—Pupils are made acquainted with the equipment of the kitchen, the cooking utensils and their arrangement. Dictation and practice in the division of work.

- Demonstration lesson 3.*—Water, its use in the kitchen. Rules for washing up. Barley water or water gruel.
- Practical work II.*—Using and washing up cooking utensils. Oatmeal porridge or oatmeal gruel with milk.
- D.l. 4.*—Milk, its treatment and use. Boiled rice.
- P.w. III.*—Boiled rice with fruit syrup.
- D.l. 5.*—The nutritive properties and the produce of milk. Demonstration of its nutritive qualities. Hasty pudding.
- P.w. IV.*—Hasty pudding with fruit syrup.
- D.l. 6.*—Potatoes, their properties, and how to cook them. Cleaning herrings.
- P.w. V.*—Potatoes, herrings and soup (barley groats).
- D.l. 7.*—Eggs. Flat pancakes.
- P.w. VI.*—Pancakes. Herring soup.
- D.l. 8.*—Meat, different kinds of meat, their properties, how to prepare them.
- P.w. VII.*—Meat soup with preserved (dried) cabbage, meat with onion sauce and potatoes.
- D.l. 9.*—Meat, frying meat. Stewed meat.
- P.w. VIII.*—Stewed meat, mashed potatoes. Caraway soup or stew with red sauce.
- D.l. 10.*—Fish, how to clean and cook it. Fish and soup.
- P.w. IX.*—Fish, soup, potatoes and white sauce.
- D.l. 11.*—Fish, various kinds of fish, their nature, how to fry them.
- P.w. X.*—Fried mackerel, potato salad (or ground sorrel), rhubarb soup.
- D.l. 12.*—Washing. Soaking, cold and warm water washing, boiling, rinsing, hanging up to dry, sprinkling, stretching, mangling.
- P.w. XI.*—Summer cleaning.

*Summer Holidays.*

- D.l. 13.*—Summary of articles of animal food. Vegetable food. Potato soup.
- P.w. XII.*—Potato soup. Fried pickled herrings and greens.
- D.l. 14.*—Fruit. Hermetic preserving.
- P.w. XIII.*—Fricassee. Whortleberry soup.
- D.l. 15.*—Ordinary preserving and boiling of fruit syrup. Sugar.
- P.w. XIV.*—Fried cakes. Preserving.
- D.l. 16.*—Vegetable roots and green vegetables. School-kitchen soup.
- P.w. XV.*—School-kitchen soup. Fried halibut. Pickled vegetables.
- D.l. 17.*—Pulse. Green peas with fried bacon.
- P.w. XVI.*—Green peas with fried bacon. Fruit stew from the leavings after preserving.
- D.l. 18.*—Different kinds of corn, grinding, sifting, groats, their properties. "Fladbröd" (Flatbread, the national bread, made without leaven). "Flödegröd" (sour cream boiled with flour and milk).
- P.w. XVII.*—"Fladbröd." "Flödegröd."
- D.l. 19.*—Yeast. How to bake rye bread.
- P.w. XVIII.*—Boiled mutton with cabbage. Apple soup. Rye bread.
- D.l. 20.*—Baking powder. French bread. Scones. Honeycake.
- P.w. XIX.*—Haricot soup, blood dumplings (or cabbage rissoles). French bread or scones.
- D.l. 21.*—On keeping food. Hanging and salting mutton. Hermetic preserving.
- P.w. XX.*—Broth, meat and bacon, mashed kohl-rabi.
- D.l. 22.*—Blood. Pluck. Black pudding. Dumplings.
- P.w. XXI.*—Black pudding. Stewed or baked apples. Bread soup.
- D.l. 23.*—Decay of pluck and of meat. Liver cooked like game.
- P.w. XXII.*—Liver cooked like game. Syrup of prunes.
- D.l. 24.*—Fat. Clarifying fat. Fried bacon in broth.
- P.w. XXIII.*—Fried bacon in broth. Lentils. Stewed sago with syrup and water.
- D.l. 25.*—Relishes. Seasoning. Meat balls.
- P.w. XXIV.*—Meat balls. Mashed potatoes. Whortleberries or apples with rice.
- D.l. 26.*—Relishes. Coffee, tea, chocolate. How to boil and grind coffee.

## SYLLABUS—continued.

- Practical work XXV.*—Minced liver. Greens or cabbage.  
*Demonstration lesson 27.*—Relishes. Oil, wine, spirits. How to extract oil.  
*P.w. XXVI.*—Dumplings. Trondhjem soup.  
*D.l. 28.*—Cooking with lard. Flead cakes (cakes fried in lard).  
*P.w. XXVII.*—Cakes. Honey cake. Porridge or "helmat" (Swedish dish of stewed potatoes, kohlrabi and sausage).  
*D.l. 29.*—Cleaning.  
*P.w. XXVIII.*—Cleaning.
- Christmas Holidays.*
- D.l. 30.*—The composition and relative heating value of different kinds of fuel. Burning and produce of burning.  
*P.w. XXIX.*—Buns. Small fried fish in sauce.  
*D.l. 31.*—The composition of foodstuffs.  
*P.w. XXX.*—Liver cooked like beef. Stewed haricot beans or scarlet runners. Hotchpotch.  
*D.l. 32.*—The principles of nutrition.  
*P.w. XXXI.*—Soup of split peas. Meat or fish cakes with brown sauce.  
*D.l. 33.*—Digestion.  
*P.w. XXXII.*—Pork chops. Stewed cabbage. Sago pudding.  
*D.l. 34.*—The sufficiency of food and its combination.  
*P.w. XXXIII.*—Meat stew. Macaroni. Beer soup (bread boiled in weak beer).  
*D.l. 35.*—Calculation of the nutritive qualities of a given meal.  
*P.w. XXXIV.*—Cod fish, scarlet runners. Mustard sauce. Stewed prunes.  
*D.l. 36.*—Calculation of the cost of a given meal.  
*P.w. XXXV.*—Reindeer or other roast joint. Apple fritters.  
*D.l. 37.*—Feeding of infants. Milk gruel.  
*P.w. XXXVI.*—Milk gruel. Meat pudding. White or brown sauce.  
*D.l. 38.*—Food for invalids. Barley broth. Steamed fish. Omelette.  
*P.w. XXXVII.*—Barley broth. Fish soup. Steamed fish. Omelette.  
*D.l. 39.*—Repetition.  
*P.w. XXXVIII.*—Repetition.  
*D.l. 40.*—Repetition.  
*P.w. XXXIX.*—Cleaning.

This plan of instruction, with a few local alterations, is uniform throughout the country. In the Christiania public schools, the principal dishes are fixed by the plan which is drawn up beforehand for each day throughout the school year, and the same text-book is used in all schools. The instruction goes hand in hand with the natural science lessons. The demonstration lessons are given to two or three classes combined, *i.e.*, 50-60 pupils, and last from 1 to 1½ hours. From 12 to 24 pupils—according to the size of the kitchen—take part in the practical work, and this number is again divided into "families" of from three to six members. Each practical lesson lasts 3 hours. Each pupil receives 4-4½ hours' instruction per week.

The demonstration lesson includes: (1) questioning, (2) going over the new lesson, (3) demonstration and explanation by the teacher of the mode of procedure in preparing the dishes which the pupils are to make in their practical lesson, and (4) the tidying of the rooms by two or three of the pupils in turn.

The practical lesson consists of—

- (a) Preliminary work, *i.e.*, clearing out the range and lighting the fire, fetching the articles of food, and putting out the utensils to be used;
- (b) Going through the receipts, and apportioning the work for the day;
- (c) Preparing and cooking the appointed dishes;

(d) Laying the table and dining;\*

(e) Washing up, and cleaning the kitchen.

In every kitchen there is a fixed distribution of labour. From the beginning of the school year, the instruction is given by word of mouth. The pupils receive numbers—A1, A2, A3, A4, A5; B1, B2, B3, B4, B5, and so forth. All the "ones" have one kind of work to perform, all the "twos" another, and so on.

Each kitchen is divided into from three to five small kitchens, fitted up simply but completely, as befitting a working-man's or mechanic's home. The school kitchens are furnished with a larder, a scullery, a small room for the teacher, and a drying-loft. The fitting-up of a kitchen in Christiania costs from 1,000 to 1,500 kr. (£55-£82 10s.). The washing of the kitchen linen and of the pupils' caps and aprons, and the mending of the same, is done by the pupils during the lesson as an extra task. The cost of the food is calculated every day by the pupils themselves, and the accounts are entered in a little book.

There is no leaving examination for the pupils, but only annual exhibitions of cookery, to which any one may obtain admittance.

In Christiania and many other towns, the expenses of the school-kitchens are borne by the Municipality, aided by a Government grant as in the case of other public school teaching. In places where the Municipality has not yet taken upon itself the expenses connected with the instruction in this subject, the work is supported by contributions from savings banks, Government spirits monopoly, and by private benevolence.

The teachers are appointed under the same conditions as the other elementary school teachers, but they have shorter hours, as they give one lesson a day. The teachers have to mark the absences, see to all purchases for their kitchen, and keep a general account of all receipts and expenditure (the cakes and pastry are sold to the pupils for the cost of the raw material).

In Christiania the kitchen accounts are checked by the inspectress of school-kitchens before they are sent in to be audited by the Corporation. The inspectress, who is appointed by the School Board, also sees to the uniformity and systematic carrying out of the instruction, and to the enforcing of economy and order; and she makes suggestions with regard to the fitting-up of new kitchens, and draws up estimates of the working expenses.

In 1898, by the direction of the Education Department, the Storting voted money for the inspection of all the school-kitchens then existing in the country, this office being entrusted to Frøken Helgesen. A report was sent in to the Department. There is no regularly appointed inspectress for the whole country.

Domestic economy, cookery, and gardening are taught to deaf and feeble-minded children to improve their general intelligence and health and to give them means of occupation, or of obtaining employment on leaving school.

Schools for  
Defective  
Children.

\* No charge is made for the dinner.



Homes for  
Neglected  
Children.

In homes for neglected children great stress is laid on manual work (cooking and laundry), on account of its great value as an educational discipline, and the training it gives the girls in self reliance and adaptability.

Secondary  
Schools.

The first secondary school for girls at which a school-kitchen was started was Fröken Henriette Wulfsberg's school\* at Drammen in 1891. In Christiania, Olaf Berg's girls' school was the first to start a kitchen (1892). The sympathy and support these schools gained from both parents and pupils resulted in the introduction of "housekeeping" as an optional subject for girls into the new law of 1896 for secondary public schools (*höiere almennskoler*).† In the plan of instruction also there are detailed regulations for instruction in housekeeping. This led to the introduction of household management as an examination subject at all girls' schools where suitable accommodation can be obtained; in Christiania there are at present six of these schools. The examination in household management is held at the end of the last school year but one, when the girls' average age is rather more than fifteen. As a subject of examination, household management takes the place of gymnastics, in which only boys are examined. The examination test is "to prepare and serve up one course. Herein are included all necessary preparations, and the cleaning of the utensils used; also calculation of the cost of the dish prepared."

The instruction embraces the composition and nutritive value of food, a little domestic economy, heating and ventilation, and corresponds closely with the instruction in natural science and hygiene. The lessons are conducted in very much the same manner as those, already described, in the primary schools. The demonstration lasts one hour, the practical work two hours. It would be difficult to set apart more time for this instruction. The parents often express surprise at the amount their daughters learn in the comparatively short time, and the lessons arouse the interest of the pupils in household work.

It is not usual in the secondary schools for the pupils to eat the food they have prepared. This takes place only now and again, in order to afford an opportunity for laying a table, learning rules for waiting, etc. As a rule, the principal of the school finds a use for the food. Cakes and pastry are sold. It is considered inadvisable for the pupils at a school kitchen to execute orders, or to prepare dinners for customers, as this prevents methodical and systematic teaching.

The "*middelskoler*" in the small towns are as a rule mixed schools. The girls are taught household management as in the higher girls' schools or the primary schools.

At the higher girls' schools and "*middelskoler*" the aim is the same as at the primary schools, namely, to awaken an interest in, and respect for, domestic work, and to lay a foundation on which

\* Fröken Wulfsberg founded her school-kitchen on her return from a visit to Belgium, during which she had made a study of the Belgian schools for girls.

† An account of "The New Law for the Secondary Schools in Norway," by Dr. Otto Anderssen, is to be found in Vol. 8 of Special Reports on Educational Subjects (1902).—Ed.

schools of cookery and household management, and life itself may build. Neither the secondary nor the primary schools aim at producing fully-trained housewives or domestic servants; that is a work that belongs, not to children's schools, but to the special schools.

**III.—TRAINING OF TEACHERS OF DOMESTIC ECONOMY.**

From the very first, the State has undertaken the training of Domestic teachers for the school-kitchens by providing courses of instruction in domestic economy for teachers. Domestic Economy Courses for Teachers.

The 1st course was held in 1892, lasting 6 weeks, attended by 20 pupils.

" 2nd	"	"	"	"	1894,	"	3	months,	"	"	20	"
" 3rd	"	"	"	"	1897,	"	3	"	"	"	24	"
" 4th	"	"	"	"	1899,	"	4	"	"	"	31	"
" 5th	"	"	"	"	1900,	"	4	"	"	"	18	"
											(in Trondhjem)	
" 6th	"	"	"	"	1901,	"	4	"	"	"	by 24 pupils.	
											(in Bergen)	
" 7th	"	"	"	"	1902,	"	4	"	"	"	by 24 pupils.	
											(in Christiania)	

The first four courses were held in Christiania under Frøken Helgesen's direction.

The total amount voted towards the teachers' courses is about Kr. 25,000 (£1,375), including travelling scholarships for pupils. The instruction at all the courses has been free, and pupils who have held travelling scholarships have had their travelling expenses defrayed.

The courses were intended for fully-trained teachers; but it soon became apparent that fully-trained teachers already appointed to schools found the school-kitchen work too hard and unfamiliar, and were unwilling to undertake it. This was especially the case in Christiania. It became necessary to admit to the lectures pupils who had no training as teachers; and it was soon proved that the short courses, though perhaps sufficient for pupils already pedagogically trained, were by no means sufficient for young beginners with no teacher's certificate. The question of having the subject taken up in the training colleges was raised—a question that has not yet been settled, but will it is to be hoped, find a solution in a parliamentary revision of the training-college laws this year, when domestic economy, in accordance with a proposition from the Education Department, will be taken up as an optional subject.\*

The subjects of the teachers' courses are physiology, chemistry, alimentary science, the system of school-kitchens, book-keeping for school-kitchens, practical work and demonstration lectures in cookery, practice in the teaching of children, the management and feeding of infants, a little sick nursing, washing and mangling, and house cleaning. In the courses held in Christiania, the instruction in chemistry is given at the University chemical

\* In November of the same year, the Training College Bill passed our Storting, and Housewifery was made an optional subject.

During the present year, 1902, a two years' course of "Housekeeping" has been introduced, as an optional subject, into the Training Colleges for Teachers at Levanger and Hamar.

laboratory, and part of the physiology at the physiological institute of the University. The rest of the instruction has been associated with the Christiania public school-kitchens, and given at the Möllergaden school-kitchen. At the last two courses in Christiania, five Danish teachers were trained, and with warm interest have taken up and introduced school-kitchen instruction in primary and secondary schools in Denmark.

At the course held in Trondhjem, and at that given this year in Bergen, there have proved to be many difficulties to overcome in order to make the courses fully satisfactory. There is too little opportunity of seeing different kinds of school-kitchens, and of hearing the teaching of various experienced school-kitchen teachers.

At the conclusion of the course, there are written and *viva voce* examinations. The candidates give a demonstration-lecture to children upon a given subject, and prepare the dish lectured upon.

At the Government courses both the teachers in the secondary girls' schools, and public school teachers have been trained.\*

Qualifica-  
tions  
desirable in  
a Teacher of  
Domestic  
Economy.

The training of teachers in domestic economy, or household management, as the subject is called in the secondary schools, has not quite kept pace with the rapid development of the school-kitchens and housekeeping schools during the last ten years—a circumstance which may have important consequences and influence the whole matter.

A mere training in the one subject is not considered sufficient for a teacher of domestic economy. In the hands of a pedagogically trained teacher, the subject (1) possesses greater educative power; (2) can be more easily associated with other school subjects, thus making the instruction more general and productive; and (3) rises in popular estimation. Carpenters are not appointed as sloyd teachers, nor seamstresses as teachers of needlework; and a good housekeeper or cook is not equal to undertaking the instruction in a school-kitchen, although she may be clever and have had special training. In schools for children, the main stress should be laid, in our opinion, on the educative power of the subject; consequently the instruction should preferably be imparted by pedagogically trained teachers. It is generally found that purely specialist teachers of domestic economy are prone to treat the subject in a more complicated and elaborate way than the teacher who has received a general pedagogical training. In schools for adults, schools of domestic economy, housekeeping schools, schools of cookery, etc., the greatest weight is naturally attached to practical work; efficiency in the subject is required from the teacher before pedagogic understanding.

The ends aimed at are:—

- (1) To have domestic economy introduced into the training colleges as an optional subject with two years' instruction†, and

\* Courses for Teachers organised by the Society for the Welfare of Norway have been referred to above (page 216). (See also second footnote, page 221).

† As has already been done in two Training Colleges, referred to above (footnote, page 233).

- (2) To have short courses in Christiania for the further training of appointed teachers in school-kitchens, schools of cookery, house-keeping schools, and housewifery schools, the theoretical subjects, i.e., physiology, chemistry, and hygiene, being by preference associated with the University, and the practical with a training school of domestic economy.

## CONCLUSION.

“Slidets dagverk, yrkets pligt skal til søndagsgjerning adles.”

—HENRIK IBSEN.

- “Who sweeps a room as for Thy laws,  
Makes that and the action fine.”

—*The Elixir.* GEORGE HERBERT.

In our schools, and among our teachers, there has been, and to some extent still is, a tendency to overrate intellectual development as compared with physical training and the formation of character. The school has claimed the child's whole interest for literary pursuits, learning lessons, and sedentary mental work.

The school has not encouraged the child's natural longing and desire for productive work—work in which there is movement and life, and a living connection between theory and practice. A change came when sloyd and cookery found their way into the Board School curriculum, together with object lessons, and less bookish instruction in natural science.

For a people living under such hard conditions as prevail in Norway, there is quite as much need of working hands as of working brains, in order to extract from the ungenerous soil and narrow surroundings that which is necessary for the maintenance of life; and it therefore becomes a matter for serious reflection whether it is wise, by one-sided literary occupations, to stifle the desire for work from childhood upwards. The school must teach both boys and girls a respect for the daily work of house and home—the physical work that most nearly touches the child—and must arouse and encourage a desire for work and a sense of thrift. “The secret of thrift is knowledge,” said Charles Kingsley; “knowledge of domestic economy saves income, knowledge of sanitary laws saves health and life.” But theoretical knowledge does not suffice; it must be accompanied by trained skill in handiwork. Theoretical knowledge alone is unremunerative capital. Owing to the increasing employment of women in factories, in business and other branches of industry, the home cannot give girls the foundations of that knowledge and efficiency which are necessary for the intelligent and economical management of a home; the school must try its best to supply this want.

The instruction both for children and for adults must be methodical and thorough, and exactly suited to the circumstances of the pupils. When these conditions are fulfilled, experience

shows us that lessons in domestic economy and cookery teach contentment, industry, order and cleanliness, and foster a woman's independence and feeling of responsibility.

The special schools and life itself must build upon the foundation laid in the schools for children.

The instruction in this subject in our schools—the secondary as well as the primary—has aroused the greatest interest and sympathy among both parents and school authorities; men of science, and philanthropists have warmly supported the cause.

Dr. Sophus Torup, professor of physiology, says: "The principles of rational food have gained an important ally in the school-kitchen (in public schools). Every pupil who has passed through this little hygienic laboratory, will form a centre in after life, whence a knowledge of what is necessary for the proper nourishment of the body will spread among the homes; and among the very homes to which it is most desirable in this respect to gain access, and let us add, which are always the most difficult of access. There is every reason to hope that in this way may be brought about that spread of the knowledge of what is required for proper nourishment, and of the penalties attached to the non-fulfilment of those requirements, which must be the first, as it is the most difficult step towards reform in diet."

The establishment of school-kitchens has been an item in the programmes of both progressives and moderates in several municipalities and, now that women have obtained the municipal vote and can themselves be elected to serve on municipal authorities, one local branch of the Association for Furthering the Interests of Women has made the obligatory introduction of domestic economy and cookery into Board Schools a part of its programme also.

These efforts afford a guarantee for the advancement and growth of this movement in primary and secondary schools, continuation schools, and special schools, both in town and country.

HELGA HELGESEN,

*Inspectress of School-Kitchens  
in Christiania.*

July, 1902.

*Note.*—There have not been many recent changes in the teaching of domestic economy in Norway. A few alterations have been introduced in footnotes in the preceding pages.

## APPENDIX.

NOTES ON THE ORGANISATION OF PRIMARY AND SECONDARY  
EDUCATION IN NORWAY.

[In order that points of general educational organisation, touched upon in connection with schools of various types in the foregoing pages, may be clearly understood, it has been thought advisable to supplement Miss Helgesen's report with a brief outline of the State organisation of Primary, Secondary and allied education in Norway.]

The following information has been taken from: "Education in Norway in the Year 1900," a short summary reprinted from "Norway" (Official Publication for the Paris Exhibition, 1900) in Volume 8 of Special Reports on Educational Subjects (1902).—Ed.]

(i) *Primary Education.*

The development of the school in Norway has always been in a decidedly democratic direction. From a school for the poor it has risen to a *national* school; from a church school to a school in which a general education is given, which ought to be common to all members of society. The local authorities and the parents have acquired a decided influence upon the arrangement of the school, and an organic connection has been brought about between the primary school and secondary education.

The Norwegian primary school has a seven years' course, adapted for children between 7 and 14 years of age. It is free to all children in the kingdom. There is no obligation to attend the public primary school; but the *obligation of education* exists, in that every child between 8 and 15 in the country, and between 7 and 15 in the towns, who is not in receipt of instruction calculated to bring it up to the standard of the primary school instruction within its 15th year, is referred to the primary school, and the attendance of the child there can be enforced by a fine imposed upon the parents or guardians.

The primary school in each municipality is governed by the *School Board* (*skolestyret*), which consists of a priest, the chairman of the Municipal Council (or one of the aldermen), one of the teachers chosen by the body of teachers, and as many other members (men or women) chosen by the Municipal Council as the Council itself determines. In the towns, at least one fourth of the members of the School Board chosen by the Council, are chosen from parents who have children in the primary school. The School Board elects its own chairman. It appoints the teachers, gives detailed instructions as to the arrangement of the primary schools of the municipality, draws up the school plan, with the plan of instruction and division of lessons, and sends each year to the Municipal Council an estimate of the sums supposed to be required to meet the expenses of the school for the coming year. It is also the duty of the School Board to see to the education of children who are not pupils in the primary school. The School Board appoints a *Board of Inspection* for every primary school, consisting of one member of the School Board as Chairman, and three members (men or women) chosen in the towns by the parents of the children attending the school, and in the country by such parents and the ratepayers in the school district. This committee maintains a constant supervision of the school, and takes care that there is good attendance and order. It gives to the School Board the information and advice that are required, and in the country is to have the opportunity of giving its opinion before the appointment of teachers. The School Board and the Board of Inspection in the country may also lay matters connected with the primary school before a *district meeting*—i.e., a meeting of the ratepayers of the district, and those parents of children attending the school, who live in the district. Some questions must be discussed at the district meeting before they can be

decided, *e.g.*, whether corporal punishment may be administered, changes in the district regulations, etc. In the large towns the School Board appoints *school inspectors*, and where there are several schools, as a rule a *head-master* to each.

For every province (or county) there is a *Provincial School Board*, consisting of three members chosen by the Provincial Council. The Provincial School Board has to take charge of the common educational matters of the province, and to make proposals to the Provincial Council concerning the income and expenditure of the provincial schools. It has to gain the necessary acquaintance with the primary schools and continuation schools of the province, and may appoint a provincial inspector to assist in the supervision of the primary schools of the province, a permission, however, which has scarcely ever been made use of.

The *Department for Ecclesiastical Matters and Public Instruction* is the highest school authority in the country. Next come the *School Directors*, one for each of the 6 dioceses, for the superintendence of the primary schools. Bishop and dean take part in the superintendence, and the priest in supervising the instruction in religious knowledge.

In the *country*, every municipality is divided into *school districts*. In 1895, the number of these was 5,923. Each school district has its primary school, with at least 2 classes, 1 for children from 7 to 10 years of age, (infant school), and 1 for children from 10 to 14. In consideration of the distances, the districts in many places are again divided into several infant-school districts. The *compulsory* number of school-hours amounts to 12 weeks per annum, and can be increased to 15 weeks. Six weeks' *voluntary* instruction may further be added to this. Every school-week amounts, in the infant school to 30, and in the upper school to 36 lessons. Thus in the infant school, each child has at least 360 lessons per annum, and the number may be increased to 450 or 630; and in the upper school each child receives at least 432 lessons annually, and the number may be increased to 540 or 756. In exceptional cases, both schools may be taught together.

In the *towns* the primary school is divided into three divisions, intended respectively for children between 7 and 10, 10 and 12, and 12 and 14. Each of these divisions may again be divided into several classes. The primary schools in the towns are, as a rule, divided into seven progressive classes, which yet again, when necessary, are divided into parallel classes. Instruction has to be given daily for a number of hours amounting to from 18 to 24 a week. Voluntary instruction may be added to this in the two upper divisions. The total number of hours, however, must not exceed 30 per week. The school year, after the subtraction of the holidays, is intended to number 40 weeks.

Both in the country and in the towns, whatever *voluntary instruction* is given must be imparted out of the school's legally ordained time for instruction, so that the latter does not thereby suffer. In the country, the subjects of instruction in the voluntary lessons shall, as a rule, be the ordinary subjects of the primary school and others closely allied to them. In the towns, instruction in foreign languages may be included. Domestic economy is becoming more and more frequently a subject in voluntary instruction.

For every primary school special *buildings* shall be erected or rented. In the country, however, in the infant-school districts and the primary school districts that have less than 20 scholars, school may be held in rotation in the houses of the inhabitants of the district, where sufficient room can be procured. Peripatetic schools are steadily decreasing.

The *syllabus of subjects* in the primary school is religion, the Norwegian language, arithmetic, elementary geometry, writing, singing, geography, history (including a knowledge of the administration and local government of the country), botany, zoology and the elements of physics, with the fundamental features of hygiene (including instruction in the effects and dangers of intoxicating liquors), manual work, drawing, and gymnastics (in which may be included preparatory rifle practice). In undivided schools in the country, the introduction of manual work, gymnastics, and drawing is a voluntary matter; if the school be divided into classes, only one of these subjects is compulsory, but in the towns all three subjects are compulsory. Dissenters are exempted from instruction in religious knowledge.

The standard to be attained is fixed by law only with regard to religious knowledge. In the other subjects it is left to the School Board to fix the standard in the school plan. In the towns, where the school terms are of longer duration, and where absences are less frequent, it has been possible to set a higher standard than in the country districts. In Christiania the primary school is considered to be among the best and has been the model for a number of other towns. It is decided in the school plan whether yearly and leaving examinations are to be held, and if so, how they are to be arranged; the form of the leaving certificate of the school is also determined.

*The Pupils.*—In the country, the number of pupils in each class must not exceed 35, and in the towns 40, except temporarily or from urgent pecuniary considerations, and must never exceed respectively 45 and 50. In the country boys and girls are generally taught together, in the towns, as a rule, separately.

In 1895 there were 331,133 pupils in primary schools, of whom 253,916 were in rural districts, and 77,217 in towns, being 97 per cent. and 89 per cent., respectively, of the children who were of the legal age for instruction. More than 10 per cent. of the total number of children attending the primary school in the country in 1895 had to go more than 2 miles to school. Needy children receive their school books, etc., from the municipality.

*Teachers.*—Teachers may be men or women, according to the decision of the local authorities; but at each primary school in the towns there must be at least one master and one mistress. All teachers in the primary schools are appointed by the School Board. No one can receive a permanent appointment unless he or she has completed the 20th year, belongs to the Established Church, and has passed a teacher's examination. About one-third of the posts, however, may be filled on terms of 3 months' notice, and for these appointments, and for visiting and assistant teachers, no examination is required. Private or assistant teachers may be employed as teachers in singing, gymnastics, drawing and manual work.

For the training of masters and mistresses in sloyd, needlework, domestic economy, gymnastics, drawing, singing, writing and repetition in these subjects, courses are held at longer or shorter intervals, according to requirement.

Towards travelling scholarships for primary school teachers the Government votes an annual sum, which of late years has amounted to 10,000 kr. Several municipalities also give travelling scholarships.

*Budget.*—The expenses of the primary school are paid by the municipalities, the counties and the State. In the country, every municipality receives a government grant towards the salaries of its teachers, amounting to  $\frac{1}{3}$  (in exceptional cases  $\frac{1}{2}$ ) of the salaries given (allowance for keep included). The town municipalities receive a grant of  $\frac{1}{3}$  of the amount of the salaries.

In each province, there is a provincial school fund, of which  $\frac{1}{2}$  are made up by government grants, and  $\frac{1}{2}$  is voted out of the provincial revenues. Various expenses are defrayed, by permission of the Provincial Council, out of the provincial school fund. What is required over and above the government grants (in the country, the government grants and the provincial school fund), to meet the expenses of the primary school is furnished by each municipality in accordance with a vote of the Council.

(ii) *Further Education on the Basis of the Primary School.*

The primary school law allows the country municipalities to establish, by means of public contributions, *Continuation Schools* (fortsettelsekoler) as an optional school for children who have left the primary school, and for older children (14–18). The time of instruction may be extended from 1 to 6 months. The primary school teachers are in charge of the education. In these schools, which are managed by the School Board, the aim is to take up and treat the educational material of the parish school (Norwegian, arithmetic, history, natural science) with the object of opening the pupils' eyes to the claims that life makes upon every one in their sphere of action. In 1896–1897, there were 172 such schools at work, with 2,868 pupils. The schools lasted from 5 to 18 weeks, and the number of classes per week for each school averaged 38, and the expenses kr. 17'07 per pupil.



To meet the needs of the children who have left the primary school, *Night Schools* (*aftenskoler*) are also held with public and municipal assistance. The subjects are the same as in the continuation schools (principally Norwegian and arithmetic), and the instruction is in the hands of the primary school teachers. While the continuation schools are attended chiefly by children who have just left the primary school (age 15 and 16), the pupils in the night schools are rather older (17-19). In 1898-1899, there were 389 night schools being carried on, with a total of 5,519 pupils. The average number of classes was 60, and the expenses per pupil kr. 3'36.

In most of the provinces (or counties) there are one or more *Provincial Schools* (*amtskoler*). In these schools, the education for a practical life is continued on the lines of the primary school and the continuation school. The provincial schools are managed by the Provincial School Board, which also appoints the teachers. The arrangement and plan of the instruction is determined by the Provincial Council with the approbation of the king. The provincial school course is for 2 years or 1 year. Some of the schools are intended for mixed schools, some for separate courses for each sex. In the mixed and the boys' courses, the instruction, as a rule, lasts for 6 or 7 months of the year. The girls' courses are shorter—3 or 4 months. Most of the provincial schools are peripatetic, and move from parish to parish, remaining 1 or 2 years in each place. Of late years, however, several of these schools have become fixed. The syllabus is generally the same as that of the primary school, but the aim is a higher one. The girls receive instruction in needlework and, as a rule, household management, and the boys in sloyd and technical drawing. In a few schools, instruction is also given in gardening, agricultural subjects and English. The instruction is being imparted more and more through the medium of lectures.

In addition to the provincial schools, there are the so-called *People's High Schools* (*folkehøiskoler*) in several of the provinces. At these schools, which are private, special attention is paid to influencing the characters of the young men and women, and to fostering an affection for their country and mother-tongue. No attempt is made to train the pupils for any particular position in life or for any examination, but the end aimed at is that, on returning to their homes, the pupils may feel themselves at home in whatever sphere of life they are called upon to enter. The pupils live at the school, and make up as it were, a household with the manager's family; particular attention is given to the intercourse between masters and pupils.

In aid of the provincial schools, the people's high schools, and private schools with a similar object to that of the provincial schools, and for scholarships for needy pupils at such schools, the State grants thrice the amount voted to the schools by the provincial fund. Direct government grants are also made to a few advanced people's high schools. In the school-year 1898-99, 45 provincial and people's high schools were being carried on, 9 of which were private. There were 101 masters and 56 mistresses teaching at the schools, and the number of pupils was 1,273 boys and 942 girls.

Of late years, adult men and women, chiefly of the working classes, have been instructed in the so-called *Working-Men's Colleges* (*arbeiderakademier*) in the phenomena of nature and of human and social life, and in the development of human culture and its effects upon thought and commerce.

### (iii) Secondary Education.

By the Act of 1896 an organic connection has been brought about between the secondary school and the primary school in the towns. In accordance with this Act, the secondary school builds upon the two first divisions of the town primary school (with voluntary instruction in the second division). The primary school is to be, in general, the common preparatory school for all children for the first 5 years of schooling; at any rate, it is the only government-supported school for children of this age. At present, there are, however, some preparatory schools in connection with private higher schools.

The secondary school is also divided by the Act of 1896, into *middelskole* and *gymnasium*. The *middelskole* course is generally 4 years (intended

for children between 11 and 15). According to the Act, the course must not be made longer, but may be shorter, if the middelskole in any place can be connected with the primary school higher up than after the latter's 5th year. The gymnasium course is 3 years. The aim of the school is given in the Act as follows: "The middelskole is a school for children, which, in union with the primary school, gives its pupils a complete, thorough, general education, adapted to the receptivity of childhood. The gymnasium is a school for young people, which, on the middelskole foundation, leads on to a complete, higher, general education, which may also serve as a basis for scientific studies."

*Subjects.*—In the middelskole, instruction is given in the following subjects: Religious knowledge, Norwegian, German, English, history, geography, science, arithmetic and mathematics, drawing, writing, manual work, gymnastics and singing. For girls there is also instruction in domestic economy. The law allows the establishment of middelskoler in which, either with or without the addition of instruction in other departments, only one foreign language is taught, and where the instruction in mathematics is somewhat restricted.

In the gymnasium, the following subjects are to be taught: Religious knowledge, Norwegian, German, English, French, history, geography, science, mathematics, drawing, gymnastics and singing. Manual work may also be included in the syllabus. Latin and Greek, by the Act of 1896, are altogether omitted from the subject-list of both the middelskole and the gymnasium, and instruction in these languages is relegated to the University. Whereas in the middelskole the instruction is common to all the pupils, a gymnasium may be divided into two sections, the language-history section, and the science or "real" section. This division, however, only takes place in the gymnasium's 2nd and 3rd classes, and not in all subjects.

In connection with a middelskole, or if there is a gymnasium, with its first class, a one-year's course may be arranged, which gives a complete training for special practical callings, *e.g.*, trade.

The instruction in the middelskole and gymnasium concludes with a leaving examination, called respectively middelskole examination and "examen artium." The holder of an examen artium certificate is entitled to enter his name as a student at the University.

*Inspection.*—Some secondary schools are government schools, some municipal, and some private. The Ecclesiastical and Educational Department has the supreme management of all the secondary schools. To assist the Department in the inspection of the schools and the arrangement of the leaving examinations, there is a council of education (*undervisningsraad*), consisting of 7 members chosen from men with a practical understanding of higher education. In all hygienic questions, an expert is admitted into the council. Each of the government schools has a board of management consisting of the headmaster of the school and 4 members, one of whom is chosen by the Department, and 3 by the Municipal Council. In many places, the School Board forms the board of management for the municipal secondary schools.

*Teachers.*—In order to be appointed to a permanent post in a secondary school, it is generally required that the candidate shall have passed one of the theoretical teachers' examinations at the University—the language-history or the mathematical-natural-science. Kr. 15,000 has been voted annually of late years for travelling studentships for teachers at the secondary schools, a third of that sum being an extraordinary grant on the occasion of the new law. The courses mentioned in connection with the primary school, for teachers in gymnastics, sloyd, etc., are also intended for teachers in the secondary schools. For the latter especially, holiday courses have been held the last two or three years, at the University, to enable them to meet the increased requirements of the new law.

*Statistics.*—The number of government schools amounted, in the school-year 1899-1901, to 14, which all include middelskole and gymnasium. The number of municipal and private schools that have received the right of holding leaving examinations with the same effect as the government schools, amounts respectively to 42 (3 of them in the country) and 28. During the school year there have thus been 84 secondary schools at work. Two of the municipal schools and 4 of the private schools have a gymnasium

as well as a middleskole. A private Latin gymnasium is attached to one of the government schools. The government schools and most of the municipal schools are intended for the common instruction of boys and girls. Sixteen of the 28 private schools are exclusively for girls, the remainder are in some cases mixed schools, in others for boys only.

The municipalities have to provide the government schools with premises, school plant, apparatus, lighting and heating. The rest of the expenses are met by the government grants, the school fees, and, in a few cases, by the schools' private means. Thirty-nine of the 42 municipal schools are supported by government grants. The grant amounts to a third of the total of the teachers' salaries, and all the additional amounts for long service. The rest of the expenses are covered by the school fees and municipal grants.

In addition to the secondary schools, there are some municipal and private boys' and girls' schools without the examination right, in which instruction is given that goes beyond the aim of the primary school. These schools have a freer arrangement than the middleskoler, and have for their object, in great part, the higher education of girls. In 1896, there were 65 of these schools, and the number of pupils was 3,707, of whom 2,751 were girls.

(iv) *Schools for Defectives, Waifs and Strays.*

The law of 1881 for schools for defectives, and subsequent additional laws, regulate the instruction for *deaf*, *blind*, and *imbecile* children. At the head of matters relating to defectives' schools is a director under the Ecclesiastical and Educational Department.

# THE TEACHING OF DOMESTIC SCIENCE IN DENMARK.

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## THE TEACHING OF DOMESTIC SCIENCE IN DENMARK.

### INTRODUCTORY.

Until a very few years ago a Report on this subject would have had to be confined to needlework, knitting, and hygiene, but quite lately the interest in Domestic Science has grown very rapidly, and although we are still behind many other countries we are now making satisfactory progress.

The principal types of schools to be dealt with in this article are:— Principal types of schools.

*Elementary Schools.*—Mostly Municipal, all State-aided.

In most of these schools the instruction is entirely free. The compulsory school age is from 7 to 14 years. In 1903 there were 326,000 children attending municipal elementary schools. Of these, 44,000 children were in Copenhagen (36 schools). In 1897 there were 3,118 schools, with 213,700 children in attendance, in country districts, and 138 schools, with 56,750 children, in towns (excluding Copenhagen). There are about 20 private State-aided elementary schools in Copenhagen, with 1,600 children.

*Secondary Schools:*—

(a) "*Realskoler.*"—Some entirely Municipal, some private, with or without aid from Municipal Council, County Council, and State.

The recent Secondary Education Act, 1903, bases secondary education on elementary education, so that now a child can pass on from the Elementary School, "Folkeskolen," through the "Mellemskole" (4 years) and the "gymnasium" (3 years) to the University. An examination, recognised and controlled by the State, is held at the end of each course. The "Mellemskole" may have a fifth form ("Realklasse") added to it for those pupils who do not intend to pass on to the "gymnasium." The "Realeksamen" at the end of this fifth year is required in many of the minor professions, and in the higher departments of business. Some schools consist of both "Mellemskole" (with or without preparatory classes) and "gymnasium"; these correspond to what were formerly called "Latinskoler" or "Lærde Skoler." A far greater number have preparatory classes and "Mellemskole" (generally with a "Realklasse"); these correspond to the old "Realskoler" and are still generally called so. In 1903 there were 152 "Realskoler," attended by 22,411 pupils;

34 of these schools were for girls only, many are for boys alone, but in the country and in smaller towns they are generally mixed. In "Mellemkolen" the Act orders provision to be made for needlework instruction for the girls, and recommends the introduction, where circumstances permit, of domestic work. The schools for girls alone are free to hold a special examination giving the same rights as the "Realeksamen," but with some modification of the syllabus. In provincial towns the State higher secondary schools, which used to be for boys only, now all admit girls as well.

(b) *Girls' High Schools*.—All private, with no aid, or very little, from either State or Municipality.

Attached to an increasing number of these schools, but generally in no organic connection with the rest of the school, is a two years' course preparatory to the above-mentioned "Realskole" examination.

*Continuation Schools*.—Often Municipal. Schools or classes for boys and girls who have left the primary school (aged from 14 years).

*People's High Schools (Folkehøjskoler)*.—Private State-aided.

The "Folkehøjskoler," continuation schools for adults, are residential schools in the country, chiefly attended by young peasants of either sex. In 1904 there were 82 schools, including the related agricultural schools, attended by 7,679 students (4,377 men, 3,302 women); of these the majority were between 18 and 25 years of age, and 1,161 were over 25 years of age. The courses for young men are generally held during five or six winter months, courses for girls, for three summer months. £12 or £13 is sufficient to cover all expenses connected with a six months' course; many students obtain bursaries.

*Housewifery Schools*.—All private, only one receiving State-aid.

L—DOMESTIC SCIENCE IN ELEMENTARY, SECONDARY,  
AND CONTINUATION SCHOOLS.

(a) *Housewifery (including Cookery and Laundry work).*

(i) Introduction of Housewifery as a School Subject.

Until very recently the idea of making cookery, etc., subjects of instruction in schools was thought quite out of place; it was considered entirely the business of the home to train girls in household duties. But as time went on, complaints of the deterioration of household skill in all classes grew louder and louder. School, and preparation for school, occupied an increasing proportion of the time of the girls in the higher schools, while amongst the poorer classes the increase of women's work in factories, etc., made it difficult, if not impossible, for mothers to teach their daughters, even if they knew how to do so. In the seventies and the eighties a few advanced educationists began to advocate the introduction of Domestic Economy into schools, not only for the sake of the future homes, but also, as a good educational discipline, for the sake of the schools, whose work had been getting too much out of touch with practical life.

First attempts.

The interest in the matter spread very slowly, however. In a few provincial towns private attempts were made to teach girls in elementary schools, or girls who had just left school, a little cookery and laundry work, but these attempts were unsystematic and did not influence the later development of the movement.

In 1893 the Town Councillors of Copenhagen adopted a tentative plan for introducing the subject into an elementary school, and voted the money for it; but on account of resistance from the Town Executive, nothing was done for some years. By this time reports from other countries had begun to stir up more interest in the subject. One of the mayors of Copenhagen had seen cookery centres in London; different Danish teachers reported on what had been done in Norway and Sweden; and articles in newspapers and periodicals impressed upon the public the economic, social, and educational value of the subject.

At length in 1897 the first three housewifery centres (Skole-kökner) were opened almost simultaneously, one at an elementary school at Fredriksberg,\* one at Fröken Winteler's High School for girls in Odense in Funen, and one at a private day continuation school in Copenhagen. It is worthy of notice that the suitability of Domestic Economy as a school subject was thus recognised from the outset in three such different types of schools.

First centres opened, 1897.

These first practical attempts proved very successful and it was marvellous to see how fast the interest spread among

\* Fredriksberg is geographically part of Copenhagen, but is a distinct municipality and, next to the capital, the largest in the country.

educationists, parents, and authorities. The girls themselves delighted in this new subject, and, even where it was voluntary and taught out of school hours, as at Fredriksberg, the classes were excellently attended.

Elementary schools :—  
Copenhagen. The following year the Town Council of Copenhagen opened a few voluntary housewifery classes for girls in the two highest standards of the elementary schools, and these also were well attended and much appreciated by parents and pupils. In September, 1900, the subject was made part of the curriculum for Standard VI. of all schools having access to a centre. The necessary time was obtained by increasing the school hours from 29 to 30 a week, and by taking 2 hours from needlework, and 1 from writing. There are now 4 centres used by girls from 8 schools, and more kitchens are being built or planned.\*

Fredriksberg. At Fredriksberg there are now two centres in elementary schools; the subject is still voluntary and taught out of school hours.

At a few elementary schools in provincial towns kitchens are being built. No rural school has as yet introduced the subject, and the recent Elementary Education Act of 1899, which recognises the subject in urban schools, does not even mention it in connection with rural schools.

Continuation classes,  
Copenhagen. In 1898 the Copenhagen Town Council also established "continuation classes" in housewifery for girls from fourteen to twenty years of age. The first year the classes were attended by 132 girls; the numbers have continued to increase every year, and have now reached 300.† The courses are held in the morning or the afternoon, and never in the evening;‡ they are therefore not accessible to shop assistants, clerks, factory girls, etc. Some of the pupils are domestic servants; most of them live at home.

Secondary schools. There are eight † high schools for girls which have introduced housewifery, including the one in Odense mentioned above. Five are in Copenhagen (and Fredriksberg), one in Aalborg, and one in Silkeborg. This last centre, which was built in 1900 by Fröken Lang for the use of the practising school of her training college for elementary school teachers, as well as for her high school, is now also used on four days of the week by girls in the elementary schools of Silkeborg, the Municipal Council paying a certain amount for each child. Housewifery has also recently been introduced for the girls of a "Realskole" in Esbjerg. The subject is there voluntary and taught out of school hours. In the girls' high schools it forms part of the curriculum, is taught chiefly in school hours, and is compulsory.

\* The Copenhagen Elementary Schools have now ten housewifery centres, of which three were built last year. (1904).

† The Municipal continuation classes in housewifery in Copenhagen are becoming more popular every year. In 1903, 660 girls applied for admission, and the Town Council had to open evening classes in order to accommodate all; these classes, held twice a week for 2 to 3 hours, were attended by 300 of the girls. In 1904, out of 878 pupils, 603 attended the evening classes. (1906).

‡ There are now ten high schools for girls where housewifery is taught. (1906).



## (ii) Methods of Teaching Housewifery.

For the method, which, with slight variations, is used almost exclusively in Denmark, we are chiefly indebted to Norway, both Denmark and Norway having adopted the idea of demonstration lessons from England and Scotland.

As a specimen I propose to describe fully the method employed in the Copenhagen Elementary Schools, stating afterwards in what respects it differs from that in use in other schools.

Elementary  
schools,  
Copenhagen.

The kitchens, large and well-lighted rooms, are at the top of the school buildings. One end of the kitchen is arranged as a classroom with raised seats. The girls are all in Standard VI,\* age 11 to 14 years. A whole class is instructed at a time, the number of pupils being generally about 30.† Each class has two lessons a week: a demonstration lesson of one hour, and a practical lesson of three hours. With a school year of almost 40 weeks this makes a course of about 160 hours for each girl. Six or eight classes are taught at each centre, some in the morning, some in the afternoon.

In the demonstration lesson, the teacher prepares the dish or dishes which the girls are to prepare in the next practical lesson; she explains how the cooking is to be done and why, speaks about the dietetic value and price of the materials used, and keeps the girls attentive by constant questioning upon what they have learned before. Care is taken to choose the dishes with a view to showing how the different food stuffs may best be utilised, prepared and combined. The time is too short to allow more than the necessary minimum of theoretical teaching. A book of axioms and recipes (by Fröken Stamer‡) is used; each girl must possess a copy.

For the practical work the girls are divided into four (or five) "families." Each family has the use of a small kitchen range or gas apparatus, and a simple kitchen outfit. The appliances used are mostly such as are generally found in the homes of the working-classes; still it is not thought necessary or desirable to follow this rule strictly.

The different families are distinguished by different letters, the different members of each family being numbered—one, two, three, etc. All "number ones" have one part of the work to do, all "twos" another, etc. At each practical lesson the numbers are changed, so that all the girls, in turn, do all the different kinds of work.

With the exception of the first few lessons, a dinner of two dishes is generally cooked at every practical lesson. The dishes prepared are plain—great stress is laid on the economic side of the question—and they are, for the most part, in use in the girls' homes; but the teacher adds other dishes, which it is thought desirable to introduce on account of their cheapness and nutritive value, or in order to give more variety to the diet.

\* Some schools have six standards; some have seven.

† It may be noted that, in Denmark, the number of pupils in an elementary school class is not allowed to exceed 35 or 37.—Ed.

‡ Now Fru Stamer-Michelsen. (1906).

While two or three girls of each family prepare the dinner, the rest are occupied in baking bread or cakes, in cleaning, and in laundry work, which is also done in the kitchen; the kitchen towels, dish-cloths, table-cloths, and the girls' aprons and caps, are washed and mangled, but no ironing is done. The teacher supervises the work, but does not help the girls; and from the beginning great care is taken to train the pupils to self-reliance and adaptability.

The girls themselves eat what they have cooked. After an hour and a half of busy work the dinner must be ready and the table laid. Then all the girls sit down, each family at their own table, and enjoy the meal, one of the girls acting as the mother of the family. The teacher gives her opinion of the food, and looks after the manners of the girls while they eat. The food is not paid for by the girls; only bread and cakes are sold, and these at cost price.

The last hour of the lesson is occupied in washing up, etc., and at the end of the 3 hours everything must be in its proper place, ready to be used again by the next class. No hired help is employed.

The girls do not buy the provisions themselves; the teacher makes all the necessary purchases. Towards the end of the course, however, the pupils weigh and measure what they are to use, and note down and sum up the price.

No examination is held in this subject.

As the subject has been so recently introduced, and is still in an experimental stage, no fixed syllabus has as yet been adopted, and the teachers are given a free hand. Once in every month most of the housewifery instructresses meet, agree upon the syllabus to be followed during the next month, compare notes as to their experiences, and discuss questions concerning the subject.

There has been, hitherto, no special correlation of housewifery with the other school subjects; but the curriculum of the schools is being revised, and some connection between the nature lessons and the housewifery teaching is to be established. From Standard II. natural history is taught; from Standard V. botany; in Standard VII. both boys and girls have a weekly lesson on hygiene\* and theoretical domestic science.

The teachers of housewifery are all certificated elementary teachers with an additional training for the purpose. Their teaching is not restricted to housewifery and none of them as a rule give more than 12 to 16 hours a week to this subject; as these lessons are very trying, and as the purchasing and accounts give much extra work, 2 hours in housewifery count as 3 ordinary hours—the total number of hours for each teacher per week being 36.

Continuation  
classes,  
Copenhagen.

At the Continuation Classes established by the Copenhagen Town Council, a housewifery course comprises forty lessons of 4½ hours each. The charge for the whole course, including the food, is three kroner (3s. 4d.),† those who are too

\* In an increasing number of schools one aspect of practical hygiene, *i.e.*, cleanliness, is taught by means of warm shower-baths.

† In this report nine kroner are reckoned as equivalent to ten shillings.

poor to pay being admitted without any fee. Method and syllabus are very nearly the same as in the elementary schools, except that there is a little more time for theory, and that it is generally possible, with these somewhat older pupils, to lay more stress on the communal importance as well as the individual benefit of good hygiene and economy, and of a high level of domestic skill.\* Some instruction in nursing and the care of children is given, and some food for invalids prepared.

The Town Council also arranges free evening courses on "first-aid."

In the Fredriksberg elementary schools, each class is taught two days a week, 3 hours per day, which makes a course of about 240 hours. One lesson is used partly for demonstration and partly for practical work, and the other for practical work alone. The girls who can afford it pay ten öre (about 1½d.) per lesson, which is a little more than half the average cost price of a dinner of two dishes. Very little theory is taught in these lessons, but in the nature lessons of Standards V. and VI. some theoretical domestic science teaching has been introduced, *i.e.*, a little practical physics, chemistry, and physiology. In Standard VII. both boys and girls have lessons on hygiene.

In the secondary schools where housewifery is taught, some difference is made as to apparatus, dishes, etc., because of the different home-surroundings and social and economic circumstances of the girls. Upon the whole, however, the same methods are used as in the elementary schools, and care is also taken to teach these girls strict economy. The girls do all the work themselves, including washing, cleaning, scrubbing tables and floors. The time given to the subject varies from 4 to 6 hours a week, for one or two years. The average age is about 14 years. More theory is generally taught in the higher schools than in the elementary schools.

In most cases the theoretical lesson is on one day, the practical on another; but in Fröken Lang's school a whole school day a week, from 8 to 2 o'clock, is given to the subject.

The dinner is eaten on the premises by the pupils themselves. The girls generally pay about 2 kroner (about 2s. 2½d.) a month for materials and fuel.

In Fröken Winteler's school each girl, in turn, has to propose a dinner for the next lesson, at an average cost price of 40 öre (about 5d.) for each person, giving her reasons for the choice.

It may be mentioned that an attempt has been made at the same school to correlate this subject with the other lessons; the girls have sometimes to write for the Danish lessons compositions bearing on the subject of domestic science, such as: "Describe the food-stuffs from the Animal Kingdom," and the like.

The housewifery teachers are all trained; they generally belong to the staff of the school, and sometimes teach other subjects besides housewifery.

\* An increasing number of the girls who attend the continuation classes have already received housewifery instruction at school; these pupils are taught in separate classes. (1904).

At some of these secondary schools housewifery courses are also arranged for outsiders.

Schools for defective children.

One school for feeble-minded children has for some years provided instruction in laundry work for the older and stronger girls, and another has recently introduced systematic teaching of cookery.

Two schools for the Deaf give some opportunity for domestic training: the girls in the upper standards have no lessons on Saturday morning but, under the supervision of an inspectress, half of them help to clean the school, while the others help in the domestic work in the homes where they are boarded out. This has been done chiefly with a view to making it easier for them to enter domestic service on leaving school.

Children's homes.

At most Children's Homes there is some unsystematic training in domestic work.

### (iii.) Aims and Results of Housewifery Instruction.

Utilitarian and educational aims.

The fact that Housewifery has thus acquired, or is acquiring, a place in schools of almost all types is due chiefly to a growing feeling on the part of the authorities that, especially in the elementary schools, it has become a necessity on social and economic grounds to give the girls, while still at school, some fundamental knowledge of the work which sooner or later the majority of them will have to undertake in their own or other people's homes. In this way it may be regarded as an early instalment of technical education inserted in the school curriculum, with what results it is far too early to judge; there are, however, many signs that it is an excellent means of eradicating the idea, which had until lately been growing in all classes, that housework is meaner than other work, and that housework is something that everybody can do without learning it.

On the other hand the value of housewifery as an educational discipline is being more and more recognised in the school world, and it has generally been found possible to combine the disciplining of the intelligence with an increased manual and practical skill. There have even been cases where girls who were backward in all other subjects have, through this practical work which they felt they could do, obtained more self-confidence and begun to do their general school-work better.

Attitude of teachers and parents.

Very little opposition has been shown by teachers of other subjects, and often the whole staff of a school is interested in the matter. Great interest is also shown in the homes in this branch of the school-work,—more, indeed, than in any other subject. Mothers not infrequently attend the lessons themselves and their appreciation has been almost unanimous, except at the very beginning when some were disappointed that their daughters did not learn high-class cookery.

Results in the homes.

It is extremely common for the girls to apply at home what they learn at school; they often tell at school that they have been allowed to prepare such and such a dish at home quite by themselves. In numerous cases the mothers tell the housewifery teachers that their daughters are now much more willing and much more able to help at home; the girls even now and then

introduce the more rational methods they have learned at school. One mother reported that her daughter every evening reminded her to note down the expenses of the day.

At one Copenhagen elementary school, account-books were given last year to girls willing to keep the family accounts on leaving school. Two girls have now brought back the books with the house-keeping accounts of a whole year very neatly and accurately entered; one of them gives the daily, one the weekly expenses for meat, eggs, bread, milk, fuel, etc., not forgetting to add of how many members the family consists.

Some time after the introduction of housewifery as a school subject at the Esbjerg "Realskole," the headmaster sent out printed forms of questions to the mothers of the girls. The answers were all to the effect that the interest of the girls in the new subject was great and rather increasing than otherwise, that almost all of them were more sorry to miss these lessons than any others, that they liked to help in the work at home, that they had successfully made various dishes they had learned at school, that they were more tidy than before, and more anxious to put everything in its proper place, etc.

#### (b) *Needlework and Dressmaking.*

Needlework is taught very differently in different schools and in many rural schools it is not taught at all. The Elementary Education Act of 1899 makes it a compulsory subject in towns and in those rural schools where there is an assistant mistress. Where there are only masters, as in the majority of cases, it is left to the local school authorities to decide whether they will provide for this instruction or not. But the Education Department, in circulars to the school authorities, urges them to take steps towards introducing it. These circulars recommend a progressive syllabus for knitting, plain needlework, patching and darning, not only on samplers, but if possible on real garments; they also recommend the drafting of patterns and cutting out; the instruction is meant to occupy at least 4 hours per week in the summer terms throughout the school.

Elementary schools —  
Rural elementary schools.

The above syllabus, or some other progressive method, is followed in an increasing number of schools where the instruction is given by the assistant mistress or by some other woman trained for the purpose. In other schools where untrained persons, either appointed by the school authorities or holding voluntary classes, are in charge of the instruction, the teaching is generally un-systematic, and fancy-work and crochet are often taught in preference to more useful branches of the subject.

In the elementary schools in towns much time and care are generally given to needlework. Even before it was made compulsory by law it was an exception to have no such instruction provided, and in many towns the subject for years has been compulsory and taught in school hours.

Urban elementary schools.

The schools are still left free as to the amount of time they give to needlework, and the plans they select to follow. The time varies from 2 to 6 hours per week throughout the school. In many schools the instruction is still unsystematic, but on the whole

the tendency is towards introducing methodical and progressive class instruction, and towards laying more stress than formerly on making the lessons useful for the practical needs of life.

Copenhagen  
and  
Fredriksberg  
elementary  
schools.

In the Copenhagen and Fredriksberg schools considerable time is given to needlework; in Fredriksberg from 4 hours per week in the lowest standards to 6 in Standards VI. and VII.; in Copenhagen the hours are the same, except that Standard VII. has 8 hours. Class teaching is often used; when anything new has to be taught it is demonstrated and explained by the teacher, and the whole class performs it simultaneously. The girls have to do everything themselves. In the lowest standards knitting and plain sewing are practised on samplers, and some plain garments are made. In the higher standards the girls are also taught to cut out, and to darn and patch on samplers; only a few attempts have been made to introduce patching and darning on real garments. In Standard VII. dressmaking is taught, often without any special method; each girl makes a petticoat and a gown for herself. A sewing machine is used. Except in Standard VII. the school provides all the material, and the children are free to buy the ready-made garments at cost price.

The instruction is now generally given by the ordinary staff of the school; only dressmaking is often taught by outsiders without any educational training.

Secondary  
schools.

All Secondary Schools for girls provide instruction in needlework and knitting, some in dressmaking as well. The time generally given to the subject is from 2 to 4 hours per week for from 8 to 10 years. In some schools preference is still given to ornamental needlework, but as a rule it may be said that the good schools lay more stress on plain needlework, patching and darning (almost always practised on samplers), than on embroidery, lacemaking, crocheting and the like. Class teaching and some progressive method, often the Schallensfeld,\* are in increasing use. The instructresses generally belong to the ordinary staff of the school.

In the mixed "Realskoler" there is a certain difficulty about the time-table; in some schools this difficulty is overcome by giving the boys woodwork, while the girls have needlework, in most by teaching this subject out of school hours, so that the girls have from 2 to 4 hours a week more than the boys. It is quite an exception when no provision is made for needlework. It is only in the two last school years that the subject is dropped altogether. In a mixed Latin school† in Copenhagen both boys and girls learn some sewing and knitting in the six lowest forms.

\* *The Schallensfeld method*, so-called after Rosalie Schallensfeld, a German teacher, who recognised the educational value of needlework as a school subject for girls. In her well-known article on "Needlework instruction in Schools," published in 1861, R.S. urged that needlework should be taught in accordance with general educational laws and as class teaching, and that the instruction in this subject should be inductive, methodical and progressive; she further drew up a model course of instruction, beginning with knitting. R. S. died in 1864 and did not, therefore, live to see the results of her pioneer work, but it is upon the method which she advocated and introduced that modern systems of teaching needlework have been based.—Ed.

† See page 245.

In all schools for defective children much time is given to needlework; even the blind girls are occupied with knitting and a little sewing during 2 hours or more every day. Schools for defective children.

## II.—TRAINING OF TEACHERS OF DOMESTIC SCIENCE.

The first teachers of housewifery had to go abroad for their training, to Cassel in Germany, to Sweden, but chiefly to Norway. In the winter 1899-1900 a four months' training course was established in Copenhagen and was made part of "Statens Lærerkursus."\* The first year 24 teachers were trained, the next 12. These two courses were in many respects very satisfactory, but it was felt to be difficult in such a short time to give a thorough training without over-working the students. From September, 1901, the courses will be lengthened and spread over a year of about 38 weeks. This year 16 students have been admitted.

The subjects taught are: Chemistry (65 hours); Physiology (36 hours); Hygiene (20 hours); Bacteriology (10 hours); Nursing and First Aid (32 hours); Dietetic value of foods (18 hours); Demonstration (38 hours); Practical work (38 lessons of 3 hours each). In addition, the students attend the lessons of a practising class, first as listeners, afterwards by turns giving the lessons themselves under supervision. A certain number of essays are written, and visits are made to different institutions, such as breweries, bakeries, etc.

The lessons on physiology are given by a lady doctor, those on chemistry and hygiene by University lecturers. The rest of the instruction is given by three housewifery teachers, who have held travelling scholarships from State or municipal funds to enable them to supplement their training by studies abroad; these are Fröken Eline Hansen, Frk. Blicher and Frk. Stamer.

Some practical skill and experience in housework are required for admission, and those of the students who are not already teachers have to go through a special course of training, but, so far, the greater number have been well-trained, experienced teachers.

The instruction is quite free; everything is paid for by the State, which even gives a certain number of scholarships to cover maintenance in Copenhagen. Some students hold municipal scholarships; thus, this year, the Copenhagen Town Council voted

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\* Now called "Statens Lærerhøjskole," an institution for teachers, consisting of training and continuation courses in the most various subjects, which costs the State yearly about 170,000 kroner (c. £9,444), nearly half this sum being spent on scholarships. In 1904, 181 men and women (out of 293 applicants) were admitted to the long courses, lasting one school-year, and 890 (out of 2,176 applicants), to the shorter courses, lasting from three weeks to three months, mostly held during the holidays. In the same year, the institution opened its own large building in "Odensegade." The top floor contains excellent premises for the Training College for Housewifery Teachers; there is accommodation for 14, but generally more than double this number apply for admission.

To understand the value of the figures given above, it must be remembered that the total population of Denmark is not quite 2,500,000. (1906).

2,000 kroner (about £111) to pay the substitutes of some of their teachers while these trained as housewifery instructresses.

No final examination is held, but the students on leaving receive a certificate in each subject.

Training of elementary school teachers in needlework.

Needlework is part of the ordinary training of women elementary school teachers, and a final examination is held in the theoretical as well as the practical side of the subject, the teaching ability of the candidates being also tested. Censors\* appointed by the Education Department set the tests and give the marks in conjunction with the teachers of needlework.

For other teachers of needlework there have been hitherto very few opportunities of training; and there has been far too great a tendency to regard needlework as a subject which anybody who could sew herself was competent to teach.

Training courses in needlework—Copenhagen.

Some arrangements have been made, however. For about twenty years short courses of four weeks have been organised in Copenhagen, in the summer holidays, by the Society for Promoting Home Industry (Husfidsselskabet †). Every year free instruction and materials, besides free accommodation, are given to about twenty-five women, mostly from the country, many of them teachers.

Silkeborg.

Since 1899, winter courses of two months have been held at Frøken Lang's Training College in Silkeborg. ‡ These are chiefly intended for peasant girls who are to teach needlework in the village schools where they live. The syllabus followed is that recommended by the Education Department for rural schools. Frøken Lang relates in her report of the first course that one of the best pupils, who had taught needlework before, began by criticising the method, urging that it was chiefly the finer branches of the subject, embroidery, etc., that ought to be taught, but ended by declaring it her firm intention to follow the syllabus in her future teaching.

Besides the practical work, which takes up the greater part of the day, lectures are given on the method of teaching needlework, on school hygiene, on Danish history and geography; further, singing classes are held. The charge is about 45 kroner (£2 10s. 0d.) for the course, including materials. Board and lodging can be obtained very cheaply. Many scholarships are given by the Parish Councils or by the State.

This year these courses have been amalgamated with those held by the "Husfidsselskabet," and a Joint Committee has been formed and entrusted by the State with the sum of 5,000 kroner (about £277).

\* In Denmark, oral examinations are generally conducted by the teachers, while "censors" as they are called, (often appointed by Government), listen but do not as a rule interfere; afterwards the censors give their marks in conjunction with the teachers.

† A private State-aided Society. It is generally possible for societies of some standing to get State recognition and State aid for work of communal importance.

‡ The courses were started on the initiative of Fru Langballe, a clergyman's wife, who, by lecturing in villages and by other means, has done much towards arousing an interest in the matter in rural districts; Fru Langballe always finds that the chief obstacle to the introduction of needlework is the want of suitable teachers.



Besides the two sets of courses mentioned above, a third will be arranged in Funen.

### III.—DOMESTIC SCIENCE IN SCHOOLS AND COURSES FOR ADULTS.

Very few opportunities of technical training have hitherto been available for women engaged to be married or wanting to earn their living by domestic work. A few unsystematic schools for maid-servants, a few courses of cooking were all that existed; for the rest, the training had to be obtained in private houses or in restaurants and hotels. No technical school had or has any department for any kind of domestic science.

The want of a thorough, systematic training is, however, being more and more felt and acknowledged, and during the last few years some housewifery schools, including in the curriculum the various branches of the home arts, have been established.\*

As the most comprehensive, I choose for more detailed description that in Sorö, a small town in Zealand. The school was opened in 1895 and was at first in private hands; now it belongs to a company which has erected new school buildings and extended the work. This year the school has obtained a grant of 2,000 kroner (about £111) from the State.

Housewifery school, Sorö, Zealand.

There are two courses of five months every year; about fifty pupils can be received at a time, each paying 35 kroner (nearly 39s.) per month for tuition, board and lodging. Three or four students share a room.

Theoretical teaching is given for 2 or 3 hours every day, and includes Chemistry, Physics, Hygiene, Botany, Bookkeeping. The practical work comprises: "Slagtning" (butcher's work),† plain and fine cooking, purchasing provisions, baking, French washing and ironing, domestic work, dressmaking, plain sewing, darning and patching. Systematic class teaching is used and the pupils take turns to do all the work. Some lectures are given on literature, woman's legal position, social economy, etc.; singing classes are also held. For classes in horticulture an extra fee is charged.

The students are mostly drawn from the same circles as the pupils of the "Folkehøjskoler," that is from the well-to-do rural population.‡

During the autumn holidays courses for married women, lasting a fortnight, are arranged at the school. Besides practical housework, which takes up the greater part of the day, there is a lecture every day on physiology, hygiene, the care of children, etc. The total cost, comprising board and lodging, is 50 kroner (about £2 15s. 6d.).

Housewifery courses for married women, Sorö.

\* Cf. Additional Note, page 260.

† This does not necessarily comprise the killing of animals, but the students are taught to cut up and prepare the meat of calves and pigs killed on the premises.

‡ Two other housewifery-schools in Zealand, one in Fredriksborg, and one in Gentofte, are chiefly frequented by girls from Copenhagen and other towns. The charge is 50 kroner (about £2 15s. 6d.) per month. The curriculum and method are very nearly the same as in the Sorö school.

Training courses for peripatetic teachers, Sorø.

Village housewifery courses, Zealand.

The school has now also opened three months' training courses, comprising practical work and theory and practice in teaching, for teachers who are to be sent out to hold short courses in villages.\*

These village courses were started in 1900, under the auspices of a women's association in Sorø, by Frøken Lauridsen, the Principal of the Sorø School of Housewifery, who got the idea from England. They very rapidly became popular in the country round about, and the organisation of them has now been taken over by the Joint Agricultural Societies for Zealand ("De samvirkende Landboforeninger").

A course is generally of five months' duration, and comprises twenty demonstration lessons (each of 2 hours) on cookery. The same instructress is employed by six neighbouring villages, and gives one lesson a week in each. As a class generally consists of thirty to seventy persons, and as very little apparatus is needed, the whole thing can be arranged without great expense. The classes are held in the schools or in the parish meeting-hall, or sometimes at a private house when a large enough room is available.

There can be no doubt that in the hands of well-trained, intelligent teachers, such courses may be of great use to women who have some practical experience, by increasing the interest in domestic work, and by helping to spread some fundamental knowledge of good hygiene and suitable diet.†

Housewifery courses at "Folkehøjskoler."

At two of the "Folkehøjskoler" housewifery courses are held. The pupils, besides preparing dinner for themselves, cook for the "Højskole" pupils. The instruction is chiefly practical, comprising cooking, laundry work, sewing, etc., but some theory is given by means of lectures on hygiene, chemistry, botany, etc. The pupils also attend some of the ordinary high-school lectures on literature, history, etc. The winter course is of five months', the summer course of three months' duration. Many of the pupils enter domestic service.

Cookery school, Copenhagen.

In Copenhagen, a cookery school of a different description was opened early in 1901; it only receives day scholars, and has courses for married as well as for unmarried ladies. The courses last from three to nine months; the charge varies from 25 to 35 kroner (about 28s. to 39s.) per month for three lessons a week of 4 hours each (food included). The teaching is both practical and theoretical; the Principal, Frøken Suhr, has prepared herself for her task, at home and abroad, with the greatest thoroughness. The premises are fitted up with elegance and comfort, and most probably the school will help to make domestic work fashionable in the capital.

Horticulture, hygiene and other courses open to women.

During the last few years, short courses on horticulture and fruit preserving have been arranged for cottagers' wives and daughters by the Royal Horticultural Society, which has a special State grant for this purpose. The courses have been well attended and seem to be very useful.

\* The training course for these peripatetic teachers is now of nine months duration and is in receipt of State support. (1904).

† The short demonstration courses held in villages are increasing in number every year. In 1903, 25 teachers held 170 courses, attended by 1,400 to 1,500 women. (1904).

Amongst other courses\* may be mentioned: Horticulture, Hygiene and Chemistry at "Statens Lærerkursus" †; Horticulture, Botany and Chemistry at The Agricultural College ("Landbohøjskole"); Hygiene at the University. None of these courses have been specially arranged for women or with a view to furthering domestic science, but they are all accessible to women, and have been or may be utilised for the purpose of studying domestic and allied sciences; some of them, for instance, have been attended by housewifery teachers.

Different kinds of needlework are taught in the "Folkehøjskoler" during their three months' summer term for girls. Two hours are generally spent every afternoon on plain needlework and fancy-work, for example, a kind of national white embroidery. In some schools courses of weaving or dressmaking are given as well.

During recent years, private courses of dressmaking have also been held in many different places by Frøken Steffensen, who has introduced a very practical method of drafting patterns and cutting out.

Neither these courses of dressmaking nor those at secondary schools or elementary schools, mentioned above, are meant for training professional dressmakers; they aim at enabling women engaged in housework to make clothes for themselves and for their families.

In Copenhagen there is a training school for professional dressmakers, receiving a yearly grant from the State, and another school for seamstresses, both started by women's associations.

Another women's association in Copenhagen has recently started different courses of ornamental needlework, besides courses on weaving, with free instruction and free accommodation for four months, for girls from the provinces, from Slesvig, and even from Iceland. The object is partly to elevate the taste in the homes, partly to help the pupils towards earning a living.

#### CONCLUSION.

Before closing I must mention that last session a sum of 500 kroner (about £27 15s. 0d.) was voted by Parliament to Fru Berg Nielsen, one of the earliest advocates of housewifery teaching in schools and of a thorough domestic science training for women, to enable her to go on with experimental domestic science work.\* Besides experimenting on brewing and baking, Fru Nielsen has begun to collect facts and statistics on the consumption of food in Denmark. In the preparation of these statistics the account books of the Copenhagen school-girls, mentioned above (p. 253), will be used.

From this report it will be seen that the organisation of Domestic Science teaching in Denmark is, for the most part, of recent date, some of it being in a very crude stage. Still the

\* Cf. Additional Note, page, 260.

† See Footnote, page 255.

germs of development are to be found everywhere and, upon the whole, I think I am justified in saying that the teaching of Domestic Science is becoming more general and popular in all classes, and is considered a matter of growing importance by educational and municipal authorities as well as by the State.

September, 1901.

HENNI FORCHHAMMER.

#### ADDITIONAL NOTE.

I am glad to be able to say that, during the years which have passed since the above Report was written, the cause of Domestic Science has been steadily growing and developing in my country. A few details, included in footnotes in the preceding pages and in this Note, suffice to show this. It will be seen that the following remarks supplement Section III. (pp. 257-259 above), which deals with schools and courses for women (adults).

During the year 1903-4, further peripatetic housewifery courses were started, on the initiative of Fru Berg Nielsen, by the "Dansk Kvindesamfund," a women's association. During the year nine courses were held; each course comprised from 60 to 160 hours of instruction, of which at least half were given to practical work. The practical work was done in a kitchen which the teacher brought with her. The pupils generally paid 25 øre (3d.) per hour, but many were admitted free.

The teachers of these courses had had a training lasting two and a-half years: six months at a housewifery school, one year at the State's Training College, Copenhagen, and one year at the "Landbohøjskole" (The Agricultural College).

At one of these courses, a short holiday course, one of the students was a village schoolmaster who especially wished to learn baking, preparing vegetables and cleaning.

In 1905, Fru Berg Nielsen opened a housewifery school in Copenhagen. A new feature of this school is a laboratory, where the pupils themselves have to work at those branches of Chemistry which are related to housewifery; they also have to make experiments in Physics and Bacteriology.

In November, 1904, a demonstration course of ten lessons on "Systematic Dietetic Cooking" was started by Professor Dr. med. Jürgensen, specialist on diseases of the digestive organs. The course was attended by twelve young doctors. Every lesson opened with a lecture by the Professor on some kind of food: milk, meat, eggs, vegetables, etc.; after this Frk. Blicher, the inspectress of the Training College for Housewifery Teachers, demonstrated the different ways in which the food-stuff that had been the subject of the lecture might be prepared, especially for invalids. Every lesson was of three hours' duration. The kitchen of the State's Training College at the "Statens Lærerhøjskole" was lent for the purpose.

1906.

H. F.

# THE TEACHING OF DOMESTIC SCIENCE IN SWITZERLAND.

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## THE TEACHING OF DOMESTIC SCIENCE IN SWITZERLAND.

### PREFATORY NOTE.

In the course of preparing this report I visited the following schools:

*Canton Zürich* :—

- Zürich: Courses for primary school-girls, ladies and factory workers in the three school kitchens;  
the Zürich Housekeeping School;  
• Swiss School of Dressmaking and Lingerie;  
Private Housekeeping School at Bocken, above the Lake of Zürich;  
Institute Bros-Jegher (private);
- Winterthur: Housekeeping School;  
Morning Cooking Course;  
Continuation school;

*Canton Zug* :—

- Housekeeping School, St. Carl, near Zug (private);  
Cloister School Menzingen;

*Canton Solothurn* :—

- Olten: Secondary school sewing class;  
School kitchen;  
Grenchen: Village Housekeeping School;

*Canton Bern* :—

- Bern: Housekeeping School;  
Needlework School;  
Sewing and Cooking Classes at the Training School for Primary School Teachers;
- St. Imier: Housekeeping School;  
Worb: " " ;  
Herzogen- }  
buchsee: } " " ;  
Ralligen: " " (private);

*Canton Neuchâtel* :—

- Neuchâtel: Needlework School;

*Canton Vaud* :—

- Lausanne: Housekeeping School;  
Needlework School;  
Vevey: Training School for Servants;  
Needlework School;

*Canton Geneva:—*

Geneva: Housekeeping and Needlework School ;

*Canton Fribourg:—*

Fribourg: Housekeeping School ;  
 Needlework School ;  
 Cooking course for Secondary School girls ;

*Canton Aargau:—*

Lenzburg: Housekeeping School ;

*Canton Baselstadt:—*

(Town of } Needlework School, including Housekeeping  
 Basel): } courses ;

Primary School Kitchen.

The following Schools were closed at the time of my visit, but I was able to see the rooms, etc., and I am indebted to the authorities for much valuable information: Olten cooking course; Solothurn, Bern primary school classes and Gelterkinden.

My warmest thanks for invaluable help are due to Dr. Huber of Zürich (author of the *Schweizerische Schulstatistik*) ; to Frau Coradi-Stahl of Zürich, Federal Inspectress of Technical and Domestic Schools for Women ; and to the teachers and directors in all parts of Switzerland for their unvarying kindness and hospitality.

M. C. M.



I.—INTRODUCTION.

At the present time great importance is attached in Switzerland to the teaching of the domestic sciences. It is more than twenty years since the subject first claimed attention, but the progress has been most rapid during the last six years. New schools and classes are continually being founded, and they are almost always quickly filled, so ready are the people to take advantage of the opportunities offered to them.

(a) The chief subjects included under the general head of domestic science are :—

(a) Subjects included under Domestic Science.

Needlework, including mending, knitting, machine-sewing, drafting and cutting-out, etc.; cookery, with lessons on the theory of nourishment and book-keeping; housewifery, *i.e.*, general house-work and theoretical lessons on hygiene, cleaning, arrangement, etc., laundry work and gardening. Millinery is occasionally taught in schools which give a business training. Some instruction on the proper feeding of children is often given in the theory and hygiene lessons; otherwise the care of nursery and children has not yet found a place in domestic science curricula.

(b) The different grades or types of schools in which the domestic sciences are taught may be roughly classified as follows :—

(b) Types of School in which Domestic Science is taught.

- (1) Primary schools.
- (2) *Fortbildungsschulen* or continuation schools, consisting of day and evening courses in different subjects.
- (3) *Arbeitsschulen* or *Écoles professionnelles*, schools giving trade and private training in every branch of needle-work.
- (4) *Haushaltungsschulen* or *Écoles Ménagères*, house-keeping schools proper; these may be subdivided into two groups: resident schools, where the pupils are responsible for all the practical work of the house; and non-resident schools, in which the pupils go through a more or less complete course in all branches of house-work.
- (5) Special courses in cooking, etc.

Girls who are engaged to be married often attend the special schools or courses. Many of these schools were founded primarily with the object of training girls for service, but in most cases the majority of the pupils return home after completing the course.

There are at present no special schools or colleges devoted to the training of domestic science teachers. One non-resident and two resident housekeeping schools have teachers' courses; and pedagogic courses for women already proficient in the subject they wish to teach are arranged as need arises. Many of the teachers at present working in the various schools have been trained abroad, principally in Germany.

Some of the schools which correspond to the English high schools have optional cooking courses; sewing is compulsory,

and, in some places, two weekly lessons are given on hygiene (*Gesundheitslehre*). The pupils from these schools attend the special schools where their general education is finished. Girls begin to learn sewing when they are between six and eight years of age. In some of the primary schools they learn domestic economy in their last year, when they are between 13 and 15. Special and continuation schools only admit pupils who have passed the compulsory school age. No branch of domestic science is ever taught in boys' schools.

A great many small villages have their own courses, or housekeeping schools, which are, on the whole, simpler than those in the towns, but not essentially different.

Needlework is always taught in institutions for defective children, and if they are physically capable they are trained to earn their living by this means. Cooking and other household work is as yet rarely taught in such schools.

(c) Arrangement of Classes; Text-books, etc.

(c) Text-books are not universally employed by domestic science teachers. In many schools the teachers have drawn up their own books; in sewing, they must always adhere to the government plan. The teacher generally plans the cooking courses, subject to the approval of the committee who are responsible for the conduct of her school or course, but she is, as a rule, entirely free to arrange the theory lessons as she thinks best.

As the whole subject gets more systematised, and as good text-books multiply, there will probably be less left to the individual teacher. Many of the special schools are so new that they must be regarded as somewhat experimental.

Domestic science is everywhere treated from an utilitarian point of view, and the theoretical lessons are extremely simple. The subject has been introduced by those who look beyond the help given to the individual pupil to the national importance of keeping up the standard of home-life. The pupils themselves, as a rule, only realise the usefulness to their own immediate surroundings of the training they receive.

The maximum number of pupils in a practical class under one teacher varies considerably in different parts of Switzerland. In cooking, the number varies from 6 to 24, and in a sewing class there may be as many as 40 girls. Cooking lessons are always arranged on the same plan and they last about four hours. One to two hours are devoted to theory, *i.e.*, discussion of nourishment-values, dictation and explanation of recipes, and simple book-keeping. Then the pupils cook the meal, which they all take together with the teacher, and afterwards the kitchen is cleaned and set in order. In some courses for advanced cooking, outside orders are executed in order that the pupils may learn to prepare more luxurious dishes than the school could afford.

(d) Teachers.

(d) There is, at present, no general law as to the training of any but the sewing teachers. In towns and more important schools, the domestic science teachers are generally certificated, but it is not yet possible to secure certificated teachers for all

country schools. In villages, the only teacher who can be found may be a woman proficient in one special branch of the work, but otherwise comparatively uneducated. Sometimes such women are sent to undergo a short course of training in teaching. This, however, must only be regarded as a temporary arrangement. In no country is the importance of proper training for teachers more recognised than in Switzerland. At the present time the demand for domestic science teachers exceeds the supply, and the schools must do the best they can. The preference is given to certificated teachers, and as the arrangements for their training improve, so will the demand for definite qualifications be raised. At the present time the general training courses can hardly be regarded as altogether complete and sufficient.

Diplomas are issued, and the candidates are examined theoretically and practically as well as in practical teaching. The diplomas are granted on the course as a whole, by expert examiners, in consultation with the teachers; thus both the class work and the actual examination are taken into consideration.

(e) All types of domestic science classes, whether public or private, are under the supervision of *Aufsichtskommissionen*, or voluntary committees of ladies, who are appointed to inspect the work, and to assist the teacher to make the instruction efficient. Nearly every canton has its own special inspectress of needlework, and, whenever a school or class is assisted out of public money, it is subject to inspection by the authority providing that assistance. (e) Inspector and Finance.

A primary school class is instituted and supported by the educational authorities of its own canton and commune\*

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\* "The Commune can truly be called the basis of Swiss republican institutions. A Swiss Commune is an assemblage of individuals and families inhabiting a certain defined portion of national territory, and possessing intimate relations of neighbourhood, as well as common interests regulated by a common administration. It is, in fact, a kind of miniature of the State (Canton), and has been described as one of the cells of which the social body is composed. All the Communes are by no means of one unvarying type. Some are rich and extensive, others are poor and small in size. Rules and regulations differ, but each Commune is free and independent in itself, subject, however, to the supervision of the State. That authority must naturally have the right to exercise a certain control over communal administration, so that the latter may be prevented from exceeding its powers or abusing its liberty. A Commune provides for all the public services within its limits much after the manner of a Canton; it generally possesses a sort of local police, which keeps order day and night in its territory, is present at fairs and markets, has an eye to public houses, and watches over rural property. There are also communal officials who maintain the public buildings, roads, and fountains, look after the lighting, take measures against fires, superintend schools and religious matters, and supply necessary aid to the poor, both in sickness and in health. The organisation of a Commune depends much upon its extent. If its territory be small, a Communal or Municipal Council may be sufficient. This is composed of several members, and is presided over by an official called in different Cantons either *syndic*, *maire* or *president*. In larger Communes there are generally two Councils, one legislative and the other executive, and there are frequently special committees charged with the inspection of schools or hospitals, or again with the superintendence of buildings in course of erection."—*The Swiss Confederation*, pp. 99, 100, by Sir Francis Ottiwel Adams, K. C. M. G., C. B., and C. D. Cunningham. (1889).

(*Gemeinde*), and the central or Federal Government has no control over it. The Swiss Department of Industry can, however, assist special or technical schools and classes, and it can therefore inspect them. Nearly all the special domestic schools are subject to this inspection, though they are private foundations. They are generally started by a local society and then supported by (1) federal grants; (2) communal and cantonal grants; (3) subscriptions from societies and individuals; (4) pupils' fees; and (5) in some cases by work sold or done to order.

(1) The Federal Government has one inspectress of "professional, industrial and domestic education." It is impossible for her to visit every school yearly, as there are more than 170 institutions under her inspection, many of which are only open at certain seasons.\* The inspection, however, is thorough, though occasional, as will be seen from the form prescribed for the report (*see Appendix A., pp. 299-300*). The Federal Government may increase by one-half the total sum received by a school; in other words, it may provide one third of the income. Schools which are partially self-supporting do not always receive the maximum amount; and there are a few schools which are in no way assisted by public money. The federal grant may not be used for ordinary current expenses, and it is generally devoted to teachers' salaries and special appliances. The full regulations concerning federal industrial grants are given below (*see Appendix A., p. 296*).

(2) The communal and cantonal grants are supplied out of the general taxes. No community or canton can raise a special tax, such as the English library rate, to supply a special need. The incomes of the community and of the canton are divided between the different administrative Departments. If new demands are made the only way to meet them is to raise the general taxes.

f) General  
remarks.

(f) The teaching of domestic science is becoming every year more popular and more widely spread. Not only is its importance recognised alike by educational authorities and private persons and institutions, but there is everywhere an alliance between private and governmental energies to further the work. There is a feeling that girls of all classes learn less and less at home, and, in order to keep up the standard of home life, opportunities must be furnished for them to learn home work outside the walls of home. The scarcity of servants is also a great and pressing difficulty, and so far the domestic science schools and classes have not made much progress towards the solution of this problem.

The usual attitude of the people towards the whole subject is undoubtedly a great help to the teachers and authorities. House-keeping is treated as a fine art, and its importance is fully recognised. There is no tendency to despise subject or teacher; the people are generally quick to perceive the practical advantage of the instruction.

\* Two additional federal inspectresses have now been appointed, and the number of institutions under their inspection exceeds 200. (1904).

The schools have not been founded in the idea that it is the paramount and only duty of women to cook and sweep; but the founders are convinced that the domestic faculty must not be neglected because of the wider training now open to girls. It must be awakened and systematically trained that it may not be lost or crowded out amongst other interests, and if a woman of any class undertakes to manage a house, she must understand its practical working.

In our study of the different types of school in which the subject is taught, it must be borne in mind that only one phase of a remarkably rapid development can be presented. Nothing is more striking than the progressive spirit that leads this branch of education in Switzerland. It is freely acknowledged that in many respects the work is new, and, therefore, to some extent experimental. Mistakes have been made and corrected. The needlework schools, at any rate, rest on a foundation of many years of experience. Any arrangement in the other schools that strikes the observer as incomplete and behind the times will probably so impress those in authority. There are points in which the Swiss could learn from neighbouring countries but the chief obstacle to progress is removed because he recognises that there is still much to improve.

## II.—DOMESTIC SCIENCE IN PRIMARY SCHOOLS.

In dealing with any branch of public education in Switzerland, <sup>(a) Intro-</sup> the inquirer is confronted at the outset by the difficulty that the <sup>duction.</sup> country possesses twenty-five distinct systems of education.\* The central or Federal Government demands that general free elementary education shall be provided; it may assist the fulfilment of this demand by subsidies, and it may, in consequence, inquire into the application of the money, but otherwise it has no authority. Each canton, and, to a certain extent, each commune (*Gemeinde*) levies its own taxes, distributes its funds, and is supreme in local affairs. Foremost among its duties is the regulation of public elementary education; and this is a duty that is everywhere performed in a liberal and progressive spirit. No traveller in Switzerland can fail to observe the large square school house which is a feature of every village; and in the towns the public schools are often palatial buildings. The public schools are used by all classes; at the age of six the children enter the primary school and they remain there from six to nine years. School is compulsory for seven, eight, or nine years. This time is sometimes spent entirely in the primary school; in other places at the end of six years the pupils enter a secondary school, where the teaching is a direct continuation of the work of the primary school. The first two secondary school, and the last two primary school years may overlap; in this case parents who cannot afford to keep their children at school after

\* An account of "The National Organisation of Education in Switzerland," by Mr. R. L. Morant, was published in Vol. III. of *Special Reports on Educational Subjects* (Cd. 8988) (1898); issued also in a Reprint (Price 1s. 1d.) —ED

the compulsory age may let them follow the whole course in a primary school; while the richer children enter a secondary school when they are twelve, and there prepare for the higher educational establishments of the country. Thus the public education of each canton of Switzerland resembles a work consisting of chapters forming a regular sequence and not a volume of disconnected essays.

The systems of education in force in the different cantons are very similar in their entirety, but in detail and arrangement they differ considerably. Before studying any particular branch of public instruction, the inquirer must grasp at least these elementary general principles underlying the arrangement of public education. In dealing with our present subject it will be impossible to examine the work of each canton separately. Representative examples can be selected where there is little difference, and in other cases we shall confine our attention to cantons remarkable for progressive and enlightened administration.

Sewing, theoretical domestic economy and cooking are the chief domestic subjects taught in primary schools.

(b). Sewing :  
Organisation.

Sewing is almost universally taught; with the exception of parts of the Forest Cantons, it is everywhere compulsory. Great importance is attached to it, and the authorities insist that it has an educational as well as a practical value. Children do not enter the sewing schools (*i.e.*, sewing classes) as soon as they enter the primary school; but between their second and fourth school years they start on a systematic course which embraces all kinds of knitting, stitching, and mending, with some cutting-out, and occasionally lessons in the use of a sewing-machine. The practical work is accompanied by object lessons on the implements and various materials used by the class. The official programmes must be strictly followed; they all cover approximately the same ground, though differing as to arrangement.

The programmes for Neuchâtel (French-Swiss) and Solothurn (German-Swiss) are given as examples (*see* Appendix B). It will be seen that a good deal of time is devoted, as in English schools, to detached samples of the different kinds of sewing, but the practice of making the pupils apply what they have learnt to the mending of garments which they bring from home is far more general in Switzerland than in England. The *Arbeitschulen*\* or sewing schools are practically independent branches of the primary schools. They are the subject of separate legislation, and the minute care with which they are arranged and governed shows the immense importance attached to needlework.

The sewing schools may be held either in rooms specially arranged for the purpose, or in the ordinary class-room. The former plan is followed in the majority of schools in the north-east of Switzerland. A light, airy room in the school building is set apart, or, occasionally, the pupils meet in the teacher's own house. In any case the room must be fitted with a large black-

\* These school sewing classes must not be confused with the *Arbeitschulen* or *Écoles professionnelles* described in Part IV., p. 282 ff.

board, a cupboard with a lock for the work, and a frame for demonstrating the different stitches in knitting and sewing. Each primary school class forms also a distinct class in the sewing school, where the teaching must be collective or class teaching. For country places, however, where the classes are very small, corresponding classes from different schools in the same district may be taught together, or the teacher may combine two or more classes. The maximum number of pupils that may be taught at one time by one teacher varies from thirty to forty, whether in the case of a single or combined class.

Girls must attend the sewing school during at least four years of their school life. The instruction is generally spread over six or seven years. Alternative cantonal programmes are often issued, giving different arrangements of the work to be accomplished, and each commune may decide which it can most advantageously follow.

The number and distribution of the hours devoted weekly to needlework varies considerably. Occasionally this subject occupies as little as two or as much as eight hours, but the usual time is from three to six hours. This time may be divided into short lessons of one hour each, or into two "half-days." The winter and summer time-tables are generally quite different. Some authorities arrange for nearly all the sewing to be done in summer; others look on it as a winter occupation.

All the work done must be kept in the school by the teacher until after the yearly examination, when each child takes her work home. The materials for sample-work are generally supplied free by the school. In some cantons needles, thread, etc., are also gratuitous, and in others all materials are free; Zürich,\* Baselland, Baselstadt, Neuchâtel and Geneva are the cantons where this latter plan is, at present, generally adopted, but it is tried in isolated schools in all parts of the country and seems to be gaining ground in public favour. Arrangements are almost always made to provide children with all that they need for their work if their parents or guardians are too poor to do so.

The sewing schools are supported partly from the sum set apart for education out of the communal funds, and partly by special cantonal grants. These grants are used chiefly to augment the teachers' salaries. The law and regulations for the Bernese sewing schools are given as an example (*see* Appendix C).

There is great variety of opinion as to the practical value of the programme at present in force in these schools. Some teachers in the special needlework and housekeeping schools find that their pupils come well prepared to profit by the more advanced instruction. Many, on the other hand, make a complaint often heard in England, *viz.*, that the girls can do the different stitches, but that they lack independence and power to apply

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\* "The obligatory sewing materials prescribed by the Council of Education, both for samples and useful articles, are to be gratuitously supplied to the pupils by the community. Knitting and sewing needles, pins, measure, sewing-cushion, scissors, etc., are not included." Order concerning Public Schools, Zürich, April 7, 1900, § 122.

(b) Sewing—  
continued.

them practically, and that, consequently, a great deal must be re-taught and re-learned. The conclusion is that in Switzerland, as elsewhere, the good teacher makes the good school, and without her the most excellent regulations are ineffective.

Inspection.

Each sewing school is under the special supervision and management of a committee of ladies. They visit the school regularly, help in the purchase of whatever articles are provided gratuitously in their locality, inspect the work, and transact all business except such as demands intercourse with the cantonal or state authority (*see* p. 307, Appendix C, II., § 4). The sewing schools are subject to visits from the general school inspectors, but they are also under the supervision of experts or inspectors appointed by the cantonal governments.

Teachers and  
Training  
Courses  
(Bern,  
Zürich).

The primary-school sewing teachers of Switzerland may be divided into two classes: (a) those who are at the same time primary-school teachers; and (b) specialists or teachers of sewing only. The former plan finds favour chiefly in Catholic and French Switzerland, while in the north-eastern parts of the country, where the cantons most famed for needlework are situated, it is almost unknown. In both cases the teacher is paid according to the number of lessons she gives weekly. In the case of a primary-school teacher this payment supplements her ordinary salary. The salary may be anything between 10 and 105 francs a year (8s. and £4 4s.) for each weekly lesson.

(a) In the canton of Bern sewing is generally taught by the primary schoolmistresses, and it forms a compulsory branch of their training course (*see* Appendix C, I. §10-§13, §15, and II. §11-§31). Their work consists largely of samples of different kinds of sewing, knitting and mending. An important branch of mending is cloth patching; and every shape of patch that the clothes of a country boy can need is practised.

(b) The employment of specialists to teach sewing would appear at first sight to promise greater competence on the part of the teacher. This plan is so much more generally adopted in Switzerland than the other that it evidently gives greater satisfaction to the authorities. To an English eye it seems as if there must be some danger lest, by giving sewing into the hands of professional needlewomen who are not likely to be so cultivated as the other teachers, its value should be lowered in the eyes of clever pupils, especially in the case of small country places where the sewing teacher, having to give but few lessons, continues to work at her trade and so cannot be much influenced by the educational atmosphere of the school. The danger however is less than it would be in England, owing to the different social customs. In the first place, as all children share the same elementary education, they all have an equal start in the race of life. Then, too, a sewing teacher must give evidence of a good general education before she may enter on the training course; rather more than the compulsory school course is generally required. The training courses vary in length, but they all include a good deal more than the mere practice and teaching of needlework. The teacher



is expected to give the object lessons, and in some cases, theoretical domestic economy is combined with sewing (*see* Solothurn programme, 6th and 7th years, pp. 303-304). Elementary freehand and geometrical drawing are generally included, in order that the teacher may be able to illustrate her lessons on cutting out with ease and accuracy.

The new Zürich regulations for the course for sewing teachers are probably the most stringent and advanced. The full text of the regulations and the syllabus of the course are given in Appendix D. This training course lasts a whole year, and includes all branches of theoretical and practical domestic economy. Cooking is already compulsory for all girls in the 8th primary school class in Zürich town; and the time will soon come when it is compulsory all over the canton. In preparation for that time all sewing teachers must learn cooking and other branches of housework, in order that, as soon as school kitchens can be started in the more remote villages they may be able to give the necessary instruction.

Most of the course, to which twenty-five candidates are admitted, is held at the beautiful Swiss School of Dressmaking and Lingerie at Zürich. Here the candidates are trained by the best teachers that can be found, under the guidance of the cantonal inspectress of needlework. Special masters are engaged to teach drawing, physiology and hygiene. The scientific lessons are very simple, but their existence tends to raise sewing above the rank of an occupation requiring mere technical skill.

The last six weeks of the course are spent entirely in the Zürich housekeeping school which is conducted by specially trained teachers. The students reside there and do all the work of the house. The school was originally a private house, but it has been adapted to meet the special requirements of a school, while retaining as far as possible the character of a home.

The course closes with a government examination, and the successful candidates receive diplomas enabling them to teach in public schools.

It is still rather the exception than the rule to find domestic economy a compulsory subject in primary schools. It has already been mentioned as sometimes forming part of the sewing course; in canton Baselland it is combined with science, and in Zug, Lucerne, Zürich and other cantons it is taken as a special subject. In Zürich, one of the most advanced cantons in this as in many other respects, one hour a week is devoted to theoretical domestic instruction and the course may be taken as an example of the plan followed wherever the subject is taught. The following is the government programme:—

1. Necessary qualities of a housewife (love of order, cleanliness, punctuality, economy).
2. The dwelling; its arrangement, how to keep the different rooms in order; cleaning, with reference to the healthy influence of a home.
3. Heating and lighting.

(c) Theoretical Domestic Economy (Zürich).

4. Clothing: general and hygienic observations; cleaning and washing.

5. Theory of nourishment: fundamental principles of a mixed diet; the chief articles of food, such as milk, eggs, meat, fish, green vegetables, potatoes, grains, pulse, luxuries and spices, with accounts of their origin, varieties, food-value, ingredients, purchase, price, use and preservation.

The subject is still rather new and this programme is intended more as a ground work from which each teacher may develop her course of lessons than as a final and complete syllabus.

(d) Cooking:  
Compulsory  
(Zürich  
Town).

In addition to this theoretical domestic economy all girls of the 8th primary school class in Zürich Town are obliged to learn cooking. As girls who are able to continue their education beyond the compulsory school age usually enter a secondary school when they are about twelve, it follows that the eighth year pupils are generally the children of poor parents. This is just the class that the authorities are anxious to reach, as these children have few home advantages and are not likely to be able to enter a special housekeeping school when they are older. There are three school kitchens in Zürich and the lessons are given by trained teachers. There is a lesson lasting four hours once a week throughout the year. The teacher begins with a very simple theory lesson, discusses the dish to be cooked and its value as food. She then dictates the recipe, with an exact account of the cost; the latter is entered in the book-keeping section of the children's note-books. As soon as the theory is finished the children are divided into groups of three, four, or six, and their duties are apportioned. Each group works at a separate stove and prepares the one or two dishes which form the subject of the day's lesson. As soon as the food is ready the tables are laid and teacher and children take the meal together. Then everything is cleaned and put in order before they go home.

A few rules are laid down for the teacher's guidance and to ensure that each child shall have her turn in every kind of practical work. The last rule sums up the aim of the lessons: "The children must be made acquainted with simple and cheap popular diet, must know the nourishing value of the most important articles of food, must notice their changes and learn to find out their uses. Thus shall real interest in domestic duties be awakened in them."

The programme of the lessons on the different kinds of food is almost identical with that prescribed in the training course for sewing-teachers (see App. D, Syllabus, C. 6, pp. 316-317). The theory and housewifery lessons cover the same ground as those given in the school, but they are fuller and additional instruction is given in simple physiology (the digestive and breathing organs in their relationship to each other); the arrangement of meals with reference to the season, the business, age and state of health of a person; simple household book-keeping; laying the table and waiting; and first aid to the injured and the elements of nursing. A class generally consists of eighteen pupils, and twenty-four is

the maximum number allowed. The lessons, including the meals, are entirely free and are very popular.

In Bern, St. Gallen, and Baselstadt cooking is taught, but it is not yet an obligatory subject. In Bern 80 per cent. of the primary school girls join the cooking classes. Optional  
(Baselstadt).

In Basel there are always too many applicants and the classes are over-filled. There four groups of six pupils each form a class. The poorest children have the first right of entrance and after them the children with the best school reports. The classes are held twice a week for six months. Book-keeping is included in the course, but these lessons are given in the ordinary school by another teacher. The children come straight from school at four o'clock in the afternoon. First they prepare and drink coffee and then follows the theory lesson. This consists almost entirely of the explanation and dictation of the two recipes for the day. The preparation of supper is a lively scene. The teachers are instructed not to insist on strict school discipline. Talking and even singing are allowed, but this is not likely to interfere with the work when the children are cooking the best meals they have in the week. About 6.30 the tables are scrubbed and laid for supper. After the meal the cleaning is finished, and the children go home about eight o'clock. The dishes cooked are generally simple and inexpensive, suitable for homes where means are small, but from time to time more luxurious food is introduced in order that the lessons may be a real help to girls going to service as well as to those who live at home.

Laundry work is not yet a primary school subject. Some theory is included in the domestic economy lessons but the actual practice is confined to washing and ironing kitchen cloths, etc.

The most complete and systematic compulsory course of domestic economy is to be found in Canton Solothurn. The chief industry of Solothurn is watch-making, and the factories provide employment for women and girls as well as men. Consequently, in poor homes, the mothers are away at work; most girls go to work immediately on leaving school, and the homes are often much neglected, or left in the charge of quite young girls. Watch-making is not a very healthy occupation; the constant smell of the oils used often causes serious illness and the workers have imperative need of nourishing food and healthy homes. It is now more than twenty years since the first housekeeping school was established, and the work, under the enthusiastic guidance of a prominent schoolmaster and various societies, is still increasing. Some preparatory domestic economy has been introduced into the winter sewing lessons of the 6th and 7th school years (*see* App. B., pp. 303-304) and it is now compulsory for every girl to spend one whole day or two half days weekly in a housekeeping school during the first year in which she is free from the primary school, unless she lives in one of the few districts where no such school exists; in the latter case she must attend an 8th year sewing school.\* (e) Complete  
House-  
Keeping  
Courses:  
Compulsory  
Course  
(Solothurn).

\* In Lucerne, girls who have left the primary school must attend a sewing school for one whole or two half days a week each winter until they are 16, unless they are receiving equivalent instruction in a continuation school.

Girls are obliged to spend seven years in the primary school in Canton Solothurn, thus they are about fourteen when they begin to work in the factories, and the weekly school day not only gives them valuable and necessary instruction, but also makes a healthy and pleasant break in the long work hours. The different district authorities have a good deal of freedom in shaping the school programmes; usually half a day is devoted to sewing, and half a day to cooking, theory,\* etc. The courses include knitting, sewing, and all kinds of mending, cutting out and machine-work, cooking, book-keeping, theory, ironing, and, in a few cases, washing. Gardening is added in four schools.

In the village school of Grenchen gardening is obligatory, and excellently carried out. It precedes the cooking lessons, to which it acts as a preliminary subject. The school year begins in May, and for the first two months† there are lessons in theory and gardening. In June, when the pupils have acquired some elementary ideas on the subject, the gardening lessons are given early, before it is too hot, and cooking takes the place of theory. The garden is almost entirely given up to vegetables, which seem to thrive better than the few flowers which are cultivated. The girls are supplied with good tools, and work in a most business-like manner, though the ground is stony and unsheltered, and water has still to be fetched from a distance.

Ten to sixteen pupils form a class or group in these schools. In another out-of-the-way village, Derendingen, there are sixty-five pupils in the school. Each of the ten groups attends for a whole day (twelve hours) once a fortnight. The morning is generally devoted to theory and cooking; in the summer afternoons the girls work in the garden, and in the winter they sew. The sewing lessons are always a continuation of the primary-school lessons. The year's course closes with a public examination before the cantonal inspectress.

Though these housekeeping schools are compulsory, they are not supported wholly out of public funds. The federal government, the canton, the communal authorities, and various philanthropic societies contribute towards their support. The teachers are not yet all certificated; it is hoped that the cantonal authorities will shortly establish a special training school, and then only certificated teachers will be appointed to vacancies.

\* In Switzerland the term "theory" is used to include the theoretical teaching that accompanies the practice in all branches of domestic work.

† Lesson plan of the Grenchen Housekeeping-school from May 1 to June 30.

A.M.		Theory.	Gardening. In case of bad weather, washing or ironing.	10.30.	P.M.		Sewing.
Group.	Day.				Group.	Day.	
I.	Mon.	7.30-9.30	9.30-10.30	Cooking the dinner.	II.	Tues.	1.30-4.15
II.	Tues.	7.30-9.30	9.30-10.30		IV.	Tues.	
III.	Wed.	7.30-9.30	9.30-10.30		I.	Fri.	
IV.	Thurs.	8.30-10.30	10.30-11.30		III.	Fri.	

In 1899 there were eleven of these housekeeping schools; the work is increased, never by the enlargement of existing classes, but by the foundation of new ones.

Geneva somewhat resembles Solothurn as far as the teaching of domestic economy is concerned. In this canton, at the end of their sixth school year, girls have two courses open to them. They may either continue their ordinary studies in a secondary school, or they may enter an "*École professionnelle et ménagère*" for two years. The chief of these schools is the enormous institute in Geneva, to which the pupils come from the surrounding country as well as from the town. Geneva being almost entirely a commercial canton, the school is arranged not only to train girls in domestic duties, but also to help those who propose to enter business houses.\*

Alternative  
course  
(Geneva).

The trade or apprentice classes belong to the section dealing with special schools, and will be considered later. The course for pupils from 13 to 15 years of age includes as commercial subjects: French and German, arithmetic, book-keeping and geography; and as domestic training: drawing, domestic economy and hygiene, cooking, washing, and all kinds of sewing, with cutting-out and mending. Half an hour daily is devoted to gymnastics, and the commercial subjects occupy eleven hours out of the weekly total of twenty-nine or thirty. The number of pupils in a practical class must not exceed thirty. Each section or group in turn spends a week in the kitchen and laundry, and those who cook dine at the school. For this meal they pay 3d. a day, otherwise the school is entirely free. The food is exceptionally good, and the dinner usually consists of three courses—soup, meat and vegetables, and a pudding of some kind. The girls are in the kitchen from nine till two o'clock, and they work under a trained teacher. The other teachers in the school are generally engaged to teach the branch of work which they have made their trade, and they take a short training course which gives them the rank of primary school teachers.

The kitchen, a large room at the top of the building, is fitted with four stoves. The pupils are divided into four groups; each group has distinct duties, and does not cook a complete meal, as in the schools in northern Switzerland. Thus one group does the marketing and tidying, another cooks the meat, and another the fish and vegetables. A few teachers and pupils whose homes are at a distance dine at the school, and this is an additional inducement to the children to make the service and waiting good. The classes are very mixed, and the instruction is arranged to meet the requirements of all. The domestic economy and hygiene lessons are very elementary, and are practically the same as those already described. Geneva shows her somewhat cosmopolitan character in this school, and makes it equally free to all, whether natives of Switzerland or foreigners.

The House-keeping School ("*École Ménagère*") at Lausanne, though hardly a branch of the primary school, may perhaps be

Optional  
course  
(Lausanne).

\* This institute now contains several hundred pupils, and extensive additions have been necessary during the last few years. (1904).

best included here. It is under the ordinary school authorities and a special ladies' committee, and, though optional, it is a direct continuation of the primary school. The rooms are in one of the large primary schools of the city and their arrangement is particularly good. The school consists of two parallel classes, each numbering thirty-five pupils. Every week six from each class work daily in the kitchen, where they prepare their own dinner, for which they pay 5d. a day. As in Geneva, drill, French, German, and arithmetic form part of the course. The teachers are certificated, but not specially trained in the subjects they teach. The teaching is free, but pupils provide their own materials for needlework. Girls must be 13 or 14 years of age when they enter the school, and they remain there for one year; preference is given to natives of Lausanne. Connected with the "école ménagère" is the "école professionnelle," a school devoted entirely to needlework. It is also free and preference is given to pupils who have passed through the domestic course. Though it is under the ordinary school authorities, it does not differ from the special sewing schools.

As far as it goes, the introduction of domestic science into Swiss primary schools is very successful. It is much appreciated by children and parents, and even where it is not compulsory there is no danger of empty classes. Many people still think that the children are too young to derive much benefit from the lessons, but the opinion is steadily gaining ground that it is well to take the opportunity of giving them some idea of domestic work and of awakening their interest in it before they enter factories and workshops, and are out of the reach of the school authorities.

### III.—DOMESTIC SCIENCE IN SECONDARY AND CONTINUATION SCHOOLS.

(a) "High Schools":—

Domestic Science is less neglected in Switzerland than in England in the schools corresponding to our high schools, but it is by no means a general subject of instruction. In some places where it has been tried there was so little demand for any branch except sewing that the classes were closed. As the pupils in these schools have every opportunity of attending special schools and courses when their ordinary education is finished, it is not felt to be essential that they should add to their "high school" studies.

Many schools, however, have very successful optional courses in cooking, and hygiene or physiology often forms a part of the regular school course. The programmes closely resemble those issued for primary schools, but the subject is treated in a less elementary way. Some sewing is generally compulsory and fancy work is often allowed.

Cooking is always taught by trained teachers, and the lessons are given in specially arranged kitchens.

One of the "high schools"\* where domestic science is taught is the "école secondaire" at Fribourg, for girls from 14 to 18 years of age.

Fribourg  
Secondary  
School.

\* The principal other "high schools" where the subject is now taught are in Schaffhausen, Zürich, Thurgau and Bern. (1904.)

During the first two years five hours weekly are devoted to needlework. The courses recapitulate and extend what has been learned in the primary school, and much more new work is done, for which a sewing machine may be used. There is also a weekly lesson on domestic economy and hygiene, dealing with the simple rules which regulate house and food, and which are necessary to health.

In the third year needlework is limited to three hours weekly; patterns are given for difficult and ornamented garments and dressmaking is begun. The weekly theoretical domestic economy lesson is continued and deals chiefly with sickness and nursing; in addition, the pupils go once a week to the town kitchen. This is a shop that has been adapted and fitted up with three stoves, and it is used for various courses, which are all arranged on the same plan. The lady who teaches domestic economy in the school is head of this kitchen. Both she and her assistant were trained in London. Their training has influenced their arrangement of lessons and in these Fribourg courses demonstration lessons are always given. Generally, in Switzerland, the teacher gives full directions during the theory lesson, and does a little demonstration from time to time as occasion arises. The Fribourg course begins with two weeks' cleaning, then follow ten demonstration lessons, and afterwards the pupils begin to cook by themselves. This plan seems to answer well, for they work independently and intelligently. They work in couples and take turns at the different dishes. The school-girls have some cake or other light refreshment during the afternoon; otherwise everything cooked in this kitchen is sold, and most things are made to order. The sewing and cooking lessons are continued in the fourth and fifth school years, when they are, naturally, more advanced.

If domestic science forms but a small part of "high school" education, it is the chief subject of instruction in the "Töchterfortbildungsschulen." These schools are best described in English as continuation schools for girls and women. They consist of various classes in technical and commercial subjects, which are held at any time of the day or evening, according to local convenience. They are public schools, *i.e.*, controlled by the ordinary educational authorities, but they are not compulsory. As they are subsidized by the federal Department of Industry they are under the same inspectress as the special housekeeping and sewing schools.

The continuation schools are open to all women and girls who have passed the primary school age, and many mothers join the mending and boys' tailoring classes. There they can do their family work in quiet and comfort, and at the same time learn to make all the children's clothes properly.

Young servants often get permission to do their own sewing at a weekly mending class, and many a trousseau is prepared in the courses for white work or "lingerie."

There are about eighty of these schools, and they are mostly in German-Switzerland. There are classes for all kinds of

(b) Continuation Schools:—

ornamental work and every kind of making and mending, with special lessons on the renovation of old garments. There are also often evening cooking classes for factory workers.

The fees are very small and the classes are practically open and useful to all.

The teachers are not always certificated, being often chosen solely on account of their proficiency in a special subject. This plan, however, has not always been found successful, and some authorities have been led by experience to appoint no fresh teacher who is uncertificated.

Winterthur  
School.

Perhaps the largest of these schools is the one at Winterthur (canton Zürich). Being a town school, there is a demand for a great variety of subjects, and lessons can be given in the day time as well as in the evening. In a poor manufacturing district all classes must be held in the evening and employers sometimes give special facilities to those who wish to attend the school.

The regulations and programme of the Winterthur school are given in Appendix E. They give some idea of the great amount of work done by one of these schools in what we should consider a small country town. Seven large rooms are devoted to this school in a primary school building. Several of the courses are so full that they must be worked in two or even three divisions.

Each "continuation school" must naturally be arranged to suit local needs, but the same principles underlie them all. There are a great many special courses in towns and small villages which do the same work as the "continuation schools," and though they are not all public institutions, they may be classified with them.

(c) Evening  
Cooking  
Classes :—

Excellent evening cooking courses, which are held in many towns for women who are engaged in factories and business houses during the day, belong to this class.

Zürich Town.

The free evening lessons given in one of the Zürich school-kitchens may serve as an example. The pupils come straight from work at seven o'clock and prepare their supper. This consists of tea, meat, and some inexpensive accompaniment, often a dish unknown in England. There are two lessons weekly for ten weeks. The pupils pay threepence each time for supper. They are thoroughly in earnest and most eager to learn. Many take two courses, and the classes are always full. There is no examination at the end of the course, but the pupils and teacher celebrate it by a little feast. The programme of a similar course is given in Appendix E (See page 322, Programme of Evening Courses.—*Cooking*).

(d) Country  
Housekeep-  
ing Classes:  
Aarau dis-  
trict.

Aarau is an old town little known to the tourist, but it has long been remarkable for vigorous intellectual life. Like most Swiss towns it has its society for promoting the public weal, and one of the works of this society has been to found little house-keeping schools in the surrounding district (Bezirk).\* The president goes to one of the small villages, and addresses the people on the importance of home life to the national prosperity.

\* A "district" is a division of the Canton, embracing a number of Communes.



He adds that the women must be trained before they can make the homes comfortable, and that his society would like to teach some of the village girls to cook and will provide a stove if the village will provide a suitable room with the necessary furniture and fuel. A teacher who visits all the different villages comes from Aarau; for five or six months lessons are given once or twice a week, eight to twelve pupils being admitted to each class. There are no fees and there is no age limit; only the very simplest cooking and needlework are taught.\* The village people are generally quick to recognise the value of the work. They become enthusiastic and gradually take more of the responsibility. A good deal of ignorant prejudice had to be overcome, but the society looks forward to the time when the work will be taken out of its hands by the different local authorities and its members will be free to devote their energies to some more neglected cause. The whole enterprise was supported by the society in its pioneer stage, but now it has assumed a partially public character and is aided by the federal government, the canton and the town.

Another country district that has similar advantages is the Baselland. little canton of Baselland, where there are eight housekeeping schools which were started about four years ago by the bequest of a rich native of the canton.

These schools are very like the "continuation schools," being sets of classes which are held two or three times a week. There are eight or ten pupils in a practical class and twenty in a lecture class; if too many pupils apply parallel classes are started. The schools are not compulsory, but they are generally well attended, especially in winter when there is no field work, or at times when trade is good and the people can afford the small fees. Baselland is one of the silk weaving cantons, and England is the chief customer, so the classes empty if England is financially depressed. Some of the schools are in small and remote villages, and girls come long distances to attend them. Nothing can give the visitor a stronger impression of the energy

\* Specimen time-table for a village cooking and housekeeping course (Gränichen). 45 pupils, 4 groups.

	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
7-12 a.m.			II. Domestic economy, sewing, and cooking.			
5.15-7.12 p.m.	I Cooking.	I. Domestic economy and sewing.	III. Cooking.	III. Domestic economy and sewing.	IV. Cooking.	IV. Domestic economy and sewing.
7.15-8.15 p.m.						

(d) Country  
Housekeep-  
ing Classes—  
*contd.*  
Baselland—  
*contd.*

and the public spirit of the country people than a visit to one of these villages, buried among the wooded hills, and connected only by a tramway with the outer world. There he will find a complete organisation worked by the village people with the help of the cantonal society of public utility and bringing every kind of domestic training within the reach of all women and girls in the neighbourhood. The federal government and the canton help the local authorities and private societies to support these schools.

The teachers are generally chosen to give lessons in their own trade, and before they begin work they are sent to take a course at Basel or some other housekeeping school, and their fees are paid for them. Theory lessons are given in the ordinary schools, and small kitchens are fitted up in the best room the village can provide. The classes are all held in the afternoon and evening and some of the lectures are given on Sundays. In winter, public lectures on useful subjects, such as nursing or the education of children, form a branch of the school work. The courses are always so arranged that a pupil may take more than one subject, though only attending two or three times a week. The committee members offer free lodging for the night to girls from distant homes who want to attend the evening lessons.

Much importance is attached to domestic book-keeping, and other subjects taught are cooking, sewing, mending, dressmaking, ironing, wool work, hygiene and domestic economy, nursing, and pickle and jam making. The village doctor gives the hygiene lessons and a nurse comes from Basel to teach bandaging. Poor pupils are often admitted free or for reduced fees; the ordinary payment for a course varies from 4s. to 10s., and there are small fines for absence or unpunctuality. Pupils learning any branch of needlework are obliged to attend a weekly mending lesson; they must follow the regular programme in each subject, and each one is expected to make one or two garments for one of the charitable institutions with which this public-spirited little canton is well provided. The community provides the material for these garments; a sewing machine is provided for each pupil and they bring all they need for their own work. The syllabuses are very like those given in Appendix E.

The people bear emphatic testimony to the value of the schools, which have already given them much help. Baselland is probably the most advanced country district in Switzerland as regards optional domestic teaching, but the example, once given, is likely to be soon followed elsewhere. The decentralisation of Swiss educational arrangements seems to act as a powerful stimulus to the various authorities, who are enthusiastic workers and determined not to fall behind their neighbours. Public school teaching in domestic science has been here described as it now is; ere many years are passed it will, at its present rate of progress, present a totally new aspect.

#### IV.—NEEDLEWORK SCHOOLS.

(a) Organisa-  
tion.

The special schools for needlework have two sides to their work. They all have courses varying from three to six months in

length for private pupils who wish to perfect themselves in a particular branch of work. These courses are very similar to those given in the best "continuation schools," but they are rather more thorough and generally demand daily attendance.

In addition, the majority of the needlework schools have apprenticeship courses lasting from one and a half to four years; these courses are attended by pupils who intend to adopt dress-making or "lingerie" (white sewing) as their trade. The course only differs from an ordinary apprenticeship in being more systematic and scientific, lessons on drafting, cutting out and book-keeping forming an important part of the instruction. In large schools the two sets of pupils often work separately; in small schools all work together under one teacher.

There are both public and private needlework schools. The public schools are governed by the ordinary school authorities with the help of special committees. The private schools are founded and controlled by societies of public utility; when grants are received from the canton and the commune, these authorities have either the right of inspection or that of nominating a certain number of the members of the executive committee.

Both the public and the private needlework schools rank as technical schools, and are assisted by grants from the Department of Industry and visited by the federal inspectress.

The teachers are nearly all trained; many of them study in two or three different towns and some even pass through a regular trade apprenticeship before entering the more important schools as teachers.

Very few of these schools are free. Ordinary pupils pay the fixed fees and provide their own materials. At first they follow the school programme, but as soon as they are sufficiently skilful they choose their own work.

The chief needlework schools which do not profess to give a business training are those at Lausanne, Neuchâtel and Basel. These are all public schools. At Lausanne the school is free, and is chiefly attended by girls of about 16 who have passed through the primary school with the addition, in many cases, of the optional housekeeping course (see pp. 277-278 above). (b) Examples of Schools :—  
Lausanne.

Pupils supply their own materials, books, etc., and work for themselves. The full course lasts two years, but most girls leave at the end of the first year. Each pupil must choose on entering the school between the dressmaking and "lingerie" courses. At present the former seems to be the more popular, for the authorities have been obliged to start a second and parallel class. Thirty-four pupils are admitted to each class. A noteworthy feature of the arrangement of this school is the second set of tables provided for cutting out. These are higher than the ordinary ones, so that standing to work need not also mean stooping for growing girls.

In Neuchâtel also the full course lasts two years; it includes mending, hand and machine-sewn "lingerie," and embroidery. There is but little dressmaking attempted. Pupils are not

obliged to take the whole course; there are short courses open to them in each special branch.

The school is seven years old, and occupies five large rooms in one of the public school buildings. Here, as is usual in French-Switzerland, the lingerie course begins with baby clothes. The work is most exquisite, especially in the hand-sewing and mending classes. Mending, indeed, becomes a work of art, and would be a revelation to most English eyes.

Basel.

The largest and oldest needlework school of this class is at Basel, and it is one of the most interesting schools in history and organisation. It was founded in 1879 by the society of public utility, and was a private school carried on with public help till 1894, when the canton Baselstadt took possession of the school, on condition that the teachers should be retained, and that the years they had already devoted to the school should be reckoned for their pension as years of state service. All public teachers in Basel are pensioned when they retire from teaching, and during working years no teacher must teach for more than thirty-two hours a week.

Thirty teachers are employed in the needlework school and they are all trained and certificated. The initial salary is £80 a year, and it rises by a three-yearly increase to a maximum of £160. All the school courses are free and last six months. Pupils learning dressmaking or "lingerie" must attend daily for eight hours, but there are two half-holidays every week. Ironing, embroidery and other courses occupy from two to twelve hours weekly. The school is always too full and many of the classes are parallel courses. The school work is exhibited once a year. In spite of the short courses it is as good as that done at any of the schools which give a business training. A pupil may, naturally, take several courses and thus gain a complete knowledge of the subject. The book-keeping is particularly thorough and practical. There are also housekeeping courses connected with the school, but they are really distinct and belong to the group of non-resident housekeeping schools.

Geneva.

The finest examples of private needlework schools are at Bern and Zürich. Some of the chief public ones are those at Geneva, Fribourg, St. Gallen and Aarau, but there are many more of each class, chiefly in German-Switzerland. In Geneva and Zürich the instruction is not confined to needlework and the theory relating to it. The Geneva pupils have lessons in German and French, book-keeping, hygiene, the elements of civil law, drawing and gymnastics. Twenty-two hours a week are devoted to the making of new garments and two hours are set apart for the renovation of old ones. The remaining nineteen hours are divided between the various theoretical subjects. During their first two years in the "école professionnelle" the pupils follow a general course (see page 277: alternative housekeeping course (Geneva)) and pass through the lingerie and mending classes. In the third year they specialise and enter either the commercial section, or one of the apprenticeship sections, viz., dressmaking or children's clothes.

The Swiss school for Dressmaking and Lingerie in Zürich is a Zürich. much younger institution and the school premises are probably the finest of their kind to be seen in Switzerland. The training-courses for sewing-teachers in primary schools are held here; there are also various short courses and others on special subjects for members of the various trades represented. The school is divided into two branches, dressmaking and lingerie. In the former the period of apprenticeship is three and a half to four years, in the latter it is one year less. At least six months of this time must be spent in the "atelier" or business department where the pupils work independently and receive a small salary. Natives of Switzerland are admitted free and may even receive a maintenance allowance in case of need. Foreigners are charged a premium of £6; any apprentice leaving without sufficient reason before completing her course must pay £4 for each year of instruction. French, German, book-keeping and drawing are the theoretical subjects taught, and in the highest dressmaking class lessons on form and colour are added. An ordinary class may number twenty pupils, a class of apprentices not more than fifteen.

The work of the apprentices is either done to order or sold when finished. This plan makes it rather difficult to put each pupil through a systematic and progressive course, but the work is carefully divided between the different classes. Most of the Swiss apprenticeship courses are arranged on the same plan. Yearly examinations and exhibitions of work are held and the successful pupils receive diplomas.

The needlework school in Bern is a more modest undertaking Bern. but it resembles the Zürich school in general plan. It was founded by the Bernese "Women's Society of Public Utility," and it is assisted by the usual public grants. All pupils pay some fees (4s. to £1 12s.) but as usual there are free places for those who cannot afford to pay. A course lasts fourteen weeks; three are held yearly both for dressmaking and "lingerie." The pupils come every day and work from 8 till 12 o'clock in the winter and from 7 till 11 a.m. in the summer, and also on three afternoons a week from 2 till 5. The school is open till 6 p.m. to any who desire an extra hour's work.

There are also half-day courses in embroidery and short courses in mending and ironing. Book-keeping and drawing are the additional subjects. The apprenticeship lasts one and a half or two years and closes with the national apprentices' examination. The apprentices work for themselves at first, but as soon as possible they begin to execute orders and, as an inducement to industry, they receive 20 per cent. of the profit of their work. They have only one free afternoon in the week, but there are ten weeks' holiday every year. The school is in an old house and is kept gay with flowers. The girls of Bern rival the girls of Neuchâtel in accuracy and daintiness of work.

The school of St. Gallen combines the functions of a continua- St. Gallen. tion school, a training school for teachers and a special needlework school; nearly 600 pupils pass through it in the course of a year.

**Fribourg.** At Fribourg there is a dressmaking school where the apprenticeship lasts two years. French, German, Drawing and Arithmetic are obligatory for apprentices. In a cutting-out class the number of pupils is limited to twelve.

**Aarau.** The cantonal school at Aarau is at present small, but it has excellent teachers. The apprenticeship only lasts a year and a half, and the pupils pay altogether nearly 30s. (36 francs). The special courses are also short, lasting ten weeks, with a daily lesson of four hours. The fee for each course is £1 4s, with an additional charge of 5s. for the use of a machine.

**Vevey.** One very modest sewing-school deserves special mention, both for the brave struggle it makes against difficult conditions, and for the exquisite work that is produced. This is the little "École professionnelle" at Vevey. The town is small, and many pupils come from the surrounding country, where they are fully occupied in the vineyards, etc., during certain parts of the year. It has therefore been found impossible to have regular courses beginning on a fixed date. Pupils are received whenever they can come, and they stay from two months to two years. If they wish to work for themselves they bring their own materials and pay 8s. (10 francs) a month. Others only pay 4s. a month and work for the school. The work is nearly all done to order. The pupils who stay two years are those who wish to take a business course.

The work and organisation devolving on the single-handed teacher is enormous; every piece of work has to be planned out with reference to the pupils who happen to be present, so that in the end each may pass through a complete course, and yet the teacher cannot choose what work is to be done, but must arrange to make whatever is ordered fit the needs of her pupils. This plan seems to suit the girls, for they are very independent and the finished work is of beautiful quality.

The attention given to sewing in all grades of Swiss schools makes it seem natural that the country should be famous for needlework. From the primary to the special needlework schools there is continuous training both in technique and in drawing and measurement. The special schools attract every class of pupil and are everywhere widely used and appreciated. The work done is often perfect as far as technique is concerned, and both in sewing and drafting the greatest neatness and accuracy are shown. The dressmaking varies a good deal. The examples recently shown at the Trades Exhibition by the Basel School were excellent in cut and finish. The coloured embroidery is the only branch of work that leaves something to be desired. Execution is as usual perfect, but the artistic perception so necessary to such work is not sufficiently trained. A more careful selection of designs and lessons in drawing from nature seem to be needed.

## V.—HOUSEKEEPING SCHOOLS.

### 1.—*Resident Schools.*

(a) Origin. The resident housekeeping schools of Switzerland are all private foundations, and most of them owe their existence to

branches of the National Women's Society of Public Utility, or to kindred associations. Simple as these schools are in plan and management, they are a result of earnest study of various social problems of the day—problems that are everywhere acute, even in Switzerland, where the population is comparatively small and cases of grinding poverty are rare. The country owes a great debt of gratitude to these bands of public spirited women; the housekeeping schools are only one branch of their work, the many-sidedness of which is shown in the variety of reasons which have led to the foundation of the schools. One of the oldest schools is a training home for servants at Vevey, which was founded in 1876 by a society whose original aim was rescue work. The members early came to the conclusion that one of their first duties was to provide training and honest employment for young girls as soon as they leave the shelter of home; within a few years they established this school, a home for women out of work, a registry and a sewing school, and undertook in addition various kinds of social work, prison visiting, etc.

One village society, founded in 1870, reminds one of the Charity Organisation Society, with its motto: "The main point is, and ever will be, to fight not the symptoms of poverty but poverty itself, and while we cherish and raise the spirit of self-respect in the poor, we must endeavour to help as far as possible in such a way as shall make them later independent of our help."—(Paulsen.) This society early turned its attention to temperance reform. Convinced that it is useless to combat drink without reference to life as a whole, its members determined to do all in their power to raise the standard of home comfort, and thus to offer a counter attraction to the public house. A temperance restaurant and a housekeeping school, most carefully arranged to meet the special needs of the village, are two of the results of this work.

To improve the national health through more scientifically arranged food, to raise the standard of home comfort through careful training of the women in economical and sensible administration of means and time, to combat the increasing dearth of servants—to these and other efforts do the schools owe their origin.

The schools are generally very simply arranged, and are often carried on in ordinary houses that have been adapted for the purpose. The bedroom and kitchen space sometimes leave much to be desired, but the teachers always insist on the necessity of sunshine and fresh air in the dwelling. Occasionally one or two young servants are kept to attend to the passages, errands, etc., but in the majority of schools the pupils must do all the work of the house. There are from six to twenty-eight pupils in a resident school. The courses vary in length from three months to a year; they generally last five or six months. The fees for board and tuition vary very much and may amount to anything between 4s. and £2 15s. a month, but they are always lower than is usual in England. The committees always reserve the

(b) Organisa-  
tion.

(b) Organisa-  
tion—contd.

right of lowering the fees in case of need. The schools founded to train servants and to attract young peasant girls are naturally the simplest and the cheapest; the pupils have meat about three times a week, and the directress is sometimes only allowed about 6d. per head a day for food. In such schools, rooms are often set apart for lady boarders, and other ladies (teachers, etc.) come daily to dinner. This plan helps the finances of the school and gives the pupils an opportunity of learning to wait and of cooking more varied food, and it is thus very helpful to any who are going into service. On the other hand, it is apt to increase the difficulties of the teacher. One of the first requirements in every school is that the pupils shall learn to work independently. When they have only to cook their own dinner it does not much matter if a little independence leads to a few mistakes; they learn by experience. It is different when they are cooking for other people; then the teacher must watch closely and must interfere if anything goes wrong, lest the dinner should be spoiled. As far as waiting, cleaning of rooms, etc., are concerned, the presence of these ladies seems helpful. Their rooms are always comfortably arranged and the cost is very reasonable, so that the possibility of such a lodging is a boon to solitary and working women.

Even in the most expensive schools we should consider the food simple, and every effort is made to instil a love of simplicity and thrift into the minds of all the pupils. At the same time, by observance of little festivals, such as birthdays, etc., opportunity is given to cook more luxurious food and to study the little graces and daintinesses that make a home pleasant. In one school the arrangement of cut flowers is included in the programme. The routine is always strict and, to English eyes, rigorous. Breakfast, consisting of coffee, bread and perhaps cheese, is between 6.30 and 7.30 a.m. Very often a good deal of the ordinary housework is done first. An hour's theory lesson follows breakfast, and the menu and recipes for the day are discussed and explained. Afterwards one group of pupils prepares dinner, while the others are busied with housework, sewing or washing and ironing. There are theoretical lessons on hygiene, nursing, etc., and sewing lessons in the afternoon, and some time is generally set apart for outdoor exercise. In many schools lessons are given which are not directly connected with domestic science; singing is generally taught, French or German may be compulsory, and in some cases any who wish can learn English or instrumental music. The washing of clothes takes place every two, three, or four weeks according to Swiss custom. In schools where all the washing is done on the premises the pupils must from the first help with everything; if, under these circumstances, washing only comes once a month it is an enormous work, and the ordinary routine of the school is altered for a week. In some schools all the house linen is done by the pupils, and they only wash such of their own clothes as are needful for a progressive ironing course. As the washing is nearly always done at home in an ordinary Swiss household it is a very important branch of domestic training. Pupils are probably not entirely ignorant of it when they come to the



schools, and so are ready to profit by the practical experience they gain.

The theoretical domestic economy is very elementary. Sometimes it is given in the form of lecture-lessons; in many schools the pupils use simple text-books. These deal chiefly with the choice of a dwelling, the importance of light and air, the cleaning of various rooms, utensils, etc., clothing, service and the arrangement of meals.

Sewing occupies a good deal of time; ordinary household mending is taught, and the pupils cut out and make undergarments, aprons and blouses.

Gardening is taught wherever possible, and many schools are able to grow sufficient vegetables for their own use; flowers seldom receive much attention. The gardens are generally in good order, and some have quite a professional aspect. In a few cases fowls and pigeons are also kept. The pupils always do the household shopping under the guidance of a teacher, and they are also taught how to make an advantageous choice of materials for clothes, etc.

Cooking is, of course, the most important subject in the programme. In order to ensure plenty of practice to each pupil there are seldom more than eight in the kitchen at the same time. Sometimes the pupils work in couples, and each couple cooks a complete dinner; thus, if there are eight girls cooking for a household of twenty-eight, each couple cooks a dinner for seven persons. In other schools each pupil is responsible for one dish and helps with others, and the duties are distributed and rearranged daily. A specimen of such a plan is given in Appendix F.—III. page 326; it is an example of the careful organisation of work which is common to all these schools. Sometimes the same group of pupils cooks every day for a week; in this case they spend alternate weeks in the kitchen. In other schools the groups change their work daily, and each girl cooks on alternate days.

The principals of the schools are not all trained teachers. Many are practical women, whose former experience has rendered them peculiarly fit for the work.

Nearly all the assistant teachers have attended a training course, and those who come from outside to give special lectures on health, etc., are generally either professional men or teachers.

There are two housekeeping schools where training courses are held, one in Bern and the other in Zürich. Each school trains six teachers yearly. At the end of the course they are expected to be capable of teaching any domestic subject, but in an important school a teacher generally specialises and teaches either washing, sewing, or cooking.

The schools at Bern and Zürich are very similar. At both there are ordinary courses, as well as the training courses for teachers. The ordinary courses at Zürich are chiefly for girls from well-to-do families, and those at Bern are arranged more as a training for service.

(c) Teachers  
and Training  
Courses  
(Bern,  
Zürich).

In Bern there are several lady boarders. The school has a large vegetable garden. Twelve ordinary pupils are received and the course lasts six months. The teachers' course was first held in 1897, and the account in the report for that year describes the training as still being carried on.\* After thanking the various city professors, who freely gave their services to make the new project a success, it continues: "The theoretical instruction included (weekly)—theory of teaching, two hours; chemistry and physics, two hours; law, one hour; theory of nourishment, one hour; hygiene and health, one hour (lessons given by a lady doctor); book-keeping, two hours; domestic economy, two hours; German and French, each two hours.

"During the first term our candidates did all the different kinds of practical work, just like the other pupils of the school; at the end of the term they underwent a small examination. In the second term they began to teach; each had alternately to conduct the school, week by week, as kitchen and house 'chef,' and also to conduct sewing-lessons as well as to teach domestic economy, to talk over the menu and to do the accounts with the pupils.

"They also in turn cook meals at a cost of 3d. per head, so that they may be able later to conduct cooking courses for workmen's families. In sewing we followed exactly our Cantonal plan for sewing teachers. (See Appendix C, page 308.)

"Our school has this advantage over all other institutions of the kind, that the candidates can not only learn practically and theoretically all that they need for their future profession, but that they have opportunity in the housekeeping school at once to use in teaching what they have learnt and thus to cultivate their talent for teaching; for it is by no means sufficient for a teacher to know her subject, she must also understand how to impart it, and to achieve this is the chief aim of our teachers."

A resident teacher's salary begins at about £40 a year. The weak point in the position of these teachers is that in some schools no proper arrangement is made for holidays. The schools are by no means overstaffed, and the principal's position is a very exacting one. In schools where there are two or three courses every year it sometimes happens that there is only an interval of eight to sixteen days between the courses. Part of this time is necessarily spent in winding up the affairs of one term, and preparing for the incoming pupils, so the teacher has small chance of change or rest. Sometimes she has a month's holiday each year, and another teacher takes her place. In case of serious illness or need of complete rest, a teacher may be allowed a term's absence.

(d) Examples of Schools:— In general plan the housekeeping schools are all similar. The different ways of carrying out and arranging the work can best be shown by describing a few of the leading and experienced schools.

\* In 1903 the Bern school was moved to new premises, where twelve students are received. The training course has been extended and lasts one and a half years. A weekly lesson in gardening has also been included.

Among the schools for poorer pupils, that at Herzogenbuchsee, <sup>Herzogenbuchsee.</sup> a prosperous Bernese village, is one of the most interesting. It is held in a beautiful and roomy old house, which is the property of the local Women's Association, and is combined with a temperance restaurant and a home for workmen.

The monthly fee for board, lodging and tuition is eight shillings. Six pupils are trained together, and the course lasts six months. Three pupils are received and three leave every three months, thus there are never six entirely inexperienced girls in the school. In order to connect the teaching as much as possible with ordinary life all lessons are given in dialect. This is unusual in a German-Swiss School; the general plan in domestic science classes is to give the lesson in German and to speak dialect in the kitchen during practical work.

Domestic book-keeping is everywhere an important subject, but in this school it is treated in its widest sense and is not confined to kitchen accounts. The whole weekly income of an ordinary village family is considered; the menus are arranged for a week and not for a single day, in order that the pupils may learn to distribute the food as advantageously as possible, and they are most carefully shown how the money should be divided, and what proportions must be reckoned for rent, clothing, food, etc. The ladies of the committee are anxious to introduce porridge to the country folk, as a desirable addition to their limited choice of nourishing food.

A great many short courses in special subjects (cooking, mending, etc.) are also held, and the two sets of pupils take some of the lessons together.

In fitting up the school the committee has been guided by the desire rather to introduce pupils to new economical and labour-saving methods and appliances, than to imitate the arrangements of their homes. The village is lighted by electricity, which is used throughout the school, even for heating the irons. The classes are small in summer, and at no time may exceed fourteen in number. The short courses last three weeks, the lessons being given daily from 1 to 5 p.m.

There are three teachers and the committee do not demand that applicants for vacant posts shall be certificated.

The pupils seem to respond to the intelligent organisation of the school. Though most of them come from the humblest homes, they are bright and alert, ready to adapt themselves, and thoroughly interested, both in the simple hygiene and theory lessons and in the practical work.

Vevey, Fribourg, and Winterthur are towns where there are schools for training servants and for peasant girls.

In all these schools ladies are received as boarders. At Vevey <sup>Vevey.</sup> there are generally eight or nine girls in the school, which has been at work more than fifteen years. There is no regular course. Pupils can enter on the first and the fifteenth of each month, and the monthly fee is about £1. Many are taken at reduced fees, or are sent by friends who pay for them. The curriculum is very simple; the aim of the founders is "to exercise a refining

- influence on the girls and to develop an upright Christian character" in them, while training them to earn their living.
- Fribourg.** The school at Fribourg is comparatively new, having only been opened in 1900. There is room for twelve pupils and the course lasts six months. A small restaurant is attached to the school, and the advanced pupils have extra lessons in cooking at the town kitchen which has already been mentioned.
- Winterthur.** At Winterthur, in addition to serving boarders and extra dinner guests, dinners are sent out; thus the pupils have plenty of opportunity to adapt their work to the needs of others, but at the same time the principal has a great deal of extra work and responsibility. The school is in a new house, which has been built for the purpose, so there is plenty of space, and the duties are so divided as to give each pupil as much practical work as possible. There are two kitchens; in the first the pupils' dinner is cooked; the second is for the boarders, etc. There are sixteen girls in the school, of whom four cook in each kitchen. The remaining eight attend to the rooms, and then help in the kitchen with washing and cleaning. The girls change their duties once a week. The prospectus and regulations of this school are a good example of schools of this class, and are given below (*See Appendix F*).
- Canton Bern is particularly rich in good housekeeping schools. Besides those at Bern and Herzogenbuchsee, there are rather more expensive ones at St. Imier and Worb.
- St. Imier.** St. Imier is a little French-Swiss watch-making village high up among the pine woods of the Jura. The pupils, of whom there are twenty-eight, come mostly from the German part of the canton, and they are sent to St. Imier as much to learn French as to learn to cook. They are quite young, being seldom more than sixteen years of age.
- The course includes French language and literature, and English and music if desired. The school is in many ways like an ordinary boarding school, and the discipline is very strict. The girls take daily walks, but are never allowed to go out alone. They do all the work except the odd errands, the heaviest garden work, and the general washing. The course lasts a whole year, and costs altogether £32—a large sum for such an institution in Switzerland.
- Worb.** At Worb, a little village not far from Bern, the girls are rather older, and the rules are less rigid. The school is in an old house standing in a large and shady garden, and it seems to be half buried in flowers. All the garden work is done by the pupils, under the principal's direction, and this includes the growing of all the vegetables needed for the house and the care of a number of fowls. So beautiful are the grounds that the place looks at first sight more like a gardening than a housekeeping school. However, a tour of the house soon dispels such an idea.
- There are twenty-four pupils, and they pay about two guineas a month. Three courses are held yearly, the summer one lasting five months, and the two others three months each.
- In this school the pupils are divided into four groups. Directly after breakfast, group 1 does the bedrooms, group 2 the sitting

rooms, group 3 is busy in the kitchen, while group 4 does the shopping. This work is finished at 7.30 a.m., when all come together for the theory lesson. At 8.30 one group begins to prepare dinner and the rest sew. They learn, of course, to prepare the various soups, vegetables and meat dishes that are the usual fare in Switzerland, and in addition they make the finest sorts of pastry and cake. The pupils are generally fairly skilful needlewomen before they come to the school, so a strict programme in this subject is not necessary. They make and mend for themselves, and can choose their work, subject to the approval of the teacher.

Dinner is at 11.30, and in the afternoon there are three hours of lessons—chemistry, arithmetic, hygiene, singing, etc. These lessons are given by the village clergyman, doctor and head schoolmaster. Washing and ironing fill alternate Monday afternoons; the evenings are free.

The principal teaches cooking, theory and gardening; her assistant, who was trained at the Bern needlework school, has charge of the sewing, washing and ironing. The school is very homelike, and the principal seems to be particularly successful in making her pupils work independently and think for themselves.

The schools mentioned above may be taken as fair examples of the Swiss resident housekeeping schools. There are many others,\* but their arrangements are practically the same, and the chief differences lie in the different individualities of the teachers. No account of these resident schools is complete, however, without some mention of two out of the small group of schools which are entirely private, i.e. which receive no grants from public funds.

The first of these is St. Carl, a Roman Catholic school belonging to the Sisters of the Holy Cross, which is beautifully situated on the Lake of Zug in a fine old house. It is an off-shoot from the great cloister school at Menzingen, a village among the hills of Canton Zug, about eight miles from St. Carl. There are altogether 300 pupils in the various divisions at Menzingen, and special attention has for many years been given to domestic science. All pupils must attend to their own cubicles, and girls can learn cooking, washing and ironing if their parents wish. In addition, there are special housekeeping courses for pupils of 14 or 15 who do not wish to enter the "High School" classes or the training school for teachers. These pupils learn to do practical housework in the morning, when four or five of them help in the kitchen; and in the afternoon they have ordinary lessons. When it became difficult to do justice to all the domestic science pupils, St. Carl was started for older girls who wish to take a full housekeeping course. This school is conducted by six of the Menzingen Sisters, and serves as a holiday home in summer for the foreign pupils in the big school. The course lasts three months; the fee is £8, and there is an extra charge for those who prefer a bedroom with three or four others to the dormitory.

Menzingen  
and St. Carl.

\* A list of schools and classes in receipt of Federal grants appears in the *Jahrbuch des Unterrichtsvereins in der Schweiz*, issued annually, which may be seen at the Board of Education Library.—ED.

The number of pupils varies from 18 to 30. The special feature of the school work is individuality; a separate time-table is made out for each pupil to meet her special needs. Both here and at Menzingen the visitor is at once struck by the gentleness and motherly care shown by the Sisters to their pupils. The prospectus is given in Appendix F, II. (page 324).

Ralligen.

Another well-known private school is at the old castle of Ralligen, ideally situated on the Lake of Thun. There are sixteen pupils in a course, and in summer there are two parallel but practically independent schools, under the supervision of one principal. The rooms are large and airy, and the pupils spend a great deal of time in the open air. Foreign pupils are welcomed in this school, as the directors hope that a mixture of nationalities will help to cultivate a broad-minded and friendly spirit among the pupils. There are two young servants to clean the corridors, carry the wood, and do other rough work.

The pupils are divided into two groups; eight work in the kitchen, and eight are occupied with cleaning and sewing. Two "housekeepers" are appointed weekly in each of the two schools, and they have numerous special duties, such as arranging the work lists and places at table, keeping kitchen accounts, answering the door and receiving visitors, etc. Extracts from the prospectus, etc., are given in Appendix F, III. (page 324, ff.).

#### 2.—Non-Resident Schools and Classes.

In addition to the resident housekeeping schools, there are a few town housekeeping schools, where the pupils come at 8 a.m. and stay till 6 p.m. The most complete of these schools are at Basel and Neuchâtel.\* The course at Basel is one branch of the great needlework school, and was instituted thirteen years ago. There can naturally be very little housework in a school of this kind, and the time is chiefly devoted to cooking, needlework, and the usual theoretical lessons. The pupils are charged 16s. a month to cover the cost of the daily dinner and afternoon coffee. In the kitchen they work singly. There are two parallel courses, each lasting six months.

Basel.

Neuchâtel.

At Neuchâtel the course only lasts three months, but, as not more than six or eight pupils are usually admitted, each one receives a great deal of individual attention. The programme and time-table for this school are given in Appendix F, IV. (page 327, ff.).

Cooking Courses.

There are also a great many cooking courses, both public and private, varying in length, where the pupils attend daily from 8 a.m. till 2 p.m. Many of these courses are free, a small payment being made for dinner. The instruction is very like that in an ordinary housekeeping school, but the fare is generally rather better. The number of pupils naturally depends on the size and arrangement of the kitchen, as all must be occupied simultaneously with cooking. The pupils do their own shopping on market days. A simple theory lesson, including accounts and a little hygiene, is given every morning; and then dinner is pre-

\* In 1903 a similar school was opened in Lucerne.

pared. The pupils leave as soon as the kitchen is cleaned and tidied. In these courses high-class cookery is taught, and the lessons are generally very popular.

A specimen division of work is given below (see Appendix F, V., page 329). It is used in a class composed of eighteen pupils working under one teacher; her kitchen is fitted with six stoves, and a complete dinner is cooked at each by three pupils.

The most striking points in the teaching of domestic science in Switzerland are the accessibility of the classes and the popularity of the subject. Its scientific side is almost too simply treated in the more advanced schools; in some places the arrangements bear the mark of haste; but every school is individual, and carefully adapted to the needs of its own locality. Conclusion.

As Dr. Huber says: "This branch of education attracts the increasing attention of both the communal and the cantonal authorities. The active emulation that shows itself between all parts of the country is seen not only in the schemes of work and other details of school organisation, but also in the arrangements that are being made for the better training of the teachers."\*

The citizens have come to the conclusion that some domestic training is essential to all women. Private societies have founded schools and detached classes to meet the needs of every class of pupils. The fees are very low, and it is not difficult to obtain help from the central and local governments. Thus, over a large part of Switzerland a thorough domestic training is in reach of every woman, and this fortunate region is constantly increasing in area as the value of the work becomes more apparent. The people have responded heartily, and it is a cheering sight to see the well-filled classes. One seldom hears of an empty place in a school, and in many cases pupils are entered some weeks before the course begins. Of course, there are districts where ignorant opposition is experienced, but this seems to be a rare occurrence. The teaching may seem old-fashioned in some respects, but it is evidently well suited to the country and the customs of the people. Thanks to public-spirited directors and a responsive and grateful population, there is every promise that the teaching of the domestic sciences will expand and increase to meet all demands that may in future be made.

1902.

M. CÉCILE MATHESON.

In order to bring the above report up to date, a few additions have been entered, in the form of footnotes, in the preceding pages.

1904.

M. C. M.

*Note.*—In connection with the foregoing Report, the following article by Madame Jean Brunhes (Fribourg) may be read with interest:—"Le développement et l'organisation de l'enseignement ménager en Suisse et particulièrement dans le Canton de Fribourg." This article was published in the "Musée Social. VI. année, No. 11," November, 1901 (Paris), and may be consulted at the Board of Education Library, St. Stephen's House, Cannon Row, S.W.—Ed.

\* Jahrbuch des Unterrichtswesens in der Schweiz, 1900, p. 146.

## APPENDIX A.

EXTRACTS FROM THE FEDERAL RESOLUTIONS CONCERNING  
TECHNICAL AND INDUSTRIAL EDUCATION AND THE DOMESTIC  
AND TECHNICAL EDUCATION OF WOMEN. (Nov. 17th, 1900.)

## I. CONDITIONS OF APPLICATION FOR FEDERAL GRANTS.

Art. 1. Applications for federal grants towards the expense of maintaining institutions whose aim is technical and industrial training, including the domestic and technical education of women, must be made every year before August 15th to the Swiss Department of Industry, through the cantonal governments, by whom they must previously be verified and approved. In the case of an inter-cantonal institution, it is sufficient if the application is presented and approved by the government of one of the cantons concerned.

Art. 2. A first application must contain :—

(a) Concerning organisation and management :—

1. The exact name of the institution ; description of the building, owner, time of opening.
2. Description of aim, premises, organisation of managing council, teaching apparatus, etc. Information concerning the teaching and managing staff and their payment ; and  
In the case of schools : information concerning the yearly amount of instruction and its distribution ; syllabus and timetable ; attendance in the separate departments or classes, total attendance ; conditions of entrance ;  
In the case of museums : conditions of use ; visiting time.

(b) Concerning the financial conditions :—

A full statement of accounts for the last year's work, if the institution is in a position to make such a statement ; the budget of the year for which a grant is desired. These documents must state accurately on the prescribed forms :—

1. The pecuniary and other donations of the canton, the communes, corporations and private individuals.
2. The capital belonging to the institution and the interest thereof.
3. The sum derived from entrance and school fees and fines, from purchase of material, and the profit on work and other sales.
4. The amount of the federal grant and its proposed application.

In addition, the application must be accompanied by any documents that have been published concerning the institution, such as laws, decrees, resolutions, regulations, syllabus, annual report, catalogue, etc.

Art. 3. Applications from institutions which have already been subsidised by the Federation must include :—

(a) A report of the progress, results, and attendance of the last year or course ; printed reports suffice for such institutions as are able to send them.

(b) The statement of accounts as described in Art 2 b.

Art 4. The accounts (according to Art. 2 b) of institutions receiving federal grants must be delivered to the Department of Industry as soon as possible after the close of the year or course concerned, and at the latest on



January 31st; the cantonal governments must duly audit the accounts before presenting them. Bills, receipts, etc., must only be sent if specially demanded. Institutions which carry on business need only send a balance sheet. An inventory of all appliances obtained through the federal grant must accompany the accounts. The government of the canton concerned is responsible for the accuracy of the accounts and inventory.

Art. 5. Applications for federal grants towards the expenses of special courses, "peripatetic courses," and prize competitions in technical and industrial training, including the domestic and technical training of women, must give exact information concerning the founders, aim, organisation, syllabus and date of foundation; also detailed accounts. When the undertaking concerned has been brought to a successful close, a report on progress and result, accompanied by the accounts and a statement of the application of the federal grant, must be sent through the cantonal government, which is responsible for the accuracy of the accounts.

## II. AMOUNT AND APPLICATION OF FEDERAL GRANTS.

Art. 6. The federal grant may equal in amount one half of the total sum received from the canton, communes, corporations and private individuals. Interest derived from invested capital may be reckoned with the aforesaid. No decrease of former donations from canton, communes, corporations and private individuals must follow the receipt of a federal grant.

Art. 7. The federal grant may not be employed :—

- (a) For general management, rent and repairs, lighting, heating, office expenses.
- (b) For the purchase and repair of furniture, for pupils' materials, raw materials, and such utensils as need frequent replacing.
- (c) To increase the working capital.

Art. 8. Institutions, courses, etc., in receipt of federal grants must make the advantages they offer as general and easy of access as possible. In the matter of school and entrance fees, it is not, as a rule, allowable to favour natives of the locality or canton more than other natives of Switzerland.

Museums must be open free at suitable times to teachers, pupils, manufacturers and their workmen; as much facility as possible must be given for lending out, under proper guarantee, and for making other use of the materials available advantageous to students (practical research work, travelling exhibitions, etc.).

The cantonal governments must undertake to use and preserve for public use all purchases made with the help of federal grants, should the institutions which they originally served cease to exist.

## III. SCHOLARSHIPS.

Art. 9. Applications for scholarships from those who wish to be trained, either at home or abroad, as teachers for institutions aided by the Federation must be presented to the Swiss Department of Industry through the cantonal governments, and with their approval.

Applications must be accompanied by :—

- (a) School certificates, and other proofs that the applicant has acquired such knowledge and practical training, and possesses such abilities and qualifications as shall justify the grant of a scholarship.
- (b) An official statement of the financial circumstances of the candidate and of his or her parentage.
- (c) A declaration that the candidate is already assured of a scholarship from other sources (canton, commune, corporation, endowments, etc.).

- (d) The syllabus of the proposed institution if the candidate means to attend a foreign educational establishment.
- (e) A written declaration from the candidate that he will fulfil the conditions laid down in Art. 11.

Art. 10. A federal scholarship is only granted if the candidate also receives assistance from other sources.

The federal scholarship may equal the amount received from other sources.

The department reserves to itself the right to send the candidate, if needful, to special institutions suitable to his work.

Art. 11. The recipient of a federal scholarship binds himself :—

- (a) To send the cantonal government annually, for the information of the Industrial Department, a report on the course of his studies, if possible with the addition of certificates.
- (b) At the close of the time of study, to take a position as teacher, at the usual salary, at one of the institutions sanctioned by the Federation, if opportunity offers.

In case of non-fulfilment of these conditions the recipient may be called upon to refund the grant received from the Federation.

The federal scholarship will only be continued if satisfactory reports of the recipient are received.

Art. 12. Applications for scholarships, in order to attend courses or make research journeys, from teachers already working at institutions receiving federal grants, are to be treated according to Art. 9, §1. c. and Art. 10, §1, 2. The recipient undertakes to furnish a report of the course or journey.

#### IV. PAYMENT.

Art. 13. The Swiss Department of Industry is empowered, under certain reservations, to make grants within the limits of the budget on receipt of applications (as described) and to decide on the amount to be granted in each case.

Art. 14. Federal grants are paid through the cantonal governments, as soon as the department has decided thereon. Institutions whose course is regular and perpetual may, on application, receive the federal grant in two instalments, the first, amounting to about half the total grant, before inspection—at the earliest sometime in January—the second, as a rule, only after receipt of the expert's report. The first payment is not binding on the subsequent decisions of the department.

Should the accounts of an institution show that the federal grant has overstepped the maximum laid down in Art. 6, §1, a corresponding deduction will be made from the next grant. Scholarships will be paid as soon as the consent of the department has been gained.

#### V. INSPECTION.

Art. 15. The Swiss Department of Industry is entitled to inspect the work of institutions or other undertakings receiving federal aid, to inquire into the application of the federal grants, and to be represented at examinations. For the last-mentioned purpose the inspecting experts must be punctually informed of the dates of such examinations.

The department may employ experts to decide upon applications for scholarships, and to supervise the recipients.

The department will issue instructions to the experts, concerning their duties and fees.

**INSTRUCTIONS TO EXPERTS, § 12.**

The Experts receive 20 francs (16s.) per day of inspection or work relating thereto, also a travelling allowance of 20 centimes per kilometer (about 3d. per mile).

Where journeys of inquiry in foreign countries are undertaken at the request of the Department of Industry, an allowance is made of 35 francs (£1 8s.) per travelling day and 20 francs (16s.) per work day (drawing up of report, etc.), and the amount actually expended on travelling and transport of luggage is refunded.

**FORM OF EXPERT'S REPORT.**

Superintending authority.	Proprietor of the establishment.	In what building is the institution, and to whom does it belong?	Condition of the rooms and appointments.	Fees, purchases, fines, etc.	How is irregularity of attendance dealt with, and with what result?

**PERSONS EMPLOYED IN THE INSTITUTION.**

Name.	Training and further profession.	Duties or subjects taught.	Salary.

Condition and suitability of apparatus.	Preservation of apparatus purchased by the federal grant.	Collections and Museums.	
		When open.	Entrance fees.

Term or Course.		No. of weeks of duration.	No. of pupils.		How many pupils				
Commencement.	End.		Male.	Female.	Only attended the primary school ?	Are still of primary school age ?	Are apprentices ?	Have finished their apprenticeship ?	Have not yet chosen a profession ?

Expert's report concerning organisation, time-table, results of the instruction, progress of the institution :—

Suggestions of the Expert as to the amount and application of the federal grant :—

Date :

Signature.

Further observations :—

## APPENDIX B.

### TWO SPECIMEN PROGRAMMES FOR SEWING SCHOOLS (NEUCHÂTEL AND SOLOTHURN).

#### I.—PROGRAMME OF NEEDLEWORK IN THE INFANT AND PRIMARY SCHOOLS OF THE CANTON OF NEUCHÂTEL (FEBRUARY 4, 1899.)

In each class the pupils shall all be engaged on the same work.

Any occupation foreign to the lesson is strictly forbidden to the teacher. The preparatory exercises made on coarse linen in the infant school are to be repeated in the primary school on fine white calico.

The theory taught shall be applied to practical and useful objects.

There shall always be simultaneous or class teaching.

As all the work in the programme is connected and developed progressively, the pupils can and ought to prepare their work themselves, both in sewing and knitting, according to the directions of the teacher. The attention of the pupils shall be called both to the proportions of the objects, and to the necessity of employing materials suitable to the fineness or strength of the cloth. In the infant school the several exercises in the lower division must have as object the training of the hand and eye. It is in the middle division that the exercises designed to serve as foundation to the preparatory sewing exercises begin ; thus the threading of beads leads to the threading of needles, the first exercises of embroidery on paper are a preparation for the different stitches, and those of weaving paper mats by means of large strips of paper, lead to Swiss darning.\*

\* Darning according to the web of the material.

In the upper division, the different stitches employed later in the making of hand-sewn objects shall be studied on coarse material; the exercises of weaving with paper in narrow bands should, by their gradation, put the child in a position to execute spontaneously the first steps in the mending of cloth. The paper-cutting done in this division serves as foundation to cutting out. In a word, these different exercises, while preserving an entirely infantine character, should furnish a solid preparation for all kinds of sewing.

Programme for Infant Schools.

*Lower Division (age four to five years).*

First Year.—Numerous exercises with the object of developing manual dexterity and accuracy of vision.

*Middle Division (age five to six years).*

Second Year.—Preliminary exercises; threading of beads. (Introduction to threading of needles.)

Threading of a wool-needle.

Pricking of checked paper and embroidery on paper. (Introduction to sewing.)

Exercises of weaving with paper cut into large strips. (Introduction to the mending of cloth.)

Use of scissors for cutting paper previously folded. (Introduction to cutting out in cloth.)

*Upper Division (age six to seven years).*

Third Year.—Preparatory exercises in cutting out canvas or coarse cloth: overcasting; hemming; cross-stitch; herring-bone; back-stitch; Swiss darning.

Further exercises with narrower strips (of paper), easy designs. (Introduction to the mending of damask.) Further exercises in cutting out.

Preparatory knitting exercises.

Programme for Primary Schools.

*Lower Division.*

First Year.—*Theory of Knitting*:—Preliminary exercises in plain and purl stitch, using coarse coloured cotton and short needles; practical applications. Strip in cotton, forward and back, with increase and decrease, seam-stitch and small heel as preparation for stockings; a stocking leg.

*Sewing*:—Use of the thimble and ordinary needle.—Hemming, overcasting. Back-stitching on canvas.

*Swiss darning*:—Exercise on canvas with an ordinary needle.—A hemmed article.

Second Year.—*Knitting*:—Second heel-exercise.—A pair of stockings.

*Sewing*:—Running, hemming, overcasting on cloth. Introductory marking exercises: cross-stitch.

*Swiss darning*:—Continuation of preceding exercises. A cloth object (pocket, etc.).

*Middle Division.*

First Year.—*Knitting*:—Theory of the entire stocking. A pair of stockings.

*Sewing*:—Various stitches. Mending of stockings: thin places on the right side. A cloth object: apron.

Second Year.—*Knitting*:—Mending of stockings.

*Sewing*:—Recapitulation of different stitches. Sewing on the cross. Placing of oversewn patches with corners. Alphabet in cross-stitch on canvas.

*Garments*:—Cutting out and making a chemise. First theoretical principles of taking measurements, with their applications.

*Upper Division.*

First Year.—*Knitting*:—Re-footing stockings. Optional exercises in crochet. Stocking-mending.

*Sewing*:—Application of the different stitches to the making of finished objects. Making a cuff. Simple darning on canvas. Overcast patches with four corners.

*Garments*:—Cutting out and making a pair of drawers.

Second Year.—*Knitting*:—Re-heeling stockings. Stocking-mending. Optional crochet work.

*Sewing*:—All kinds of mending. Complete wristband with back-stitch, button holes and loops; four-cornered patches; simple mending on cloth.

*Garments*:—Taking of measurements. Cutting-out and making a chemise. Optional exercises in ornamental stitches on canvas.

II.—PROGRAMME FOR THE SEWING-SCHOOLS OF THE CANTON OF SOLOTHURN.

First Sewing-School Year—(Second Primary-School Year).

(a) *Knitting*: To be learnt on a practice-strip, 24 stitches to be cast on. The plain stitch shall be practised till the pupils have attained to some ease in knitting, for which at least 20 rows without mistakes are necessary. Similarly with purl stitch. Then follows ribbed knitting with two plain and two purl stitches; similarly 20 rows. Afterwards a complete heel. Only on completion of this practice-piece follows the:

(b) *Stocking-knitting*: One pair of stockings with 84 stitches cast on (the casting-on shall be done by pupils of the third school year), with discussion of the parts of a stocking and their proportions, with the aid of the drawn stocking-pattern and the knitting frame. Discussion of the properties of the material used for knitting. Material for practice-strip and stockings: unbleached cotton yarn, 12-ply, and four suitable needles. An extra strand to be used for heel and toe.

Second Sewing-School Year—(Third Primary-School Year).

(a) *Knitting*: Casting-on stockings. Lessons on the proportions of stockings as in the first year. Calculation of the different parts.

(b) *Footing stockings*: Instruction in sewing is not to begin until the majority of the pupils have finished a stocking. Afterwards knitting is to be continued two hours weekly, and as extra work.

(c) *Sewing*: Backstitch and seaming on a piece of cloth. (The remnants from the cutting-out classes to be used for this.) Hemming pocket-handkerchiefs.

Lessons on the use of material and implements.

Third Sewing-School Year—(Fourth Primary-School Year).

Summer.

(a) *Knitting*: Re-footing and re-heeling stockings as extra work.

(b) *Sewing*: Beginning of the sewing practice strips, which are continued in the two following years.

Material: 30 cm. (11½ ins.) of bleached, coarse, soft cotton, red marking cotton and white cotton.

Running, quilting and backstitch (with red cotton); two narrow seams, and two tucks.

Lessons on the origin, meaning, and uses of sewing, also on the quality of cloth and sewing materials. The texture will be demonstrated on the sewing-frame, also the different stitches.

Winter.

(a) Continuation of stocking making and mending as extra work.

(b) A girl's gored chemise, with a completed chemise as pattern.

Material: 1·80 m (2 yds.) medium calico, 84 cm. (32½ ins.) in width.

Fourth Sewing-School Year—(Fifth Primary-School Year).

Summer.

(a) *Knitting*: A pattern strip, 40 stitches wide, with five piqué and five open-work patterns.

Material: English yarn and two suitable knitting-needles.

(b) *Stocking-mending*: Simple holes, and the covering of thin places with the pattern stitch.

(c) *Sewing*: Continuation of sample-piece; putting on a sleeve band; placing of a band with ornamental stitching; sewing on loops and buttons.

Winter.

(a) *Knitting*: A pair of new stockings as extra work.

(b) *Sewing*: A simple chemise.

(c) *Linen Marking* on a canvas sampler, on which two or three alphabets are to be worked in cross-stitch; also simple numbers, the pupil's initials, and the date of the year.

Demonstration on the canvas-net of the sewing-frame.

Fifth Sewing-School Year—(Sixth Primary-School Year).

Summer.

(a) *Knitting*: A pair of socks as extra work.

(b) *Sewing*: Thorough learning of button-holes, loops and eyelet-holes on a piece of material. Afterwards at least five button-holes, and some loops and eyelet-holes are to be worked on the sample-piece.

(c) *Mending*: Two square patches to be made in the sample-piece.

Winter.

(a) *Sewing*: Further back-stitching, and some ornamental stitches on the sample-piece. A plain chemise with short gores.

Material: Bleached, medium calico, 2.15 m. (2 yds. 12in.) long, and 84 cm. (32½ ins.) wide.

(b) *Stocking-mending*: Two pairs of stockings to be patched and darned.

(c) *Linen-marking*: Mark the sample-piece and a finished shirt in cross-stitch.

Sixth Sewing-School Year—(Seventh Primary-School Year).

Summer.

(a) *Stocking-mending*: Various kinds of patching. Darning of simple holes, and holes in seams requiring decrease.

Demonstration on a mended stocking-web on the knitting frame.

(b) *Mending*: Square, rectangular and triangular patches on a coloured sample-piece.

Explanation of the use and application of different kinds of mending.

The different shapes of patches, showing the fitting at the corners, to be drawn on the blackboard.

Winter.

(a) *Cutting out*: The chemises for the fourth sewing-school year.

(b) *Sewing*: A boy's shirt. (Cutting out the same with the help of the teacher.)

(c) *Mending of material*: At least two practical pieces of mending, if possible, one to be white and one coloured.

(d) *Marking* of the boy's shirt.

(e) *Cutting out in paper*: Chemise, with all its parts in reduced proportions.

The patterns to be drawn on the blackboard, and in an exercise-book with checked paper.

(f) *Domestic economy*: Care and cleaning of the dwelling—bedroom, sitting-room, kitchen, store-room, linen-closet, loft, cellar, etc.

Knowledge of the different kinds of yarn, calico and linen.

## Seventh Sewing-School Year.

## Summer.

(a) *Stocking mending*: Practice in mending. The mending of ribbed stockings.

(b) *Mending of materials* according to woven pattern.

(c) *Cutting out*: Directions for measuring, drafting and cutting-out a man's shirt. Front, shoulder piece, and sleeves in full size in paper.

(d) *Sewing*: One pair of drawers, one dressing-jacket, one petticoat, or one bed-cover. Each pupil to cut out her own work under the teacher's supervision.

## Winter.

(a) *Cutting-out* and making a man's shirt.

(b) *Mending*: Two or three practical exercises as in year VI.

(c) *Marking*: The man's shirt in cross-stitch; other articles, such as handkerchiefs, napkins, towels, etc., in various stitches.

(d) *Domestic economy*: Care and preservation of washing garments and of dresses.

## Materials and Implements.

(a) Each pupil receives from the school:—

1st year: Unbleached cotton yarn and knitting needles.

2nd year: Material for a pair of stockings, as in the first year. Sewing material: white cotton, needles (half-length) and pins. Similarly in all the following classes.

3rd year: Bleached, coarse, white calico for the sample work; red cotton; bleached medium calico (84 cm., i.e. 32½ ins. wide) for the chemise.

4th year: English yarn for the pattern-strip and darning. Tapes and buttons for the sewing sample, canvas, wool, and darning needles.

5th year: Knitting material for the socks as in the first year; red cotton, etc., for the embroidery and marking; darning cotton as in the fourth year; material for the shirt as in the third year.

6th year: Tick for the mending-pattern; darning-cotton as in the fourth year; paper for cutting out.

7th year: Darning cotton; paper for cutting out.

(b) Each pupil must provide: Thimble, scissors, darning-ball and sewing-cushion, also the necessary material for the garments.

## Teaching-Materials.

(a) *Obligatory*: 1. A diagram of a stocking; 2. Sewing frame, with the necessary cloth and knitted webs; 3. A large blackboard ruled in squares (4 cm., i.e. 1½ ins. to a side); 4. Large examples of different alphabets and figures.

(b) *Desirable*: 1, Collection of stuffs; 2, Check drawing-book (½ in. side); and, 3, *The Continuation Pupil*,\*—the two latter for the use of the two upper classes.

## APPENDIX C.

## BERNESE LAW, REGULATIONS AND PROGRAMME FOR THE GIRLS' SEWING SCHOOLS.

## I.

THE LAW CONCERNING GIRLS' SEWING SCHOOLS (27TH OCTOBER, 1878) OF THE GREAT COUNCIL OF THE CANTON OF BERN, DETERMINES:—

## A.—GENERAL CONDITIONS.

§ 1. The instruction in sewing is obligatory for primary school girls. It includes knitting, sewing, mending and the making of simple garments. Neatness and cleanliness must be strictly insisted upon.



At the beginning of each term the Primary School Commission may, in exceptional cases and on the recommendation of the teachers and the Ladies' Committee, excuse pupils from further attendance. Such pupils must be in the third school division, and must pass an examination showing that they have reached a satisfactory standard.

§ 2. The girls of a primary school class form also a special class in the sewing-school, and the instruction must be properly graded as in other subjects.

If the number of pupils in a sewing school exceeds forty, an additional class must be formed.

A class numbering less than fifteen pupils can be combined with another sewing school and class of the same district, provided that the total number of pupils does not exceed forty.

§ 3. This law applies similarly to secondary schools.

#### R.—SPECIAL DIRECTIONS.

##### (I).—School Hours and Absences.

§ 4. The number of school weeks prescribed for primary schools by the law of 11th May, 1870, applies also to the sewing schools. During this time the teaching is to be given :—

(1) In winter in all divisions for three to four hours weekly.

(2) In summer on two half-days for four to six hours weekly.

The school hours for girls shall not in any case exceed the weekly maximum of thirty-three hours, sewing lessons included.

§ 5. If the unexcused absences from the sewing school exceed one-third of the time of instruction, the delinquents shall be reported by the Primary School Commission, even the first time, to the Council of Government.

##### (II).—Financial Arrangements.

§ 6. The expenses of the sewing schools are defrayed by the communes or school-districts with the help of cantonal grants, and sometimes of presents, legacies and the earnings of the schools.

§ 7. The commune or school-district must provide :—

(a) The room with furniture and heating.

(b) The necessary teaching and demonstration apparatus (black-board, frames, charts, collection of patterns, etc.).

(c) Part of the salary of the teacher.

§ 8. The parents or guardians of the pupils must furnish the necessary materials, and if they neglect to do so, the school authorities must provide the same at their expense. The materials are to be supplied gratuitously to children, if they or their parents receive parish relief or are otherwise in needy circumstances.

The School Commission must inform itself accurately of these circumstances at the beginning of the school year. The requisite credit for these expenses must be granted to them yearly.

§ 9. The canton contributes to the yearly salary of a sewing teacher :

(a) 50 to 70 francs (£2 to £2 16s.) per class if the teacher is certificated.

(b) 30 francs (£1 4s.) per class if the teacher is uncertificated.

The limits of the cantonal grant are determined by the financial condition of the canton as set forth in the official budget.

The contribution of the commune to the yearly salary of a sewing teacher amounts to at least 50 francs (£2) per class. This payment is made half-yearly.

The payment of the cantonal share is made on the report of the Council of Education through the Government agent ; but only if the provisions of

this law have been complied with; where this is not the case, the commune or the school district has to pay this contribution, unless the fault lies with the teacher concerned.

The Council of Education, under appeal to the Council of Government, decides any disputes on this point.

If the payments are not made within a month of the day when they are due, the recipients are entitled to 5 per cent. interest.

#### (III).—Appointment of Sewing Teachers.

§ 10. When a primary-school teacher is appointed to a given class, she can only be absolved from the duties of sewing teacher to that class by permission of the Council of Education. On the question of payment see § 9.

§ 11. A primary school teacher is permitted to undertake the sewing lessons in other classes, provided that the instruction of her own class does not suffer thereby.

In this case the appointment to a further class is concurrent with her appointment to her own primary school class.

§ 12. The appointment of sewing teachers, other than primary school teachers, is made not less than eight days after advertisement of the vacancy in the official organ of the district, or a similar public announcement. The teacher is appointed by the School Commission on the recommendation of the Ladies' Committee, and this appointment is valid for six years.

§ 13. Only those persons are eligible, who are certificated as having passed a special examination for sewing teachers. Uncertificated teachers can only be provisionally appointed for one year. The appointment of the latter is subject to the sanction (ratification) of the Council of Education.

The diploma of a primary school teacher includes the certificate necessary for a sewing teacher.

#### (IV).—Inspection of Sewing Schools.

§ 14. The primary school commissioners stand in the same relationship to the sewing schools as to the primary schools; but they may transfer these duties to committees of ladies appointed by them for the special supervision of the sewing schools. The school commissioners must, however, transact all business with the cantonal authority.

The duties of school inspectors are the same with regard to sewing schools and primary schools.

The Council of Education may, from time to time, as it deems necessary, order special inspection by female experts, to which the school inspectors must also be invited.

Should these arrangements for the inspection of the sewing instruction be found insufficient, further orders may be given through decree of the Great Council.

#### (V).—Training of Sewing Teachers.

§ 15. It is the duty of the canton to provide for the training of sewing teachers, either by the arrangement of the necessary courses or in other suitable ways.

By order of the Council of Education compulsory and optional recapitulation and continuation courses for already certificated teachers are also held from time to time.

§ 19. This law, after its acceptance by the people, comes into force on April 1st, 1879. It abolishes the law of June 23rd, 1864, concerning girls' sewing schools. Before the first-mentioned date arrangements must be made for the provision of institutions, where sewing teachers can obtain the necessary diplomas.

II.

REGULATIONS FOR THE GIRLS' SEWING SCHOOLS IN THE CANTON OF BERN.

(1).—The Instruction.

§ 1. Sewing has the same value as other subjects, and the sewing teachers have the same rights and duties as the other teachers.

§ 2. The instruction must be simultaneous (class-teaching), *i.e.*, all pupils of the same class must be taught together; it must be arranged in accordance with the prescribed programme with special reference to local requirements. The teacher in consultation with the Ladies' Committee must arrange the details of instruction on the lines of the general official programme.

§ 3. The teacher must conscientiously carry out the obligatory scheme of work, and must produce it at the times legally appointed for examination by the School Commissions. She shall send the winter list of work before the 15th April, and the summer list of work before the 15th October to the school inspector.

The school inspector shall forward these reports at once to the Council of Education and the cantonal grant for the half year will be forthwith paid by the Government clerk.

§ 4. According to § 14 of the law the School Commission shall elect, for a term of from two to six years, committees of ladies consisting of at least five members. These committees of ladies, in co-operation with the School Commission, supervise the discipline and teaching in the sewing school. It is also their duty:—

- (a) To see that the instruction is given carefully in accordance with § 1 of the law, and in conformity with these regulations, and that the programme is strictly followed.
- (b) To take care that the pupils are provided with the necessary materials for the general teaching.
- (c) To arrange yearly, as a rule at the close of the school year, for a public examination, at which an account of the work done during the year, and, if possible, the work itself shall be produced.
- (d) At the close of a school year to add their judgment on the work to the school report.
- (e) To visit regularly, and in turn, the sewing school, that they may form a correct judgment on its progress and results.
- (f) To examine the pupils who, in accordance with § 1 of the law, wish to be excused further attendance at the sewing school, and to report to the School Commission the result of such examination.
- (g) To forward a nomination (duly proposed and seconded) to the School Commission when a new sewing teacher is to be chosen.

§ 5. The materials for the elementary exercises in knitting, sewing, drawing, mending and cutting out shall be provided by the Ladies' Committee, through the sewing teachers, and the cost shall be divided among the children.

For the other instruction each pupil must bring the necessary materials.

Should parents who are in a position to provide the requisite materials refuse to do so, the Ladies' Committee shall provide the children in question with the necessary articles. If the parents refuse to pay for these materials, the work already completed by their children shall be sold to cover the expense incurred. The Ladies' Committee shall be empowered to provide the prescribed materials for poor children. In carrying out this duty they shall only consider the efficiency of the teaching, and not the needs of the children.

§ 6. The School Commission must give their attention and care to the sewing schools, and may at any time demand a report of them from the Ladies' Committee.

Any vacancy for a sewing teacher shall be made known by them according to § 13 of the law; they shall supply the Ladies' Committee with the list of applicants, and shall appoint the teacher not less than eight days after the vacancy has been advertised. As a rule certificated candidates are to be preferred to uncertificated. Sufficient reason must be given to the Council of Education for departures from this rule.

The definite choice of a teacher must be at once announced to the inspector, as must also a provisional appointment, which requires the consent of the Council of Education.

§ 7. The School Commission shall further:—

- (a) Appoint the weekly number of hours of instruction within the limits fixed by § 4 of the law, and their position in the time-table.
- (b) Decide, after receipt of a report from the Ladies' Committee, in cases of withdrawal demanded by pupils of the third division.
- (c) According to § 5 of the law, check the absence list, and report delinquents to the authorities.
- (d) Provide the necessary teaching and demonstration apparatus and suitable furniture. The latter includes a cupboard with a lock in which the children's work and materials shall be neatly kept, also forms and tables. Where the ordinary school room also serves as sewing school, school tables must be provided which can be conveniently used as work tables. The use of the school tables as seats and the forms as footstools is forbidden.

§ 8. Primary school teachers who undertake to conduct a second sewing school (§ 11 law) must arrange the time of instruction with the consent of the School Commission and notify the same to the inspector.

§ 9. In cases where, according to § 4 of the law, four hours weekly are devoted to needlework in winter, they may be divided between two half days or added in single hours to the other lessons. The latter plan is recommended for the first division.

§ 10. The cantonal school inspector will inspect the sewing schools. In addition to his ordinary duties, he will:—

- (a) Have constant control over the teachers of the sewing schools.
- (b) Examine personally, as a rule once a year, the condition and work of the sewing school, and insist on the removal of existing inconveniences and deficiencies.
- (c) Report on the result in the different kinds of work in the way that seems best to him.

#### (9).—Training Courses.

§ 11. As a rule, two courses for the training of sewing teachers take place yearly. These courses are held at suitable centres in different parts of the canton.

§ 12. Fifteen to thirty candidates may be admitted to a training course.

§ 13. Whoever wishes to enter such a course must apply to the Council of Education according to the prescribed form. The following papers must accompany the application:—

- (1.) A birth certificate.
- (2.) An account of her education, drawn up by the candidate herself.
- (3.) A testimonial from the local School Commission.
- (4.) A testimonial as to character from competent authorities.
- (5.) If the applicant has already conducted a sewing school, testimonials as to teaching ability from the local School Commission, endorsed by the inspector.

§ 14. Candidates must have completed their seventeenth year, and must show in an entrance examination—

- (1.) That they can make a stocking suitable for a given age.

- (2.) That they can cut out and make a man's shirt with all its parts.
- (3.) That they can patch a white garment neatly, and
- (4.) That they understand how to mend and piece stockings.

§ 15. The school or local authorities of the place or institution where the course is to be held must provide premises suitable in every respect, and furnished with the necessary tables and seats, and a black-board; they must also arrange that the necessary practice lessons shall be given throughout the course in the girls' sewing schools.

The Council of Education provides the necessary teaching apparatus.

The candidates must provide the necessary sewing materials.

§ 16. A training course includes at least 300 hours of instruction, which may be extended over from six to twenty weeks.

The course consists of instruction in needlework, methods and theory of teaching, sewing, pedagogy, drawing and practice lessons in the local sewing schools.

§ 17. The following kinds of work are taught: knitting, sewing, drawing, mending and cutting-out. At least 120 hours must be devoted to these subjects. The instruction is given according to the method which the pupils will follow later in the school, and it begins with the elementary exercises in each of the above-named branches. Lessons on the materials employed must accompany the practical instruction. Lessons on method are combined with the practical work and are a guide to a rational division of this instruction according to the requirements of the programme.

§ 18. The theory lessons must extend over at least twenty hours and must deal with school discipline, the elements of teaching, and the position and function of the sewing schools.

At least twenty hours must be devoted to drawing.

Each student must attend recapitulatory specimen lessons in the sewing school, and must herself give at least two practice lessons under the direction of a teacher.

§ 19. A specially qualified teacher will be entrusted with the arrangement of each course. Before the beginning of the course she must submit a detailed programme and time-table to the Council of Education, together with an estimate of the cost; she must also arrange the details of the instruction in consultation with the other teachers, and conduct all business with the authorities.

§ 20. The course is free to all students. The teachers receive from the Council of Education a fee of 1½ francs to 3 francs per hour, according to the number of pupils.

The maintenance of the students during a course is arranged for according to circumstances. The Council of Education contributes a sum not exceeding 60 francs (£3 8s. 0d.) for each student.

§ 21. The Examining Commission must inspect the courses and report thereon to the Council of Education. The members must be present at the concluding public examination and for at least one day during the course.

§ 22. The Government arranges from time to time, according to local necessities, for recapitulatory courses, lasting two or three weeks, for already certificated sewing teachers. Those attending such courses receive free instruction, also their board or a maintenance allowance.

### (3).—Examination for Diplomas.

§ 23. The Council of Education appoints, for a period of four years, two mixed Examination Commissions, consisting of three to five persons, for the German and French parts of the canton; the Council also appoints the presidents of these Commissions. The lady members of the Commissions also conduct the examinations of the primary school teachers for needlework diplomas.

The Commission may be enlarged by the Council of Education if the number of candidates at an examination necessitates it. The members of this Commission receive the same remuneration as the members of Commissions appointed to examine male candidates for the primary school diplomas.

§ 24. Diploma examinations—primary school diploma—take place immediately after every teaching course for sewing teachers and at other times when need arises. The Council of Education fixes the time and place of examination and announces the same at least one month beforehand in its official journal.

§ 25. Whoever wishes to enter for such an examination must apply in writing to the Council of Education within the given time, and the application must be accompanied by the papers named in § 13.

§ 26. The *viva-voce* part of the examination is public; the written examination, to which the public are not admitted, is conducted under special supervision.

The length of the examination depends on the number of candidates.

The work must be given in whether finished or not, at the close of the given time.

§ 27. For the *viva-voce* examination the Commission may be divided into different sections, each of which must consist of two members. The subjects must be divided between the different sections in such a manner that each may have, as far as possible, the same value in the examination. The sections examine simultaneously and devote an equal time to each group of candidates.

§ 28. The examination includes the following subjects:—

- (1) Theory of education; care and treatment of children; elements of teaching, discipline, organisation of the Bernese system of education; object, arrangement and management of a sewing school; rights and duties of the sewing teacher.
- (2) Method of teaching according to the official programme.
- (3) Preparation of a paper-pattern and black-board drawing.
- (4) Preparation of work.
- (5) A test lesson.

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§ 30. Candidates who have not satisfied the examiners in each of the above subjects will not be recommended for a diploma.

§ 31. The Examining Commission furnish the Council of Education with a detailed account of the examination, accompanied by their decisions, to which both the examination results and the testimonials of the candidates are to be added.

### III.

#### PROGRAMME FOR THE GIRLS' SEWING SCHOOLS IN THE CANTON OF BERN.

Needlework has the same value as any other school subject, and contributes equally to the education of the child.

The aim of the teaching is not purely utilitarian, nor the pleasure of this or that piece of fancy work; its object is to acquire technical skill in needlework, which is a part of all true domestic efficiency, and is the foundation of most branches of female industry, as well as of habits of order, cleanliness, industry and economy.

In order that thoroughness may be combined with as complete a knowledge of the subject as the short time devoted to it allows, the difficult parts of the different garments must be separately practised until the pupils are sufficiently skilful to make the whole article. On this account the basis of the instruction, especially in the lower divisions, will be not so much finished garments as samples of each kind of sewing.

Although the circumstances of our country primary schools are not such as to allow of the immediate introduction of sewing-machines, the

authorities are strongly recommended to banish more and more from their programmes such kinds of needlework as can be performed better by a sewing-machine, as, for example, backstitching, which is wearisome, uninteresting and bad for the eyes. In the arrangement of the teaching, let the time be rather devoted to that which cannot be done by a machine, *viz.*, mending, cutting-out and construction; all the more because both educationally and practically mending is the most important branch of sewing, and cutting-out and putting together train and test the self-reliance of the pupil.

The following tables, showing the division of the work between the different grades of the school, are arranged according to the principles here laid down, and indicate the minimum of what must be accomplished.

[Here follow 3 alternative syllabuses.

Although differently arranged they cover approximately the same ground as the one already given for Solothurn (App. B, II., page 302) and they have, therefore, been omitted to avoid multiplicity of programmes.]

#### GENERAL DIRECTIONS.

1. According to § 2 of the regulations the teaching must be simultaneous —*i.e.* the children of the same school-year must be taught together. The teacher addresses herself to all in explaining each new step or in drawing a new pattern; she must insist that all do the same work and use the same kind of sewing materials, and that the different movements are simultaneously copied and practised (drill work). She must also take care that the children, as far as possible, work at the same rate, in order that the explanations and corrections made during the progress of the work may be useful to all.

N.B. In the shirt-making the teacher may allow the pupils to bring cotton or linen, either coarse or fine; also when the general mending exercises have been completed, the girls may apply what they have learnt to various articles.

2. Pupils who have completed the prescribed work before the others, or who need the help of the teacher at a time when she is occupied with another class, may occupy themselves with some extra work (*Nebenarbeit* \*) which shall aid the progress of the instruction, without disturbing the class teaching. The teacher may also appoint such pupils to supervise those who are younger or more backward.

3. If the class teaching is to have good results, it must be clearly and methodically given. The exercises must be so progressively arranged as to awaken and maintain the children's pleasure in the work; they must not only lead to the necessary understanding of the work, but must give the child, by means of constant practice, sufficient sureness and dexterity to enable her to proceed without difficulty to the next step. Only so can the foundation be laid for that practical facility, the absence of which is so often deplored in pupils who have passed through their nine school-years.

4. The instruction in cutting out and making garments shall be accompanied by thorough demonstration; the description of the completed garment shall be accompanied, whenever possible, by demonstration with the paper pattern and descriptive drawing on the blackboard; examples must be shown giving exact proportions of form and measurement, and comparisons shall be made with common, faulty, and unpractical shapes. Only when the full attention of the children has been fixed upon the subject, and their lively interest awakened in it, can the teacher proceed to cutting out the different parts and to theoretical explanations.

5. Although the "drill work" is so necessary and indispensable to the simultaneous learning of a new exercise, it must never be allowed to become

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\* In the higher classes this "extra work" is often knitting (see Solothurn Syllabus). Simple trimmings or ornamentations for different garments are also allowed.

monotonous and mechanical, to the detriment of real comprehension ; it should only be used in the elementary stages or as a means of arousing and holding together a class that is becoming sleepy or confused.

6. The exercises in sewing must be done on practice pieces. Sixteen or more different stitches and seams cannot be learned and brought to perfection on one piece of cloth from 45–60 cm. long and 80 cm. wide (17 to 23 in. × 31 in.), but each exercise requires a separate piece of stuff, and this may give opportunity for many exercises in the cutting out and joining together of pieces of material. The material employed may be new or old, so long as it is clean and usable. The practice-piece itself can serve as a summing up and recapitulation of the instruction in the third division.

7. With the exception of the pinafore,\* which one cannot expect children of nine to cut out, all work done in the school must be cut out in the school by the pupils themselves. In the third division, in addition to the garments which are made in the school, patterns of other simple articles are to be given, which each girl shall be able to carry out independently after leaving school. Economical use of the material can be insisted on even in cutting out paper patterns, and above all the pupils must be trained to treat carefully everything that they use in their work, and always to show a sense of cleanliness and order, economy and conscientiousness.

8. The teacher must give special attention to mending ; as much for the sake of the work as for its practical importance.

The different kinds of mending must also be learnt on samples ; the material need not be new ; on the contrary, it is good for the children to learn to adapt themselves to the use of old material. When the exercises on the darning of materials have been sufficiently explained and mastered with the help of the sewing frame, black-board, and canvas, the pupils receive small pieces of coarse (not too thickly woven) table linen with a suitable pattern (100 mending pieces may be cut from one metre of such cloth) ; then each member of the class must cut out an equally large piece and darn it in according to the pattern.

9. The exercises in stocking-mending are executed on flat pieces of knitting, which can either be cut out of old stockings or specially prepared for this purpose. Not only the stitches, but also, what is more important, the joining of the mending with the old stocking-web, can be practised on these samples.

10. In order that intelligent class-teaching may have the best results, it must be supplemented by proper apparatus for demonstration.

This apparatus includes :—

- (a) A checked blackboard for drawing the different exercises in knitting, mending, or cutting-out.
- (b) A mending or sewing-frame, which must be so arranged that either a piece of canvas for showing different stitches, marking and cloth darning, or a knitted-web for showing stocking-mending, may be stretched upon it.
- (c) Tables showing different shapes and proportions in measurement.
- (d) Thick wooden knitting-needles and red string or wool for showing the first steps in knitting.
- (e) A collection of raw materials, threads and stuffs which must be used by the teacher in her lessons on materials, their preparation, etc.
- (f) Samples made by the teacher of all articles which are subsequently to be made in the school by the pupils.

11. Conscientious preparation on the part of the teacher is essential to satisfactory progress in the school. With the programme as a foundation she must have a definite plan of work for each lesson. She must carefully prepare the theoretical lessons.

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\* Garment for the first winter in the sewing school.



All arrangements for the lessons must be made either by herself or by her pupils before the lesson. To avoid unnecessary pauses in the teaching and waste of time she must not only be careful to have all her materials ready to distribute at the right time, but she must also see that the children bring the implements, etc., which they have to provide.

12. All work shall be begun and entirely finished in the school, and, as a rule, it must be kept by the teacher till the closing examination.

## APPENDIX D.

### ORGANISATION AND SYLLABUS OF THE TRAINING COURSE FOR SEWING TEACHERS IN THE ELEMENTARY AND CONTINUATION SCHOOLS OF THE CANTON OF ZÜRICH (May 16, 1900).

#### ORGANISATION.

Conditions of Admittance. *Age*: Completion of the 17th year. (Candidates, who have not already filled the post of sewing teacher, must not be more than 30 years of age.) *Education*: Three years' attendance at a secondary school or corresponding grade of education. (French not compulsory.) *Sufficient preparation in sewing*. (Certificate of apprenticeship, sewing-school, etc.)

Candidates must pass a practical and theoretical entrance examination, which includes the following subjects: Sewing and mending, German (reading and composition), arithmetic, geometrical design, writing, freehand drawing, natural history.

Application must be made at the appointed time to the education office.

The application must be accompanied by:—

- (a) A certificate of age.
- (b) A certificate of character from the authorities (*Gemeinderat*) of the district where the candidate resides.
- (c) A certificate either that the candidate has attended a secondary school for three years, or that she has attained to such knowledge and ability as she might have gained from three years' attendance at a good Zürich secondary school.
- (d) A certificate of sufficient preparatory knowledge of needlework.

*Fees*: Those who are not natives of the canton must pay a fee of 150 francs (£6). Natives of the canton are admitted free, and may, in case of need, obtain scholarships on application to the Council of Education.

At the close of the course the canton will refund to natives of Zürich one half of the necessary outlay on material.

*Subjects of Instruction*: The programme includes practical and theoretical instruction and special instruction in practical and theoretical domestic economy.

The subjects of the practical instruction in needlework are:—Knitting, sewing, mending, embroidery, dressmaking.

The theoretical subjects are:—German, theory of teaching, hygiene, geometry, arithmetic, drafting, freehand drawing, method and practice in the practice school.

The subjects included in domestic science are:—Domestic economy, method in a school-kitchen, theory of nourishment, cooking, washing, ironing.

*Management and superintendence*: The management of the course is one of the duties of the cantonal inspectress of sewing schools.

The course will be superintended by the Council of Education, in co-operation with a ladies' committee consisting of seven members appointed by the Council.

*Examination*: At the close of the course an examination is held, on the results of which the Council of Education grants diplomas to the teachers.

## SYLLABUS.

## A.—NEEDLEWORK.

(Twenty-four hours per week, during 38 weeks.)

## I.—Knitting.

1. A sample (plain and purl-stitch, decreasing heel).
2. A pattern-stocking according to prescribed dimensions (normal stocking).
3. Rational toes (right and left stockings).
4. Different kinds of heels.
5. A pair of stockings, size optional.
6. Fancy patterns.
7. Primary shapes : triangle, square, rectangle, circle ; edgings.

## II.—Sewing.

1. A sample of stitching (running, backstitch, hemming, and seaming or oversewing).
2. A sample showing the most important ways of joining selvages and rough edges.
3. A sample in cross-stitch.
4. A simple girl's chemise with gores.
5. A cushion cover with further practice in buttonholing.
6. A woman's chemise.
7. A woman's chemise with yoke. Drafting of the yoke pattern according to normal measurements. Combination of different yoke and sleeve patterns with the original model with the use of fashion papers. How to take the measurements for making a yoke.
8. A woman's nightdress.
9. A man's shirt with yoke.
10. A pair of drawers (full-size).
11. Preparation of shirts in half-size (models) :—
  - (a) Country woman's chemise.
  - (b) Woman's chemise (fastening in front).
  - (c) Woman's chemise (fastening on the shoulders).
  - (d) Woman's chemise with yoke.
  - (e) Woman's nightdress.
  - (f) Man's shirt.
  - (g) Man's shirt with yoke (repetition) according to other measurements.
  - (h) Man's shirt with yoke fastening behind.

## III.—Mending.

1. A sample in knitting-stitch, *i.e.* Swiss darning (repairing thin places).
2. Re-heeling, etc.
3. Samples of patching :—
  - (a) On white cotton.
  - (b) Different shapes on coloured (and checked) cotton material.
  - (c) On material with a pattern (flowers, etc.).
  - (d) On cloth.
  - (e) On flannel.
  - (f) On tulle.

4. A knitting-stitch sample (mending of holes).
5. Samples : darning of plain and patterned materials and tulle.
6. Mending of various useful articles.

IV.—Embroidery.

Samples :—

- (a) The various ornamental stitches.
- (b) English and couched embroidery.
- (c) Samples of open-work.
- (d) Transferring of designs on to materials.
- (e) A useful object showing application of the embroidery.

V.—Dressmaking.

1. A petticoat.
2. An under-bodice according to measurement.
3. A bed or dressing-jacket.
4. A simple dress.

B.—THEORETICAL SUBJECTS.

I. Drafting. This follows in connection with the practical exercises and is included in the time allowed for them. It comprises the following stages :—

- (a) The taking of measurements.
- (b) Construction of a pattern for cutting-out.
- (c) Geometrical drawing of patterns.
- (d) Drawing of the same on the black-board.
- (e) Cutting-out and trying on.

II. Freehand-drawing (two lessons weekly throughout the year) : the instruction in drawing has for its object the training of the eye to a quick perception of form and proportion, and the cultivation of precision of line.

The means employed are :

- (a) Ornamental drawing from the flat, from patterns drawn on the black-board.
- (b) Letters and monograms.

III. Geometry (one lesson weekly for one term). The instruction covers the ground necessary for the construction of patterns for, and the cutting-out and the ornamentation of different garments.

IV. Arithmetic (one lesson weekly during the second term). Mental and written calculations applicable to the practical needs of life. Domestic book-keeping.

V. German, combined with lessons on the nature of materials, etc. (two lessons weekly throughout the year). The subjects selected for composition have reference to the future calling of the candidates, or are drawn from the lessons on materials and on the theory of education. Reading and practice in independent verbal expression of thought. The lessons on materials deal with the products which are used in sewing (cotton [cloth and yarn] flax and hemp, silk, etc.), with special attention to the materials used in schools.

VI. Science of Education (one lesson weekly throughout the year) :—

- (a) General principles of education.
- (b) Mental and moral care of children.
- (c) Administration of discipline, reward and punishment ; how to accustom the children to cheerful activity, love of order, cleanliness and modest behaviour.

VII. Hygiene (one lesson weekly throughout the year); elementary principles of the structure and functions of the human body with special reference to questions of health.

1. The organs of motion :—
  - (a) The skeleton : deportment, dislocations, sprains, fractures : bandaging in cases of accident.
  - (b) The muscles : work.
  - (c) The nervous system : sleep, recreation, unconsciousness.
2. The organs of sense :—
  - (a) The skin : care of the skin, baths, clothing, hardening, burns.
  - (b) Smell.
  - (c) Taste.
  - (d) Hearing : mechanical derangement, care of the ear.
  - (e) Sight : care of the eye, lighting, long-sight, rest.
3. The digestive system :—
  - (a) The digestive organs : care of the teeth, poisons.
  - (b) Circulation of the blood, care of the blood-vessels, exercise, drinking of water, tight clothing, wounds, bleeding, bandaging.
  - (c) Breathing, air, dwellings, ventilation, microbes, precautions against infectious diseases, suffocation and artificial respiration, the heat of the body, fever.
  - (d) Functions of the kidneys and the skin.

VIII. Ordinary complaints. General symptoms and precautions. Introduction to sick-nursing.

#### C.—DOMESTIC TRAINING.

(8 hours a week during the first 38 weeks and 32 hours a week during the last six weeks.)

1. General observations concerning the province of the housewife.
  - (a) Position and duties of the wife, the daughter and the servant.
  - (b) Essential qualities of a housewife.
2. The dwelling.
  - (a) Requirements of a healthy dwelling.
  - (b) Arrangement ; care of the various rooms, especially the kitchen.
  - (c) Cleaning.
3. Heating and lighting.
4. Clothing.
  - (a) General and hygienic observations.
  - (b) Purchase, preparation and preservation.
  - (c) Washing and cleaning (clothes).
  - (d) Repairs.
5. The care of children.
  - (a) Physical care : air, nourishment, clothing, bed, baths, rest and exercise.
  - (b) Spiritual care : training in habits of obedience, gratitude and truthfulness ; habits, activity, reward and punishment.
6. Theory of nourishment.
  - (a) General observations (variety of food, nourishment, water).
  - (b) Our most important foods and luxuries.

Milk (origin, various food-value, chemical composition, price, uses of good milk, boiling of milk, preservation, changes, products).

Eggs (kind, chemical composition, food-value, price, appearance cooking uses, preservation).

**Meat**

Green vegetables	} General observations, varieties, origin, food-value, digestion, purchase, price, use, dressing, preservation, changes, products and preparation.
Peasants	
Grains	
Pulse	
Fish	

Fruit: Kinds, value as food, assimilation, fresh, dried and preserved fruit, manufacture (spices), price, preservation.

**Fats**—

As nutriment; production, purchase, use, difference between animal and vegetable fats, preservation.

**Liquors**—

Coffee

Tea

Choco

Wine, beer and spirits

**Spices**—

Cooking-salt

Sour and sweet condiments

Native and foreign spices

General observations, origin, varieties, ingredients, digestive value, purchase, price, uses, preservation.

**2. Differential sources and their cost.**

3. Preparation of dishes, which form a simple, rational and popular food.

**a. Invited Cookery.**

1a. Laying the table and serving.

11. Order in the house.

## APPENDIX E

### REGULATIONS AND PROGRAMME OF THE CONTINUATION SCHOOL (FÖRTJUDNINGSBETJEL) OF WINTERHULT

#### I.—General Regulations

§ 1. The aims of the continuation school for girls in Winterhult are to forward, by means of theoretical and practical day and evening classes, those branches of knowledge which are indispensable in housekeeping, and to increase the earning capacity of women.

§ 2. Only pupils who have completed their 15th year, and who are properly prepared to benefit by the instruction are allowed to enter the school. A higher age may be demanded for certain courses.

§ 3. As a rule the courses will last one term. The duration of the courses may, if necessary, be shortened by lengthening the number of hours per week.

§ 4. The maximum number of pupils for a class is determined by the supervising committee. Part-time classes will be started if the number of applicants exceeds the maximum.\*

§ 5. The programme for the separate classes is determined by the supervising committee on the proposal of the teacher's "Konvent."

§ 6. At the close of each term there are examinations and an exhibition of the school work. Reports on the term's work are given if desired.

Practical examinations, conducted by experts, are arranged for pupils attending the courses arranged for business training. Special regulations

\* Twenty is usually the maximum number in this school.

are issued for the organisation of these examinations and the granting of certificates to successful candidates.

#### II.—The Pupils.

§ 7. Pupils must, as a rule, enter the school at the beginning of a term. Those who wish to enter later must obtain the permission of the president of the superintending committee.

Application must be made to the Principal during the hours appointed in the public announcements of the different courses.

§ 8. Pupils must be regular in attendance at the classes and in execution of the home-work. Whoever is hindered from attendance by illness or other cause must excuse such absence to the Principal.

Three unexcused absences are punished by expulsion from the school.

Pupils must obey the orders of the teachers respecting the preservation of order and cleanliness in the rooms.

§ 9. The school fee is 2 francs a term, and must be paid on entrance. Special fees may be demanded for certain courses.

#### III.—The Teachers and the Teachers' "Konvent."

§ 10. The teachers are chosen by the school council on the recommendation of the superintending committee. The appointment is usually for one term.

The school council determines the salaries of the teachers on the recommendation of the superintending committee.

If the Principal is otherwise engaged the teachers must make arrangements for the suitable employment of the classes.

If a teacher wishes to leave she must send in her resignation at the same time to the Principal and to the School Council. Notice of resignation shall, in ordinary circumstances, be given at least four weeks before the close of a course.

§ 11. All the teachers together constitute the "Teachers' Konvent." The Principal is the president. The vice-president and secretary are chosen from among the members. The teachers are obliged to attend the meetings of the "Konvent."

§ 12. It is the duty of the teachers' "Konvent" to foster the general well-being of the school. The members must aim at a methodical arrangement of the lessons within the limits of the programme, must observe any defect in the organisation of the school and bring such defect to the notice of the superintending committee. The proposals of the teachers' "Konvent" must be forwarded in writing to the superintending committee.

§ 13. The teachers are forbidden to accept presents from the pupils.

#### IV.—The Principal.

§ 14. The management of the institution is entrusted to a principal. She is appointed for a period of three years by the School Council on the recommendation of the superintending committee. Her salary is determined by the School Council.

§ 15. The principal must give a maximum of 15 lessons a week. She must also superintend the whole institution. She must listen every week to various lessons and must assist, through suitable advice and discussions in the "Konvent," the methodical arrangement of the teaching, and the punctual observance of the programme laid down by the superintending committee.

§ 16. In addition she has the following duties :—

1. To receive applications for entrance.
2. To arrange the time-table.
3. To keep a register of the pupils.

4. To keep an inventory of the furniture and apparatus.
5. To keep the books.
6. To draw up the report of the term's work.

V.—The Superintending Committee.

§ 17. The superintending committee consists of four members of the primary School Council and nine ladies. Members are chosen for three years by the School Council. The committee elects its president, vice-president and secretary from among its own members.

§ 18. The superintending committee is responsible for the management and supervision of the whole institution. It can divide itself into different sections to visit the various classes.

§ 19. The Principal attends the meetings of the committee, except when matters relating to herself are under discussion. The other teachers may also be asked to attend.

§ 20. These regulations came into force at the beginning of the winter term 1896-97.

PROGRAMME OF STUDIES.

DAY COURSES.

LINGERIE.

Course I.—Nine hours a week, including 2 hours' drafting, and 2 hours' hand sewing.

A pillow-case and simple under-garments for women. In drafting, the necessary designs will be made for bed-linen, and for the garments made in the lessons. The patterns will be prepared in normal size and according to measure.

Course II.—Five hours a week, including 2 hours' drafting. More complicated garments: nightdress, man's shirt, bodice and dressing-jacket.

The necessary patterns will be prepared as in Course I. The drafting in this course ends with the pattern of an under-skirt.

Course III.—Three hours weekly.

With the use of the patterns drafted in Courses I. and II., and the help of fashion plates, simple and complicated articles will be made according to the capacity and desire of the pupils.

Double Course.—12-14 hours weekly.

In this course the programme of Courses I. and II. will be carried out in one term.

CHILDREN'S GARMENTS.

1. For home use.—3-4 hours weekly.

Drafting patterns for children's under-garments.

2. Trade Course.—6 hours weekly for two terms, including 2 hours' drafting.

The garments of children from babyhood to the age of fourteen will be theoretically and practically treated in systematic order.

CHILDREN'S CLOTHES.

1. Girls' dresses for home use.—3 hours weekly.

Course I.—Construction of a normal pattern for a child's bodice.

Elementary rules for taking and practical application of measurements. As practical application: pinafores and simple frocks.

Course II.—Simple and more difficult frocks, jackets, cloaks, etc., according to the capacity and desire of the pupils.

The necessary patterns will be drafted by the pupils according to measure.

2. Boys' clothes for home use.—3-4 hours weekly.

Course I.—Construction of the normal pattern for boys' clothes.

Directions for taking measurements and drafting patterns according to measure.

Simple boys' clothes.

Course II.—More complicated boys' clothes with use of the patterns prepared according to measure.

3. Children's clothes ; trade course.—15 hours weekly, including two hours' drafting, for 2 terms.

During the first term, dresses, jackets, cloaks, etc., for different ages will be thoroughly and systematically dealt with, both theoretically and practically.

Similarly, during the 2nd term the instruction will be continued to the preparation of boys' clothes.

**DRESSMAKING.**

Course I.—4 hours weekly.

A petticoat to be cut out and made from a pattern drafted by the pupil.

Construction of a bodice pattern of normal size.

Measurement and construction of a bodice.

As practice in cutting out and sewing, 2 under-bodices will be made, of which the second may be sewn at home.

A simple dress.

Course II.—3 hours weekly.

Preparation of a bodice-pattern with changes according to the prevailing fashion.

An elaborate dress to be made, and if possible a dressing-gown or jacket.

Course III.—3 hours weekly.

Patterns for jacket, cape, waterproof, etc. Garments to be made according to pupil's choice.

Double Course, 12 hours weekly, including 2 hours' drafting.

The programmes of Courses 1 and 2 to be carried out in one course.

**MENDING.—3 hours weekly.**

Course I.—Practice in different kinds of patching—Practical application to garments.

**FINE MENDING.—2 hours weekly.**

Practice and application of darning flannel, cloth and tulle according to the patterns.

**MENDING OF KNITTED ARTICLES.—3 hours weekly.**

Exercises and practice in mending and patching, according to the web.

**WHITE EMBROIDERY.—3 hours weekly.**

Course I.—Practice in the different kinds of white embroidery by scalloping and different leaf forms ; introduction to ornamental marking.

Further practice on different articles according to the pupil's choice and capacity.

Course II.—More complicated embroideries, leading to the finest white flax embroidery.



COLOURED EMBROIDERY.—3 hours weekly.

Course I.—Practice in ordinary ornamental stitches, shaded embroidery, etc., according to choice and fashion.

Course II.—Further practice according to choice.

FRAME AND CROCHET WORK.—3 hours weekly.

NETTING.

Two courses in different kinds of netting, each 3 hours weekly

Simple stitches, straight and diagonal nets, patterns with increasing and decreasing and requiring various tools. Net-guipure

DRAWING.—2-3 hours weekly.

Elements of form. Outlines with use of triangle and compasses  
Copying from black-board and copies. Technical Drawing.

EVENING COURSES.

*Machine-sewing*, 2 hours weekly in courses lasting two months.

Explanation of the machine and its parts. Instruction in correct use through practice on a sample-piece and the making of a simple apron.

*White work*, 2 hours weekly. Simple under-garments: 3 courses. The prescribed garments are prepared and drafted on a reduced scale and the proportions are noted.

*Mending of stuff articles* } as in day courses.

*Mending of knitted articles* }

*Dressmaking*, 4 hours weekly } as in day courses.

*Children's dresses*, 2 hours weekly }

*Drafting for ladies' dressmaking*.

The simple bodice is drawn according to normal measurements; measuring and drafting are practised in different sizes till the pupils are fairly skilful, and thoroughly understand the work. The pupils are taught how their patterns must be altered to fit figures not normally developed, or to be brought into agreement with the changing fashion.

Patterns of muslin for fancy garments are also prepared.

*German*, 2 hours weekly, 2 courses.

*French*, 4 courses, each having 3 lessons weekly.

*Writing*, 1-2 hours weekly.

*Arithmetic and Book-keeping*, 1½ hours weekly.

*Hygiene*—1 hour weekly.

*Air*: Composition, uncleanness, necessity of pure air, its action on the human body, organs of breathing and circulation.

*Water*: Use in daily life, drinking water, action on the body, structure and functions of the skin, action of baths.

*Clothing—Food*: Observations on the care of children.

Lessons on sick-nursing with practice.

*Domestic Economy*—1 hour weekly.

The dwelling (arrangement, demands of health, how to keep it in repair, ventilation, etc.)

Household articles (furniture, beds, etc.)

Heating, lighting, clothes, washing, theory of food, foods popularly used for nourishment and enjoyment (appearance if good, food-value, price, preparation, preservation), the law concerning mistresses and servants.

*Ironing*—3 hours weekly.

Sprinkling preparatory to ironing ; ironing and folding simple garments ; starching collars, shirts, aprons, dresses ; ironing of starched articles.

*Cooking*—6 hours weekly.

Preparation of a healthy, cheap, cooking fat. Arrangement of meals, with regular changes from meat-foods to those in which maize, rice, chestnuts, potatoes and flour are used. Preparation of macaroni and pastry.

Dishing up and waiting.

Cost and food-value of the various meals.

Cleaning of kitchen and utensils.

#### NOTES.

1. A sufficient knowledge of machine-sewing is a condition of entrance to the practical courses in lingerie, dressmaking and children's clothes.

2. Pupils are only admitted to a second course if they have successfully completed the corresponding first course. If a pupil's work in any course is unsatisfactory, she may be sent back into a more elementary course—simultaneous attendance at a first and second course is only allowed in exceptional cases and by special permission.

3. Only pupils who have attended the domestic economy course are eligible for the cooking and ironing classes.

4. Pupils wishing to enter the trade class for children's clothes must have passed satisfactorily through two courses for home use, or must have had equivalent practice. Pupils are obliged to attend the corresponding class for children's underclothing.

5. The drafting class for dressmakers is only for pupils who have been apprenticed for at least one year to a dressmaker.

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## APPENDIX F.

### PROSPECTUSES AND REGULATIONS OF HOUSEKEEPING SCHOOLS.

#### I.—PROSPECTUS AND REGULATIONS OF THE HOUSEKEEPING AND SERVANTS' TRAINING SCHOOL OF THE WOMEN'S ASSOCIATION, WINTERTHUR.

§ 1. The housekeeping school of the Women's Association of Winterthur, founded especially for girls of the poorer classes, aims, through thorough theoretical and practical instruction in all branches of housewifery, at preparing the pupils to perform domestic duties in an efficient manner, whether helping their parents, in homes of their own, or in service.

§ 2. The following are the different branches of instruction:—house-cleaning, cooking, washing, ironing, mending, the making of new undergarments, simple domestic book-keeping, letter-writing, elementary hygiene and gardening. A detailed time-table arranges the course of instruction in its principal branches.

§ 3. The staff consists of:—

- (a) The principal, who teaches theoretical and practical domestic economy and under whose special supervision the pupils are placed.
- (b) An assistant teacher, for simple cooking and gardening.
- (c) Teachers for washing and ironing courses.
- (d) A sewing mistress.
- (e) Teachers for letter-writing, hygiene and singing.
- (f) A master for theory of gardening.

§ 4. The courses last 5 full months. A fee of 100 francs (£4) for instruction, board and lodging must be paid on entrance.

§ 5. The principal will choose six pupils to stay on and attend to the house during the four weeks' interval between the courses. They will receive payment for this service according to their abilities.

§ 6. Applications for entrance must be accompanied by certificates of good health and character. Permission to enter can only be granted after the receipt of these papers. Sixteen to eighteen pupils are taken for each course; natives of and dwellers in the Canton Zürich, between 16 and 22 years of age, have the right to enter the school.

§ 7. Withdrawals must be notified to the principal at the latest 8 days before the beginning of a course. Pupils who do not appear on the appointed day, must, unless detained by illness, pay an indemnification of 20 francs (16s.) i.e., the fee for the first month.

§ 8. Pupils must bring with them:—underclothing in good condition, sufficient for 3 weeks, 2 dresses for outdoor wear, and 1 or 2 house dresses, 2 pairs of shoes, 1 pair of slippers, 4 towels, 6 aprons, tooth and clothes brushes and sewing materials.

§ 9. An examination takes place at the close of the course, and certificates as to conduct and progress are given.

§ 10. The Bureau of the Women's Association will find situations for pupils wishing to enter service, if they have gained a satisfactory report in the school.

§ 11. If a pupil seriously disobeys the regulations, she can be dismissed by the committee on the application of the principal. In such a case she has no claim on the fee already paid. The same applies to any pupil leaving the school of her own accord without sufficient reason.

§ 12. Alcoholic drinks are only allowed during the course on receipt of a written medical order.

§ 13. Pupils are forbidden to make presents to the principal and teachers.

§ 15. The expenses of the institution are met:

(a) By the school fees.

(b) By cantonal and federal grants; also by occasional presents and legacies.

(c) Any deficit is met out of the funds of the Women's Association.

#### Rules for the Pupils.

1. The pupils of the housekeeping school must cheerfully obey all orders of the teachers, and must, by their diligence, obedience and proper behaviour, assist them in carrying out the household rules.

2. All pupils must appear at the breakfast table cleanly dressed and washed, with their hair neatly arranged.

3. All pupils must punctually and conscientiously execute the work entrusted to them and return all utensils to their proper places immediately after use.

No clothes or other objects belonging to pupils must be left about; their cupboards must be tidy.

4. Materials for garments furnished by the School Commission must be paid for by the pupils; the finished work remains their property.

5. Pupils or their parents must make good all damage to school furniture (breakages, etc.).

6. The pupils shall be peaceable, polite, friendly and serviceable to each other.

7. In order that the house routine may not be disturbed, visitors must only be received on Sunday afternoons.

8. Pupils may only go out by permission or order of the principal.
9. The girls attend church in turn on Sundays and Feast Days. They can have permission to go out on Sunday afternoons.

## II.—PROSPECTUS OF THE HOUSEKEEPING SCHOOL SALESIANUM—ST. CARL, NEAR ZUG.

This institution aims at fitting girls, at the close of their school education, for the rational, intelligent guidance of a household. In order more surely to attain this end, only a limited number of pupils are received. This makes a pleasant home life possible without too great rigidity of programme. The idyllic situation of the house, by the Lake of Zug, is very beautiful, exceptionally healthy, and also particularly suitable to delicate girls who need to gain strength.

### Programme.

1. Needlework :—
  - (a) Hand and machine sewing, cutting out and making of undergarments, darning and mending.
  - (b) Dressmaking ; introduction to measuring, cutting out and making ladies' and children's clothes. Remodelling of old clothes.
  - (c) Introduction to fine needlework ; embroidery, etc.
2. Housework.
3. Washing and ironing.
4. Cooking—simple and high-class cooking. In spring and summer the opportunity is given to learn gardening.\*
5. Domestic economy, including theory of nourishment, hygiene and nursing.
6. Book-keeping, advanced book-keeping if desired, business correspondence.
7. Lessons on education.

Three courses are held during the year ; each lasts three months. The school and boarding fee for each course is 300 francs (£8) and must be paid at the beginning of the course. A special account is kept for the extra expenses, such as school and sewing materials, two francs monthly for those who practise the piano regularly, wine, baths, etc. Private rooms can be had at a small additional cost (about £1).

If desired, the whole time of a course (three months) may be devoted to one branch of work. Special arrangements are made for pupils who wish to remain for two or three courses in the Salesianum. Special teachers from Zug and the neighbourhood are engaged for sewing. The cost per month is 12 francs (about 10s.).

Each pupil must bring :—

Writing and sewing materials. Two pairs of stockings for darning, some garments to mend, material for undergarments, material for a dress, which will be made by the pupil herself at the end of the course, six kitchen aprons, some house aprons, towels and napkins, four sheets, a bed-spread, knife, fork and spoon, certificate of baptism, etc.

## III.—PROSPECTUS AND SPECIMEN PLAN OF WORK OF THE TRAINING SCHOOL FOR HOUSEKEEPING AND COOKERY AT CASTLE RALLIGEN ON THE LAKE OF THUN.

(Founded in 1893 under the protection of the Bern Society of Public Welfare.)

The aim of this establishment is to strengthen young ladies who have just passed through the trying time of their school education and to instruct them thoroughly in everything that appertains to the management of a house.

\* This privilege is very rarely used.

*Housekeeping Schools Salesianum and Castle Ralligen.* 325

On Sundays the students may attend their own church.

Exercise in the open air is encouraged (bathing, rowing, climbing, etc.).

The daily intercourse of pupils of different nationalities has a good influence in broadening the character and provides opportunities for conversation in German, French and English.

Syllabus.

1. Cooking, plain and high class.
2. Housekeeping.
3. Washing, starching and ironing.
4. Scouring and cleaning.
5. Needlework (darning, patching and plain sewing).
6. A little gardening in the spring and summer terms.
7. Bookkeeping.
8. Lectures on hygiene, given by a lady doctor.
9. Part-singing, taught by a master.
10. Lessons in music and languages may also be taken during the half-yearly courses of instruction (*A* and *B*).

Duration of Terms and Fees.

(*a*) First Spring Term, March 23rd to June 30th; fees according to room £10 to £14 (fr. 250—350).

Second Spring term, April 17th to June 30th: £8 to £12 (fr. 200—300).

(*b*) Summer Term, July 8th to October 15th: £12 to £16 (fr. 300—400).

(*c*) Autumn Term, November 1st to December 22nd: £5 4s. to £6 16s. (fr. 130—170), including bedroom fires.

(*d*) Winter Term, January 6th to February 24th: £4 to £5 12s. (fr. 100—140).

(*e*) Second Winter term, January 6th to April 16th: £7 4s. to £9 12s. (fr. 180—240).

*A*. First Half-Yearly Term, January 6th to June 30th: £15 4s. to £20 (fr. 380—500).

*B*. Second Half-Yearly Term, July 8th to December 22nd: £18 to £24 (fr. 450—600).

The arrangement of two entirely distinct departments, each with its own kitchen, school-room and dining-hall, allows pupils entering at different dates to pursue the separate courses of instruction.

The fees are regulated by the size and situation of the rooms and are payable in advance for the school terms *a* to *d* and quarterly in advance for *A* and *B*.

Outfit Required.

Writing materials. (Books and exercise-books can be bought in the school). Sewing materials. Two pairs of stockings and some underclothes for mending purposes. Six kitchen aprons. House aprons and towels. It is desirable to have a good stock of underclothes. One pair of goloshes, a pair of strong boots, for mountain walks. In the summer term a bathing costume.

Order of the Day.

- |           |                                                                                 |
|-----------|---------------------------------------------------------------------------------|
| 6 a.m.    | The bell rings.                                                                 |
| 6.30 a.m. | Work begins for those pupils who have to prepare breakfast and the dining-hall. |
| 7 a.m.    | Breakfast.* Afterwards cleaning bedrooms and corridors.                         |

\* Coffee, bread and cheese.

8.15--9.30 a.m.	Lesson on the recipes and discussion of the menu for the day.
9.30 a.m.	Milk.
10--11.30 a.m.	Sewing for the rooms' group.*
9.30 a.m.--12 noon.	Cooking the dinner, for the kitchen group.
11.30--12 noon.	The rooms' group lay the table and clean the lamps.
12 noon.	Dinner.†
2--3.30 p.m.	Free.‡
3.30 p.m.	Tea (or coffee).
5-6 p.m.	Theory (in summer, gardening once a week).
6-7.15 p.m.	Preparation of supper.
7.15 p.m.	Supper.
9.15 p.m.	Bed.

After each meal the pupils must clear the kitchen and dining-hall.

Time-Table for Theory Lessons.

Monday	—Book-keeping.
Tuesday	—Domestic Economy.
Wednesday	—Hygiene.
Thursday	—Domestic Economy.
Friday	—Singing.
Saturday	—Domestic Economy. (Gardening in summer.)

Specimen Plan of Work for Five Days for Fourteen Pupils.

No. or Name of Pupil.					Group I.
Day 1.	Day 2.	Day 3.	Day 4.	Day 5.	
1	14	6	12	4	Chef, dispose of scraps, keep the accounts.
2	8	7	13	5	Soup, make the fire, wash the china.
3	9	2	14	6	Meat, clean the stove, sweep the kitchen.
4	10	3	8	7	First vegetable, wash kitchen crockery, clean 1st corridor.
5	11	4	9	2	Second vegetable, wash kitchen crockery, clean 2nd corridor.
6	12	5	10	3	Sweet dish, wash wooden and tin utensils.
7	13	1	11	1	Sweet dish, dry wooden and tin utensils.
Group II.					
8	7	13	5	11	Breakfast and 4 o'clock tea, lamps, water, lay supper-table and wait.
9	1	14	6	12	Breakfast, dry the china, lamps, water, lay supper-table and wait.
10	2	8	7	13	Soup for supper, dining-hall, cut the bread, wash the glasses.
11	3	9	2	14	2nd supper-dish, dining-hall, put away crockery, and wash glasses.
12	4	10	3	8	2nd supper-dish, dining-hall, help to lay dinner-table, wait.
13	5	11	4	9	3rd supper-dish, wait, clean knives and silver.
14	6	12	1	10	Evening kitchen chef, wait, clean knives and silver.

\* The pupils are divided into two groups, one set working in the kitchen and the other attending to the rooms.

† Soup, meat and vegetables.

‡ Spent in walks, boating, etc.

IV.—REGULATIONS, PROGRAMME AND TIME-TABLE OF THE DAY HOUSE-KEEPING SCHOOL AT NEUCHÂTEL.

1.

The aim of this school is to initiate young girls into all the different kinds of work that are necessary in a house, by means of practical and theoretical instruction.

2.

This school is attached to the needlework school (*École Professionnelle*), and is controlled by the same committee. The Commission of lady inspectresses of the needlework school also supervises the housekeeping school, and must bring before the committee the programme of instruction, and all measures necessary to the efficiency and progress of the institution.

3.

The housekeeping school has 3 courses yearly, each one lasting 3 months, with a maximum number of 15 pupils in a course. The courses open at the beginning of January and April and towards the middle of September.

4.

The fee, payable in advance, is fixed at £2 (50 francs). This includes dinner and refreshment at 4 o'clock in the afternoon. The committee may, on application, exempt certain pupils from the payment of the whole or of part of this fee.

5.

The pupils provide the materials etc., necessary for the sewing lessons, and the work when completed is their property.

6.

The minimum age for admission is the age fixed by law for exemption from attendance at the primary school.

7.

Each course ends with an examination, after which each pupil receives a certificate showing the opinion of the experts on each branch of work submitted. The principal teacher gives the report on all the work done during the term in certain branches of practical work. The certificate also contains a special report on the conduct and industry of the pupil.

8.

The school programme includes the following subjects:—

(a) Practical work : preparation and cooking of food, purchase, choice and preservation of food, waiting, care of kitchen utensils and furniture, washing, ironing, and care of linen, domestic accounts.

(b) Theoretical lessons : domestic economy, theory of nourishment, hygiene, and sick nursing.

9.

There are lessons daily from 8 a.m. till 6 p.m., except on Saturday, when the school closes at 2 p.m.

10.

The practical and theoretical instruction is supplemented by the internal organisation of the school, which is so planned as to enable the pupils to learn all kinds of housework and to acquire habits of order, punctuality, neatness and economy.

With this end in view, the pupils are divided into different groups which are simultaneously occupied with the different kinds of practical work.

## Detailed Programme of the Course.

1.—*Practical Work.*

(a) *Cooking.*—Before all else the school kitchen must possess all the qualities of a good middle-class kitchen. The aim is to develop good housewives, rather than professional cooks.

Special courses in high-class cookery may, however, be organised subsequently on the school premises.

Every evening the pupils will arrange the menu for the next day with the mistress; they will calculate the probable cost, and each one must keep careful accounts.

(b) *Choice and purchase of meat, vegetables, etc.*—Groups of the pupils will go in turn with the mistress, every day, to do the shopping, that they may learn to make a proper choice, and may acquire a proper knowledge of the cost and relative value of the different kinds of food.

(c) *Cleaning.*—The pupils must in turn wash up, clean the kitchen utensils, and keep the rooms and furniture of the school in good condition.

(d) *Waiting at table.*—The pupils must learn to lay the table and to wait on visitors.

(e) *Washing.*—There will be every week some washing of kitchen cloths, aprons, table-linen, material prescribed for the ironing course, body-linen, flannel and woollen garments. The pupils will also learn recipes for washing laces and for cleaning stuffs.

(f) *Ironing.*—This course, which is absolutely distinct from those given in the needlework school, includes the ironing of everything washed in the school.

(g) *Mending.*—Making and mending of linen belonging to the school; mending of objects washed by the pupils. Making of an apron, the uniform for all the pupils.

2.—*Theoretical Lessons.*

(a) *Domestic Economy.*—Woman's mission in the home; her duties as wife and mother. Necessity of neatness, foresight and economy. Domestic book-keeping, employment of time; daily and periodical occupations. Care of rooms, cleaning, advice and methods. Concerning the house in general. Rooms and furniture, their arrangement and care; the different rooms, cellars, kitchen and wash-house. Methods of lighting and heating, different kinds of fuel, their use and heating value. Linen and clothing. Bedding; choice and treatment. Cleaning, how to take stains out of different materials. Theoretical ideas of cooking, choice and preparation of food for persons in health and for invalids; practical methods of detecting common frauds or adulteration of ordinary articles of food.

(b) *Theory of nourishment.*—Necessity of food; chemical composition of plants and animals; modifications in the composition of our bodies, produced by work and life. Judicious choice of food; necessity of variety, cooking and seasoning. Different classes of foods; mineral foods, hydro-carbonates, fats, nitrogenous foods, composite foods, condiments, drinks. Study of each of these groups. Preservation of food; reasons why food does not keep; mould and decay; preservation by means of heat, anti-septics and desiccation.

(c) *Hygiene.*—General principles. Health and illness. *Personal hygiene*: Body, clothing, dwelling, food, drink, mode of life, excess, exercise, rest, late hours, etc. *Hygiene of the Family*: All the preceding headings treated in their relationship to family life. *Hygiene of children and old people*. Distribution of work between the different members of a family, and according to times and seasons. Sick nursing. First aid (in case of accidents and before the arrival of the doctor), dressings.



**Time-Table.**

	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
<i>Morning :—</i>						
Group I 8-9	Shopping	Preparation of Dinner	Shopping	Shopping	Shopping	Cleaning of Kitchen Utensils
9-12	Preparation of Dinner		Preparation of Dinner	Preparation of Dinner	Preparation of Dinner	
Group II 8-11	Mending	Washing	Ironing	Mending	Ironing	Preparation of Dinner Cleaning Rooms, etc.
11-12	Preparation for Tuesday's Washing		Cleaning Windows, etc.			
Groups I & II 12-2	Dinner, wash and put away all Utensils, etc., tidy the dining-room, etc.					
<i>Afternoon :—</i>						
Groups I & II 2-3	Theory of Nourishment	Washing	Theory	Dictation of Recipes	Composition of Menus and their Cost	
3-4	Preparation of Refreshments and Afternoon Meal	Afternoon Meal Washing	Preparation of Refreshments and Afternoon Meal	Preparation of Refreshments and Afternoon Meal	Preparation of Refreshments and Afternoon Meal	
4-5	Domestic Economy	Dictation of Recipes	Cmp'siti'n of Menus and their Cost	Theory of Washing	Theory of Nourishment	
5-6	Composition of Menus and their Cost	Cmp'siti'n of Menus and their Cost	Hygiene	Cmp'siti'n of Menus and their Cost	Hygiene	

**V.—SPECIMEN PLAN OF WORK FOR A MORNING COOKERY CLASS.**

Specimen plan of work for each group in a cookery course where there are 18 pupils divided into six groups of three, each group cooking a complete dinner at a separate stove. (The pupils change their numbers weekly.)

	Before the Lesson.	During the Lesson.	After the Lesson.
No.1.	Shopping. Tidy dining-room.	Make soup. Lay the table.	Clean knives and forks. Sweep kitchen, dining-room and passage floors.
No.2.	Distribute stores. Lay the table and clear away after dinner.	Cook meat or pudding.	Clean the stove.
No.3.	Warm the crockery,	Cook vegetables or fruit and dessert. (Dessert = biscuits, etc.).	Wash and put away the crockery.

**THE TEACHING OF DOMESTIC SCIENCE IN  
STATE INSTITUTIONS IN FRANCE, WITH  
SPECIAL REFERENCE TO PARIS.**

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## THE TEACHING OF DOMESTIC SCIENCE IN STATE INSTITUTIONS IN FRANCE, WITH SPECIAL REFERENCE TO PARIS.

This report on the teaching of domestic science in France Introductory deals necessarily with the education of girls, upon whom the care of the household will devolve, even when, as in many cases, they have to be bread-winners as well as housekeepers.

With the development of the idea of woman as a being to be fitted for leading her own life, whether married or single, much has been done within the last twenty years for the education of girls. The educational authorities of the Third Republic have multiplied schools of every grade and kind, where girls of every class and station can receive the instruction they need.

### I.—ÉCOLES PRIMAIRES (ELEMENTARY SCHOOLS).\*

In 1881 education at the public elementary schools was made free, and the following year attendance became compulsory for all children (aged six to thirteen) who did not attend any other school and who could not receive elementary instruction at home. In the towns these schools are frequented in the main by children of workmen and small tradesmen, in the villages by the children of farmers and agricultural labourers. A general elementary education is provided, including moral and civic instruction, reading and writing, grammar, syntax and spelling—all the subjects, in fact, comprised under the term *la langue française*,—arithmetic, especially the metric system, history, geography, object lessons with practical elementary science, singing, drawing, and last but not least, elements of manual instruction (needlework for girls). Education,  
free and  
compulsory.

At the elementary school, all the girls from the age of six or seven to thirteen do needlework for 2½ hours a week in each of the lower divisions, and for three hours a week in the highest class (*cours supérieur*). The first two terms, October to March, are usually devoted to learning the different stitches—running, hemming, oversewing, button-hole stitch, cross-stitch for marking etc.—or to the recapitulation of what has already been learnt. The stitches are learnt on little squares of calico, linen or canvas, and the children use coloured thread that the stitch may show better; some of these little pieces of preparatory work are often very tastefully made. Curriculum.  
Needlework.

\* A short account of the general organisation of education in France will be found in a previous volume of Special Reports on Educational Subjects, *t. c.*—Vol. 7, Rural Education in France, (London, 1902). The forthcoming volume of Special Reports, alluded to in the Annual Report of the Board of Education for 1904-5, will contain an account of secondary and higher education in France.—Ed.

last terms the different stitches are applied to practical articles, such as towels or napkins, small sheets and pillow-cases.

The children are expected, at a very early age, to exercise their taste by the invention of simple geometrical patterns which they draw on thin paper with pencils of various colours. The patterns are then tacked on to a piece of linen or canvas with coloured thread; this done the paper is carefully torn off and the pattern remains traced on the linen or canvas. In the higher classes (age eleven to thirteen), part of the time devoted to needlework is given to the methodical tracing of patterns and to the making of baby linen, or of little chemises, frocks and pinafores, and to darning. Each child is expected to have a little case or housewife with her name marked on it, in which her thread, needles, thimble, scissors, and piece of calico or linen are to be kept.

Theoretical  
Domestic  
Science  
teaching in  
Paris.

In Paris, in elementary schools of this type where girls do not remain later than the age of thirteen, regular and methodical teaching in theoretical domestic science is given only in the *cours supérieur*, in one lesson of about three-quarters of an hour every week. The qualities necessary for a good housewife, her various duties and their importance to the welfare of the household, are explained to the children in familiar language. Among other things the children will be given some ideas of order, economy, cleanliness, of keeping accounts, of choosing furniture, of the proper way to make a bed, to sweep and dust, to trim lamps, to take care of linen, to remove stains, and further, of the hygiene of the house and furniture, of ventilation, of different kinds of lighting and heating apparatus, their advantages and dangers, of the hygiene of clothing and of the general influence of cleanliness on health.

## II.—COURS COMPLÉMENTAIRES (CONTINUATION CLASSES).

Their raison  
d'être.

The greater number of children who frequent the elementary school leave when they are eleven or twelve years old as they must, even at that early age, begin to earn something, be it ever so little; others may perhaps compete for entrance to technical schools (*écoles professionnelles*), or to higher elementary schools (*écoles primaires supérieures*), but there still remains a large number of girls whose parents can allow them a little more schooling and who are either unable or unwilling to enter technical schools or higher elementary schools. For these girls it was found necessary to provide more advanced education than that given in the elementary schools. Thus the *cours complémentaires* were created (1884-1887), and formed one or two higher classes in some of the existing elementary schools.

Curriculum.

The pupils are admitted into these classes after examination at ages varying from thirteen to fifteen; the same subjects are taught as in the elementary schools, but the different branches are treated in greater detail and some fresh elements are introduced, such as book-keeping, a foreign language (English—especially in

Paris), etc. In the *cours complémentaires* 2 hours a week are devoted to needlework, 2½ hours to dressmaking; 2 hours are given to a theoretical lesson on domestic economy and hygiene, while a certain time, amounting to about a fortnight in the year for each group of girls, is devoted to practical teaching in cookery and household work.

At the needlework class the pupils learn to make all the different articles of a girl's trousseau; they design, trace, and work the patterns, and the trimmings, frills and embroidery are entirely made by them. They also learn to darn linen, cloth, and stocking-web material. Of the time devoted to dressmaking, part is employed in taking measurements, tracing patterns on the blackboard from given measures, and drafting patterns on paper (natural size), the remainder in cutting out, tacking together, fitting and sewing the garments. The girls generally learn to make a bodice in the first year, and in the second year a plain dress, with bodice and skirt, and blouses for themselves.

Needlework  
and Dress-  
making.

Instruction in domestic economy and hygiene, as in needlework and dressmaking, is generally given by the class-mistress. The work that has been done in the *cours supérieur*, the highest class of the elementary school proper, is first revised. Then follow theoretical lessons in cookery; the most nutritive kinds of food and drink are indicated, and explanations are given of the methods of preserving household stores (butter, eggs, oil, vegetables, fruits), and of making jams and pickles. Further, the utility and charm of gardening, especially in rural schools, are pointed out. The lessons on hygiene are co-ordinate with those on domestic economy, and include explanations of the nutritive properties and digestibility of the different kinds of food and drink, of the danger of eating unripe fruit or adulterated articles of food, of the precautions to be taken in cases of epidemic disease, of the necessity for vaccination and re-vaccination, of the danger of alcohol, of the hygiene of the body, of the necessity of bathing and of general cleanliness, of the preparation of tea and some simple medicaments, and of the first principles of sick-nursing.

Domestic  
Economy and  
Hygiene.

In some Parisian schools practical instruction in cookery is given from October to April or May on two consecutive days—Tuesday and Wednesday—every week, in order that the pupils may learn how to prepare in appetising ways the food that is left over from one day to another. The class is divided into groups of eight or ten, not more, and the time-table is so arranged as to give each group two courses of eighteen days instruction in cookery, that all the girls may see each of the eight summer and eight winter menus indicated in their syllabus. The teacher of cookery is chosen for her capacity as cook by the directress of the school and approved by the inspectress of domestic science and needlework, but no special certificate of efficiency is required of her. It is generally arranged that one of the class teachers should be present at these lessons. The girls take it in turns to go, two or three at a time, with the cook to purchase the necessary provisions

Cookery.

for the day, and they have little note-books in which to enter the details of what is spent. The following are luncheon menus for two successive days in winter and in summer:—

MENU D'HIVER.

MARDI.—	Soupe aux pommes de terre et aux poireaux.	Veau rôti ou rouelle de veau. Poisson sur le gril ou en friture.	Salade de légumes.
MERCREDI.—	Soupe à l'oignon.	Restes de veau accom- modés en blanquette ou en croquette. Pommes de terre au lard.	Marme- lade de pommes ou autre dessert.

MENU D'ÉTÉ.

MARDI.—	Soupe aux choux et au lard.	Rôti de mouton : épaule ou gigot aux haricots.	Œufs au lait.
MERCREDI.—	Vermicelle au beurre.	Restes de mouton en émincés ou braisés. Pommes de terre en purée avec saucisses.	Fromage à la crème.

Lunch ready, the little cooks sit down and relish with good appetites the work of their own hands. They have nothing to pay for this lunch, as the Ville de Paris grants 60 centimes (6d.) per head per day to cover expenses; the pupils have only to find their own bread and wine. After lunch, the kitchen is set in order and everything tidied up under the direction of the cookery mistress.

The kitchen of the school cannot always be used for the cookery class; in one of the *cours complémentaires* I visited, a kind of recess in the *préau*\*, below the staircase leading to the class-rooms, was turned into a kitchen; it had been already supplied with water, and the necessary additions were a sink, a cooking stove, some cupboards, a kitchen table, and nails on the wall for the kitchen utensils.

Household  
work.

As regards household work, the *cours complémentaires* were not originally adapted for this kind of teaching, and the directress of the school has to find some sort of equivalent to take the place of regular instruction; generally it is her own study which serves to give the pupils practice in polishing tables and chairs, cleaning ranges and stoves, dusting shelves, etc.

Laundry  
work.

When laundry work is included in the curriculum of the *cours complémentaires* it consists of ironing only, as the children are not allowed to do the actual washing. A regular laundress is the instructress, and there are sixteen lessons in the year for each group of ten pupils; in connection

\* The *préau* is a sort of large, bare hall where the pupils remain during play hours when the weather prevents them from staying in the playground, and where all sorts of functions take place which demand more space than the class-rooms afford.

with this class the pupils are taught how to take out stains of ink, rust, or fruit on linen, and stains of grease or candle on woollen material, how to trim and fill a lamp, to clean copper, steel and bronze articles, and kid gloves, and how to prepare a poultice, etc.

III.—COURS COMPLÉMENTAIRES MANUELS ET MÉNAGERS (CONTINUATION CLASSES FOR MANUAL AND DOMESTIC TRAINING).

So far, in these *cours complémentaires* of the elementary schools, of which about thirty exist in Paris alone,\* the teaching of domestic science is very fragmentary and takes up but a small proportion of the time devoted to study. The pupils consider it an addition to their general course of instruction and not a very important one. It was resolved, three or four years ago, that some *cours complémentaires* should be organised in such a way as to comprise the teaching of all the domestic subjects which girls might need in their own homes, to enable them to be their own cooks, laundresses, seamstresses, dress-makers, milliners, etc., the general studies acquired at the elementary schools being at the same time continued and extended.

Five such courses now exist in Paris†, under the title of *cours complémentaires manuels et ménagers*; they are attached to elementary schools, the *cours* and the school being under the same directress. A course of this kind, but with a somewhat different organisation, was founded in the *rue des Minimes* in 1899; this course is not attached to an elementary school and the directress can therefore devote all her time to it, and experiments can be made more easily than in the larger schools. The course of study in the *cours complémentaires manuels et ménagers* lasts two years. The entrance examination, which is not very difficult, can only be taken by girls who have passed the examination for *le certificat d'études primaires*, as most children of the elementary schools do at the age of eleven or twelve.

The instruction given forms three divisions: (a) general instruction, including *morale*, French, arithmetic, history, geography, book-keeping, elementary science, hygiene and domestic economy, singing, gymnastics, and English (which is optional), which together occupy 16½ hours a week; (b) technical instruction, including drawing, dressmaking, needlework, millinery, 18 hours a week; (c) practical domestic science, comprising cookery, laundry work, housewifery, 3 hours a week; making a weekly total of 37½ hours.

The class-mistress, besides the *brevet supérieur* required of all class-teachers in the *cours complémentaires*, must be provided with a special certificate proving her ability to teach domestic

\* The schools in the provinces have similar, but somewhat less advanced curricula.

† In the *rue de l'Arbre-Sec*, *rue David*, *rue de Patay*, *rue des Pyrénées*, *rue Sorbier*.



science—*le certificat d'aptitude à l'enseignement manuel*. The theoretical classes in domestic economy and hygiene are taken by the class-mistress, and she has to be present at all the practical lessons in domestic science given to her pupils, but she does not herself give these lessons, as there are special mistresses for needlework (including embroidery and dressmaking), millinery, cookery, ironing and cleaning, drawing.

Needlework  
and Dress-  
making.

In the first year of the needlework class, the pupils make all the simple articles of baby linen and a baby's plain frock; during the second year a more elaborate frock, with tucks, embroidery, trimmings, etc., hemstitched handkerchiefs and girls' underlinen. In the first year of dressmaking a girl's plain bodice is made from measurements taken on a dummy and corrected by the pupils, who cut out the patterns first in paper and then in the material; in the second year the work consists of shaped skirts with flounces, cut out and made entirely by the pupils, several of whom work at the same skirt, if necessary.

Millinery.

In the millinery class the pupils learn how to make shapes of hats and bonnets with wire, straw or stiff muslin, and how to trim them; they are allowed to buy the articles they have made by paying only the price of the material used. This encourages them in their work and the parents are delighted when their daughters bring home some article—a frock, a hat, a baby's sun-bonnet—which they have themselves manufactured.

Cookery.

The kitchen I visited in the *rue de Patay* is well arranged and neat. Here also the girls take it in turns to go and buy the provisions with the cook, to prepare the vegetables and clean the copper, tin, and brass utensils used. The directress sometimes varies the menu a little, by adding to it some dish likely to be serviceable in a workman's family. On the day I was there a few pounds of strawberries had been bought because the directress wished to have the girls shown how to make strawberry jam. The cookery class takes place in the morning, and at lunch-time the pupils lay the cloth, take off their aprons and sit down to the meal they have prepared.

Laundry  
work.

There is a special laundry, but ironing is the work principally done, for it is thought that the actual washing may be prejudicial to the health of young girls. The pupils are instructed to bring from home the different articles which they must learn to iron (women's underlinen, men's shirts, etc.); they are also taught how to take out stains of ink, grease or tar, and how to clean kid gloves, straw hats, etc.

School  
in the rue  
des Minimes.

The school in the *rue des Minimes*, already alluded to, was founded in 1899 with money bequeathed for that purpose to the Ville de Paris by M<sup>me</sup>. Trélat. It is intended only for girls, aged thirteen to fifteen, who have left the elementary school and who do not think they will have to earn their living, but expect, as the directress explained, to marry and have homes of their own to manage. Small tradesmen of the neighbourhood, clerks and employés send their daughters there. The school is free; admission is gained by examination, as in most French higher primary schools. As the school has only been two years in existence, the results cannot yet be foretold. Of the thirty pupils

in the first year, none had left at the beginning of the second, and in July, 1901, there were fifty-two pupils on the roll.\* The course of study lasts two years, and during this time the girls are expected to learn all that concerns the management of a household: cookery and the purchase of provisions, laundry-work, needlework, millinery, dressmaking, embroidery. Out of a total of 35 hours a week (7 hours a day except Thursday), 22½ hours are given to domestic subjects, 8 hours 20 minutes only to general instruction, 3 hours 20 minutes to drawing, and 65 minutes to shorthand. Thus, in this school, the classes in domestic science decidedly outweigh those devoted to general culture. There are no regular classes for teaching the care of children, but the directress, it seems, has taken the girls once or twice to a neighbouring *crèche*, where some elementary principles of the care of infants were taught them.\*

The organisation of the school is far from complete, as it is only provisionally installed in its present quarters; a house is being built purposely for it next door and it is hoped that the pupils will be able to enter the new building in October, 1901. The directress seems very hopeful as to future results.\*

#### IV.—ÉCOLES PROFESSIONNELLES MÉNAGÈRES (TECHNICAL SCHOOLS).

A certain number of children, after leaving the elementary school, or after having passed one year at the *cours complémentaires*, compete for entrance to a technical school where they can learn a trade which will enable them to earn a living. They may enter these schools, of which five for girls exist in Paris,† at an age not under twelve nor over fifteen.

The course of study lasts three years, or four years for those pupils who take drawing or painting for their subject. General instruction is given in the morning from 8.30 to 11.30, technical instruction in the afternoon from 12.30 to 5, with half an hour's interval from 3.30 to 4 for recreation. The technical classes vary a little according to the needs of the neighbourhoods in which the schools are situated. The principal *ateliers*, or workshops, are those for dressmaking, needlework, embroidery (dress and furniture), artificial flower-making, drawing and painting, stay-making, straw-hat-making. The school in the *rue Fondary* has also an *atelier* for laundry-work, or rather for ironing, as the washing is done by a professional washerwoman. The school in the *rue Bouret* has an *atelier* for making men's coats, little boys' suits, and ladies' garments. Each pupil must attend one of these technical classes to the exclusion of the rest, in addition to the instruction which all receive in sewing, housewifery, and cooking, while hygiene and domestic economy form part

\* The school in the *rue des Minimes* has prospered since it was moved into the new building, which is nearly full. There are now 85 pupils on the roll. Regular classes have been formed for teaching the care of children. (1905).

† In the *rues de Poitou, Bouret, Fondary, Ganneron, de la Tombe-Issoire*. The two *écoles professionnelles* in the *rue Duperré* and *rue des Boulets*, which served as models to the State and to the City of Paris when they wished to organise technical schools, were founded by Mma. Eliza Lemonnier during the Empire; they are independent of the State and supported principally by private subscriptions.

of the general instruction in science. The curriculum is more flexible than in the *cours complémentaires*, as the directresses are allowed greater initiative. All these schools have practical classes for cookery, except that, in the *rue de Poitou*, where space was wanting when the cookery classes were established. In two, those in the *rues Bouret* and *Fondary*, there are classes for ironing.

École Jag-  
quard.

The *école Jacquard*, in the *rue Bouret*, is very well arranged for the classes in housewifery, as the pupils have not only a laundry with a boiler and appliances adapted to their size, but also their kitchen and two dining-rooms, their own and the teachers', for practice in household work. The girls are taught, in groups of twelve, for a whole week about three times a year, except during their last school-year when they have only two weeks of cooking and household work. Each pupil has, therefore, eight weeks of cooking, laundry work and housewifery during the three years she is at the school.

The work is organised in the following manner:—In the morning, some of the pupils go to purchase provisions with the cookery mistress, others undertake the work of the house, some lighting the fires, others putting in order the two dining-rooms, cleaning and brushing tables, cupboards and chairs, and polishing the brass ornaments of faïence stoves. On the return of the foraging party, some set to work to prepare the vegetables, others clean the saucepans, making them shine brightly. During this time cooking goes on under the supervision of the cook. When everything is ready, the pupils lay the cloth and sit down to lunch with one of the class-teachers, who take it in turn to share the meal. After lunch everything is put back in its proper place, the dining-rooms are swept and the plates, knives and forks washed up and cleaned. The pupils have note-books in which they write out their menus and the recipe for each dish they have cooked, and also the cost of the provisions. Expenses are distributed among the pupils who share the meal, and the amount to be paid by each is very small. In the afternoon, at one o'clock, the classes in laundry work begin; first the torn linen has to be repaired and the stains removed; then comes the washing and ironing. Only very small things are washed at the school; the pupils bring the heavier linen ready washed from home and iron it with the school linen (napkins, towels, etc.).

École pro-  
fessionnelle,  
rue Gan-  
neron.

At the *école professionnelle* in the *rue Ganneron* the practice in housewifery consists in cleaning the directress's study. The girls of the cookery class, besides cooking their own lunch according to the menu of the day, attend to the *déjeuner* of all their comrades. The pupils do not go home to lunch but bring their midday meal to school and, if they do not wish to eat it cold, have it warmed up in the kitchen; or they may have some little thing cooked, such as an egg, an omelet, a beefsteak, and it is the girls of the cookery class who take care that the food in the numerous little saucepans on the oven or gas-stove is not burnt, and who wait upon their companions. In this school there are eighteen different menus,

and it is arranged that each group of pupils shall prepare them all in turn.

The following is a menu of the *déjeuner* of July 4th at the school in the *rue Fondary*, which one of the pupils kindly copied out, with the cost of the articles necessary for making the various dishes:—

MENU DU 4 JUILLET, 1901.

Soupe à l'oseille.  
Bœuf bouilli parmentier.  
Petits pois au lard.  
Café.

DÉPENSES.		francs.
1,000 gr. de lard . . . . .		0'20
1 kilo pommes de terre - - - - -		0'25
3½ kilos petits pois - - - - -		0'80
1 laitue - - - - -		0'15
60 gr. café à 5'60f le kilo - - - - -		0'35
Oseille - - - - -		0'05
Poivre - - - - -		0'10
125 gr. beurre à 2'20f le kilo - - - - -		0'45
500 gr. pain . . . . .		0'20
1 œuf - - - - -		0'10
		2'65

Eight pupils shared this meal so that each had the small sum of 0'35 centimes (3½d.) to pay, but this was a cheap day, as the meat had been purchased the day before; on an average the cost of the lunch is about 5 francs, or 0'60f (6d.) each.

The programme in needlework and dressmaking is the same in all the *écoles professionnelles* of Paris at least. During the first year the pupils cut out and make baby linen; in the second year they make the different articles of a child's outfit, and they begin learning to make a woman's bodice, that is, they cut it out in stiff muslin, tack it together and try it on. In the third year the complete bodice is made.

Domestic economy and hygiene are taught theoretically by the teacher of science; there is no general syllabus for this branch of the subject as each teacher draws up her own and, probably, submits it to the directress for approval. At the *école professionnelle* of the *rue de Poitou*, for instance, there is no regular class in domestic economy and hygiene for the first and second years, but the pupils are taught scientific principles which prepare them for the methodical study of these subjects. In the third year there are forty lessons, of three-quarters of an hour each, in domestic economy and hygiene, and the teacher explains the practical application of the scientific principles which the girls have previously learnt; she speaks to them, for instance, of the various causes of sickness and disease, and explains how some of these causes may be prevented by proper hygienic conditions of the body and of the dwelling; or, in a lesson on accidents, she tells them how bruises, cuts, suffocation, etc., should be treated pending the arrival of the doctor.

V.—ÉCOLES PRIMAIRES SUPÉRIEURES (HIGHER PRIMARY SCHOOLS).\*

Organisation and Curriculum.

The *écoles primaires supérieures* for girls, of which there are two in Paris, *l'école Sophie Germain* and *l'école Edgar Quinet*, give a complete primary education, of a much higher standard than the *cours complémentaires*, to girls whose parents can afford to let them continue their schooling to the age of sixteen or seventeen. These schools are not meant to train teachers like the training colleges, nor to prepare for any trade or profession, like the technical schools, although they provide instruction of a practical kind. The pupils enter by competitive examination at the age of twelve to fifteen. The course of study lasts three years and a fourth year is optional for those who wish to prepare for entrance to a training college, or to fit themselves for employment as accountants, interpreters, clerks in banks, in post and telegraph offices, etc. The school is open for 3 hours in the morning and for 3½ hours in the afternoon, on five days of the week, Sundays and Thursdays being holidays. The branches of domestic science taught in these schools are needlework, dressmaking and millinery, hygiene, domestic economy and cookery. Though the general scope of all the *écoles primaires supérieures* is the same, they are not closely formed on the same model; each school arranges its own time-table and has its own curriculum.

École Edgar Quinet.

I will speak here more particularly of the last higher primary school founded in Paris (1892), the *école Edgar Quinet*, situated in the *rue des Martyrs*.

(a) Needlework, Dressmaking and Millinery.

In this school the classes in needlework, dressmaking and millinery together occupy 3½ hours a week in each class. The pupils are taught all the different kinds of needlework which a woman may have to practise in her own home: the making of baby linen and children's outfits, the drafting and cutting out of patterns for frocks and dresses, embroidery from designs of their own composition, the trimming and making up of plain hats and bonnets. There is one mending day in the month, when the pupils bring their own underlinen, stockings or frocks which are in need of repair, and thus learn practical darning and patching. One interesting feature of the sewing class at the *école Edgar Quinet* is what is called the *vestiaire des pauvres*. Friends of the school and pupils or teachers who have garments which they can no longer use themselves, bring or send them to the school, which first has them disinfected and cleaned, if necessary, and then altered and re-made by the pupils. A grown person's dress is turned into a child's frock, for instance, or some torn garment is mended and made to look neat. Sometimes new materials are given, and they are made into petticoats, frocks or dresses, and placed in the *vestiaire des pauvres*, out of which they issue at stated times to clothe poor children of the neighbourhood. Not only are

\* Cf. Special Reports on Educational Subjects, Vol. I., p. 287.—The French System of Higher Primary Schools, By R. L. Morant. (London, 1897).—Ed.

the poor children thus benefited, but the pupils of the school have practical lessons in housewifery and are shown besides how, with a little labour, they may render the giving of their cast-off clothes a work of love.

The cookery class is conducted by a specialist, M. Driessens, (b) **Cookery.** who is a firm believer in the educational value of good cooking. Under his direction, once a fortnight, six or seven young girls prepare appetising dishes, while the others look on and write down recipes from his dictation. M. Driessens has several little portable gas stoves which can be connected with the gas supply of the *refectoire*, where the lesson is given. I understand that the cookery lesson is very pleasant, for the pupils all taste what has been cooked; as the lesson takes place in the afternoon, the dainties, crèmes, sweets, etc., are no doubt more palatable than the solid food.

There is not much time available for the teaching of hygiene (c) **Hygiene and Domestic Economy.** and domestic economy, which form part of the course in natural science in the first and third years; so many things have to be learnt in the *écoles primaires supérieures* in about 26 class hours a week, that only 1½ hours can be devoted every week to natural science.

#### VI.—ÉCOLES NORMALES PRIMAIRES (TRAINING COLLEGES FOR PRIMARY SCHOOL TEACHERS).

As the students in the *écoles normales primaires* are boarders, (d) **Household work.** there is greater facility for teaching practical household work of every kind. In fact, in most training colleges the students sweep, dust and keep in order all the different parts of the house which they use themselves—class-rooms, school-rooms, dining-hall, dormitories, linen-cupboard, cloak-room, staircases, etc. A sort of monthly rotation is organised, so that each pupil in turn is entrusted with every part of the work of the household, under the superintendence of *Madame l'Économe*, who has to see that every pupil acquits herself well of her share of the common task. In some training colleges, even the care of the heating and lighting apparatus is confided to the students, but usually the servants attend to this. One or two of the most obliging and steady students, one at least being in her third year, are appointed to tend those of their comrades who are obliged by illness to remain temporarily in the dormitory; this is, however, only in cases of slight indisposition, for when there is any serious illness, or any danger of infection, the students are carefully kept away from the sick-room and it is the directress, with perhaps one of the teachers, who takes the post of danger. The students also have charge of the linen; they count the articles sent to the laundress, receive them when they are brought back, distribute them, and replace in good order the household linen. In the hours devoted to needlework, they are expected to mend the linen of the school and their own clothes.

When there is a botanic garden attached to the college, the (e) **Gardening.** students take care of it under the direction of a teacher; they also do the gardening when the school keeps no gardener.

Needlework  
and Dress-  
making.

The classes in needlework and dressmaking take up 3 hours a week in the first year, and 2 hours in the second and third years. The students learn to knit mittens, stockings, etc., to crochet babies' socks, vests and undergarments, and to cut out, tack together and make the various articles of a child's and a woman's outfit: chemises, drawers, petticoats, pinafores, blouses, frocks, etc. The use of the sewing machine is taught in the second year.

Domestic  
Economy and  
Hygiene.

Hygiene and domestic economy are taught theoretically by the science teacher in the third year; hygiene takes up twenty lessons of an hour each, and domestic economy one hour a week.

Cookery.

Cookery is very seldom taught in training colleges; it would be difficult to organise the classes in such a way that students on duty in the kitchen should not miss any important lecture, moreover the teaching staff have so much work on their hands that it would be almost impossible to detach one of them for the superintendence of a cookery class.

#### VII.—LYCÉES DE JEUNES FILLES (PUBLIC SECONDARY SCHOOLS FOR GIRLS).

Organisation.

The *lycées de jeunes filles* provide education and instruction for girls of all ages from five or six to eighteen. There are three or four elementary classes (*classes préparatoires*) and five secondary classes. The pupils who enter at five years of age can attend all the classes in turn, till they pass the examination for the *certificat de fin d'études secondaires* at the end of the fifth secondary class, at ages varying from sixteen to eighteen.

Domestic  
Economy and  
Hygiene.

The only domestic science subjects included in the official programmes are needlework and dressmaking, and a course of lectures on domestic economy and hygiene in the 3<sup>e</sup> *année secondaire*\* (age fourteen to fifteen), given by the science teachers. This course consists of twelve lectures of an hour each. In the fourth year (age fifteen to sixteen), and fifth year (age sixteen and over), hygiene is included in the lessons on natural science which occupy one hour a week throughout the year.

Needlework  
and Dress-  
making.

Needlework is compulsory in all the elementary classes, and in secondary classes up to the third year, except in the *lycées Lamartine* and *Victor Hugo* in Paris where the organisation as regards optional and compulsory courses is somewhat different from that of the other Parisian and of the provincial *lycées*. The needlework lessons last 2 hours a week at least, and in the provinces generally 3 hours in the secondary classes and 1 hour in the elementary classes. For the pupils of the fourth and fifth years these lessons are optional. Under the modest name of needlework (*couture*), the pupils during their progress through the different classes of the *lycées* learn to sew (all the different stitches), to crochet, knit, embroider, darn, etc. In the preparatory classes they

\* The classes are called years—2<sup>e</sup> *année secondaire*, 3<sup>e</sup> *année secondaire*, etc.

apply what they have learnt to the making of handkerchiefs, table napkins, towels, baby linen; they crochet or knit babies' petticoats, vests, woollen shoes, caps, etc. In the first three secondary classes, they make all the different articles of a child's or girl's outfit; in the fourth and fifth years they try their hands on complete dresses, blouses, morning-gowns, children's frocks, aprons and pinafores, and little boys' suits. From the lowest class upwards, they are taught how to trace and cut out the articles of clothing which they afterwards make, and in the higher classes they cut out, tack together, and fit bodices and skirts. They also learn how to use the sewing machine. When they leave the *lycées* they are able to cut out and make their own clothes, and to do many kinds of fancy work which they have also learnt at school. Many of the garments made at the *lycées* are intended for charitable purposes. At the *lycée Victor Hugo*,\* for example, twenty poor children of the neighbourhood were provided last Christmas with frocks, chemises, pinafores, petticoats, etc., which, for the most part, were prepared and begun by the pupils in the school hours devoted to needlework, and generally finished by them in their leisure time at home.

The committee entrusted with the revision of the school programmes in 1897 thought that the teaching of other domestic subjects—the purchase of provisions, cookery, etc.—should be left to the mothers, who would be able to do it in a better and more practical way than the *lycée*, and who could adapt it to the particular circumstances of each family. Optional classes in cookery have, however, been opened in Paris at the *lycées Victor Hugo* and *Fénélon*. The cookery class at the *lycée Victor Hugo* lasts 1½ hours every week during seven months, from November to May; it is generally attended by girls who have already left school, or by those who do not take the complete school course. The cook of the establishment prepares before the pupils the dishes he has to show them, and while these are cooking a *répétitrice* dictates the recipes. The pupils in this school are not forced to *mettre la main à la pâte* themselves and, with one or two exceptions, they are content to look on.

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It will be clear from this survey of the teaching of domestic science in France, that the authorities responsible for the curriculum in public schools, primary and secondary, lay stress chiefly on needlework and dressmaking and on theoretical domestic economy and hygiene; and further, as regards secondary schools, that it has been decided, after discussion, that practical domestic science can be best taught by the mothers and that it is, therefore, unnecessary to add lessons in cookery, housewifery, etc., to an already crowded curriculum. It is also obvious that when much time is devoted to domestic science teaching in primary schools, less must be given to subjects of

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\* I speak of the *lycée* best known to me, though it is probably not the only one where this custom prevails.



general instruction, and in those primary schools where a higher intellectual standard is maintained, or where a trade or profession is taught, necessarily but few hours can be given to practical housewifery teaching.

It must not be forgotten, however, that efficient instruction in domestic science, provided that it is not permitted to usurp a place of unfair importance in the curriculum of schools which aim at giving a general education, must always possess a peculiar value in so far as it makes girls familiar with the different branches of household work with which, in all probability, they will one day have to deal, whatever their station in life. Towards this end the state schools in France have made considerable progress.

1901.

RÉGINE PITSCH.

*Agrégée de l'Université;*

*Professeuse d'anglais au lycée Victor Hugo.*

There have been no important developments in the teaching of domestic science in France since 1901.

1905.

R. P.

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## APPENDIX.

## A HIGHER EDUCATION FOR WOMEN AS WOMEN.

[An interesting report on the subject of a higher education for women as women, addressed to *M. le Ministre de l'Instruction publique* and written at his instigation, by Madame Yon-Lampérière, was published in the *Revue Internationale de l'Enseignement* of October, 1903.\*

As the organisation of a scheme for domestic science teaching of a university standard is an idea that has not been seriously considered, outside the United States of America, it has been thought desirable to give a short summary of this article.

A note is added on the new *École des Mères* in Paris.—ED.]

Madame Yon-Lampérière pleads for "*la création d'un enseignement supérieur féminin*,"—a higher education for women based upon the methodical and scientific study of the nature and conditions of woman's existence, and so constituted as to instruct men as well as women; in other words, a university education that might be described as, in the widest sense, the teaching of the domestic and allied sciences.

Although universities in many cases have opened their doors, more or less generously, to women, or in others have at least placed certain special courses within their reach, there has been so far, says the writer, no attempt to organise a higher education on the lines that she suggests.

The report is divided into five sections:—

- 1.—The *principles* upon which the writer bases her conclusions.
- 2.—The *need* which, in her opinion, makes the institution of a higher education for women as women essential.
- 3.—The *nature* of this education and the *method* by which it should be differentiated from the higher education of men.
- 4.—The resultant occupations open to women, apart from those to which the actual development of the knowledge to be acquired will lead in the future.
- 5.—A general outline of the practical measures of *preliminary organisation* to be adopted, in order that this education may be developed, by a wise progression, from the necessarily restricted beginning to complete organisation.

The report opens with a discussion of woman's position and calling, and of social relations generally.

Man in the scheme of existence is the producer, woman the organiser of Principles the resources necessary to their common life; and what is true of the underlying family is true of society, which is simply an extension of the family. —By a higher study and research the man can discover new truths useful to the com- education munity, but it is the woman, by extending her sphere of action as the family for women expands into society, who alone can ensure the practical application of these as women. discoveries.

A partial realisation of this truth has led intelligent men to interest themselves in the education of women, in order to bring women nearer to themselves, to interest them in modern discoveries, to lead them to an attitude of less indifference towards questions of general interest. But it is to be recognised that in doing this men have had in view their need of finding in the woman a companion more in harmony with their own ideas, of feeling themselves better understood; they have not had the conception of a distinct social element whose action is of an importance at least equal to their own in the sphere of human activity, whose education must also be quite distinct, often very different, in order that harmony may be established in the necessary differentiation of respective functions.

\* *Revue Internationale de l'Enseignement*, (Paris), vol. XLVI., 1903, page 312:—  
"La Création d'un Enseignement Supérieur Féminin," signed, "Anna—M. Yon-Lampérière. Chargée de mission pour l'étude des questions d'éducation sociale."

Need for this education.

The first point of view has produced the secondary education of girls, which is nothing but a guarantee of intellectual equipment for the future husband ; the second point of view should produce the higher education for women, as women. The secondary education of girls responds to an immediate, an urgent and practical need; but it leaves unsolved questions of necessity no less pressing.

The girl who is educated in the same way as the young men of her acquaintance tends to adopt the same career, to compete with them, to become, in a word, a "modern woman" instead of becoming woman. An incomplete and really unenlightened idea of justice leads liberal-minded men to accept the consequences of a situation which they have created, and this accentuates a tendency, dangerous alike for the well-being of society and for the future of the race : the wrong employment of women's activities.

Although people of insight recognise these undeniable results of a reform from which enormous benefits had been anticipated, they recoil from overthrowing an institution so recently created which, if reorganised, would run the risk of losing the support of those who are now accustoming themselves to attend it. But there is a means by which this education might be improved, without being overthrown, solely by the influence of progress and the natural development of ideas, that is by the creation of a higher education for women as women, of an education truly adapted to the real conditions of a woman's life.

This new education would inevitably affect, animate and insensibly modify secondary education, and would make it what it ought to be, a preparation of girls for a woman's life, for the series of tasks which await them in social life and which, well established, would ensure them the security and the consideration which they quite legitimately seek. To recognise and rightly to estimate these tasks and to give them their due importance, is the aim which would be pursued by a higher education for women as women.

Once this special function has been clearly defined and well recognised, an appeal would be made to the best efforts of men and women to make the immense value of the new education appreciated, from the point of view both of the individual and of society. It would then be easy to retain within their legitimate sphere the ambitions of women, impatient for an opportunity of distinguishing themselves by some discovery or by the exercise of some beneficial influence, thus enabling them to attain to well merited honours.

Nature and method of the new education.

To be truly suitable, the new education must concern itself with those data which are especially connected with woman's activity :—

- 1.—Maternity, with all that depends upon it, and in all its applications ;
- 2.—Domestic and social economy ; 3.—Æsthetics.

The woman, as already mentioned, is not producer like the man, but organiser, dispenser of the resources created or discovered by him. Her knowledge, therefore, should not be obtained by an analagous method. While the education of the man should enable him to make independent research in the vast domain of accessible knowledge, the woman needs, rather, to know all that has been acquired in order to utilise it to the best advantage ; the method which suits her is therefore the historical method, establishing the results obtained by the activity of men. This method, exclusively employed, would present a danger if it tended, by avoiding useless investigation, to develop in women a habit of taking for granted what is told them by others, but they should acquire good, methodical, intellectual habits by being allowed to practise research into the facts of their special life, and to employ the historical method only in those fields which relate to these special facts.

The higher education for women as women would thus allow, at the same time, scientific study, research, and a practical education ensuring the diffusion of acquired and proved truths.

The necessary specialisations would be developed as a matter of course. No woman, were she a genius, could know all that is known and apply it to all the phases of existence.

In the section relating to maternity, for example, the sub-divisions are obvious :—(a) Physical care of the mother, of the child, of the family (embryology, morphology, etc.); hygiene, chemistry of foods. (b) Intellectual

culture; psychology of the child and of the adult, pedagogy, methods of acquiring moral ideas, etc. (c) Critical periods of growth and illnesses, care of the sick, of convalescents, of invalids, of the abnormal, etc.

In the section of domestic and social economy:—Balance of family income, investigations as to its disposal, as to its organisation (practical knowledge of household management); social organisations for the stability of family incomes (theory and practice of co-operation and of insurance); social organisations for the security and the well-being of individuals (organisation of charity).

In the æsthetics section the specialisations would be numerous; at present three main sections can be distinguished:—(a) Individual æsthetics: æsthetics of the human figure; calisthenics; clothing and ornament, lines, forms and colours. (b) Æsthetics of the home: the house and the furniture; sounds, colours and scents; family fêtes. (c) Social æsthetics: concerts and exhibitions; books to read; means of diffusion; social fêtes; arrangement of recreations, festivities and theatricals.

From the practical point of view these necessary specialisations would be the source of a great many employments, as yet unforeseen, for women.

By the very extension and diffusion of these principles, the woman's activity in her home, the individual and social usefulness which this activity represents, would receive recognition; they would be sanctioned finally by measures which would preserve the home from a desertion disastrous from every point of view.

Occupations for women resulting from the new education.

The activities of women should, in fact, never be employed for remuneration except in quite abnormal cases; the growth of an organisation is therefore desirable which, under the guidance of more enlightened women, would permit suitable women to exercise their capabilities in society, just as they would normally exercise them in their family, under the guarantee of social protection and support, and apart from any spirit of gain. But that belongs to the future.

For the present, the defective conditions of actual society impose upon a considerable number of women the necessity of creating their own incomes; the whole discussion between the "modern woman" movement and its adversaries (to whom the writer belongs) depends upon whether these means are to be found by women in the careers created and opened up by men, to which they demand access and free competition, or if, on the other hand, they are to be furnished by new occupations, created by the ingenuity and the knowledge of women themselves, outside the field of masculine activity.

Madame Von-Lampérière supports the latter opinion. If it is true that women could easily fill the posts invented by men to provide means for themselves and for their families, it is not less true that men are unable to fulfil the absolutely different duties which are imposed upon the woman if the well-being and the full development of the present and of future generations are to be assured. Instead, then, of throwing women into a foolish and sterile competition with men, instead of the easy and short-sighted ambition which leads them to wish to take part in everything that men undertake, women should undertake what men cannot do; thus only will a rational social organisation be developed corresponding to the normal division of the respective tasks of the man and of the woman in their common life.

It is in this sense that the higher education for women as women would lead women to employments more and more varied and definite. The following examples may be given, in the order of the sections reviewed above:—

1. Supplementary mothers, more enlightened than the teachers of to-day, and specialising as: (a) governesses in families; (b) teachers of *enseignement secondaire*; (c) hospital nurses, directresses of schools for training sick-nurses, specialist doctors, etc., and other occupations which would follow as these studies are developed.

2. Trained economists whose knowledge could be applied: (a) in schools for training teachers of domestic science; (b) in the administration of co-operative food societies, extended to the production of food, these last organisations being independent of the co-operative body itself; (c) in the organisation of local philanthropic services, and others of a like kind.

3. Women specially qualified, theoretically and practically : (a) in the training of the body ; (b) in the design of clothing and of ornament and in their execution ; (c) in home arts and crafts ; (d) in art as applied to public life, with the infinite applications of detail which the matter admits.

Leaving on one side the consideration of special future developments, studies seriously and methodically carried out in these various subjects would give women opportunities of activity clearly distinguished from the opportunities of men, and would enable the former, as the latter, to develop themselves fully, while giving mutual support instead of injuring and fighting each other in competitive fields.

Preliminary  
organisation.

*Formation of Staff.*—Firstly, all precipitation, all impatience, must be avoided ; nothing is ready, neither staff nor public opinion ; means must be found of accustoming opinion to the idea of this new education, and, above all, of discovering possible teachers resolved not to permit any deviation from the fundamental idea, the distinctness and integrity of which must remain intact.

In the beginning we should require no elaborate organisation, but only clear investigation, occasional pertinent experiments ; but then it would be necessary to welcome with alacrity everything bearing on the subject, to facilitate experiences and experiments. All those willing to help must be encouraged, but their credentials would have to be thoroughly investigated before accepting them.

Practice only can determine how these experiments could be made compatible with a respect for the actual regulations of higher education on the one hand, and, on the other, with the exact environment and conditions by means of which alone they could be judged impartially on their possible results.

*Commission of initiation.*—In order to apply and test these attempts at realisation, it would obviously be useful to begin by constituting a commission which should first study, and afterwards control, the course and methods to be adopted, the experiments to be attempted.

In forming this commission—in some respects a commission of initiation—it would be essential to avoid everyone who had indulged in greater or less enthusiasm for the “modern woman” movement, and to avoid equally all elements of puerility, under cover of sentiment or of feminine intuition. A few people would be sufficient but it would be necessary to choose them well ; the circle could only be enlarged after the first impression had been given.

*Diplomas.*—What diplomas would grant a right to give instruction in this new branch of study, and what diplomas would qualify their holder to practise in it ?

Only the final studies could enable formal stipulations to be made in this respect, but as a principle, the diplomas of men, necessitating studies made perforce in the masculine environment and spirit, should not be demanded of future teachers. The first commission could give, provisionally, personal authorisations after an examination of which it would be sole judge until, after experience, the conditions and the syllabus of a special examination should be fixed.

The question of diplomas giving the right to practise is not so immediate, but a double necessity must be mentioned : firstly, not to give them names similar to those of men ; it would be necessary to find something other than *docteur, agrégé, licencié*, etc. ; secondly, to ensure them equal value in honours and precedence, an equality which could not detract from their character in the opinion of the teachers, of the students or of the public.

*Conditions of admission.*—Students could be entered on the production of a diploma of : *baccalauréat moderne*, or *certificat d'études secondaires*, or *brevet supérieur d'enseignement primaire* with an additional modern language.

Each of the sections instituted would be sanctioned by one or more special diplomas ; but a first division of general subjects might be provided bearing on the fundamental questions of the three sections, and giving rise to a special diploma.

*Committee of patronage.*—As soon as the matter took shape and it was decided to put it in practise, it would be necessary to appeal to a committee of patronage, drawn as much from among the *Amis de l'Université*

as from among the kind of people who could efficiently protect the students and the whole future of the higher education for women as women.

Supplementary expenses incompatible with official resources could be provided by this committee. The members of the committee could also be of assistance in placing the first students of the new education, on the assumption that secondary education did not immediately absorb them as teachers, for secondary education would, in fact, find in the new education a means of renaissance, of finding its true place in relation to the sex, and of ensuring its own proper development by dissipating prejudices, still too often justified.

In conclusion, Madame Yon-Lampérière says that, once put in possession of the widest means of study for what is her normal task, the woman would bring to social existence her contribution of activity and intelligence, a contribution necessary to the harmonious equilibrium of the common life.

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It should be noted that two letters\* on this subject were subsequently addressed to the editor, pointing out that partial experiments had already been attempted in the direction indicated by Madame Yon-Lampérière.

M. Clédât\* described a course for girls which had been instituted during the preceding year at Lyons University, at the proposal of the *Faculté des lettres*. This course, held in the winter for two hours three mornings a week, was attended in its first year by twenty-two pupils. It included a course of moral philosophy and pedagogy (e.g., subject: "The rôle of women in education"); a law course (subjects, 1st year: "The family"; 2nd year (1903): "The theory of punishment"); a science course (1st year: "Bacteriological theories and their application to the study of infectious illnesses and of hygiene"; 2nd year: "Principles of applied biology," and a course of astronomy); courses of history and geography, literature, history of art (1903: "Furniture"), and history of language.

M. Loisel\* drew attention chiefly to the work that is done and that might be done in this connection by the *Association pour l'enseignement des jeunes filles à la Sorbonne*.

Further, it may be mentioned that a private school, called *L'École des Mères*, has been started in Paris (Avenue Wagram, 25). It is a school of hygiene, of home education and of housewifery, and is intended to include four sections, of which the first, for teachers, women, and girls over fifteen years of age, was opened on November 15th, 1904. The other sections are called the *section des professionnelles* (cooks, nurses, etc.); *la section populaire* (working women, etc.), held in 1904 at the *Université populaire de Belleville*; *la section d'études ménagères et économiques*.

The school is patronised by a body of women and men, and directed by a committee composed of teachers and lecturers of the school; the directress is Madame Augusta Moll-Weiss.

Courses of lessons, theoretical and practical, are given in hygiene, principles of law (particularly, the law regarding women and children), domestic economy, the care and education of children, sick-nursing, cooking (including invalid cooking), care of linen, making *lingerie*, cutting out and altering garments, millinery; there are, further, higher courses in principles of social economy, modern forms of saving, physiological pedagogy, etc., and optional courses (music, drawing, languages).

The course lasts (minimum) one year. The school year comprises two terms: November 15th to March 15th and March 15th to June 15th. At the end of the school year examinations are held; there are special conditions for intending teachers. Fees for a year are 120 francs.

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\*See *Revue Internationale de l'Enseignement*, vol. xlv. Page 447—*L'Enseignement supérieur féminin*; letter from L. Clédât, *Docteur de la Faculté des lettres de Lyon*, October 22nd, 1903. Page 553—*A propos d'un projet de création d'un enseignement supérieur féminin*; letter from Gustave Loisel, *Professeur à l'Association pour l'enseignement des jeunes filles à la Sorbonne*.

The aim of the school is to give girls, after they leave school and before they marry, a methodical preparation for their future home and social duties, to educate them for the double rôle of mother, and of mistress of a house. The intention is not so much to give the pupils new knowledge, as to teach them to apply what they have already learnt to practical, daily life, to make them observe and think, and to teach them how to turn the resources at hand to the best advantage, how to conduct a household economically and intelligently.

Before starting this school in Paris, Madame Moll-Weiss conducted a similar school in Bordeaux, with an attendance of four or five hundred pupils. The ideas which led to the foundation of this school, and an account of the instruction, are given in the following books, which may be seen at the Board of Education Library :—

- Les Mères de demain. L'Éducation de la Jeune Fille d'après sa Physiologie. By Mme. Augusta Moll-Weiss. (Paris, 1902).
- Le Foyer Domestique. Cours d'économie domestique, d'hygiène et de cuisine pratique professé à l'école libre et gratuite d'économie domestique et d'hygiène de Bordeaux. By Mme. Augusta Moll-Weiss. (Paris, 1902).
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26. Appendix giving a list of the chief official papers bearing on Education in Great Britain and Ireland.  
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BOARD OF EDUCATION.

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SPECIAL REPORTS  
ON  
EDUCATIONAL SUBJECTS.  
VOLUME 17.

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SCHOOLS PUBLIC AND PRIVATE IN THE  
NORTH OF EUROPE.

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Presented to both Houses of Parliament by Command of His Majesty.

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1907.



PREFATORY NOTE TO VOLUME 17  
OF  
SPECIAL REPORTS ON EDUCATIONAL SUBJECTS.

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The author of this Report has had experience as a teacher both in private and public secondary schools in England. He was for long the head of his own private school for boys at Manchester, and both before and after that taught for years in University College School, London, a public day school for boys from 12 to 19 years of age, so that the secondary school systems of the Scandinavian countries, which are remarkable for the way in which public and private activities have been reconciled, have had a great attraction for him. His acquaintance with these lands, which began more than fourteen years ago, has gradually led to the formation of intimate friendships in all of them, and he has had the advantage which few Englishmen have enjoyed of teaching in their schools. The present Report is the outcome of this long study. Part of it, that dealing with the School Leaving Examinations, has already been printed and issued as a pamphlet by the Board of Education to Local Education Authorities and others interested in this problem, but publication has been delayed until the whole was ready.

Besides the hearty co-operation of public and private effort which marks the systems of Norway, Sweden and Denmark, a co-operation which has no doubt been encouraged by the heavy pressure of modern educational needs upon the financial resources of the State, the establishment of one standard of examination for the pupils of all secondary schools whether public or private is of great interest in connection with the recent report of the Consultative Committee of the Board of Education upon a School Leaving Examination. The third matter which has some direct bearing upon our own problems is the method adopted over thirty years ago in Sweden of training secondary school teachers under the headmasters of selected secondary schools, a plan which has just been followed in Denmark also.

The Board desire to take this opportunity of thanking the Gilchrist Trustees for the grant of £60 made in 1900 towards the expenses of this investigation, at a time when the question of the publication of Mr. Thornton's paper as a Special Report had not yet arisen. In this case, as always, the Board must not be taken as necessarily endorsing the opinions of the author; the responsibility for these is his and his alone.

Office of Special Inquiries and Reports,  
May, 1907.

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## SCHOOLS PUBLIC AND PRIVATE IN THE NORTH OF EUROPE.

The secondary school systems of Sweden, Finland, Norway and Denmark differ from those of most other countries in a wider comprehension. It may be stated broadly (with some exceptions to be afterwards noted) that education authorities, central and local, do not seek a monopoly, but welcome schools of other origin to a position co-ordinate with that of their own schools. To do this, the State must have some principle of discrimination, readily applicable, in order to determine whether any particular school shall be received within the privileged circle or not. The particular form of discrimination used by these four countries is the result of the investigation which takes place when a school applies for State recognition. And State recognition consists in the right, confined to recognised schools, of holding the State leaving examination within their walls. Under this system, in the last fifty years, there has grown up alongside the public schools an equal, sometimes a larger, number of other schools, conforming to the same standards, costing the public funds either nothing at all or much less than the public schools, and by the variety of their methods introducing fresh life and vigour into all educational work. It has thus become almost an axiom in the North of Europe that a balance of schools public and private most conduces to the welfare of the State.

It has therefore seemed useful to collect materials for a comparative account not only of the leaving examinations themselves and their working, but also of their value as an instrument in the hands of government for the spread of sound education, and as a means of harnessing in the State service schools of varying origin and methods, that are nevertheless working efficiently towards the same goal. Some opportunity will also arise for showing the relative merits and demerits of the different kinds of schools, the manner in which they supply each other's defects, their relative cost, and the amount of favour they win from the population around.

All this has been done in part for Denmark in Vol. 1 of Special Reports, but not comparatively. Valuable accounts have also been given in Vols. 3 and 8 of secondary schools in Sweden, and of the new school law of 1896 in Norway; but the point of view is so different that only to a very small degree is it here necessary to go over the same ground.

I had long wished to make a study of these leaving examinations in the North of Europe, and the opportunity came in the year 1900 when the Gilchrist Trustees appointed me one of their travelling

2      *Schools Public and Private in the North of Europe.*

students for that year.\* It so happens these examinations are not held quite at the same time in the four countries. They begin earlier in Sweden and Finland than in the other two countries ; and they are a little earlier in Norway than in Denmark. And so it is possible, notwithstanding the great distances to be traversed, to watch the examination in each country in succession.

The list of friends and correspondents in all these countries, upon whose help I have now for so many years fully drawn, is much too long to be given here ; but as they read these lines, they will be reminded of what they already know, that I owe them a debt of gratitude I can hardly hope to repay. To some extent they will feel repaid, if they find that their achievements and methods prove interesting and may be helpful to their kinsmen across the sea.

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\* This visit it was necessary to supplement by one spent in Norway alone, in May, June and July, 1903. It was only in the latter year that the new order initiated by the legislation of 1896 came into full operation.

## Sweden : Leaving Examination.

### I. SWEDEN.

#### LEAVING EXAMINATION IN SWEDEN.

I reached Stockholm on the 15th May just as the second or *viva voce* part of the examination was beginning. Down to the year 1863 the leaving examination in Sweden (which provides the sole passport to the University and is called *Afgingsexamen* or *Maturitets-examen*) was held entirely within the university; but since that year it has been held entirely within the school, that is, not in any school, but only in those, whether public or private, which are complete enough to be recognised by the State for that purpose. The examination is conducted by censors and examiners. The censors in Sweden, about eighteen in number, are chosen for the most part from the professors of the two Universities at Upsala and Lund. Some of them have served in that capacity for many years and so have become experts in the performance of their duties. The examiners are just the teachers of the schools, acting always under the direction of the censor and of course in his presence. Questions for the written part of the examination, which had taken place simultaneously some weeks before in each recognised school throughout the country, had been drawn up by the censors and then sent for final revision and for printing to the Education Office.

Secondary school work in Sweden is conducted on one or other of three lines, viz., Latin line A (both Latin and Greek); Latin line B (Latin but no Greek); and the Real line. Four papers of questions are set in each of the three lines.

In line A, (1) an essay must be written whose subject lies within the scope of the ordinary school work. It is required that it be written in correct language, with an orderly arrangement and a due development of the subject handled. (2) A Latin extract must be translated into Swedish; (3) a Swedish passage into German; and (4) another passage into French.

The first two requirements hold good for line B. also; and there is required in addition (3) a translation from Swedish into French or German, and (4) three problems in Mathematics.

In the Real line, there is required in addition to the Essay, (2) a translation from Swedish into English and (3) another into French (for either of which German may be substituted); and (4) four problems in Mathematics, to which is added one in mechanics or physics.

The questions at the leaving examinations in these northern countries are not nearly so numerous as with us; nor need they be in view of the fact that the *viva voce* examination which follows is of so searching a character. But they are of such importance that ample time (from four to six hours) is allowed for each paper. The answers are, in the first instance, looked over and marked



by the teacher himself and one colleague appointed by the Lärare-kollegium (the regularly organized masters' meeting presided over by the Headmaster). And as the result of the examination, each paper falls into one of six classes, the fifth of which is satisfactory, and the sixth unsatisfactory. In the rare cases where two colleagues cannot agree, an appeal must be made to the headmaster.

The candidate cannot claim to pass to the *viva voce* part of the examination, unless in each of his four papers he gain the mark *satisfactory* at least. But to this rule there are some relaxations. A classical candidate who is strong in his mother tongue and in Latin but somewhat below the mark in the other two papers may nevertheless be allowed to proceed, if at the Lärare-kollegium two-thirds of his teachers approve. And a realist who is good in his mathematics but weak in French, German or English may have the like grace accorded to him. When the teachers have thus arrived at their decisions, the papers are stitched together into books on the school premises and sent to the department, which distributes them among the censors; and they in their turn do a good deal of their inspection of the books as they travel in the train from school to school, from one end of Sweden to the other. The final decision is not reached until censors and teachers sit together in conclave somewhat later.

The *viva voce* is wider in its range than the written examination, and embraces all the subjects taught in the later years of school life. These are in line A the following subjects:—Religion, Latin, Greek, German, French, History and Geography, Elementary Philosophy, Mathematics, Natural Science and (optional) English. Line B drops Greek and adds Natural History; and English now becomes obligatory. The Real line, as compared with line B, drops Latin and adds Chemistry.

It is this second or *viva voce* part of the examination which presents the most novel features to an English observer. It begins in Stockholm, and is then continued through all the recognised schools in the country. The Head Master in each school arranges the candidates in groups of five or six in a room; and these rooms they keep for the rest of the examination, whilst the censor is sometimes in one room and sometimes in another, according to the subjects of the examination. The order in one room is not that of another; subject must follow subject in each room in such a way that there shall be a censor of the right kind present. Various outer arrangements emphasise the importance of the occasion. At least three persons of position nominated by the inspecting local authority represent the public. Evening dress is *de rigueur* for censors, examiners and candidates; and the censors and the teachers wear their orders and decorations. The teacher of the candidates is generally the examiner, and, as a rule, puts all the questions under the direction and the guidance of the censor. Before the examination begins the censors are provided with lists

of the pupils examined and of their marks in each subject for the past year. They can thus compare their impressions with the teacher's settled judgment; and if a candidate through ill-health or for other reason has hardly done himself justice they can to some extent correct the unfavourable estimate they may have formed.

If the subject be unseen Latin, Greek, French, German or English, it is the censor who produces the books which shall be used and tells the teacher (a few minutes beforehand) at what page and line the construing shall begin. The examination then goes on much like an ordinary lesson. First one reads, then another. If a phrase of unusual difficulty occurs which none can explain, the master gives the needed help. The censor makes a sign when questioning may stop; or he may, at any point, give it a fresh direction, or occasionally even take it into his own hands. The examination can hardly be called a competitive one, for no attempt is made to determine the relative position of candidates with the utmost nicety. In each oral examination the candidate is put in one of six classes, which are named A, a, AB., B a., B. (satisfactory) and C. (unsatisfactory). A single C is enough to cause entire failure, if the subject be an important one. Otherwise it may require two C's or even three (in the case of less important subjects) before the candidate is rejected, so long of course as he is strong in the rest. The mark in each subject, whatever it be, depends on the teacher alone. The censor can reject but not alter. Most teachers have settled what their marks shall be before the *viva voce* begins, and it is seldom that any excellence in answering makes them change the verdict which they have reached as a result of the past year's work. It might, therefore, be thought that the examination was not a real one. But if the written part of the examination affords a doubtful result, or if the school marks are not good, the teacher is directed by the censor to press that particular candidate, or may himself press him with questions. In ordinary cases, however, the examination, though apparently for the pupil alone, is really quite as much for the teacher, to enable the censor to judge of the efficiency of his work. It must always be useful also for the University professors to be brought for a few days in the year into such close touch with the leaving forms of all the public schools in the country, and for school and University to be thus brought into relation.

The last scene of all is the *scrutinium*, at which I was present by special permission. The Head Master takes the chair, and before him on one side sit the censors who are responsible for that particular school, and on the other such members of his staff as have taken part in the examination.

A large sheet lies before the Head Master, and on it are the candidates' names with ruled spaces for one or other of the six marks which are employed (numbers are not used). The marks for written work have been previously entered, but are read out by

the Head Master in order that those present may have the whole case before them. When the Head Master comes to the *viva voce* subjects, he receives the marks from one or other of his colleagues and carefully sets them down on the sheet. He then reads out the marks again, in order to have any possible mistake corrected, and puts it first to his colleagues, and then to the censors, whether the candidate shall pass. It is so difficult for an ill-prepared candidate to be promoted to the leaving class, that the number of rejections at the leaving examination is exceedingly small. Occasionally a doubtful case turns up and an interesting discussion takes place. Very occasionally, also, the censors reject a candidate whom the teachers have passed, but such cases are rare. If the candidate has passed, it remains to settle what marks shall be given to the leaving certificate as a whole. This occasions little difficulty, as it follows naturally from the marks given for the separate subjects. The Head Master next courteously thanks the censors for their assistance, and the examiners and censors append their names to the sheet of results called a *protokol*, which now becomes a public document, of which any citizen may claim to take a copy. The successful candidates are now introduced and receive the congratulations of their teachers; as they go out, their friends have in readiness for them the much-coveted students' or undergraduates' cap, with its little star in front—the symbol of a freedom denied to them while still schoolboys. Two further ceremonies remain, the first of which was not allowed in one of the schools I visited. As the successful candidates pass through the schoolroom, their comrades actually toss them (*hissa*), not indeed in a blanket, but with outstretched hands and arms. It seemed dangerous for a young man to be propelled six or seven feet towards the ceiling; but I could not hear of any accident resulting. Gentler congratulations from mother and sisters in the playground come next, in the shape of a bouquet suspended from the neck and covering the chest—a bouquet worn by the candidate wherever he goes for the rest of the day.

There are three kinds of secondary schools whose work is more or less shaped by this leaving examination in Sweden. By far the most important of these are the State Secondary Schools for boys; next come five private schools which have established their claim to State recognition and support; and lastly, eight of over a hundred girls' schools and co-education schools, due to private or local initiative, which receive substantial support from public funds, both central and local. The leaving class in these schools comprises on an average not more than 4 per cent. of the entire number of pupils. It is therefore a relatively small number that is directly affected by the examination. But when Sweden, like Norway and Denmark, provides, as she seems about to do, a minor leaving examination for those who leave school at fifteen or sixteen, both the number of schools and the number of pupils directly affected by these examinations must greatly increase.

## STATE SECONDARY SCHOOLS.

The seventy-nine State Secondary Schools for boys in Sweden are of three types, classical, semi-classical (Latin but no Greek), or modern. All three types or only one may, according to circumstances, be found in any particular school. The full course extends over nine years. The first bifurcation takes place at the beginning of the fourth year,\* when a pupil must decide whether he shall proceed on the classical line or the modern. At the beginning of the sixth year a classical pupil must again decide whether he will begin Greek or take instead of it a larger quantity of mathematics, French and English. Of the seventy-nine schools, thirty-six have separate classes for each of the nine years; twenty-two have the first five classes only; seventeen the first three (though local contributions often provide for two additional years); and there are four of a still more limited extent. It follows that a pupil at one of the incomplete schools must if he wishes to complete the full course and pass the leaving examination, be transferred to a school of nine classes (possibly in some distant town). In that case he must arrange to board with a family in the neighbourhood, for all the schools are day schools only. In 1897 there were 15,762 pupils in these schools, of whom three-fourths were in the thirty-six complete schools. The State defrays the entire cost of the instruction, though the pupils have to pay every year, for light and firing, library, and repairs, a sum somewhat less than £2. But the payments for library and repairs may be reduced or altogether remitted in the case of boys—about one-fourth of the whole number—whose circumstances make it desirable. In 1895 the cost of these schools to the State, in addition to the cost of the buildings (the site is provided by the locality), was 3,438,574 kr., an average of 229 kr. or nearly £13 for each boy.†

## CONNEXION BETWEEN PRIMARY AND SECONDARY SCHOOL.

It should be added that no boy is received into the first or lowest class before he is nine years of age; and that the entrance requirements (the three R.'s, with Scripture and catechism, a little geography and natural history) have purposely been made of such a kind that a child who has passed with credit through the first three years of the primary schools will not find it difficult to pass the entrance examination.

## SCHOOL INSPECTION DOWN TO 1904.

School inspection down to 1904 was a local rather than a central matter in Sweden. The *Ecklesiastik* Department, which has also

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\* I am here describing the order that is now coming to an end. The new legislation of 1904 will be described in its place.

† In 1904 the result is not very different. In that year the pupils numbered 19,501, the yearly cost to the State, 4,335,001 kr., or 223 kr. per boy.

charge of education, had no army of inspectors at its beck and call. Secondary school inspection was exercised partly through the leaving examination as described above and partly by the local inspecting authority, *i.e.*, the bishop of the diocese; or, if the school were at a distance from the cathedral city, by an inspector (often the parish clergyman), whom he appointed as his deputy.

Sweden was the only one of the Scandinavian countries where the bishop retained this close connexion with the secondary school, his influence in the neighbouring countries being confined to the religious instruction. His duty was to see that the schools in his diocese answered their purpose (as set forth in the collection of ordinances known as Zimmerman's *Läroverksförfattningar*,\* 3rd Ed., 1896), and that the teachers were earnest in the performance of their duties. Many school arrangements, such as the fixing of the time table, the choice of new school books, did not become valid until they were submitted to him and gained his approval. In what was perhaps the most important of his duties—the filling up of vacancies in the school staff—he was assisted by the Domkapitel or Consistorium, in which several of the higher teachers in the diocese (Lektors) shared with him the responsibility of the choice. At the final decision, each member of the Consistorium had one vote, whilst the bishop had two and also (if occasion arose) a casting vote. But it is to be noted that in Stockholm, where the largest and most important schools are of course to be found, the corresponding duties were performed by a special, non-ecclesiastical body (*Direktionen öfver Stockholms stads undervisningsverk*). Thus ran the written letter of the law. But when one came to speak with teachers themselves, one soon found that the head of the secondary education office in Stockholm, who himself used to be the Rektor of a State school, exercised by his occasional school visits a much more important influence than the legally constituted inspecting authority.

#### RIGIDITY OF THE STATE SCHOOLS.

Education in Sweden is so cheap that a State monopoly arises, and with the State monopoly there comes too great a tendency to rigid uniformity, too little readiness to develop the schools according to the needs of the time and the locality. It is impossible not to admire the beautiful buildings in which the schools are housed, the accomplished trained teachers employed in them, and the amount of care and thought embodied in the regulations that govern them. But there is little power of spontaneous development. There is not the same State monopoly in secondary schools in the sister countries to the East and the West; nor are there the same complaints of unbending uniformity. It becomes interesting to note

\* This is now largely superseded by *Läroverksrådet Bergquist's Nya Läroverksstadgan*. Stockholm, 1905.

the re-action, or series of re-actions, which this state of things has brought about in Sweden.

#### THE STATE'S SCHOOL FOR EXPERIMENTS.

It was early felt that the uniformity in the State schools was of so strict a kind that some special provision should be made for carrying out educational experiments. Accordingly, in 1828, the *Nya Elementarskola*\* was opened with the understanding that it should be at liberty, whenever it seemed desirable, to depart from the regulations fixed for the rest of the schools. And in order that this might more easily be done, it was placed under a governing body of its own, quite distinct from the *Direktion öfver Stockholmsstads Undervisningsverk*. Of all the experiments made, the one that lasted longest and cut deepest was the so-called "Fria flyttningen" —the promotion of a boy in each separate subject at the moment when his proficiency in it allowed. Opportunities for promotion were given every week, with the consequence that classes were broken up into more divisions than one teacher could take charge of. This had been foreseen, and in a measure provided for by the employment on a large scale of elder boys as monitors. Indeed, it seemed to be regarded almost as an axiom that without this the "Fria flyttningen" could not be worked. But as the years went by, the monitors or pupil teachers were found unsatisfactory, and their employment became more and more restricted, the free promotion being used of late years only in the upper parts of the school. And within the last fifteen or twenty years the experiment has been entirely dropped and the school been conducted almost entirely like an ordinary State school.

#### EXPERIMENTS IN PRIVATE SCHOOLS.

But the *Nya Elementarskola* is far from exhausting the experiments needed by the secondary schools in Sweden. If the prolonged attempt to make a boy's time-table more flexible has not succeeded, it does not follow that the question is dead. Indeed, in the kindred form of *Valfrihet* (greater freedom of choice in the subjects taken up) it is very much alive. But the experiments in this and other directions (*e.g.*, co-education, the teaching of foreign languages, and sloyd) have been carried out much more fully in the private schools than elsewhere. Of these there are five boys' schools which have acquired the right to hold the leaving examination on the same terms as the Public Secondary Schools, two in Upsala, one in Lund, and two in Stockholm.

\* New Elementary School. This expression, it will be noticed, denotes in Sweden, and still more commonly in Finland, a secondary school, whose curriculum is terminated by a State leaving examination at the age of eighteen. But in Sweden the term *Läroverk* is now more common.

Of course as the instruction in the Public Secondary Schools is gratuitous, these five schools are kept in existence by subventions from the State amounting to sums varying from 6,000 to 9,000 kr. a year. The State does not ask in return for free places many or few. Apparently the State regards the money as well earned if the school keeps itself in a condition of efficiency, and occasionally originates new methods from which all the other schools can derive profit. The most famous of these five schools are the two in Stockholm, the Beskowskaskola and Rektor Palmgren's. The Beskowskaskola differs from the State schools in receiving both girls and boys in all but the four highest classes; it also gives much more attention to sloyd. It is on the scale of a public school, and could hardly be distinguished therefrom by the casual observer. It was the school at which the present Crown Prince and his brothers received their education, being chosen perhaps for that purpose quite as much through the Royal sympathy with the religious views of the founder of this school as on account of the excellence of its arrangements. The largest grant naturally goes to Rektor Palmgren's school, the one which has shown itself most fertile in experiments. It has been a Samskola in all its classes from top to bottom since it was founded in 1876; and there seems every likelihood that its example, with that of the schools in Finland, will soon receive a large extension throughout Sweden.

In sloyd, too, in methods of teaching foreign languages, and in suiting the time-table to individual needs, the school has made successful experiments from which all the rest have benefited.\*

#### HIGHER SCHOOLS FOR GIRLS AND THEIR SEMINARY.

But the partial reversion of Sweden from an exclusive State system of secondary schools to a system of schools more or less private is seen most fully in the establishment of girls' schools throughout Sweden during the last half-century. I cannot do better than draw here upon an account of them written by the late Dr. Ellen Fries.† One of the schools in Stockholm and another in Gothenburg were founded in the thirties, but most of them date from a year subsequent to the mid-point of the century. In 1844 a motion was made in the Riddarhus (the Parliament until 1866 consisted of four estates) in favour of a Normal School for Girls, which however, did not come into existence until 1864, and was then put in connexion with the Seminary for Women Teachers in Secondary Schools, that had been opened three years before. These are the only two institutions connected with the secondary

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\* Of this school Direktor Max Walter, of the Musterschule in Frankfurt am M. has written an account, which may be seen in the Board of Education Library.

† This was written in 1897 for an Exhibition of Industries that was held in Stockholm that year.

education of girls for which the State is solely responsible in Sweden ; and such is the influence they exert on every girls' school in the land that some brief account of them becomes necessary. The two institutions are situated in the same building in Riddaregatan, and are presided over by a Rektor assisted by a Lady Principal in each. The permanent staff consists of five lektors, one adjunkt, and four lady teachers, in addition to whom there are thirty extra or visiting teachers. There are about twenty-five students in each of the three yearly courses at the seminary, and a number of voluntary students in a continuation course. In addition to the ordinary subjects, three foreign languages, German, English and French, form part of the instruction ; but only two of them are obligatory. There is also a department of domestic economy which is used by the students intending to teach the subject and by the girls in the continuation class of the school. The entrance examination to the seminary consists of written work and *viva voce*. The written work consists of a Swedish dictation, a Swedish essay on one of several subjects, a translation of Swedish into French, and of Swedish into German or English. Any candidate that fails in either of the Swedish papers or in both of the translations is not allowed to proceed to the *viva voce* part of the examination, which extends over all the nine subjects taught in the seminary (the mother tongue, French, German, English, history, geography, mathematics, physics and chemistry, and natural history). Instruction in the seminary is entirely free of cost ; but the students make their own arrangements for board ; none of them live at the seminary. It must be added that the seminary, like any ordinary training college in England, is first and foremost a school for the acquisition of knowledge. It is only in a secondary degree a place of professional training. For instance, students of the first year give two hours a week to watching lessons in the school (hospitery), to *viva voce* reports of the same, and to practice in lessons with their comrades for pupils. The second-year students watch lessons six days in each of the two terms and themselves give six lessons chosen by themselves from a certain group. The third-year students give the same amount of lessons as the second year ; and they have also to give a test lesson in a subject chosen by themselves, which constitutes part of the examination for their leaving certificate.\*

The Normal School, a fully equipped secondary school, that serves to a large extent as a model for other higher girls' schools in the country, consists of three preparatory and eight ordinary classes with one continuation class. It has in it more than 300 girls and is mainly self-supporting, the fees ranging from 75 kr. a year in the lowest class to 185 in the highest. The two institutions cost the State 75,000 kr. a year.

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\*There is every likelihood that in 1907 a fourth year will be added to the course, giving fuller opportunities for professional training.



Next came a Government Bill for the erection of State Secondary Schools for girls, but it was rejected by the Riksdag in 1873, and again in 1874. In the latter year, however, a sum of 60,000 kr. a year was set aside for the help of schools already existing, and in 1882 this sum was raised to 70,000 kr. Meanwhile (1870) women had been admitted to the leaving examination on the same terms as men and to university degrees (1873).

A commission was appointed in 1885 to inquire into the condition of girls' schools, and reported three years later. As a result the grant was increased to 100,000 kr. Financial difficulties in the schools led to a petition for further help in 1895, and the grant was then increased to 200,000 kr., to be shared among ninety-one schools in every part of the country. Five of them have acquired the right of holding the State Leaving Examination. In towns where the State has no secondary school for boys, these girls' schools are allowed to develop themselves into Samskolor, and in this way additional provision for the education of boys is often made. And in one town (Motala) a boys' school, by becoming a Samskola, and thereby having a claim upon the Government grant, seems to have been saved from the extinction that threatened it. The school had been in existence for more than twenty years, and was maintained by fees and contributions from private persons and public bodies. The corporation had for a long time granted a yearly contribution of 2,000 kr., with a schoolhouse rent-free. But the school had still financial difficulties to contend with; and as the population of the town was increasing, help was sought from the State, but in vain. As, however, the grant of 200,000 kr. made to higher girls' schools the year before was also available for Samskolor if they had at least five classes, the school was at once turned into a Samskola and the 2,250 kr. a year (since increased to 3,000) which it thereupon received from the State, in addition to a like amount from the corporation, not only enabled it to reduce fees which were felt to be too high, but also gave the school a new lease of life.

#### *Financial Condition of the Higher Girls' Schools.*

The next step came in 1901. In that year Dr. L. M. Wærn, the rektor of the higher Seminary for Women, was commissioned by the Government to make a searching investigation into the financial condition of the girls' schools in receipt of State grants; this report\* contains the latest accounts of these schools.

It will be seen from his findings that notwithstanding the great success of the schools they still suffer from serious defects calling for remedy. In 1901 the schools had increased to 103, but, as one of them had sent in no returns, the report relates only to 102.

\* *Yttrande rörande de ekonomiska förhållandena vid de af staten understödda högre skolorna för kvinnlig ungdom.* . . . Stockholm, 1901, pp. 28.

(In 1905 these schools number 114.) The fees for the last completed year, 1,334,736 kr., are not much more than enough to pay salaries, 1,073,721 kr., so that the grants from the State and from local authorities, 375,137 kr., are absolutely necessary in order to pay for rent and maintenance, 186,031 kr., and for ordinary working expenses, 231,155 kr., *i.e.* for light, fire, cleaning, school materials and renewal of furniture. The debts, moreover, 1,309,943 kr., are greater than the assets, 946,656 kr., though the latter have somewhat increased and the former decreased during the year.

Of the State grant of 196,845 kr., 150,000 kr. is required to pay the fees of 611 free pupils and in part those of 980 others, who are admitted at the reduced rate of 50 kr. (the average school fee being reckoned at 125 kr. a year or £7), so that in considering the question of further aid for these schools from the State it must be remembered that the net annual grant from the State is not more than 47,000 kr. With regard to the other half of the contribution, *i.e.* the grants from commune, landsting or other local source, Dr. Lagerstedt says, "Some of these grants have been given without condition, others on condition of free instruction for a fixed number of pupils. In addition, several schools have received single contributions from communes, savings banks and private persons, besides which, in some cases, there are guarantee unions and capitalists who have taken upon themselves to make good any deficit that arises." In 1897, for instance, the commune in Stockholm granted to eight schools for a term of years an amount equal to that of the State "without any other condition than that a report of the school's activity should be sent in every year to the financial committee."

The schools to which these grants are given owe their origin to various sources. The earliest and also the largest are due to private initiative, whether of a single individual or a company of shareholders. For others the commune is responsible. It is a matter of indifference to the State what the origin may be so long as the schools satisfy the conditions. It becomes interesting, therefore, with the help of Dr. Wærn not only to mark the conditions which have been made to meet the cases of schools of different origin, but also to record the additions and modifications found desirable at each increase of the Parliamentary grant, in order to remedy the defects and correct the faults which have come to light year after year in dealing with the schools.

#### *Conditions of State Aid.*

The conditions fixed in 1882 were,—

- (1) that a certain number of pupils should receive, some of them free instruction, and others at the reduced fee of 50 kr. a year.
- (2) That a yearly report should be sent in.

- (3) That the school should submit to the control and regulations prescribed by His Majesty.
- (4) That at the application for grant particulars should be given with regard to the following eight points :
  - (a) The object and organization of the school (the division into classes, the subjects taught, the courses and hours of instruction, and the school rules).
  - (b) The government of the school.
  - (c) The qualifications of the head master or mistress.
  - (d) The number of the teachers and the number of hours that they are at work.
  - (e) The number of pupils in separate classes at one time.
  - (f) The yearly fees in each class with and without extras.
  - (g) The income and outgoings for the last year with the salary of the head master or mistress, and of each teacher.
  - (h) The size of the school rooms (a certificate from the Board of Health should show that they are suitable for their purpose).

When in 1896, the grant was raised from 100,000 kr. to 200,000 kr. important changes were made. Not only higher girls' schools but Samskolor were henceforth to share in the grant. It was also for the first time made an indispensable condition that the contribution from some local source should be at least equal to that of the State. Any alteration in this principle insisted on by Parliament ought not, says Dr. Wærn, to be proposed; "although in carrying it out serious hardships are caused and—to the great inconvenience of certain districts and private individuals—several schools have had in consequence to be discontinued. These hardships and inconveniences should nevertheless not make us flinch, if we have grounds for hoping that the carrying out of the principle will in the long run best advance the happy development of the schools."

Further conditions were added at the same time, as follows :

- (1) The school must, without reckoning the preparatory classes, give instruction in at least five classes and must for the last three years have had at least an average of thirty pupils in the last named classes.
- (2) Such a school may receive a grant of 30 kr. for every pupil in the classes above the preparatory, but no school may receive more than 3,000 kr. a year.
- (3) But if a school gives instruction in domestic economy, it may receive an extra grant of not more than 500 kr.
- (4) Various additions are also made to the particulars which must be given when a school applies for State grant. Not only must the number of pupils be given, but the number for the last three years. It also must be made clear that the class which is regarded as the lowest in the girls' school proper (as

opposed to the preparatory classes) is doing substantially the same work as the first class in the State secondary school. Certificates also must be enclosed to testify :

(a) That the local contribution is at least equal to that of the State.

(b) That the school regulations are satisfactory in regard to health, and that the instruction is so arranged that no undue strain be caused ; and that a qualified doctor be appointed at the school. The two last documents have to be forwarded by the inspecting authorities :

In 1899 it was further directed that the report sent in at the end of every school year should be drawn up in the same form as that of a State secondary school ; and that if it be printed, five copies should be sent to the department. One month also after the beginning of each term a list must be sent of the teachers with the number of hours each of them works ; of the number of pupils in each class ; and of the school rules for the term.

The school also engages to furnish the Minister of Education with such information as he may find it necessary to demand.

#### *Defects in Higher Girls' Schools.*

Rektor Wærn sums up his results under six heads :—

1. Salaries, he finds, especially those of the lady teachers, are unusually low, and, as a rule, insufficient for decent subsistence. (A third of the principals had less than £100 a year ; the 200 teachers who had the higher qualification of a University degree or of the certificate of the Higher Seminary were receiving on the average not more than £60 a year.)

2. Most of the principals teach too many hours, and cannot exercise the necessary oversight.

3. Untrained teachers are widely employed in these schools. (The rektor is speaking according to a high Swedish standard. An Englishman would not think schools badly off if they could show that 69 per cent. of the teachers on the permanent staff were either University graduates or had passed through a seminary.)

4. The putting together of two classes under one teacher is found in many schools to such an extent as to cause real injury.

5. Fees on the average amount to 125 kr. a year (£7) (at least twice as much as in the corresponding schools for boys in 1905 and afterwards).

6. About 40 per cent. of the schools in question either are run at a loss or yield an insufficient remuneration to their owners.

*Increased Grant.*

As a result of Dr. Wærn's report the State grant was increased from 200,000 kr. to 347,500 kr. Where the payment was 30 kr. a pupil it is now 45 kr., without any stipulation that the number of free places shall be increased. That is to say, whereas the State grant was formerly applied mainly in such a way as to relieve parents and guardians, it will now in addition exercise some effect, not at all too soon, in increasing the salaries of teachers, as will appear from the following new conditions:—

That teachers who are chiefly employed in classes above the preparatory shall, for twenty-four hours' work a week during thirty-six weeks a year, in which Easter and Whitsuntide and occasional holidays are included, receive a salary amounting, at least, to the lowest salary which is paid in the same commune for eight months' work to any ordinary teacher in an elementary school for girls, reckoning as part of the latter's salary any payment in kind she receives (*e.g.*, schoolhouse, firing, forage for cow).

This list of conditions looks very formidable. But everything depends on the spirit behind them, on the way in which they are worked. Of this I had good evidence once when I asked a lady principal whose school had recently been admitted among the aided schools, the conditions she had had to comply with. "Conditions!" she exclaimed, "there are no conditions. I just go and receive the money." She had conformed to the conditions virtually prior to any thought of grant, from a determination to make the school all it should be. She could do no more after receiving the grant, and therefore felt no additional yoke.

*Distribution of the Schools.*

Such is the contribution from the State, powerfully aided by public interest and by the earnestness of the teachers, which has sufficed to build up within one generation a network of schools that covers the whole land. Fifty of the 114 schools which are at work in 1905 lie along the coast of the Cattegat, the Sound, the Baltic, and the Gulf of Bothnia (almost up to the Arctic circle); thirty-five (including thirteen in Stockholm) are on or near the shores of the three larger lakes, and twenty-nine are at various places inland. Their distribution, due to no pre-concerted arrangement, coincides for the most part with that of the State Secondary Schools for boys. In two places where there is such a school for boys (one a Realskola and one a Samskola) there is indeed no higher girls' school; but, on the other hand, there are twenty-one higher girls' schools (six of them Samskolor and so providing in their respective areas the only instruction for boys above the elementary school standard) in places where there is no corresponding State school for boys. Some of these girls' schools are in places with less than 2,000 inhabitants; forty of them in places with 5,000

inhabitants or under. The aggregate number of pupils in these schools amounted to 10,694 in 1901, exclusive of those in the preparatory classes ; and if there be added the pupils of the twelve new schools down to 1905, the present number of pupils must exceed 12,000 (not to speak of those in twenty or thirty other schools of like kind that work without public assistance).

Though each girl's schooling costs public authorities and parents together from 60 to 100 kr. a year less than each boy's in a State school, such a saving is not to be reckoned as the chief advantage of the system under which the schools have grown up ; for, as we have seen, it may be easily attained at the cost of serious injustice to the teaching staff. The chief advantage of the system is its greater freedom and flexibility. These schools, moreover, are exercising a beneficial influence outside the middle classes, for whom in the main they were instituted. At the training college for elementary schoolmistresses in Skara I learnt that fifty per cent. of the students had received their earlier education at one or other of the higher girls' schools, and I found afterwards that this was by no means a solitary experience.

Such results at such a cost it is not easy to attain. They can only be brought about by pressing every available force into harmonious, efficient service. The aid given by the State is of such a kind that each description of school, whether under public or individual control, is qualified to receive it. Nothing is given, for instance, as a grant to aid in the erecting of buildings. The grants are given yearly in return for service rendered within the year. Least of all could the schools strictly private be dispensed with. They were first in the field, and still remain the largest girls' schools in the land. One of them has sent up to the University one half of the number of girls, now nearly 500 in number, who have passed the leaving examination.

But of all the agencies producing this result none has been more powerful than the Higher Seminary for Teachers in Stockholm. The State, though possessing no schools of its own (beyond the normal school attached to the seminary), has yet sent into the higher girls' schools for the last thirty-five years a steady stream of capable, well-trained teachers. Of the 777 teachers on the permanent staff, no less than 277 (close upon thirty-six per cent.) have passed through this higher seminary. The higher teachers in each school have, consciously or unconsciously, reproduced the plans and features of the normal school in which they gained their first experience. There is thus a strong family likeness to be found in the schools ; but as it has been a free imitation without the compulsion of any code, there is also constant diversity. Some make a point of preparing their pupils for the University or for the higher seminary ; another trains teachers in household economy ; a third will give more than usual attention to foreign languages, or to music and art ; a fourth grafts on its higher classes a training

department for secondary school teachers.\* The imitation has gone just as far as is suitable for the school or the neighbourhood, and with such variations and additions as the locality demanded.†

#### THE YEAR OF TRAINING.

Sweden possesses what Denmark and Norway still lack‡—a course of training for teachers in State Secondary Schools. And as this has been in successful operation for an entire generation, it seems desirable, before leaving Sweden for Finland, to describe it in some detail.

The year of training in Sweden (called Proof Year) is a necessary preliminary to employment in State Secondary Schools. It was organised on its present lines in 1875, and at the outset owed much to German influence. When I asked an earnest young teacher to give me a detailed informal account of his own "Proof Year," he told me that there were five schools in the country, three in Stockholm, one at Upsala, and one at Lund, at which this year of training could be passed. Formerly the year could be spent at any complete Secondary School. But it was found that not all head masters relished this addition to their ordinary work. And now the work is confined to five schools, whose Rektors, we may presume, are so chosen that they take as kindly to this as to their other duties. At each of these five schools there are generally ten teachers in training every year. And if women have passed through a full university course and taken a degree, they are eligible as well as men. Fifty new teachers every year are quite as many as the schools have need for. My friend had finished his university course in May, 1893; and having decided to become a teacher in secondary schools he sent in to the Chief Secretary of the Secondary Education Department copies of his leaving examination certificate and of his various university certificates, naming at the same time the three subjects he wished to be trained in, which were in his case mathematics, physics, and chemistry. He also asked to have his year of training at Upsala. A few weeks after, his application was granted; and he began his training with six others at the beginning of the autumn term, there being also three others who had begun one term earlier. The seven new candidates had first an hour's interview with the head master; and according to the subjects they had chosen

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\* *E.g.* Frk. Anna Rönström's training classes in connexion with her school in Lund have had such success that they are now developed into a separate institution under public management.

† Adjunkt S. G. Dahl's *Läroverks-Matrikel* for 1897-1899 (Stockholm, 1900, pp. 696 octavo) contains a full list of all secondary teachers in Sweden, not only those in State schools, but also in all other secondary schools recognised or aided by the State. It also includes the names of the entire staff of the various seminaries both for secondary and elementary schools. The full particulars given in regard to each teacher are very helpful to anyone making a study in detail of secondary education in Sweden.

‡ But see note on page 64.

had various leaders or guides (Handledare) assigned to them amongst the members of the staff, under whose particular direction they had to remain during their training. My friend had one leader given him for mathematics in the lower classes, another for mathematics in the higher, and a third for physics and chemistry. The first two or three weeks were spent in watching the work of the classes (the lowest class for the most part) and listening to the lessons given. Then came a little teaching, first in the presence of the teacher and then in his absence. After that came the first proof (Prof), *i.e.*, a criticism lesson was given to the lowest class in mathematics in the presence of the head master, the teacher of the class, who was also the candidate's leader, and the rest of the students in training; and as soon as possible after the termination of the lesson, all those who had thus witnessed it along with the candidate himself met and discussed its matter and manner. In the next class there was "Auskultation" only, with some teaching. In the third class, after some listening and some teaching, came the second proof (in geometry). In the fourth class there was again listening and teaching only. But in the fifth there was continued teaching for a month, both with and without the teacher. Then came two proofs one in geometry and one in algebra. This brought the candidate to the end of the lower classes, and also to the end of the autumn term. During the same term he had to hear lessons in the lowest class of physics and chemistry, *i.e.*, the lower sixth, and to give a few lessons and go through a proof.

In the spring term he merely watched the teaching in geometry and algebra in the lower sixth, going through his first proof in those subjects in the upper sixth. But he had a criticism lesson in the lower sixth in trigonometry and stereometry, being only a listener in the upper sixth. In the upper sixth he had a criticism lesson in chemistry and in physics, and one also in chemistry in the upper seventh. He also gave continuous instruction in physics in the upper seventh for a month, followed by a criticism lesson. In addition to this he was expected to take the class teaching if one of his leaders was away ill. Each of the three leaders received an addition to his salary of 50 kr. a term for the care bestowed upon him.

Beside all this a Docent in the University gave to the candidates two lectures a week on the History of Education and Pedagogik, followed by an examination at the end of the second term; but there seemed to be no sort of connexion between this theoretical work and the practical. The Docent, for instance, was not required to be present at the criticism lesson and the subsequent discussion. Then the Rektor, having heard the criticism lessons and received periodical reports both from the candidate and his leaders, holds a *scrutinium*, attended by those of his colleagues who have taken part in the training; and the precise character of the certificate is then settled by discussion and by full inter-



change of opinion and evidence. As this certificate becomes an important asset in the young teacher's stock-in-trade, one upon which the character of his first employment largely depends, I have asked the friend, who gave me his own experience so fully, to allow me to append his own certificate. It will serve to complete his picture of the situation. (See page 22.)

The Rektor of the Higher Realläroverk in Stockholm kindly allowed me to examine the papers relating to two or three years' candidates and thereby enabled me to gain a clearer insight into the nature and method of the training. These documents consisted mainly of the weekly schedules, filled in by the candidates, and of the Rektor's own half-yearly report to the department. A reproduction of the two sides of one of these schedules will serve better than any description. It relates to a candidate in his first half year, who had begun his course of training about seven weeks before. (See pages 23 and 24.)

In his report to the Department, the Rektor gives the names of his five first term candidates and of the five in their second term; and then devotes a folio page to each. The report for a second term candidate is, of necessity, fuller than that for one only half way through his course.

It will perhaps be useful to extract here the leading particulars of a candidate whose training is just finished. First, the three or four subjects are named in which he has elected to be trained, and the names given of the leader in each. Then (to pick out what seemed a typical instance) it was stated he had spent 9 hours in the term in practice lessons, 33 in criticism lessons, 140 in Auskultation, and 11 as "Vikar" \*; and counting in the previous term he had in his whole year of training spent 91 hours in teaching, 366 in Auskultation, and 15 as "Vikar." One candidate is stated to have spent only 106 hours in one or other of these ways in his second term, because he was allowed a month before its close to take up a vacant appointment in a country school. But this is a rare case. Next came fuller particulars of the candidate's training certificate precisely as they are given in the certificate itself. And last of all the Rektor mentions the extra payments (ranging in this particular report from 40 kr. to 300 kr. according to the amount of work done) which in his opinion should be paid to his colleagues who have acted as leaders. It will, of course, be understood that the detailed methods of one school are not those of another; and that in the same school those of one year may differ in some respects from those of the next, according to circumstances. Much is left to the discretion of the headmaster and the leaders.

When the greater part of the preceding account was written a commission was still investigating the condition of the State Secondary Schools with a view to a report. A Bill was drawn up in 1903 on the basis of that report and passed the two Houses of Parliament in the following year. The framers of that Bill had

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\* i. e., substitute for an absent teacher.

before them the sweeping changes made in Norway in 1896 and the new legislation on Danish secondary schools of the years 1902 and 1903. It seems better, therefore, to defer some account of the changes in Sweden until those in Norway and Denmark have been described. But first of all a brief description of schools in Finland must be given.

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*Note.*—In autumn, 1897, Professor Gertz, chief inspector of the Latin-skoler in Denmark, accompanied by the late Emil Slomann and Dr. Tuxen, headmasters of Copenhagen Latinskoler, were sent by the State to spend a week in September and another week in the middle of October carefully watching the methods of training secondary teachers—teachers, be it remembered, who were all University graduates (some of them Doctors of Philosophy) between twenty-five and thirty years of age. Their report appears in Asmusen's *Meddelelser* for 1899-1900, pp. 82-6. From this I extract the following passages: "The chief impression we got of the work of the young teacher candidates was that they lacked the art of teaching (*Lærerteknik*). The lessons were ill-arranged. In the language lessons, for example, the grammar took so much time that only five minutes were left for the reading-book. The candidates had no clear idea what questions they should ask, nor how they should deal with the answers they received. When the pupils had given a wrong answer, the teacher went on without saying it was wrong, and without substituting for it what was correct. Several of the candidates spoke so low that the children had difficulty in understanding them. The whole instruction dragged and had no life in it. When we came to regard the method of dealing with the separate subjects, the most frequent fault was that candidates with children in the lowest classes went on too fast and too far, and shot over their pupils' heads. Finally, the candidates all through managed only in a small degree to keep the class occupied and fasten the attention.

"It was such points as these and the like that were discussed at the conferences that followed the lessons. These conferences were arranged in different ways at different schools . . .

"When we again witnessed the candidates at work, we noticed time after time with how much diligence they sought to apply the rules impressed upon them, how they set about correcting their faults, and what were the actual stages in their development. The efforts of some were entirely successful, others had much difficulty in struggling through, but we could always see that the continuous guidance was of great importance for them.

"We are, therefore, convinced that Sweden has developed a system of training for the higher schools which, whilst leaving each school free to form its own methods, works firmly and securely within the given limits, so that both headmaster and staff show great interest and zeal in giving the candidates practical guidance in school methods and helping them to understand their importance, and candidates show corresponding diligence and interest in availing themselves of the guidance offered, and so there can be no doubt that the level of teaching in the higher schools has been raised in a way full of significance."

TRAINING CERTIFICATE.

X. Y. Z., Licentiate of Philosophy,

who in autumn term 1893 and spring term 1894 according to the regulations in force has undergone a training course at the *Elementarläroverk* in this place, has therein displayed

*in the theoretical course :*

an exceedingly satisfactory knowledge of the theory and history of education ;

*at the practical course :*

In Mathematics	(class I., III., V., VI.2 & VII.1)	a distinguished*	capacity for teaching ;
„ Physics	( „ VI. & VII.1	) an exceedingly satisfactory*	„
„ Chemistry	( „ VI. & VII.1	) an exceedingly satisfactory*	„
„	( „	)	„
„	( „	)	„
„	( „	)	„

and there has therefore been awarded to him, as a public testimony to his capacity for teaching, the certificate “exceedingly satisfactory.” He has besides shown distinguished industry and exceptional aptitude for the teacher's calling.

Uppsala the 2nd of June 1894.

(Signed) A. B.,  
Principal in the practical course.

(Signed) C. D.,  
Principal in the theoretical course.

[\*There is a descending scale of six adjectives, any one of which may, on occasion, be used at each of these three places. They need not be given here, for in every day practice they are replaced by the six letters or pairs of letters, A (mark of distinction), a (exceedingly satisfactory), AB, Ba, B (satisfactory), BC—much as above, page 5. It will be seen how great the number of permutations and combinations may be—also that the certificate above is of unusual excellence.]

[Weekly Schedule—Front.]

Report for the week October 17th-23rd.

Subject.	Teacher.	Class.	Number of Hours.
<i>Auskultation:</i>			
•			
Algebra - - -	Adjunkt A - -	up. VI. a.	2
Do. - - -	Extra-teacher N -	up. VI. c	2
Geometry - - -	Do. do. -	Do.	1
Physics - - -	Lektor L - -	low. VII.	2
 <i>Practice Lessons:</i>			
Geometry - - -	Adjunkt A -	up. VI. a.	1
•			
<i>Criticism Lessons:</i>			
	(none this week)		

Stockholm, October 23rd, 1897.

Candidate's name.....

P.T.O.

[Weekly Schedule—Back.]

*Work gone through in practice Lessons in up. VI. a.*

Propositions 6 and 7 in Hellgren's Euclid, Bk. VI.

*Written Work corrected.*

One set of mathematical exercises in up. VI. a.

*Vikariat.*

(i.e. work done for absent teachers) four hours in Class III.

*Present twice at Lectures on Pedagogik.*

## II. FINLAND.

It is not difficult to understand the organisation of secondary schools in Finland on coming to them from those of Sweden, just as a knowledge of secondary education in Denmark makes an investigation of that in Norway all the easier. For it is less than a hundred years since Finland was separated from Sweden, less than a hundred years since Norway was separated from Denmark. And it is only natural that these two countries that have lost their old attachments should nevertheless continue to build in the main on the previous foundation.

In Finland, as compared with Sweden, it is interesting to notice where some feature received from Sweden has remained unaltered and undeveloped, *e.g.*, Finland has still four Estates—Nobles, Clergy, Burghers, and Yeomen\*—which Sweden exchanged for two Chambers in 1866; whilst in other respects Finland has moved earlier or moved further than Sweden. For instance, Finland was in advance, not only of Sweden but of all other countries also, in making Sloyd an essential feature in national education (it was Uno Cygnaeus who first convinced Otto Salomon that Sloyd should be a means of general rather than technical education); and though Sweden was first by seven years to introduce co-education, Finland has made of it a more brilliant success. Finland was also earlier than Sweden by thirty-five years in freeing the schools from ecclesiastical oversight and replacing it by the control of experts.

### THE LEAVING EXAMINATION MAINLY A UNIVERSITY MATTER.

But the State leaving examination in Finland remains still in an undeveloped form. Finland, in fact, is the only one of these four countries in which the university continues to be mainly responsible for the examination. The written part of the examination takes place every year in March (and also in September) at the various schools which possess the right of dismission to the University. And the candidates consist mainly of the pupils of such schools, but also of such others as have been prepared privately and have intimated their desire to be examined at that particular school. This written part consists—

- (1) Of an essay on some subject that has been treated of in the school work (eight or ten subjects are generally given for the candidate to choose from).

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\* The regaining of freedom has been quick to bring with it new political developments. The Diet of 1906 has replaced the four Estates by a single Chamber of 200 members, chosen by universal suffrage of women as well as men, who have reached the age of 24 years. The Chamber meets for the first time in 1907.

(2.) Of a piece of Latin prose to be translated into the mother tongue (when the pupil has not gone through a lyceum where Latin is an obligatory subject, he may substitute Russian, German, or French). Four hours are allowed for the paper.

(3.) Of a translation from the pupil's mother tongue into the other "hemmande sprog"; that is, if the pupil speaks Swedish at home, the translation must be into Finnish; and if his mother tongue be Finnish, the translation must be into Swedish.

(4.) There are also at least three mathematical problems. Logarithmic tables allowed.

Papers are looked over by the teachers and the results entered into a minute book, a copy of which is kept in the University; and the University authorities add the result of their own separate decisions alongside. Only when a candidate's written work has been found satisfactory, is he allowed to send in his name for the *viva voce* at the University. I was present at this *viva voce*. The examination was conducted by one of the younger professors, totally unknown, it may be presumed, to the examinees; the six or seven candidates (who were examined altogether, as in Sweden, and not separately, as in Denmark and Norway) answered question after question (the subject was history) much in the same way as in a class lesson at school. They were handled in a manner quite sympathetic. But no teacher was present; and co-operation between University and School was evidently reduced to a minimum, so that I am not surprised to read, in the report drawn up in 1900 by Chief Inspector K. Synnerberg for the French Exhibition, that success in the examination is "often a matter of chance: a pupil who is not timid often succeeds beyond all expectation, whilst another fails to pass trials of a limited duration (from four to six hours) before examiners who are strangers. And so a lively opposition has for a long time been displayed against this kind of examination, as well on the part of the masters as of the public. But all the plans having for their object the transference of the examination to the schools have hitherto fallen to the ground in view of the fact that the University's little disposed to renounce the control over the schools, which the leaving examination undoubtedly confers."\*

In the year 1899 there were 524 candidates at the examination—498 in spring and 26 at the supplementary examination in the autumn. Of the 498, 109 were rejected at the written part of the examination, of whom 95 presented themselves again in the autumn with the 26 new candidates. Of the 121, 84 were approved. Of the 473 thus qualified to proceed to *viva voce*, 465 actually presented themselves, of whom 460 passed. These with twelve from the last

\* Page 17 of "Relation sur l'Etat actuel de l'Enseignement Secondaire et Primaire en Finlande."

year made a total of 472 persons qualified to proceed to the University. Of the 472, 113 were women. In 1900 the candidates numbered 535; and in 1903, 649, of whom half came from public and half from recognised private schools or from private tuition (privatists). In the latter half the number of failures is nearly three times as great as in the former: this is probably due to the number of privatists (i.e. candidates that have not gone through the regular school course in a recognised school). It will be noticed that Finland is now the only one of the four countries without a leaving examination at an intermediate stage for pupils going out into business life at the age of fifteen or sixteen.

#### CONNEXION BETWEEN PRIMARY SCHOOLS AND SECONDARY.

Before giving a brief account of the schools whose work has this examination for its goal, it will be well to prefix a statement kindly furnished me by Dr. Gustaf Lönnbeck, Chief Inspector of primary schools, with regard to the relation of the secondary school to the primary school in Finland:—"In Section 1 of the Skolordning of August 8, 1872, it is laid down that the instruction in Finland's secondary schools pre-supposes the activity of the elementary school. If this ordinance is to become a full reality, it is necessary that the classes both in the primary school and the secondary school be so arranged that those in the latter constitute a direct continuation of those in the former. Such an ordinance has in the meantime not yet been issued. But a significant step in this direction was taken by the general teachers' meeting that met in 1897, when it decided *inter alia* to propose to the government that the higher schools, both those for boys and those for girls, should be so ordered as to be in immediate connexion with the second year's division of the primary school (the higher primary schools have four yearly divisions or classes).

The Government has at present declined this proposal, but that can have taken place only because they do not regard the present time as suitable for any attempt at radical reform in school matters. There is no doubt that, in the near future perhaps, the primary school in Finland will become the common "bottom-school" for all education. Of course the secondary school has already at the present time a goodly number of pupils who have already passed through the primary school only."

It is not difficult to give an account of all the schools whose work in its complete form has regard to the leaving examination. For just as in the city of Copenhagen no new school may be erected without the consent of the commune, so in Finland the consent of the State is necessary before any new school can be begun. The regulations for the public schools were drawn up in 1872 and are set forth in Dr. G. F. Lönnbeck's *Författningar rörande Elementar-*



*läroverken i Finland* 1852-1895 at pp. 42-87; and to these the other schools have to conform, with the exception of the regulations that relate to the appointment and dismissal of teachers and the financial management of the school.

#### STATE SECONDARY SCHOOLS.

There are twenty-four\* state Lyceums for boys in Finland, each with its full eight yearly classes. The average age in the first class is twelve and in the highest nineteen, though in each pupils may be found two or three years younger than the average. In Helsingfors half the population speaks Swedish and the other half Finnish; and in the country as a whole six-sevenths speak Finnish and the rest Swedish. This necessitates double sets of secondary schools. In sixteen of the twenty-four Lyceums Finnish is the language of instruction; Swedish in eight. As far as the secondary school is concerned, the country may be described as trilingual. Finnish pupils must learn Swedish; all Swedish-speaking pupils must learn Finnish, and unless they learn Latin and Greek, they must also on the average give three hours a week to Russian. As none of these three languages is a culture language of any wide currency, it will be seen under what disadvantages a secondary school works in Finland, as compared with one in England, France or Germany. Of the twenty-four Lyceums fifteen are classical Lyceums and nine are Real-Lyceums. But wherever a classical Lyceum has not in its neighbourhood a Real-Lyceum with the same language as the medium of instruction, the pupils may at their option take modern languages instead of Latin and Greek; and as this has been done by all the pupils intended for business, it will probably be found that the modernizing movement has proceeded as far in Finland as in the countries to the West.

The two classical Lyceums at Helsingfors, the one Finnish and the other Swedish, are called Normal Lyceums, because the candidates for employment in State secondary schools there receive their training. They must all have first taken a University degree. "The candidate," says Chief Inspector K. Synnerberg, "must during two half years follow the instruction in the subjects chosen by him and himself take part in that instruction. A sum of 10,000 Finnish marks (*i.e.* francs) is assigned for bursaries to the candidates; it is divided between the two normal schools in proportion to the number of the candidates. Every week they meet in conference in the different groups of subjects. In these conferences they criticise the trial lessons, examine and compare different methods or books of instruction, discuss pedagogic and didactic questions, etc. Once a month the professor of pedagogic in the University, who is likewise inspector of the normal schools, gathers

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\* The statistics in this and the following paragraphs relate to 1903. Those of 1906 show some increase all round, but do not change the relative situation.

all the candidates together in one conference. When their period of probation is over, they pass before the same professor the examination in pedagogy, which is required of all who wish to obtain positions on the staff of the schools; last of all comes a practical examination at the normal school." At the Swedish normal school there are from fifteen to twenty candidates each year, and at the Finnish rather more than twice that number. The methods of training, it will be seen, are very similar to those followed in Sweden.

At these twenty-four Lyceums there were, according to the returns issued in 1903, 5,334 boys. Seven other schools in the provinces, called *elementarskolor*, having only four or five of these eight yearly classes, add 550 (395 boys and 155 girls) to this number, making a total of 5,884. There were formerly eight of these schools; but when the numbers at one of them diminished so greatly a few years ago as to bring the expense of each pupil (all the schools are day schools) to £135 a year, the school was discontinued. These *Elementarskoler* are very necessary; but the State, instead of establishing more of them, prefers to give aid to private or local effort.

There are also eleven State schools for girls, two in Helsingfors with seven classes each, and the rest with five; and in these eleven schools there are 2,211 girls. The two in Helsingfors, one Swedish and the other Finnish and each with 300 or 400 pupils, have in connexion with them advanced classes extending over two years, which are intended both for the training of teachers and the higher education of women. In addition to the mother tongue and its literature, which is obligatory for all, a student takes a special course (a) in history and geography, or (b) in French and German or (c) in mathematics and science. The intending teacher must add to this psychology and pedagogy and spend a third year in the practice of teaching in the school, at the end of which she may pass a theoretical and practical examination which qualifies for employment in State secondary schools for girls. Some who have acquired their knowledge at the University or elsewhere and present evidence to that effect attend only at the third year course, in order to win the certificate of competency to teach. In the Finnish school the numbers in these three advanced classes ranged from eighty to ninety each year and in the corresponding Swedish school from forty to fifty.

There are therefore altogether 8,095 boys and girls in the forty-two State secondary schools. In addition, there are also four schools (two for boys and two for girls—two in Helsingfors and two in Viborg) in which Russian is the medium of instruction: in these four schools there are altogether 142 children of Finnish citizens. The fees at all these State schools are as low as in Sweden. One-fifth of the pupils pay nothing; and of the rest those in Helsing-

fors pay 50 marks a year (£2), and those in the country 40 marks. At the girls' schools the fees are 80 marks a year.

#### RECOGNISED PRIVATE SCHOOLS.

Alongside these forty-two State schools with their 8,095 pupils are 101 so-called private schools (*i.e.* communal schools or company schools or schools belonging to private individuals) with 9,858 pupils (3,736 boys and 6,122 girls).\* One of these dates from 1853, but the great majority have sprung up within the last thirty years. Though these two totals are thus put alongside one another, it must not be supposed that the larger total represents the more responsible part of the work, for of the 101 schools, only twelve (seven *samskolor*, four girls' schools and one boys' school) have the right to dismiss pupils to the University (as against the twenty-five State schools with the same right). Sixty-eight receive grants and thirty-three are either of too preparatory a character or too thinly attended to receive State aid.†

#### *Co-Education.*

There are two features in these schools which call for special remark. Only to a partial extent has the State School in Finland adopted the principle of co-education, declining to employ it at all after the age of fourteen or fifteen. But in the private schools it has always been found in every class, from the lowest to the highest; and after meeting some opposition on its first introduction in 1883, it spread rapidly all over the country, and met with an enthusiastic acceptance. The economical reason is not enough to account for this, for some of the best *samskolor* are in Helsingfors, where that reason cannot apply. Its chief advocate there, the late Pastor Broberg, was accustomed to say that the more the school could be made like the home, the better it was both for boys and for girls; and his own school amply bore out his opinion. A third reason that weighs with some is that thereby they see a means of reducing the inequality between men and women. Of the 101 schools eighty-two have both boys and girls, two have boys only and seventeen girls only.

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\* It is not easy to ascertain how many of these 101 schools are communal, how many are company schools, and how many the property of individuals. It is a difference which the State is not concerned to indicate. No more difficulty is found in dealing with them by one common system of rules than in the case of the Higher Girls' Schools in Sweden.

† As I correct the proof, some statistics come to hand, dated 8th December, 1906, which show very clearly the relation between public and private effort in Finnish Secondary Schools during the last twenty-five years. In 1880 there were 4,592 boys and girls in 47 State Secondary Schools, which cost the State 1,220,135 Finnish marks; as against 3,282 boys and girls in 50 private Secondary Schools, which cost the State 132,800 marks. In 1905 the corresponding figures are 9,495 boys and girls in 49 State Schools, costing the State 3,190,543 marks; and 11,148 boys and girls in 111 private schools, costing the State 951,133 marks.

*Amount of State Aid.*

The other feature is the much greater amount of State aid given to the schools than in any of the other three countries (except in the case of the Higher Girls' Schools in Sweden). This is rendered necessary, if such schools are to exist at all, by the lowness of the fees at the State schools. For the preparatory classes the State seems to make no grant. But for the classes in a boys' school that correspond to the eight classes in a State school, a grant of 4,000 marks a year is made for each class, with a proviso that the aggregate grant shall not exceed a certain sum. The school that obtains the highest grant (24,000 marks) is a boys' school in Helsingfors. Three samskolor in Helsingfors and ten others in the provinces receive 20,000 marks a year. In girls' schools 3,000 marks a class is given, with a limit of 15,000 marks. If the number of pupils in a class falls below ten, the grant stops. The grants to these schools amounted in 1891 to 253,000 marks, in 1900 to 508,000 marks, and in 1903 to 781,000 marks, from which it will appear that the sixty-eight aided schools that year received on an average 11,490 marks each (£453) or 94 marks for each of their 8,321 pupils.

*The Justification of the State.*

If the State be asked to justify this unusual amount of help to such schools, its answer is ready. In Table VII. of the yearly report (*Statistisk Öfversikt af Elementarläroverkens i Finland Tillstånd*) there appears every year opposite the name of each State school the amount voted to it in the last budget, the number of pupils that pay fees, the number that are excused fees (20 per cent.), the total amount of the school fees, and the net cost to the State of each pupil. From this table it appears that the net cost per boy in the complete Lyceums has in the last eight years been gradually falling from 357 marks to 330 marks per year. The State has not been so fortunate in its management of the *elementarskolor*, which have only the first four or five of these eight classes. The net cost per pupil has diminished in the same period from 509 marks to 386 marks; and one cannot be surprised that they have sunk in number from eleven to seven, for of three schools which had to be brought to an end, one had cost the State in the last year of its existence £30 a head, another £80, and a third £320. The net cost of each pupil in the State secondary schools for girls remains fairly constant at or near 190 marks (the fees at these schools being nearly double those of the boys). It may be well to pick out from this Table VII. four representative items to show how these facts are set forth year after year for every State school (*see overleaf*).

FINANCIAL STATEMENT FOR THE SCHOOLS NAMED BENEATH, WITH AVERAGE ANNUAL COST OF THE INSTRUCTION FOR EACH PUPIL.  
FOR THE YEAR 1901-2.

Kind of School.	Situation.	Yearly Cost in Finnish marks.	Number of Fee-paying Pupils.	Number of Free Pupils.	Total of School Fees.	Net Cost to the State of each Pupil when Fees have been deducted.
Classic Lyceum (Finnish).	Kuopio.	76,770	157 (80 per cent.)	39 (20 per cent.)	5,810	362'04
Real Lyceum (Swedish).	Helsingfors.	112,840	340 (81 per cent.)	79 (19 per cent.)	16,225	230'58
4 Class School (Swedish).	Lovisa.	32,820	57 (80 per cent.)	14 (20 per cent.)	3,300	414'03
5 Class Girls' School (Finnish).	Åbo.	41,130	136 (80 per cent.)	34 (20 per cent.)	10,060	179'24

It might be said that it is better for the State to pay 94 marks a head than 330 marks—to pay 781,000 marks for 8,331 pupils in recognised private schools than three times as much for 8,095 in State schools. But that would be to ignore the higher fees at the private schools. Even if these be taken into account, the private school still makes for economy. For if to the 330 marks paid by the State be added the school fee of 40 or 50 marks, this sum is greater than the fees in the higher classes of a good *samskola* in the capital (240 marks) plus the Government grant of 94 marks.

There are instances in these countries where this economy is carried much further than in Finland, but wherever this is done, it is at the cost of injustice, sometimes amounting to cruelty, to the teachers. This advantage on the score of economy must not therefore be unduly insisted upon. The real advantage of the recognised private school is the greater life, variety and freshness introduced thereby into all school work. And so it is needed quite as much for the sake of the State school as its own. The *samskola* in Finland has won great favour and has in it more than 4,000 girls. But all these, with the exception of 155, are in the private schools.

#### *Conditions of State Aid.*

State grants to private schools are made for a period of ten years at most. The conditions for receiving them will be found at p. 214 of Lönnbeck's *Författningar*. "Applications for grants," so runs the Royal proclamation of December 11th, 1884, "should be accompanied by evidence that the school has been at work for two years at least; by a detailed statement of income and expenditure, which should in particular include the amount of the fees per term and of the sums contributed by the commune or other source; by a list of pupils drawn up in appointed form; by a time-table, showing also the apportionment of lessons among the teachers; and by a summary view of the courses of instruction which ought *inter alia* to include the two languages of the country and the Russian language to the same extent as in the State schools." The application must be sent to the General School Council (*Öfverstyrelse för skoleväsendet*), which forwards it with an expression of its own opinion to the Senate; and the Senate with a further expression of opinion must then refer the application to "Our own gracious pleasure."

Should any deviation take place from the course of instruction as given in the application, or should it transpire that the number of pupils has dropped considerably since the grant was made, the council must report to the Senate, which after satisfying itself by close enquiry as to the actual circumstances, may order the amount to be diminished or altogether withdrawn before the expiration of the period for which it was given. If the absence from the above conditions of any requirement with regard to school buildings or staff be noted, it will be remembered that the matters

had been gone into at a previous date, when the permission to open the school was granted.

#### THE INSPECTION OF THE SCHOOLS.

The general direction of schools, both primary and secondary, formerly lay with the chapter of the diocese. But by a royal ordinance dated 24th November, 1869, it was transferred to the Higher School Council (*Öfverstyrelse för Skolväsendet*). The powers of this Council are set forth at pp. 18-23 and pp. 71-75 of Lönnbeck's *Författningar*; but the account given by Chief Inspector Synnerberg is at once more clear and concise. "The duty of the Council," says Dr. Synnerberg, "is to inspect the establishments of instruction and appoint the masters and mistresses, except the superintendents of the normal lyceums, who are appointed by the Senate from a list drawn up by the Council. This latter, which has its seat at Helsingfors, is composed of a Director General and his assistant, of three chief inspectors of secondary schools and of one chief inspector of primary schools. Of the three inspectors of secondary schools, one represents the historical sciences, another languages, and the third mathematics and natural sciences. The Senate may besides appoint a consultative member who is skilled in questions of instruction, *e.g.* one of the professors in the university. Moreover, the Council includes two inspectors of primary schools and one of schools for the deaf and dumb and the blind. Business is conducted sometimes in full meeting, sometimes in two sections, the one dealing with secondary schools, the other with primary schools and schools for the deaf and dumb and blind. In each section there is a secretary who takes part in the deliberations and resolutions. The Council publishes yearly statistics.

"Inspection is conducted by the chief inspectors. . . . At the inspection, the inspector must hear lessons from all the teachers and examine the copy-books which contain the written work of the pupils. His inspection over, the inspector meets the teachers, to impart to them the observations and hints which he finds suitable, and to ask them their advice as to the arrangements necessary for improving the instruction. In judging of the instruction in drawing, music, singing, and gymnastics the inspector has competent assistance.

"In the oversight of schools, the Council is assisted by school councils (*skolråd*), one for each school, whose members, from three to five in number, are appointed by the Council for a period of three years from lists drawn up by the communes. The task of these councils is to follow with attention the activity of the schools entrusted to them, and if there appear any necessity for putting matters to rights, to inform the Higher Council and to help by their advice and information both the head masters of the schools and the chief inspector on his visits, etc. This institution, created at

the same time as the Higher Council itself, has shown itself very useful, especially in keeping up the necessary co-operation between the public and the inspecting authority."

This Higher Council figures in the budget for a sum exceeding 120,000 mks. If this appears much greater than the cost of the *Undervisningsraad* in Norway (7,000 kr.), or of the new *Öfversigtelse* in Sweden (22,000 kr.), it must be remembered that the two latter bodies have oversight of secondary education only, whilst the former is responsible for both primary and secondary.

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## III. NORWAY.\*

In passing from Sweden and Finland on the one hand to Norway and Denmark on the other, there are two great differences in the State leaving examinations to be remarked.† The *viva voce*, whilst occupying the same important place in the examination relatively to the written work, is conducted in a very different way; and there is in the latter two countries an intermediate examination, which in Norway is passed three years, and in Denmark two years, before the leaving examination proper (*Examen Artium*). This intermediate examination in Norway is called *Middelskole Examen*. The bulk of those who pass it are pupils entering at once on the active occupations of life, and to them it becomes a minor leaving examination. For all others it is an intermediate examination which must be passed before a pupil can be admitted to the upper or gymnasial classes of the school and begin his special preparation for *Artium*.

## THE OLD ORDER IN NORWAY AND THE NEW.

These two examinations in Norway are now conducted according to the new order, fixed by the law of 1896, which came into complete operation only in 1903. A glance at the old order, which dates from 1869, will best prepare for the consideration of the new. In the old order the secondary school consisted (*a*) of a six years' *middelskole* closed by a leaving examination (*Middelskole Examen*); and (*b*) of a three years' gymnasium, preparing for the leaving examination proper (*Examen Artium*). The first three years of the middle school were alike for all pupils; but in the fourth year pupils had to choose either the Latin line (giving seven hours a week to Latin) or the English line (giving five hours a week to English and two to drawing). This division was continued through the three years of the gymnasium according as Latin and Greek were the prominent subjects of instruction, or mathematics and modern languages. The steadily decreasing number of the classical candidates at the leaving examinations from 1885 onwards will show most clearly the drift of public opinion, that made the radical and startling changes of 1896 possible. In 1885 there were 1,264 candidates at the *Middelskole Examen*, 396 of whom (31 per cent.) were on the Latin line. But in 1899, when that examination was held for the last time according to the old order, the classical candidates had fallen to 159, being only 6·8 per cent. of the entire number (2,319). It is not to be expected

\* This Norse portion of the report was printed in advance and circulated amongst various educational authorities in 1904 and 1905. It was my intention, before it appeared again, to bring it down to date. But when I had spent some hours on the task, I found it imperatively necessary to refrain, and to use only a small part of the material collected. The situation at the beginning of 1907 is essentially the same as in 1904.

† The date is 1900. Changes are coming—for Denmark in 1903 (see page 94), for Sweden in 1904 (see page 99).

that the Artium candidates, most of whom are destined for the university, will show to an equal extent the same preference for purely modern studies, but though the change here is not so great, it is still very remarkable. In 1885 the candidates for Classic Artium were 339 as against 171 for Real Artium. But in 1901 the positions are reversed, the candidates for the former being 131 as against 328 for the latter. The 66½ per cent. of classical candidates in 1885 have sunk to 28½ per cent. in 1901, whilst the Realists have risen from 33½ per cent. to 71½. Without trenching on Mr. Otto Andersen's admirable account of the causes and effects of this striking drift of public opinion, I must here briefly indicate the four great changes in secondary school organisation which were brought about by the law of 1896. The circumstances of Norway were thought at the time to be so peculiar that these changes were not expected to affect other countries; but they are already affecting legislation so directly in the sister countries,\* that they become even more interesting and important than before. (1) An organic connexion was set up between the primary school and the lower division of the secondary school (Middelskole), by arranging that the work of the first or lowest class in the latter should dovetail into that of the fifth (or last year but two) in the elementary school. The permission, moreover, which had been given to the State secondary school some thirty years ago, to hold preparatory classes, was at the same time withdrawn. The effect of this is that the first five years of school life, so far as the State makes any provision for them, must henceforth be passed by rich and poor alike in one common elementary school. It is to be noted in passing that the State attempts to put no compulsion upon private schools in this matter, and that preparatory classes are to be found in them just as before. And in some few instances the legislation of 1896 has led to the opening of new private schools, to take the younger pupils which the State secondary school is no longer allowed to teach.

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\* It is interesting to notice that it has taken about the same time—seven years—for the practice of Norway to become that of Denmark, as it took an English county (Bedford) to adopt principles current in Denmark, reckoning from the time when those principles first became known in this country. The new law in Norway is dated 27th July, 1896; and the new law in Denmark, which has paid it the compliment of a fairly close imitation, is dated 24th April, 1903.

The Higher Education Scheme of the Beda. County Council which appeared early in 1904 declares (No. 53 of *Record of Technical and Secondary Education*, p. 131) that "the best proprietary or private schools have been pioneers of educational improvement; and their continued existence, efficiency and rivalry will diminish the risk of stagnation or rigidity in the public management of Schools." It is not therefore proposed "to exclude those proprietary or private schools which apply for recognition from the advantages arising from the administration of local funds to which they are admitted under the Education Act, 1902." This Danish way of considering the matter was first made known in England at the end of 1895; and again to a wider audience in 1897 in Vol. 1 of *Special Reports*.

Further, when a school board proves to the satisfaction of the department acting in consultation with the Undervisningsraad (a consultative body of school experts working harmoniously side by side with the Education Office), that its staff and appliances are sufficient to enable it to undertake the first two years' work of the middle school, it is to be allowed to that extent to absorb the middle school, *i.e.*, to provide gratuitously, in the upper classes of the folkeskole, instruction that covers the first two years of the middelskole, so that the middelskole proper shall then consist of a two years' course only. With less than this, Mr. Anderssen points out, the ultra-democratic trend of thought in Norway will not be content. And he adds the grave warning that if the plan be pushed forward at all hazards, before the folkeskole, by a series of far-reaching and costly reforms, has attained the strength and completeness necessary for the task, it can result only in the degeneration of the higher school. The department seems fully alive to the danger; for, with two or three partial exceptions (*e.g.*, "The Three Year Middelskole," p. 54), this part of the law still remains a dead letter.

(2) If the first change takes away the younger part of the pupils in the State schools, the second brings others of a later age to take their places. The State, which has hitherto made no provision for the higher education of girls but has left it entirely to private effort, now makes co-education obligatory in all schools receiving its aid. The English reader of the law of 1896 \* may not readily observe what paragraph introduces this sweeping change. It is introduced so quietly as easily to escape notice. The change follows from the definition in the second paragraph that "the middle school is a school for children, which in union with the elementary school (folkeskole) gives the pupils a completed general education of a wider extent, suited to the receptive powers of children. The gymnasium is a school for youth, which on the basis of the middle school leads to a completed general education of a higher character, which may likewise serve as a basis for scientific (*i.e.*, university) studies"; and all through the Act the general term pupils is used rather than boys and girls. The three or four larger towns have not been much affected by the change. There the girls' schools are strong and hold their own. But in the numerous small towns with a population of 2,000 to 4,000, where the boys and girls together are not more than enough to make one respectable middle school, the economical advantage has been great. In about forty such towns, the State, without any considerable outlay, has, by a stroke of the pen, given

\* The chief paragraphs of this law are to be found translated in the appendix to Mr. Otto Anderssen's paper in vol. 8 of Special Reports. In 1900 the Education Office in Christiania had the Elementary School Laws of 1859 and the Higher School Law of 1896 translated into French, and published them in one volume under the title "*Norvège: Lois sur l'Enseignement Public*" (pp. 77). It would be difficult to find a more compact body of educational legislation.

the same intellectual opportunities to girls as to boys. At the present time more than one-third of the pupils in these schools are girls; and in the gymnasia about one-tenth. Perhaps it would hardly be fair for a few years to look for the finest fruits of co-education in these schools. The boys and the girls who are taught there have not been comrades from the first, and do not always work together with the same smoothness and freedom from inconvenience as if they had always been taught together. Moreover, when the staff was chosen, it was chosen for the teaching of boys only, and no such thorough re-organisation has been possible as would make it entirely suitable for the teaching of boys and girls together. Nor can the women teachers, so long as they have not passed through the same university training as the men, claim by law the same salaries. But these are defects that will disappear in time, and are not sufficient to mar success.

(3) By the third change Greek is removed altogether from the list of school subjects and relegated to the university, notwithstanding a petition from the clergymen of Norway for its retention as an optional subject; and Latin, if retained at all, is not begun before sixteen, in the second year of the gymnasium, and then only in seven of the State schools (Christiania, Bergen, Trondhjem, Drammen, Christiansand, Hamar, and Stavanger) and in some of the private schools. Whilst it may be doubted whether the option of a Latin and Greek line in the gymnasium might not have been left to those who desired it (as in the adjoining countries), the change is by no means due to merely utilitarian considerations. The aim is still humanistic, to shape the character and the life by the study of all that is best in the modern literatures (chiefly Norse-Danish, English, and German).

(4) The fourth change is the introduction of Sloyd (two hours a week) into all the classes of the middle school, not, of course, as a technical subject but as a means of general education, and, therefore, to be taught by the ordinary teacher who has gone through the necessary training.

#### THE MIDDELSKOLE EXAMEN.

The new secondary school in Norway consists of a four years' middle school (beginning at the eleventh year) and of a three years' gymnasium. Each is terminated by a State leaving examination, held as a rule only within the schools themselves, either State schools or recognised communal and private schools. The *Middelskole Examen* must be passed before the pupil can enter the gymnasium, and the final leaving examination (*Examen Artium*) is a necessary preliminary to university studies. These examinations are the result of prolonged thought and experience on the part of the experts and teachers in Norway, whose work is profoundly affected by them; and some description of them will best show the precise nature of the schools themselves.

The full Middelskole Examen consists of sixteen different tests, of which the four written ones come first. These are (1) A Norse essay on some subject of a descriptive kind; (2) the translation into German, without the help of a dictionary, but with a few of the harder words given, of a piece of continuous prose, in which no unusual difficulties occur; (3) the reproduction of an English story, which has first been read aloud twice; (4) two problems in arithmetic, one in algebra and one in geometry. (All these subjects may come up again at the *viva voce*.) In examining the papers, six characters are used, of which the fourth is "fairly satisfactory" and the fifth "middling." If none of the four is lower than "fairly satisfactory," the candidate is allowed to proceed. But if one of them, so long as it be not the Norse essay, is only "middling," the candidate may still pass, if the remaining three are decidedly good. Any candidate who falls below this standard fails, and is not allowed to present himself at the *viva voce* and practical tests which follow.

In the *viva voce*, both in Norway and Denmark, each pupil is examined separately for fifteen or twenty minutes by an examiner (his usual teacher), and by a publicly appointed censor (generally one of the higher teachers from another recognised school). The censor fixes the parts of the subject from which the questions shall be drawn, but the precise form and sequence of the questions depend on the examiner. In languages the censor directs that the reading begin at a certain line, or comes prepared with the pieces of unseen to be translated. In other subjects he will bring with him slips of paper, on each of which are indicated the two or three distinct parts of the subject, from which the questions shall be drawn (no two slips of course being alike). These slips are placed face downwards on the table; and each candidate, as he comes up, draws one. He is in the witness-box, examined by one with whose voice and ways he is familiar. The censor for the most part sits silent taking notes. If examiner and censor do not agree as to the mark to be given, it is the censor in Norway that decides. In Denmark they split the difference. But in Norway the censor's mark is not to be considered as final, until he has been made acquainted with the mark which the law requires the teacher of the subject in conjunction with the headmaster to record in writing, a fortnight before the examination begins, after a review of the boy's diligence and progress in the subject during the past year. Whatever the teacher does at these examinations is regarded as part of his ordinary work, but the censor, who is a visitor from a distance, is remunerated according to a fixed scale for each decision he arrives at. This interchange of censors between town and country, between public school and private school, seems to have the happiest results. It constitutes an informal inspection every year of the higher classes. Many opportunities for hospitality arise; the ideas and experience of one school are passed on to another; and thus schools of varying origin and history tend to be

brought, so far as is desirable, to the same level of practice, and are all practically welded into one.

An Englishman is apt to be suspicious, and to doubt the impartiality of the decisions, when schoolmasters thus examine one another's schools, as though it were in some way possible for collusion to be practised between school and school. Such fears cause only a smile to anyone who has himself witnessed the conduct of the examinations. Censors can come only from a recognised school; and recognition brings with it a sense of distinction and of honour which no man in his wits could dream of parting with.

Such an examination is thorough and gives the pupil a good opportunity of showing what he has in him. But it formerly took up so much time (two to three weeks), that steps have been taken in Norway, and will soon be taken in Denmark, to shorten the process, without losing its advantages. The new law in Norway is satisfied if out of the eight book-subjects taken in the Middle School, *viva voce* be held in not less than four. But what those four or more shall be is not made known for each school (they may vary from school to school), until the close of the written part of the examination. With regard to each of the omitted subjects, the class mark, determined as it was described above, is entered on the examination certificate, and counts there with precisely the same effect as if it had been given by the censor. But privatists, *i.e.*, candidates for the most part from non-recognised schools or teachers, have to undergo *viva voce* in all subjects; and have not the privilege of being examined by their own teachers.

The twelve remaining tests, mostly *viva voce*, are in:—

(1) Religion (Bible history, Luther's Catechism, leading events in Church history). From this non-members of the National Church are excused, without thereby running the risk of a lower place in the examination.

(2) The mother tongue and specimens of its literature. This includes not only the Norse-Danish, which as a literary language scarcely differs from Danish, but also the special Norse language called *Landsmaal*, which was developed by Ivar Aasen (1813-1896) out of the western dialects of Norway and presents wide differences from Danish both in grammar and vocabulary.

(3) German. Reading and translation of a piece of unseen. Reading of an extract from the set books, followed by a conversation in German (with books closed) on what has been read.

(4) English (the same as for German).

(5) History.

(6) Geography.

(7) Outlines of zoology, botany and physiology.

(8) Mathematics;

to which are added—

(9) Writing.

- (10) Drawing from the round.  
 (11) Handwork. Sloyd for boys : sewing for girls.  
 (12) Gymnastics for boys : cooking (if it be taught at the school) for girls. Girls have gymnastic lessons but are not tested in them.

It will thus be seen that the new middle school is the same for all, whatever their ultimate destination. In other words, the modern side, which was added as a sort of annexe to the classical side thirty years before, is now, up to the fifteenth year, in possession of the whole building.

The marks given for *viva voce* and for the practical subjects are of four kinds, of which the third is "fairly satisfactory" and the fourth "not satisfactory." Each of the subjects must be "fairly satisfactory" at the least, and two or three must be somewhat higher than this, if the necessary minimum is to be reached. But if a candidate fails at *viva voce* in not more than one book subject and one practical subject, he may present them again a few months later and so not lose a year, so long as the rest of his subjects are good enough to promise success.

Candidates at *viva voce* are divided into sets of six or eight for each subject and are all examined separately. As soon as all the set has been examined, the results are entered in the special minute-book provided for the purpose and the signatures of censor and examiner are appended. One of them thereupon steps out into the corridor and tells the candidates how they have fared. So the results grow day by day and are discussed at home, and sometimes in the newspapers, with as much keenness as a cricket or football match in England.

Pains are taken that children shall not suffer from over-pressure in preparing for the examinations. The Bible history and catechism, the zoology and botany must be taken at the end of the third year, twelve months before the examination-in-chief ; and girls may also take the examination in cooking and sewing at the same early date. Of still greater importance is it that candidates may pass the examination in a restricted form, by leaving out one of the foreign languages and some portion of the mathematics. Out of 2,354 candidates in 1901, 596 (263 boys and 333 girls) chose the examination in its milder form. They must, if they wish to pass into the gymnasium, add the omitted portions another year.

Such an elaborate form of examination, perhaps, would hardly have been devised, in the first instance, for boys and girls of fifteen or sixteen. But the methods employed are those that have been developed in the examination for older pupils (Artium), which is of a much earlier date ; and the machinery being already in existence for this, it was easy to apply it, with the necessary changes, to the examination of younger pupils. These methods it will be unnecessary to describe again, at any rate with any fullness.

## EXAMEN ARTIUM.

More than 2,000 pupils present themselves every year at the Middelsskole Examen; the candidates at Artium three years later are rather more than a fourth of this number (614 in 1903). The rest have gone out into life. In the first year of the gymnasium all the pupils still have a common time-table. But with the second year comes a threefold division according as the pupil chooses line A or B or C. Line A is the "Real" line, which gives much more time to mathematics and science than the others, but without neglecting the mother tongue, German, English and French (the last-named makes its first appearance in the first year of the gymnasium). Line B is the linguistic-historical, which gives special attention to English (not only language and literature, but political and social institutions), French, and History. Line C (a sub-division of line B) is also called linguistic-historical, with the addition of Latin (to which seven hours and eleven hours are given respectively in the second and in the third year of the gymnasium). Religious instruction is given in the gymnasium; but it has been thought better it should not form part of the examination. At Artium four kinds of written work are required, the first three of which are for the most part common to the three lines:—

1. In Norse two essays have to be written, one of which relates to some subject the candidate's school work has made him familiar with; whilst the other deals with some matter of daily life and experience (*e.g.*, "What are the causes that have made Norway a country for tourists?").
  2. Reproduction of a story in German, which has been read aloud twice.
  3. Three or four problems in mathematics (the requirements are of course more stringent for line A);
- to which are added for A: Three problems in physics, light, electricity.  
 " " B: An English essay (its subject drawn from the set book).  
 " " C: A translation from unseen Latin.

This written work is regarded as of the highest importance; and no less than three censors are employed in adjudging the value of each paper. It is not so much an examination in knowledge as in the power to use knowledge. In the essays, for example, occasional faults in details are not regarded as an inexcusable blemish, so long as the facts are marshalled in a clear and connected manner, and evidence given of a thoughtful mind. And it is this part of the examination more than the *viva voce* that is usually fatal to candidates, so much so that, when its results are known, they are at once printed in the newspapers, and congratulations pour in upon the candidates, on the presumption that though the rest of the examination may have much influence on the candidate's



relative place, there is little chance of his absolute rejection. One cannot but admire the skill which has thrown the chief stress of the examination on the part which cannot be crammed, the part which gives opportunity for showing disciplined taste, a balanced judgment and a cultivated mind; and has yet contrived inconveniences, delays and loss of relative rank (all falling short of absolute rejection) for him who in any one subject has been careless in the acquisition of knowledge. This, of course, is also the aim in the sister countries; but in Norway, where these examinations have quite recently been in the melting-pot again, the fact is almost forced upon one's attention. In 1903 there were 614 candidates at Artium made up in the following way:—381 Realists (269 new order, 112 old), 108 linguistic-historical line, 111 linguistic-historical with Latin, and fourteen on the old Latin line. Of these 614, 112, or 18 per cent., failed and were not allowed to proceed to *viva voce*. The percentage would be much lower but for the numerous privatists, amongst whom the rejections may be five, six, sometimes seven times as numerous as in the recognised schools.

In the *viva voce* there are nine subjects:—

(1) Norse. As four or five hours a week are given to the subject in the gymnasium the requirements are not small. They comprise (a) some work common to the Danish and Norse literatures; (b) another work specially Norse, written since 1814; (c) a selection of prose and poetry covering the whole ground; (d) Landsmaal; (e) Old Norse. Line B must also offer some works of ancient or modern literature in translation (*e.g.*, Homer or Plato), in addition to a larger quantity of old Norse.

(2) and (3). In German and English, candidates are tested both in seen and unseen; and must be able to give reproductions and answer questions in the foreign tongue. Line B, which gives on an average six hours a week to English, has to read twice as much in that subject as the other two, and must also show some knowledge of the most important political and social institutions of England.

(4a) French. For lines A and B only. But B is examined in both seen and unseen, whilst A is examined in the former only. The candidate has been learning French only three years and so is not expected to converse in the language. But if, nevertheless, he is able to understand a question addressed to him in French and to reply in the same, it counts to his credit.

Line C, in order to make more room for Latin, has no French in the third year, and therefore takes a qualifying examination in that subject at the end of the second year. The candidate must present evidence of this before he can be held to have passed Artium.

(4b) Latin. For line C only. As the subject has been studied only two years, the candidate is not expected to present more than 130 pages of Latin literature.

(5) History, with special attention to the period since the French Revolution. Line B is expected to show a knowledge of "Kultur-historie" not required of the rest.

(6) Geography, especially mathematical and physical geography.

(7) Zoology and botany, to which line A must add a somewhat close acquaintance with physics. The rudiments of chemistry and physiology have also been studied in the first year of the gymnasium, and a qualifying examination has been passed at the end of that year. Evidence of this must be forthcoming two years later, on proceeding to Artium.

(8) Mathematics as far as trigonometry and the elements of stereometry. Line A must add analytical geometry, the theory of functions, and higher algebraical series.

(9) Gymnastics (for boys only). It is something new that a subject like this should form a necessary part of an examination, but so little can it be trifled with, that a candidate was rejected in it in the summer of 1903 and had to present it again in the autumn. The fact that he had to do so will be entered on his certificate and there constitute a blemish. Precisely the same arrangements are made for keeping the *viva voce* within reasonable limits as were described under the Middelsskole Examen, except that at Artium the Undervisningsraad possesses a wider discretion than at Middelsskole Examen, and may, if it think fit, dispense in any given year with the *viva voce* altogether.

Each of the four pieces of written work falls into one or other of six classes, of which the third is "satisfactory," the fourth "fairly satisfactory," and the fifth "middling." A candidate passes in his written work if none of the four pieces falls below "fairly satisfactory." But a Realist may have "middling" for his German, if his other three subjects are "satisfactory"; and a language candidate may have "middling" for his mathematics on the same condition. These classes have numerical values attached to them, e.g., "satisfactory" = 2; "fairly satisfactory" = 1; "middling" = -2.

Two further conditions are necessary for passing:

(1) A candidate must not in any *viva voce* subject or in gymnastics fall below "fairly satisfactory." But in case of failure in a single subject, he may present it by itself some months later, and so be prevented from failing. But the fact of the second examination must be entered on his certificate.

(2) For his thirteen subjects he must get at least 15 marks.

The maximum of marks for thirteen subjects is 43. Of these a candidate must obtain 39 for a first division, 32 for a second, 22 for a third, and 15 for a fourth. The examination in its present form is young and is probably as stringent as is desirable, until some years' experience of its working has been gained. Danish Artium, it may be noted, requires half the maximum marks for the barest pass; but it was only after many years, i.e., in 1896, that the authorities found it safe to fix the minimum so high.

## LANDSMAAL.

A word should be added with regard to the burning question of Landsmaal. A decisive majority in the Storting of 1835 (78 to 31) resolved that Rigsmaal (as the ordinary Norse-Danish is called) and Landsmaal should be put on a footing of equality, the desire being that Landsmaal, an admirable medium for ballads and stories of country life, should by degrees become developed enough to express all the ideas of modern civilisation, and should then become the recognised mother tongue. The two languages are as far apart as the Galloway Scots of the *Stickit Minister* and the King's English. And yet it is quite possible, quite within the limits of the law, for one school board to conduct all the instruction in Rigsmaal, whilst its next neighbour in the same valley uses only Landsmaal and books written in Landsmaal; or for a school board which for years has employed only Rigsmaal, to change round and use only Landsmaal, or *vice versa*. And at both Middelskole Examen and Artium candidates have the option of writing their essays in Landsmaal, though perhaps not more than one per cent. avail themselves of it. But the candidate must in that case show that he has a sufficient knowledge of Rigsmaal also. There are scarcely any that would object to the reading of Landsmaal in the schools. But there are many who think that the attempt to give it a position of absolute equality will cause more ills than it cures, and instead of awakening the people to a keener feeling of patriotism by the use of a language all their own, will only bring with it a hopeless confusion. A language, says Professor Falk, is a skin you grow up in and not a coat you take off and put on at pleasure.

## PRIVATISTS.

It becomes necessary to give fuller particulars of the privatists, who fill such a large place in the history of higher education in Norway. Privatists are candidates who pass one or other of the State examinations in an irregular way, without undergoing the full course of instruction (or in some instances, any part of it) provided at authorised schools. To some degree their existence is natural and necessary; but their very large number in Norway is generally held to be a blot in the higher education of that country. From the years 1823 to 1857 inclusive, 2,893 candidates passed Artium, of whom 1,651 were privatists and 1,242 pupils from recognised schools; and again in the years 1871-3, 326 privatists passed the examination as against 183 from the recognised schools. It is this larger number of privatists in Denmark and Norway that has made it necessary at the oral examinations to take each candidate separately and not in sets of six or seven as in Sweden and Finland. State schools were few and far between in the earlier years of last century; and of recognised private schools there was only one so late as 1840; So long as

this was the case, many candidates for the University had to be prepared at home with the assistance as *huskerer* of some young student from the university. Hartvig Nissen, in a lecture on the school system of Norway which he gave in London in 1854, calculated that of 10,000 pupils receiving secondary instruction, 4,000 were taught at home, 3,000 in schools little better than higher elementary, and 3,000 in State schools; such of the first two groups as were intended for the university would often before Artium put themselves for some months under a "coach" in Christiania who had made a special study of the conditions necessary for passing that examination. Before 1833 Artium was an examination held in the university and could not bear the very close relation to the school work which it does now. Such "coaches" were also resorted to by those who were entering the university at a later age than usual. In this way "Gamle Heltberg," of whom Björnson has left us a graphic sketch in the double rhymes that come so easily in his mother-tongue had on his benches in 1850-1 not only Björnson, but Ibsen, Vinje, and Jonas Lie.

Long and slender, half-dreaming, on outermost line,  
 Sat grinding for himself Aasmund Olavsén Vinje;  
 Anxious and worn, with the colour of gypsum,  
 Behind a coal-black, mighty beard was seen Henrik Ibsen;  
 I, youngest in the lot, was awaiting my 'parti'—  
 Till the new set came in after Yule—Jonas Lie.

But by degrees good schools became more numerous, partly through the increasing wealth of the country and partly through the institution of the Middelsskole Examen and the relegation of Artium from the university to the school. The State has taken these two examinations (the former more especially) and made them the instruments of a school propaganda. Any communal higher school that reached the middelsskole standard was to have money help; and any private school that reached either that or the higher standard was to have recognition, with the result that in one generation the number of places in recognised higher schools was increased fourfold.

Under these circumstances, the relative number of privatists has declined at Artium to one in three. But in Denmark it is not more than one in six, and in Sweden one in fourteen.

The real reason then of this large percentage of privatists in former years seems to be the great area of the country and the very unusual distance from many homes of a good secondary school; and this reason could be removed only by slow degrees. Meanwhile the way of conducting the examinations tends to keep the number of privatists within narrower limits. Instead of being examined orally by their own teachers, they are examined by strangers; and whenever a large portion of the oral examination at recognised schools is remitted, and the class mark substituted instead (under the safeguards detailed above)\*, this is a proceeding that cannot be

\* See pages 40, 41.

extended to privatists who have been prepared for the examination in all kinds of ways.

There are one or two schools in Christiania that prepare not a few candidates for Artium without the examination right. They send in candidates as privatists after two years' preparation, in place of the usual three ordained by the law. Where the candidates are beyond the usual school age, and in earlier years have been specially well prepared, this may often be done without injury or disaster. This was the case when women began to prepare for Artium. For a while many such candidates (the accumulations of several years) passed exceptionally well, though their special preparation had been confined to two years. But in ordinary cases, it cannot be educational to scramble through three years' work in two, not to speak of the great percentage of failures that takes place in such cases. It is just possible there may be, on the part of one or two teachers of marked individuality, a further and, on the whole, a worthier reason for not surrendering their liberty by accepting recognition, at any rate in the higher part of the school. No way is so good for them as their own way; no weapons so effective as those they have themselves proved. And it cannot be denied, as we look at the matter from the outside, that these State leaving examinations and those of Norway more particularly, excellent as they are, do considerably limit the work of the school, tying it down to a closely prescribed path and tending to reduce teachers to one pattern. The freedom of the private school with examination-right in Norway is after all a relative freedom, not enough for such an original as "Gamle Heltberg"; not sufficient for such trial of new methods as takes place, for instance, in Rektor Palmgren's school in Stockholm. Such thoughts suggest themselves most freely in Denmark, as one steps from a recognised secondary school into a Folkehøjskole; for though a school for boys and girls can hardly be compared with one for adults, the advantage of the very wide freedom enjoyed by the latter, as evidenced in quickened industries and national prosperity, cannot but re-act in the long run upon the methods used in the schools for younger folk.

#### PROVISION FOR EXPERIMENTS.

One paragraph in the new law (§10) calls for notice. It runs as follows: "Deviations from . . . the group of subjects and the aim of the instruction may be allowed by the Department" (in State-recognised schools to wit) "if the length of the school course is not thereby shortened, if the group of subjects is not essentially reduced, and if the aim of the whole instruction in regard to knowledge and ability is not lowered, and the leaving examination thereby made easier." This paragraph does little more than give legal sanction to such a method of proceeding as obtains, for instance, in the Brockske Handels-skole (Business College) in

Copenhagen, where more attention is paid to writing and mercantile arithmetic than in ordinary Realskoler, and a higher standard in composition is required in foreign languages with the result that corresponding changes to suit the altered curriculum must be made in the questions asked at the State Leaving Examination which closes the work of the Realskoler. But Mr. P. Voss, one of the most eminent private schoolmasters in the North of Europe, who was for many years Norse editor of *Vor Ungdom* and also one of the seven members of the Higher School Commission in 1892-4, breathes into the paragraph a life it does not possess when he says in his *School Fight on Norse Ground*\*: "And so when people are dissatisfied and strive for improvements, the State takes their efforts under its guidance and care, inasmuch as it permits them to work out their pedagogical ideals in schools which within certain limits have the same rights as the public schools, and thereby if possible to make their ideals universally current."

The thought is admirable and easier to carry out than in most countries. For in Norway (and also in Sweden but not in Denmark) the Expeditionschef (the permanent secretary at the Education Office) has been a schoolmaster, and may, when he is weary of public work, become a schoolmaster again, and is naturally more sympathetic and approachable than he could otherwise be. But for all that it is easier to introduce such words into a law than for the Expeditionschef to act upon them or to be asked to act upon them. A man of an independent turn of mind does not easily cry "by your leave" at every turn and corner; and the best "guidance and care" the Department can give a capable man who has won State recognition is, in such a matter, to leave him as much as possible to himself.

#### THE CONSULTATIVE COUNCIL

To help the Department in the oversight of schools and in the proper conduct of the leaving examinations, the law of 1896 established an Educational Council (*Undervisningsraad*), consisting of a chairman and six ordinary members with a medical member added and a secretary. They are appointed for five years at a time. The first chairman was formerly Departementschef (*i.e.*, Cabinet Minister in charge of Church and Education); and of the rest one is the present Expeditionschef, three are Rektors of State schools and two are senior assistant masters (one in a large private school).† The secretary is also an assistant master (in the Cathedral school in Christiania). They relieve the Department of the entire

\* Wychgram's *Deutsche Zeitschrift für Ausländische Unterrichtsvesen*. Leipzig 1897-8. Also in *Vor Ungdom* 1899.

† In the early part of 1904, four of these members retired and were replaced by others. There are now two headmasters of private schools upon the Council.

responsibility for the leaving examinations, inspect as many schools as their other duties permit, visit schools applying for recognition, and virtually decide whether the application can be granted or not, and pass judgment on and authorise new school-books for secondary schools (they authorise as many as they can and so the liberty of choice is not greatly restricted). In addition to this there are some scores of questions, sent them from the Department, which they first discuss, before the Department gives an answer. It has been proposed for instance that the number of hours an assistant master in the State secondary schools shall be required to teach, be increased from 24 to 27 hours a week. And as four hours seems a short day's work for a man in the vigour of life, the change would probably have been made, had it depended upon the Storting alone. But a body of experts like the Undervisningsraad knew well that in order to do his work properly an assistant needs time to look over exercises and essays, to keep up his reading and prepare for actual teaching. Nor did they forget that if a child is to be brought past the bitterness of his learning, the teacher must keep himself in sympathy with his pupils, by retaining, as far as may be, alertness of body and mind. And so for all these reasons they decided to leave matters as they were. They have three or four meetings a year, generally of three to four days each. They would like to see more of the Communal Middelskoler in the small towns; and as they have not enough time for this, they desire to have an inspector whose full time should be put at their disposal; but the Storting is as yet unwilling to provide the means. Every year the Undervisningsraad issues a report of its work, which appears in the official publication entitled *Universitets-og Skole-Artaler*, and from the Report for 1901 it appears that in addition to their management of the leaving examinations they discussed eighty school questions and reported on thirty-five school-books. In the spring term, the details of the new examinations had prevented them from inspecting any schools. But in June, when the examinations were on, four of them had visited schools in south, mid and north Norway; and in the autumn three had visited middelskoler in the districts of Bergen and Tromsø. The members of this Education Council receive some acknowledgment of their services, but the entire amount is under 7,000 kr. (less than £400) a year, including the secretary's salary. It is the institutions they are connected with that really pay for their public services, in the time withdrawn from their ordinary occupations.

#### EDUCATIONAL PROGRESS IN THE LAST NINETY YEARS.

In giving a bird's eye view of the various schools, whose work is so intimately bound up with these two leaving examinations, one cannot but be amazed at the enormous advance which Norway has made in education in the ninety years of her independent existence,

especially when we bear in mind the difficulties caused by a thin and scattered population, due to the small area of cultivable land.\* In 1837, 86 per cent. of elementary school children were taught in *omgangs-skoler*, schools which had no buildings of their own but met for two or three weeks first in one farmhouse and then in another. Now only 1·7 per cent. are so taught. In 1814 there were only four higher schools with an aggregate of 200 pupils. In 1901 there were nineteen gymnasia which are also *middelskoler* besides sixty-seven *middelskoler* pure and simple, with an aggregate of 15,000 pupils. This latter result is one which neither State nor local authorities, whether acting alone or together, could in the circumstances have produced: it is due to public authorities and private initiative, acting for the most part in harmony and constantly influencing one another. And this is the more remarkable, because of all these northern countries Norway is the least disposed to spend money on private schools. It does so, as we shall see, but only in very special cases. Of these eighty-six schools in the year 1899 (all of them, by the bye, day schools), 57 were public with an attendance of 7,936 and 29 private attended by 7,561, in addition to which there were 73 private unrecognised schools of a very miscellaneous character with an attendance of 4,013.

#### UNRECOGNISED PRIVATE SCHOOLS.

The number of these unrecognised schools and of the pupils attending them has remained fairly constant for the last five years for which we have any returns (1895–9). Some of them send up candidates to Artium who are entered as privatists; others are on the way to recognition; others again, especially some girls' schools, are working without regard to public examinations and therefore cannot need the examination-right; whilst a third of the entire number have each only three classes or under, and however useful they may be within their limits are too incomplete to aspire to recognition; they are for the most part not much more than preparatory schools. There is no incompleteness in the returns of these unrecognised schools, for the elementary school law of 1889 (Secs. 56, 57 of the law for towns; Secs. 63, 64 of that for the country) ordains that every one taking over a private school for children under fifteen must inform the school board of the fact or be liable to a fine of 50 kr; and he must also before the end of September in each year fill up and send in a schedule which gives the number (1) of classes in the school, (2) of boys and girls in attendance, (3) of those that have left in the year, (4) of University men or (5) of seminarists on the staff or (6) of those that have neither of these advantages, (7) of lady teachers who have passed the elementary teachers' examination and (8) of those that have not done so. The

\* Only one-fifth per cent. is arable: 2·7 per cent. meadow or pasture.



last column of all is for a statement of the ordinary working expenses of the school in the year ; but one school, I learnt, had never filled in this last column, from which, perhaps, it may be inferred that this particular return is not insisted upon. All these statistics, except those in the last column, appear in the printed Government report. A fine of 5 to 25 kr. may be inflicted for every week's neglect to send in these yearly returns.

#### PUBLIC SCHOOLS.

Of the fifty-seven public schools, fourteen are State schools, and forty-three (forty-four in 1902) are Communal Middel-skoler.

##### *State Secondary Schools.*

For the fourteen State schools, which are all both gymnasia and middelskoler, the communes in which they are situated provide the buildings and the site, with the expenses of lighting and warming, whilst school fees, landed or funded property and the State provide the rest. The entire income in 1900 was 496,000 kr., of which 202,000 came from school fees, 219,000 from the State, 60,000 was interest on capital, and the rest came from other sources. There were in 1900 490 pupils, 25 of them girls, in these 14 gymnasia ; 1,950 (512 of them girls) in the fourteen attached middelskoler ; and 449 (15 of them girls) in the rapidly dwindling preparatory classes, which have now by law come to an end. If we divide the yearly working expenses by the entire number of pupils, 2,889, this gives 172 kr. as the yearly expense of each pupil. If we neglect the preparatory school pupils, the yearly expense will be 200 kr. But as the buildings are all rent free, the real cost is somewhat higher than this. The school fees actually paid can hardly exceed half the cost of the instruction, as a not unusual fee in the middelskole is 100 kr., and in the gymnasium, 160 kr. Moreover, one-tenth of the gross amount of fees is remitted in free places to deserving pupils needing help ; and a substantial reduction is made when two or more members of a family attend school together.

This latter arrangement favours co-education ; e.g., if three brothers attend school together, the first pays full fees, the second three-fourths, the third one-half ; and if their sister then join them, she, as the fourth member of the family, would be received free of charge, as long as she remained the fourth ; whereas full fees, representing something more than the prime cost, must be paid for her, if she be sent to a girls' school.

Seven of these fourteen schools have all three lines in the gymnasium, viz., Christiania, Trondhjem, Bergen, Christiansand, Hamar-Drammen and Stavanger. Frederikshald, Skien and Bodö have the Real line only ; and Arendal, Aalesund, Christiansund, and Tromsö have only the language line.

*Communal Middelskoler.*

The origin of the forty-three Communal Middelskoler is due to the communes in which they are situated. But the State provides one-third of the initial salaries and all subsequent additions on account of length of service. The aggregate yearly income of the schools was in 1900, 814,000 kr., of which 414,000 kr. comes from school fees, 182,000 kr. from the communes, 33,000 kr. is the interest on capital, 25,000 kr. comes from miscellaneous sources, and 160,000 kr. from the State, which in recent years has arranged to take over the appointment of the staffs, so that virtually the schools become State schools, though they are not called so. They have on the average an attendance of 117 pupils, of whom more than one-third are girls. One of these schools is in Christiania (to which another has been added since 1900). Nearly all the rest are in small towns; some not even in towns but amid two or three parishes somewhat more thickly inhabited than usual. Thirty of these towns have on the average a population of less than 3,000. Most of the schools sprang up in 1880 and the following years, though many of them must have had a previous existence in a less developed form.

*A Comparison.*

An interesting comparison here suggests itself. The most difficult part of the secondary school problem both in Norway and Denmark during the last twenty or twenty-five years has been how to provide enough higher schools of a modern character for the provinces, in every part of which, except two or three of the larger towns, no fully equipped secondary day school can be expected to maintain itself without some public help. If from the population of the two countries be subtracted that of the two capitals, it will be found that the population of the provinces is in each case nearly the same. The sums expended by the public authorities of the two countries on secondary schools outside the capital are not very different. But the results are different. Norway outside the capital had in 1900, sixty-six middelskoler (13 in connexion with State gymnasia, 42 communal, and 11 State-recognised private schools in three or four of the larger towns) with an aggregate of 9,700 pupils (6,800 in the first two kinds of schools and 2,900 in the third); whilst Denmark had 124 Realskoler (12 in connexion with State Lærdeskoler or gymnasia, 32 communal and 80 private State-recognised schools) with an aggregate of 15,000 pupils (6,000 in State and communal schools and 9,000 in private schools). The population of Norway is spread over eight times as much ground as that of Denmark, and this to some extent, but by no means entirely, will account for the difference. Norway, in fact, in providing higher schools for her country population, has worked vigorously with one hand, while Denmark has worked with two; and the latter has in consequence been able to bring the higher education

to many thousands of homes that must otherwise have dispensed with it. But the Danish realskoler, as we shall see, present some defects from which the corresponding schools in Norway are much more free; and the smaller number of middelskoler in Norway, ending their course one year earlier than the Danish realskoler, are able to bring 200 more pupils through the intermediate leaving examination than the corresponding schools in Denmark. The two sets of schools may indeed learn from one another. Norway may learn from Denmark the deft, ingenious ways by which a larger number of secondary schools in the country districts—both kinds of them and not one kind only—may be raised to the standard of recognition. And Denmark may learn from Norway (she is already learning, but all too slowly) how to raise the status and remuneration of teachers in the recognised schools, and how to induce a larger proportion of the pupils to stay on until the end of the school course.

#### *Two Communal Middelskoler in the Capital.*

But of all these Communal Middelskoler there are two in Christiania (entirely supported by the commune without any help from the State), which have been the subject of most discussion in the last two or three years—schools whose object is to pave the way from the elementary school to the middelskole. Of these the four-year-middelskole is the old Borgerskole remodelled, with the fees reduced one-half. It has (in 1903) 390 boys and girls, but room for 500. The fee is now 72 kroner, which must be somewhat less than half the cost price; and 25 per cent. of the children have free places, which are granted to pupils already in the school after due consideration of behaviour, ability, and parents' means. In 1903, 180 children applied to enter the first class; but as there was room only for 130, a three days' examination was held to determine who were the best. The children are taken from the elementary school soon after they are eleven years of age, and so can pass the middelskole examen at the age of fifteen. In 1901, thirty-seven, and in 1902 forty-one pupils from the school passed that examination. But the pupils come not only from the elementary school. Every citizen in Christiania has the right of sending his children there, so far as there is room. In 1901-2, two-fifths of the new pupils came from schools other than "elementary"; and so, to that extent, the school competes on unequal terms with other schools that pay their way.

It is very natural that teachers at the elementary schools should not like to have their best pupils removed two years before that school has done all it can for them. And so the second communal school is an attempt to build on the top of the elementary school, on the seventh year instead of the fifth. It is called "The Three Year Middelskole" and meets in the old Cathedral school buildings. It is a free school, recruited entirely from the elementary schools,

Every spring the headmasters of the eighteen elementary schools in Christiania nominate about 220 boys and girls in the leaving classes whom they find most suitable for the middelskole. The elementary school year in Christiania is not co-terminous with the secondary school year. The former ends three months before the latter. In this three months the 220 children, besides beginning German, recapitulate at the new school the work they have done at the old, undergo an examination, and are reduced in the following August to 140, who are then prepared in four parallel classes for the Middelskole Examen. They are picked pupils and have had two years' extra instruction in the elementary school; and so it is thought they can easily prepare for the examination in three years instead of four, thus ending their school career one year later than pupils in the other school. The school presents its first set of candidates at the Middelskole Examen in the year 1904.

It should be added that both these schools are very well staffed; the teachers are paid at the same rate as teachers in the State secondary schools; and, by special resolution of the Storting, receive according to their rank the same titles—Rektor, Overlærer, or Adjunkt. The two schools cost the commune 30,000 kr. and 40,000 kr. a year respectively (nearly 90 kr. per pupil).

#### *Qvam's School.*

But there is one agency that is turning out nearly as much good work as these two schools put together, and at a much less cost. Mr. Qvam, though a private schoolmaster, is doing work so much akin to that of these two schools and doing it on such a scale, that his school can be more fitly considered here than among the private schools to which we are coming. Twenty years ago the State gave him 2,500 kr. to enable him to take children from the elementary schools and carry them on to the Middelskole Examen. In later years the grant has amounted to 4,500 kr. (of which 2,800 kr. must be spent in providing free places); and to this the commune adds another 4,500 kr. (altogether about 22 kr. a pupil). It is a large amount, quite the largest amount of public money given to any private school in Norway. But if either of the parties to the bargain has reason to be dissatisfied, it is certainly not the public authorities. When the 2,800 kr. has been spent in free places, the remaining 6,200 is no longer applied to the free instruction of a limited number of children, but to the reduction of the fee to the lowest possible amount (80 kr.) for the whole school; and there are, besides, the usual liberal reductions when several children come from one family at the same time. The handsome school buildings were erected in part by the help of a loan from the commune. The number of pupils, which was 640 before the two previous schools were placed on their present footing, is now (1903) 339; and of these, in each of the

three years, 1901-1903, about 105 have passed the Middel-skole Examen. It is an amount of successful work which has never yet been approached by any other school, public or private, in Norway. In conformity with the law of 1896, and as a condition of receiving the grant, the school forgoes the preparatory classes, which are a source of profit to most private schools. It is, under all these circumstances, impossible for the salaries to be adequate; and this alone would be sufficient to hinder the school from obtaining the examination-right. But, as a matter of convenience, the candidates are not, like other privatists, drafted in groups to recognised schools for examination, but have the great advantage of being examined in their own school by their own teachers, of course under the direction, and in the presence, of the outside censor. We shall find other instances in these northern countries of able enthusiasts, who if they can be set to do, under conditions of tolerable freedom, the work they like best, are glad to make pecuniary gain a secondary consideration. Such men are often the readiest, most efficient means of promoting the public weal; but the economies effected by employing them need not be pushed so far as to withhold from them a remuneration more proportionate to their deserts.\*

As in the *Borgerskole* (now called the Four Year Communal School) so here. Not all the pupils come from the elementary school, and to some extent, therefore, the school competes on unequal terms with the schools that pay their way.

#### OTHER FORMS OF THE EDUCATIONAL LADDER.

It may be noted in passing that Stavanger in proportion to its size expends twice as much as Christiania in passing pupils from the primary to the secondary school. The commune pays the fees of no less than 280 children at 80 kr. each (70 in each of the four middelskole classes) at the State school. Such children must be residents in the town and must have attended the elementary school at least one year. This is a notable accomplishment for a town of 30,000 inhabitants. These children have their fees paid only at the State school, not at any efficient, State-recognised school in the town.

It must not be supposed, however, that it is public schools alone that make a rule of giving help to those that need it. In the year 1900 there were 2,007 children, about one-eighth of the whole number in authorised higher schools throughout Norway, whose fees were remitted in whole or in part; of these 1,325 were in aided public schools and 682 in unaided private schools. The largest

\* It remains to add (February, 1907) that the State grant was given for the last time in 1904, and that from the Commune in 1906. In 1906, Mr. Qvam, an octogenarian, received from State and Commune a pension of 2,400 kr. The school is still continued by his children, the number of pupils being now 200.

private school in Christiania in twenty-five years remitted fees to the extent of 133,252 kr.

#### RECOGNITION OF SCHOOLS BY THE STATE.

##### *Conditions of State Recognition.*

Before giving some brief account of the twenty-nine State-recognised private schools that were in operation in 1900, it may be well to state the conditions upon which the State gives the examination-right that carries with it State recognition.\* They are stated much more explicitly in Norway than in the adjoining countries and are as follows (§72 of the law of 1896) :—

(a) That the length of the school course and the hours of instruction be found sufficient.

(b) That instruction in the various subjects be given to the extent set forth in Chapter II. of the law.

(c) That the staff of the school has on the whole such an education as is required from those who are appointed to the service of the higher schools of the State.

(d) That teachers' salaries be approved by the Department. (In the yearly return the headmaster states the number of teachers, the total amount paid in salaries, the highest salary paid, and the lowest.)

(e) That the buildings, furniture, and apparatus be suitable, and complete.

(f) That at least one set of pupils have been presented at the leaving examination and have passed it in a satisfactory way. (The school will in the first instance seek recognition as a middelskole ; and if not content with that, will, at least three years after, seek recognition as a gymnasium also, by presenting candidates at Artium.)

(g) That the instruction in the school and the leaving tests be submitted to the control appointed by the Department. (What that control at present is has been fully shown in the account given above of the Undervisningsraad and of the way in which the leaving examinations are conducted.)

(h) That every year there be sent in to the Department a report of the school work. (At the beginning of the school year in August a schedule is filled up giving such statistics of the school as appear in the yearly government report. Amongst the other columns is one for the amount expended in salaries, but this item is not printed. Where the school prints a report or prospectus, this also is sent.)

The examination-right is not given, as in Denmark, for a term of years (three or five) but indefinitely. One instance at least has

\* The earlier history of this movement for recognition can be traced better when we come to Denmark, with which Norway was united for 400 years prior to 1814 (see pages 71 to 73.).

occurred in recent years, where the right has had to be withdrawn, because the school had been allowed to fall beneath the mark. But such instances are rare. The fear of losing the right operates to produce continued efficiency.

The State thus holds itself responsible for secondary education as for primary, but provides for it in a different way. In each large centre it establishes a secondary school with a fee below cost price, but not, as in boys' schools in Sweden, so low as to render the existence of other schools impossible. Such a State school serves a double purpose. It not only provides a sound education for the pupils frequenting it, but becomes, in buildings, equipment and staff, a model or standard for such other schools, co-ordinate for the most part with itself, as are erected by private effort to meet growing demands. These latter schools are private, inasmuch as they are owned by private men and have greater freedom and initiative than the State schools; but they are also public, inasmuch as they conform to public standards, and at slight cost to the State supply public needs in a measure quite as full as the public or State schools. And so in these four northern countries the State is not slow, when absolute need arises, to bestow in widely varying degrees public money on schools which combine some of the best points in the public and in the private school. It may be useful as we pass along to note these widely different degrees and to trace the varying effects on the distribution of schools, on the extent of appreciation they call forth from the population around, and on the efficiency and the economy of educational work.

#### *The Recognised Private Schools.*

If now we turn to the twenty-nine recognised private schools that were in existence in 1900, we shall be at once struck by the large amount of success which a small number of schools in the larger towns have had in the higher branches of school work. There were in 1881 seventeen State schools in Norway with an aggregate of 3,027 pupils and ninety-six passes at Artium, whilst three private schools in Christiania had 1,624 pupils and eighty passes at Artium. (The privatists numbered, in addition, 117 that year.) And if we take into account those schools and private teachers that prepare for Artium without the examination-right, the comparison becomes more striking still. In the nine years 1893-1901, the State schools passed 986 candidates at Artium, whilst the recognised private schools and the unrecognised schools and teachers passed 1,740, or 63 per cent. of the whole number. And if we confine ourselves to the Real candidates at Artium, upon whom much of the higher industrial activity of the country must afterwards depend, we find that the unaided schools, recognised and unrecognised, passed 82 per cent. of the whole number.

Of these twenty-nine recognised schools only six had in 1900 the right to hold Artium, viz., three large schools in Christiania, one large school in Bergen, and two smaller ones of a temporary and exceptional character at Hamar and Bodø. But since 1900 a seventh has been added of a very interesting character. Three of the chief girls' schools in Christiania, showing a readiness to act together which is even more general among private schools in Copenhagen than in Christiania, have united their forces to form from their advanced pupils a "kvindeligt gymnasium" (girls' gymnasium). In the first year of its existence all the girls from the three schools met for their first year's gymnasia work at school A, and remained there until Artium; next year all the girls from the combining schools met for first year's work at school B, and remained there all the three years, and so on. The gymnasium classes are smaller than the classes beneath them, and require higher teaching. They are much more costly, may add to a school's reputation, but hardly to its profits. Such a union therefore combines efficiency and economy.\*

Of the twenty-three other schools which in 1900 had the right to hold the Middel-skole Examen only, fourteen were in Christiania and neighbourhood, four in Bergen, two in Drammen, and one each in Trondhjem, Stavanger and Fredrikstad. It will be noticed that all these schools are in the larger towns, for Norway, unlike the other three countries we are considering, makes no grant to any ordinary boys' or girls' school, and so renders quite impossible, so far as the country and the smaller towns are concerned, that blending of public and approved private effort, of whose value Christiania and Bergen furnish brilliant instances. Accordingly the schools, under a control entirely public, claim a larger percentage of middel-skole pupils than of gymnasium pupils. In 1890 they had 7,430 pupils in the middel-skole as against 6,938 in the private recognised schools. And if pupils in the preparatory classes be neglected (and they have now entirely disappeared from State and communal schools), the numbers were 5,604 and 3,141 respectively. And in the five years 1893-97 the former schools had 55 per cent. of the passes at the Middel-skole Examen, whilst the unaided schools had 45 per cent.

• *Private Schools Predominant in the Capital.*

In 1900 there were in the State school in Christiania and in the Borgerskole supported by the Commune 771† pupils altogether, and

\* This girls' gymnasium has now come to an end. On the other hand Vestheim School in Christiania, which shares with Aars and Voss's school the distinction of being the largest secondary school in Norway, has lately added a gymnasium to its other classes.

† To this 771 and 5,006, must be added the 400 children in the three year Communal School and about 1,170 children in unrecognised private schools, if we are to get the aggregate secondary school attendance (7,276). Liverpool, with a population more than three times that of Christiania, has 6,600 children in secondary school attendance, 600 less than Christiania.



in the various recognised private schools 5,006 pupils. This is a position very different from that obtaining in other parts of Norway, though there is some approach to it in Bergen.

Amongst the reasons for this surprising growth of recognised private schools in the capital in the last twenty or twenty-five years may be mentioned :—

1. The rapid growth of Christiania. In 1879 there was a population of 116,800 ; in 1903, of 225,600.

2. Teachers in State schools in Norway do not receive a pension as a matter of course at a certain age. (But a more adequate pension scheme is preparing.) Each case is considered on its merits ; and whatever sum the Department proposes, is apt to be reduced by the Storting. In consequence many teachers stayed on at their work longer than was expedient. In one school the average age of the ten or twelve masters was over sixty. The State school could not be so vigorous as it ought to be and now is, and the efficient private school became an established institution in the larger towns. There could be no good school without the examination-right, and the difficulty of obtaining this tended to limit the number of schools and to discourage a ruinous competition.

3. The private schoolmaster's freedom is much greater than in the State school. The Rektor there is a civil servant with a fixed orbit in which to move, out of which he can hardly step, whatever be his ability and earnestness. He does not appoint and still less can he dismiss any single member of his staff. His position and theirs is as good as a freehold. If he fills his post just respectably, he receives as much as if he put his whole heart into his work. Anything like a small fixed salary, with the bulk of his income drawn from capitation fees, is an arrangement not known in a State school. An Adjunkt seeks to be an Overlærer, an Overlærer to be a Rektor ; but for the Rektor himself there is no such promotion except from a school in the north to one nearer the capital. He may, however, be returned to Parliament if his district choose to elect him, may become a Cabinet Minister or (as was recently the case) Prime Minister, and have his headmastership kept open for him, by employing a "vikar" all the years he is in the Storting. Some of these arrangements do not tend to the efficiency of the State school.

4. The fees of these recognised schools, though necessarily higher than those of the aided State schools, are still much lower than in many schools of like excellence in England. In the dearest schools, the school fee in the higher classes is £13 to £14 ; and in other schools it is much less. Moreover, the second member of the family pays two-thirds, and the third goes free ; and these schools in 1900 had 400 places that were free in whole or in part.

## TRAINING COLLEGES—PUBLIC AND PRIVATE.

A training college for elementary teachers is not very different from a secondary school. It does not indeed, in Norway, include instruction in any foreign language; but the other subjects are studied to about the same extent as in a good secondary school. And so we find both Norway and Denmark providing a supply of training colleges in much the same way as they provide a supply of secondary schools. If the buildings, equipment, and staff of private seminaries conform to the model or standard presented by the State seminaries, and if the course of study be the same, the private seminaries obtain the examination-right, *i.e.*, can present their candidates at the examination which qualifies for fixed employment at the elementary school. This examination is conducted in a similar way to the State leaving examination in secondary schools, except that the teachers at one seminary do not act as censors in another seminary. In this instance that important office is committed to an Examenskommission, which costs 28,000 kr. a year. The State assigns grants to the private seminaries ample enough apparently to bring the greater cost within the means of the students. I find, for example, in the case of one private seminary that the State pays 1,500 kr. a year in aid of salaries, 1,000 kr. to help needy students, 500 kr. for apparatus, and 600 kr. for the preparatory class, 3,600 kr. a year altogether, besides 4,000 kr. (from State grant) for the expense of the practising school. This seminary is conducted by a section in the State Church, and is helped by subscriptions from its friends to the extent of 3,000 kr. Another is in Christiania, so that in this case the students (all women) can live in their own homes. It is carried on in connection with Nissen's Girls' School (which was established in 1849 and is the pioneer of higher girls' schools in Norway); and the fee—a much larger one than at the other seminaries—is the same as that in the higher classes of the girls' school in the same building. The three other seminaries belong to private individuals. At the present time the private seminaries have rather more students than the public. At the final examination in 1903 145 candidates from the six State seminaries passed out of 175; and 162 out of 183 from the five private. The State expends on the latter considerably under 20,000 kr. a year; on the former, somewhat over 220,000 kr., not including in either case the cost of the Examenskommission.

## THE INFLUENCE OF THE PRIVATE SCHOOL ON THE PUBLIC SCHOOL.

We have seen that fully one-half of the higher school teaching in Norway is done by private men who owe very little to public funds but very much to State recognition. But to leave the statement there would be to say less than the truth. The private school, or rather a few select spirits, nurtured in the freedom of the private

school, has been the lever in the last sixty years by which the chief changes in the State schools, necessary to bring them into touch with the times, have been brought about. And this will be clear if some brief account be given of one private school in the first half of these sixty years and of another in the second.

*Hartvig Nissen.*

Hartvig Nissen, of all the schoolmen in Norway in the last century, had the greatest influence upon the development of education, whether in the primary or the secondary field. He was born in 1815 in a country parsonage near Trondhjem. After passing his first university examination, his slender means made it necessary for him to work a while as *hustlærer*. We next find him attending Madvig's lectures at Copenhagen, where he busied himself both theoretically and practically with education, and made himself familiar with some of the Realskoler, two at least of which had existed from the end of the previous century. In 1843 he took his degree in philology at Christiania; and at once, in conjunction with O. J. Broch, afterwards Professor of Mathematics, opened a school for boys, which, says Professor J. Paludan, "in a still higher degree than the Danish private schools went ahead of the State schools by the adoption of new educational ideas and methods. His school became more and more a model school, to which the public schools had to conform. Norse and German were the basis of language instruction, and the living languages were studied before the dead—Latin not till twelve years of age and Greek not before thirteen or fourteen. The union of classical side and modern side in one school, the longer preparatory course common to both sides, the putting off of the ancient languages to a later age, as well as the relatively large number of pupils in each class were economical necessities for the private school, which Nissen at a later date elevated into educational principles and then gave them an ever widening extension. Great importance was attached to object lessons, *viva voce* instruction and gymnastics; in 1847 a whole week was occupied exclusively in musket drill. Amongst other experiments it may be mentioned that for two years from 1856 the two highest classes did all their work in school, so as to have no homework with the exception of a few essays. Under constant superintendence and with only occasional use of examination as a means of control, each pupil in those classes worked on independently, as fast as he could, without being kept back by the necessity of being taught with others, and so the transition was made to the freer methods of university studies. But the experiment did not give satisfaction."\* The thirty-three pupils of 1843 became 663 twenty

\* This is a condensed translation of pp. 282, 283 in Dr. Paludan's *Højere Skolevæsen i Danmark, Norge og Sverige*. Copenhagen, 1885.

years later; and in 1849 a corresponding school was opened for girls, which exists to this day. "As a scholar," says Mr. P. Voss (Vor Ungdom, 1899, p. 25), "Nissen did not excel his fellows. But he was strong in administration and organisation, scented from afar the requirements and possibilities of the time, and was animated by an energetic will to do all he could to raise the condition of our schools, elementary schools as well . . . He had studied his Germans, was a diligent reader of Karl Meyer's Review that worked in a 'realistic' direction and he often quotes it. He was on the whole conversant above all his contemporaries with pedagogic literature and was in this way equipped with insight and authority." From 1850 to 1854 he had to transfer his school for a while to other guidance (he parted with it finally in 1866), for in those years he was acting as the government's 'Konsulent' in school matters and in that capacity paid a long visit to Scotland in 1853, in order to study the parish schools. The results of that visit were embodied in a report of several hundred pages which was published next year and formed the basis of the elementary school law of 1860. In 1854, with Rektor Steen, who afterwards was twice Prime Minister, he represented Norway at the educational exhibition promoted in London by the Society of Arts and on that occasion delivered a lecture, to be found in the Society's Journal for October, 1854, on the school system of Norway, prefixing to it the motto *Amica schola, amica patria, sed magis amica veritas*. He was next a member of the Commission that transformed eleven out of the fourteen State schools into combined Latin and Realskoler: (the other three were transformed later). From 1865 to 1873 he was Expeditionschef at the Education Office and was at the same time appointed Chairman of the Commission for the re-organisation of the higher schools. Their labours resulted in the new school law of 1869 which fixed the form of the higher schools down to 1896. In 1872 he was appointed Rektor of the old Cathedral School in Christiania, which dates from the twelfth century; and in that position he died in 1874.

#### *Aars and Voss.*

Of the leading school in Norway during the generation just ending one must speak with more reserve, for its two founders after forty years of strenuous work are still at their post. Aars and Voss's school takes its name from its two founders, who whilst still undergraduates formed the plan of opening, by and by, a school which might realise their educational ideals. For four or five years just before beginning the school, Aars had been a teacher at Nissen's school, of which his own school must be regarded if not formally yet really as the successor. The two friends began in 1863 with 117 pupils; in three years, on removing into a school building specially erected for them, their numbers had trebled. They touched high

water mark in 1880 with 842 pupils. Though the numbers have since somewhat declined, the gymnasium still remains the most important in Norway. The school has always been to the fore in the discussion of educational developments, and has been among the first to give increased attention to the physical side of education and to Sloyd, and girls from an early period were admitted as pupils into the classes of its gymnasium and so won access to a university career. But its chief claim to public gratitude, after its long list of able pupils (Fridtjof Nansen perhaps the most eminent of them) is the large number of successful teachers whom it has trained. The two head masters, keen scholars themselves, have been quick to discern scholarship in others, and to give it the practical guidance in teaching necessary for the highest and readiest success. The young graduate has not been planted down in the schoolroom and left to sink or swim. He has been trained "partly through discussion and criticism in teachers' meetings of the current official plans of instruction, partly through the more detailed elaborated methods of instruction for separate subjects or separate sections of the school; and lastly, through the observation and criticism, on the part of a more experienced member of the staff, of his way of going to work, and by the occasional setting forth of the general principles found most useful both with respect to the way of teaching the subjects and to the general educational treatment of children." But young teachers that taught in the school have been helped still more by the spirit that ruled there.

In the first twenty-five years there were nine teachers who became professors in the university. The one best known to Englishmen, Johan Storm, taught for eighteen years in the school. In the same period were also thirteen teachers who became Rektors of State or communal higher schools, principals of State seminaries, or directors of the technical school, besides many others who were appointed Overlærere and Adjunkts in State schools, and six who became head masters of large recognised schools in the capital. The present Expeditionschef has been both pupil and teacher in the school.

Neither Norway nor Denmark has yet any recognised method of training teachers for secondary school work.\* Meanwhile Aars and Voss have provided the chief but by no means the only training ground for the secondary school teacher in Norway.

#### CO-OPERATION ESSENTIAL.

The summing up can best be given in the words of Rektor D. F. Knudsen, spoken in 1894, whilst he was still Expeditionschef: "I must in one word maintain that the intellectual interests the higher

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\* But in Norway the law of September 14th, 1905, provides for such training, and the necessary grant for it will be made in 1907. In Denmark the methods of the new Training Course may be described as a free imitation of the Swedish methods described above, pp. 18-24. See also concluding lines of the Appendix, p. 136.

## IV. DENMARK.

The law that re-organises the higher schools in Denmark was passed 24th April, 1903, but will not come into complete operation before 1910. So I propose to describe, as briefly as may be, the old order, under which the present condition of things has grown up and then to indicate the chief changes that are coming. It would hardly be possible to do otherwise, for the law only outlines the coming changes, and leaves the government and public opinion to thrash out the details, some of them very important, as they come up for settlement.

The higher school in Denmark consists (1) of a six years' gymnasium, variously called a lærde school, a cathedral school, or a Latin school, beginning at the twelfth year; and (2) of a four years' Realskole or modern school, sometimes in the same building as the first, and under the same headmaster, but more frequently standing alone. This also begins at the twelfth year. In addition to these many of the schools, especially the private schools, have six preparatory classes, which often contain more than half of the pupils at the school. At the end of the fourth year each school has a State examination of about the same difficulty, but with some difference in the subjects presented. The Realskole examination is called *Almindelig Forberedelses-examen*, or, more popularly, *Präliminär-examen*, and forms a minor leaving examination.

The intermediate examination in the gymnasium is called the Fourth Class Hoved-examen; and when it is passed the pupils are divided more clearly than before into a classical line and a mathematical line with classical artium and mathematical artium, respectively, for their goal.

## FORBEREDELSES-EXAMEN OR PRÄLIMINÄR-EXAMEN.

The Forberedelses-examen comprises:

1. A Danish essay on some subject that falls within the programme of the school studies;
2. An oral examination in Danish language and literature.
3. A translation of a piece of English prose.
4. English *viva voce*, in which special stress is laid upon translation into correct Danish of prepared and unprepared passages.
- 5 & 6. In French and German the examination is *viva voce* only and the requirements as in English.
7. History.
8. Geography.
9. Two or three problems in arithmetic.
- 10 Three problems in algebra, and in addition an oral test.
11. Three problems in geometry followed by an oral test.

12. Zoology and botany.

13. Elements of physics.

14. Neatness in the written work counts as a subject.

For each of these fourteen subjects (six written, eight oral), a "karakter" is given (i.e. marks); and as each division of the mother-tongue counts double, there are sixteen karakters in all. But those who wish to leave out either French or German and pass with fifteen karakters may do so. Of 1,141 school candidates who passed in 1902, 557 passed in three languages, 582 in German and English, and two in French and English; and of 275 successful privatists, 86 presented three languages and 189 German and English. The maximum of marks is 123; of these, 120 are necessary for the first class and 69 for the lowest (or 65 if only two languages are presented); but of the 69 at least one quarter must be won for the mother-tongue if the candidate is to pass. Before 1896, forty-eight marks were enough for a pass. When the minimum was raised from 43 to 69, there was an immediate drop of 150 in the number of successful candidates; and it was two or three years before this number began to show again its usual steady increase. The written work is not sharply discriminated from the oral in such a way that failure in the first prevents access to the second. Nor in any subject but the mother-tongue is it necessary to reach any particular standard; but in adding up the total, the two lowest marks are exchanged for minus quantities (—7 and —23), either of which may pull down the total below the minimum required for a pass. Each candidate is examined separately in the  *viva voce* in each subject; and the marks, whether for written work or for  *viva voce*, are determined by the examiner (the teacher) and the publicly appointed censor jointly. In case of difference the two marks are added, and the half of the sum gives the final mark. An examination like this, where at any given moment the examiners are twice (and in the higher examinations three times) as many as the examined, makes a great inroad upon the time for teaching at the end of each school year; and for this, according to the new law, some remedy must soon be found. It must be noticed that in the foreign languages stress is laid upon translation into correct Danish, and not as in Norway upon the use of the foreign language on every possible opportunity. In 1892 1·3 per cent. of the school candidates failed, from which it must not be inferred that the examination is unduly easy; for it is only the pupils of the leaving class that have the right to present themselves at the examination, and the entrance to this class is so fenced about that no pupil likely to fail can gain admittance. The percentage of failures among the privatists in the same year was much greater (20 per cent.). It is incumbent upon all recognised schools to give instruction in religion, drawing, singing, and gymnastics; but these subjects do not enter into the examination.

Many of the details here given will apply also to the two following examinations.

#### FOURTH CLASS HOVED-EXAMEN.

The fourth class Hoved-examen includes :

1. A Danish essay (as for Präliminär).
- 2 and 3. An oral examination in German and French seen and unseen.
- 4 and 5. History and geography.
- 6 and 7. Algebra (with arithmetic) and geometry, both written and oral.
8. Zoology and botany.
- 9 and 10. Latin, reckoned double. Latin has been read all the four years, nearly seven hours a week.
11. Greek (oral) or elements of physics, according as the candidate henceforth takes the classical or the mathematical line. The Greek has been read five hours a week for the last two years.

The candidate passes to the remaining classes of the gymnasium if (1) for his eleven subjects he obtain 55 marks out of a possible 88 ; (2) if for the mother tongue he obtain the mark *good* denoted by 5 ; and if (3) he obtains 20 marks for the four subjects to which he now says good-bye, viz., German, geography, natural history and either mathematics (if he be proceeding on the classical line) or Latin (if he be proceeding on the mathematical line). If a candidate fail only in requirement (2) or requirement (3) he may have another try in that subject or subjects alone after a short interval. Where a school is both a Latin-skole and a Real-skole, the subjects common to these two examinations are prepared together ; and if a pupil having passed one of the two examinations, changes his plans and wishes to possess the privileges belonging to the other, he is not examined again in the subjects common to both. At this examination and at Artium two censors are employed in addition to the examiner. In 1902 there were 425 pupils who passed this examination, of whom 22 were privatists, besides 90 Präliminärists who by passing a supplementary examination in Latin or in Latin and Greek acquired the privileges bestowed by the Fourth class examination.

If to these 425 be added the 1,416 who passed Präliminär in the same year, we see that in Denmark there were, in 1902, 1,841 young people who passed one of these State examinations at or about the age of sixteen. Denmark has a population of two and a half millions, and Norway has only a quarter of a million less, so that we may fairly institute a comparison between the two countries. And we find that Denmark with 167 recognised higher schools which have rather more than 10,000 pupils in them from twelve to sixteen years of age, had, in 1902, 1,841 of them who passed successfully



through this intermediate stage ; whilst Norway in 1900, with eighty-six schools and 8,745 pupils in them from eleven to fifteen years of age, was successful with 1,873 (in 1901, 2,151). There is a tendency to leave school soon after confirmation at the age of fourteen ; and under such circumstances, the middle school that ends at fifteen or a little over gets more of its pupils to finish their course than the school which ends a year later. We shall find that in this matter of the age limits of the middle school, Denmark is conforming to the example of Norway.

#### CLASSICAL ARTIUM.

Classical Artium consists of :—

1. A Danish essay on some subject within the candidate's general knowledge.
2. An essay on some subject of history or literature falling within the prescribed *pensum*.
3. An oral examination in Danish literature and old Nordisk (equal weight given to each part).
4. A piece of prose to be translated into French (with a few of the harder words given).
5. An oral examination in German or English. The latter is generally chosen ; but English in the gymnasium is not a strong subject, as but two hours a week for two years are given to it.
6. History.
7. A written translation of a piece of unprepared Latin.
- 8 and 9. An oral examination in Latin authors prepared and unprepared (no Latin prose composition is required).
10. Greek (oral).
11. Elements of physics.

It will be noticed there are no mathematics. French, history and Greek are reckoned double, so that there are fourteen "Karakters" altogether. The maximum is 112 points, of which 105 are needed for a first class and 56 for a pass.

#### MATHEMATICAL ARTIUM.

The mathematical line has, in common with the classical, the first six of the above subjects and in addition :—

- 7 and 8. Four problems in algebra, with an oral examination.
- 9 and 10. Four problems in trigonometry, conics and analytical geometry, with oral examination.
11. Mechanical physics and optics.
12. Chemical physics, astronomy and meteorology.

French and history as before, being counted double, make the number of "Karakters" fourteen. The candidates on this line give two hours a week to classical antiquities or to Latin, or to

reading Greek authors in a translation ; but such work forms no part of the examination.

In 1902 twenty Icelanders passed the examination at Reykavik on the classical line. Their two essays were written in Icelandic ; they presented Danish, written and oral, as a foreign language ; of the two optional languages they all preferred German to English.

In 1902, 345 candidates passed Artium, 196 on the classical line and 149 on the mathematical. Twenty-five of them were women and fifty-eight privatists. The average of successful candidates for the last ten years is 391 ; and the numbers differ from those in Norway in showing a tendency slightly downwards rather than upwards. The mathematical or modern line is four times as numerous as it was twenty years ago, but in its present form does not seem likely, as in Norway, to change places with the elder line. It will be seen how much fewer the privatists are in Denmark than in the sister country.

#### HIGHER SCHOOLS, PUBLIC AND PRIVATE, BALANCE ONE ANOTHER.

If it be asked from what schools these 345 "students" or under graduates proceed, it will be well first to put on one side the twenty Icelanders as somewhat exceptional and forming in any case a set by themselves. The remainder come from thirteen State schools, most of them of early date ; from Herlufsholm, which is conducted like a State school ; from four communal or town corporation schools, which occupy a place midway between the State schools and the private schools ; from sixteen recognised private Latin schools (thirteen day schools in Copenhagen and three boarding schools in the country) and from the ranks of the privatists. Most of the latter have been taught in private courses or classes, a few in four private Latin schools on their way to recognition, some perhaps at home. Of the thirteen State schools the Metropolitan skole in Copenhagen, which is the only State school in the capital, and has always more applicants than it can receive, dismisses rather more students than any other school in the country. This school and Herlufsholm are the only Latin schools that have not taken to themselves a Realskole. Herlufsholm and Söro are public boarding-schools, more like English public schools, perhaps, than any other schools on the Continent, and in that respect stand quite apart from other schools in the north of Europe. All the State schools have property of their own, which is managed and since 1892 has been largely supplemented by the State ; but one of them, Sorö Academy, whose chief benefactor was Ludvig Holberg, is so rich that the State applies half its revenues to quite a number of educational and scientific objects. Of the private schools those in Copenhagen are by far the most important, and some account of their recent development must be given below. If we endeavour to ascertain the relative contributions made by these different

schools, we find that in the five years ending with 1902 the State schools, including Herlufsholm, sent 764 students to the University, the four communal Latin schools 63, and the private Latin schools 684, and that there were also 371 privatists. If the communal schools be reckoned with the State schools, and the privatists with the private schools, we find that State schools dismissed 827 and the private teachers 1,055. If we look at the number of pupils, reckoning only those over twelve years of age, we get a similar result. In the year 1901-2, there were in the thirteen State schools 1,583 pupils, 102 at Herlufsholm, and 364 in the four communal Latin schools, making altogether 2,029, whilst the fourteen private recognised schools had 2,044, without reckoning 433 privatists.

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*How this Balance has come about.*

How has it come about that alongside these State schools, costing the country every year large sums of money, there have grown up other schools, doing the same amount of work and satisfying the same tests, costing the State next to nothing beyond the expense of superintendence, and yet contriving to be the chief avenues of new ideas and needed developments? The prosperity of the one does not mean the downfall of the other. What happy influence has brought these two kinds of schools of different origin and to some extent of different methods to work in harmony side by side, each influencing the other for good?

The result, as happy as it was perhaps unforeseen, has not come about through any abdication on the part of the State of an oversight which it alone can exercise, but in the main by providing equal opportunities to qualified teachers, public and private, of presenting candidates at the leaving examination. Private enterprise and zeal have done the rest. There has been fair play. The State with its long purse has not entered into ruinous competition with other providers of higher education. It has not discouraged but encouraged the educational employment of capital. Though the fees at the State schools are as low as two-thirds of the prime cost, this, coupled with the fact that it is a more frequent occurrence to discontinue a State secondary school than to open a new one, has still left the other schools a chance.

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**GROWTH OF THE RECOGNITION BY THE STATE OF OTHER SCHOOLS  
THAN ITS OWN.**

It may be well to trace the development of the system.

The regulations for the higher State schools were revised and consolidated in 1809; and there we read amid much else that the right to present candidates at the leaving examination, which was then conducted by the professors in the University buildings, "belongs . . . (b) to principals of existing private institutions, in which the instruction is given in the same subjects and to the same extent as in the fully-equipped State schools. . . . All

others, be they principals of institutions or private teachers, must, before they exercise the aforesaid privilege, seek and obtain permission from the authorities. Whether the privilege can afterwards be granted to an institution depends on its being equipped, and provided with teachers, in such a way as to present a reasonable expectation that it can bring candidates to the required degree of maturity" (p. 21, Vol., II. of Weis and Hage's *Gældende Retsregler for det højere Skolevæsen i Danmark*. Copenhagen, 1891).

When in 1850-52 this leaving examination ceased to be a University matter and was transferred to the schools, it was arranged that "the headmasters of the private schools who (1) through a sufficient number of classes conduct the instruction over the same grounds and up to the same limits as in the public schools, and (2) at least as far as regards the last three school years conform on the whole to the time table in force at the public schools," should hold the right of "dismissal" to the leaving examination (*ibid.* p. 90). As these words for many years contained the fullest expression that could be found of the conditions of State recognition in Denmark, it is desirable to see how they are interpreted by the Department. In some remarks, appended by the Government to the Bill (now the law) of 1903, we read (p. 38): "In the Bill for a reform of the higher school which was brought forward in 1900, the second of the two conditions above was allowed to drop, whilst the first was retained. But the feeling of the Government was that neither ought the first be retained in any strictly literal sense, and so much the less because the expression "*a sufficient number of classes*" is all too vague and may give opportunity for quite an arbitrary interpretation. Of course the communal and private schools must be required to conduct the instruction of their pupils towards the same goal as the State schools just as the ordinary rules for good order must be the same in both kinds of schools; but the same goal can be reached by different ways and with quite a different arrangement of the time table in details; and the Government cannot think it right in this matter to lay too tight a bond on the freedom of individual schools in making the arrangements which they are persuaded are most serviceable." State regulation of education is evidently not incompatible with a large amount of freedom in Denmark.

Since 1890 it has been necessary for new Latin schools (but not for Realskoler) to obtain a double permission from the Department: (1) permission to begin the school; (2) permission some years after to have the leaving examination.

Before the first permission can be given, the applicant—

1. Must give evidence of upright and honourable life.
2. If he is not a University graduate, he may very exceptionally be allowed to offer evidence (*a*) that he has taught well for five years in such a school as he proposes to erect and (*b*) that he is "accustomed to teach in three school subjects and is in a position especially in one of the chief subjects of the school

(Danish, Latin, Greek, French, history, mathematics or physics) to conduct the instruction through all the school classes up to the leaving examination."

3. He must present a full plan of instruction, showing that the school hours amount to thirty a week, not reckoning singing and gymnastics. To the latter subject four hours a week should be given.

4. School buildings, furniture and apparatus must be satisfactory (*ibid.*, I., 261).

When he has added class to class, and in five or six years has pupils ready for the University and therefore applies for the examination right, he has to satisfy pretty much the same requirements as before; and so in most cases the application will not be much more than a matter of form. But if the applicant himself have not the "required training" (*i.e.* in most instances, if he be not a university man), it is now stipulated that it shall be his duty to appoint a classical graduate with one of the old languages as his chief subject to be a teacher in these subjects in the two highest classes, and that particulars of the choice be sent to the department (*ibid.*, I., 263). The higher girls' schools more especially must in their early development have suffered greatly, but for some such provision as this, for it is only since 1875 that women have been admitted to degrees in the University of Copenhagen.

#### INSPECTION.

The oversight of these thirty-four schools (including the Realskoler connected with thirty-two of them) is committed to a body of three inspectors, who act also as confidential experts to the Government. One has charge of the language teaching (this post was held by Madvig from 1848 onwards); the second of mathematics and the third of natural science. They are all professors or docents in the University and can give only a portion of their time to the work of inspection.\*

#### REALSKOLER.

##### *History of the Realskoler.*

The recent history of the Realskoler shows a more remarkable development still. The movement for school instruction of a more modern kind began in Copenhagen as early as the end of the eighteenth century and was chiefly promoted in two schools which are still in vigorous existence—the Efterslægts-skole and the Borgerdyd-skole. By and by several of the State schools had

\* In 1906 a change in the inspection of these schools was made, Dr. Tuxen, headmaster of one of the United Latin Schools in Copenhagen, becoming sole inspector, and giving the whole of his time to his duties. His salary is 6,000 kr. a year, and to this 2,000 kr. is added for assistance in the work of inspection.

Real classes added to them, until at last in 1855 the State organised an intermediate leaving examination in modern subjects not differing essentially from the present *Präliminär*. It was found convenient four years later to have a lower examination of the same kind; and alongside of these two were two similar ones (the earlier dated from 1838) conducted by the university—all four being used as preliminary examinations for those who wished to be solicitors, dentists, veterinary surgeons or to be students at the polytechnic school. None of these examinations had 200 candidates a year; but as they were evidently in increasing request, the State in 1881 consolidated the four into one. In 1882 there were forty-two schools with about 3,500 pupils which had the right to hold this new examination. The map in Vol. 1 of Special Reports will show how these schools went on covering the land down to 1896; and in the succeeding seven years, they increased 20 per cent. more, so that in 1903 they amounted to 165 (133 *Realskoler* pure and simple and 32 in connexion with Latin schools). One hundred and twenty of these schools lie outside Copenhagen and its immediate neighbourhood; and twenty-seven in towns of 2,000 inhabitants or under. On an average each of the 124 serves a population of a little over 4,000. There is scarcely any small town or island to which they have not made their way.\*

#### *Causes of their Success.*

It is by the offer of the examination-right and the State recognition thereby gained much more than by the expenditure of large sums of public money that this result has been brought about. The right of examination is a privilege highly prized, giving a character of distinction to a school and conducing directly to its success and permanence. Nowhere will the conditions on which this right is bestowed on the *Realskoler* be found fully set down in black and white, though it will be readily understood that the

\* The following tables gives the number of pupils in recognised *Realskoler* (both in the lower classes and the four Real Classes proper) from 1891 to 1905. Some part of the increase is due to the fact that co-education has become much more common in Denmark than formerly during these years:—

On 1st June, 1891,	the pupils	amounted to	11,089
" "	1892,	" "	11,791
" "	1893,	" "	12,477
" "	1894,	" "	14,847
" "	1895,	" "	15,708
" "	1896,	" "	16,507
" "	1897,	" "	16,801
" "	1898,	" "	17,388
" "	1899,	" "	19,089
" "	1900,	" "	19,605
" "	1901,	" "	20,684
" "	1902,	" "	21,447
" "	1903,	" "	22,661
" "	1904,	" "	23,444
" "	1905,	" "	25,616

methods which have for many years been employed in the recognition of communal and private Latin schools will with the necessary changes be found equally useful for the newer *Realskoler*. At p. 303, Vol. I., of Weis and Hage, where the right of examination for *Realskoler* is treated of, it is stated that "at every school, which desires to hold or to retain the examination-right, certain requirements must be satisfied with regard to the principal's qualifications, the staff, the arrangement of the school, the number of pupils, the buildings, and the apparatus. In the absence of special regulations, the real issue depends on the chief inspector's discretion." That is, he will take the circumstances as a whole into his consideration, and finds it easier to do so if he is not hampered by hard and fast conditions. But these conditions are not doubtful, as the many recorded instances will show.

Of the head-masters, perhaps two-thirds are graduates, the remainder are either seminarists or possess some equivalent qualification. In the case of head-mistresses, the Inspector is satisfied if he finds they are capable experienced teachers. Of the importance attached to the staff one may judge from the fact that every recognised school pledges itself to report at once to the department any change in its teachers. In the yearly issue of *Asmussen's Meddelelser*, sixty-seven of the schools outside the capital—all boys' schools to which in these last years there has been an accession of girls to the extent of one-third—give the fullest particulars with regard to each member of the staff—name, age, qualification, length of service, subjects taught and the classes in which they are taught, number of hours a week spent in teaching. Twelve of them are communal schools and have 102 teachers on the permanent staff, of whom fifty-nine are graduates, twenty-two seminarists, nineteen women, and two are undescribed. The remaining fifty-seven are private schools and have 373 teachers on the permanent staff, of whom 130 are graduates, 92 seminarists, 135 are women, with 15 others. It is not required that the buildings have been specially erected for school purposes if otherwise suitable. Recognition may be refused or deferred if there be no suitable building for gymnastics. Sometimes when the Inspector is much impressed by a teacher's work and feels the importance of its continuance in the neighbourhood, he may suggest the throwing out of a room here or a new building there, and offer to do his best to get a State loan at a low rate of interest. The abstracts of the yearly income and expenditure of these sixty-seven schools show clearly the amount paid for interest and yearly repayment of loans incurred for the purpose of extensions and improvements. In some instances this item amounts to a fourth, a third or even a half of the yearly remuneration that falls to principal and assistants.\*

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\* These particulars appeared for the last time in the yearly report that was published in 1903. Room could no longer be found for them, as the number of recognised schools was becoming greater every year. The particulars, however, will appear by and by in some more compendious form.

*Grants to Realskoler, Communal and Private.*

The second way in which the State has helped the growth of these private schools in thinly populated neighbourhoods (the country and the smaller towns) is by grants of money, which in 1902 were increased 50 per cent. On p. 310 of Weis and Hage, Vol. I., the State thus justifies its action in so doing: "The condition of State support is just this, that the existence of the school in question is necessary in order that the population around may have opportunities of higher school instruction. . . . Realskoler for girls may everywhere outside Copenhagen expect a grant if the circumstances make it necessary. The State-grant in every case depends on two considerations (1) that the school cannot go on and develop its activity without pecuniary help (2) that there is a real demand for the school.

To prove this last point it must be shown that the school has not too small a number of pupils and that commune and *amt* according to ability make a contribution to its maintenance."

The State thus acknowledges itself responsible for the secondary as well as the primary schools of the country. It finds no difficulty in giving to communal and private Realskoler the same amount of help on precisely the same terms; and it will be noticed that in so doing it is guided by no feeling of tenderness or even justice to existing schools, but by a regard to the public good. The fees at these schools range from £2 a year to £8 according to age, and could hardly be higher if there is to be any wide use of them. But this alone is not enough to maintain the schools in efficiency, and above all to give the teachers anything like an adequate remuneration. And so we can hardly be surprised that the State by slow degrees is increasing the amount of help. In 1902 a new law was passed for the special purpose of helping the private recognised Realskoler in the country districts. As a consequence of this law the number of aided schools was increased from fifty-three to eighty-one and the yearly amount distributed from 65,000 kr. to 100,000 kr.\* A pension fund was established at the same time, not only for the aided Realskoler in the country, but for the unaided Realskoler in the capital. And instead of the old, somewhat hap-hazard rules for distributing the grants, new ones were now framed on a systematic plan, with this immediate result, amongst others, that the girls' schools henceforth received from three to four times as much as had been given them before. The chief of these new rules are—

1. The aided school must have been recognised (*i.e.*, must have had the examination-right) for at least two years.

2. It must have at least sixty pupils, of whom half must be over twelve years of age.

3. The average salary of teachers working full time (thirty-six hours a week) must not be less than 900 kr. a year. (The

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\* This sum was increased by 35,000 kr. in 1906.



elementary school law of 1899 fixes 900 kr. as the commencing salary of trained men teachers in elementary schools.)

4. The school must pay every year to a pension fund not more than 4 per cent. of the aggregate expenditure in salaries, including the headmasters' remuneration. The percentage paid at present is 2½.

5. The staff must pay 2 per cent. of their salaries to the same fund, and to this the State adds other 2 per cent.

6. The State contribution must be accompanied by contributions from the town, parish, and county councils, which in the aggregate must reach at least one-fourth of the sum received from the State.

7. The grant consists (a) of a small fixed sum, 400 kr., and (b) of larger sums that depend on various considerations, e.g., on the extent to which salaries rise above the minimum in (3) the liberality with which repairs and extensions have been carried out, the proportion between the number of leaving certificate holders and the entire number of pupils. But no single grant must exceed 2,500 kr.

8. Two-fifths of the grant must be expended in giving free places or half free places to children of limited means.

Some freedom is allowed the department in granting exemptions from one or two of these conditions, so that it may be able to meet highly exceptional cases. It will be noticed how deftly these rules have been framed. It can hardly be said that a penny of the money goes direct into the headmaster's pocket. Even if the school gets the highest grant, 2,500 kr., 1,000 kr. of this must be devoted to free places. The remaining 1,500 kr. help the school to provide better teaching and make its equipment more complete. The help is given really to the public. The schoolmaster is helped only as he himself is incited through better school arrangements to render greater help to the community around.

#### *Inspection of Realskoler.*

The 133 Realskoler that stand by themselves without any connexion with a Latin school have a separate inspection of their own. The chief inspector has 5,000 kr. and his assistant, who is responsible for mathematics and science, 3,000 kr.; and both of them devote the bulk of their time to the work.

In these ways then the Danish State during the last twenty years has, at an insignificant expense, fanned every worthy effort, from whatever quarter proceeding, into greater activity; and secured a higher education on modern lines and at a reasonable rate for over 21,000 young people. The old cathedral school, the schools of the town corporations, and private individuals, working from various standpoints, and with varying advantages and disadvantages, have all been incited to do their best on common lines. The twelve

cathedral and lærde skoler contribute 595 to this total; the thirty-two corporation or communal schools, 5,142; and 111 private schools (most of them, be it remembered, slightly helped by the central and local authority), 15,710.\* The latter, it seems, is an agency that moves more nimbly and readily, penetrating to places, and influencing sections of the population out of the reach of the other two. It is, as we shall see, subject to some defects of its own, that call for constant watchfulness; but when every deduction is made for these it renders at an insignificant cost an indispensable contribution to the national advancement.

#### PRIVATE TRAINING COLLEGES.

The spirit in which the State in Denmark regards approved private enterprise may also be clearly seen from the case of the private training colleges for elementary teachers. These are recognised in much the same way as the private secondary schools. "Private seminaries, both for men and women," says section 7 of the Seminary Law of 1894, "which in admitting students follow the rules of section 2, and in three one-year classes conduct the instruction through the same subjects and to the same limits as the State seminaries (including the practical training of teachers in the normal school) can for six years at a time, after previous approval of buildings, apparatus, and staff, obtain the right to send up candidates and hold the qualifying examination" according to the rules prescribed for State seminaries. All the women teachers and a majority of men teachers are trained in such private seminaries. In 1902 eighty-eight men from the four State training colleges passed the examination qualifying for fixed employment in elementary schools and the thirteen private training colleges at the same examination passed 127 men and 89 women, making altogether 304 (29 per cent. in State colleges, and 71 per cent. in private). Of these only one passed as a privatist. That is, all the 304 except one not only passed the examination but had previously gone through a training college. Only under very special circumstances is a student allowed to present himself at the examination who has not passed through a training college.

The qualifying examination, part of which is held at the end of the second and the rest at the end of the third year, is conducted for the most part like Artium. The first part of the examination consists of, (1) drawing from the round; (2) writing; (3) arithmetic (written and oral); (4) mathematics (written and oral); (5) physiology; (6) natural history; (7) geography; (8) mother tongue (written and oral); (9) religion; (5) (6) (7) and (9) being oral examinations only. The first seven subjects are finished in the

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\* The corresponding numbers on the 1st June, 1905 (three years later), are 1,354, 6,643, and 17,619, making a total of 25,616.

first two years, but the eighth and the ninth are continued into the third year. At the oral examinations the teachers examine in the presence of the censor, and share with him the responsibility of assigning the marks. The censors instead of being the higher teachers from another seminary are members of a specially appointed Examenskommission consisting of thirteen persons, whose yearly cost to the State is 31,000 kr. The Chairman of this Commission acts as consulting expert to the department; and when a new seminary applies for recognition, is practically responsible for giving or withholding the examination-right. The maximum of marks for the first seven subjects of the first examination is fifty-six. Unless the student gain at least 30½, he cannot present himself at the second examination.

This second examination consists (1) of gymnastics; (2) singing and music; (3) history; (4) pedagogik (written and oral); (5) ability to teach (written and oral, the latter counting double); (6) mother tongue (an essay, for which four hours are given, and an oral examination); (7) religion (written and oral); (8) needlework for women candidates, including the drawing of patterns.

In order to pass, a candidate must (1) obtain rather more than half the maximum marks and (2) not fall below a certain minimum in arithmetic, history, Danish (written), Danish (oral), and religion; the minimum he must not fall below in "Capacity to teach" is higher than this; but if the rest of the subjects be in good order, this last one may be repeated in some succeeding year, for the purpose of improving the general character of the certificate. Successful candidates are arranged in six divisions, so that every opportunity is given for distinguished merit to declare itself.

A candidate may also upon his own request be examined in German, English, French or Swedish and have the result entered upon his certificate, but without any effect on its main character.

It would be quite impossible for the private seminaries to send out into the schools so many as 71 per cent. of the trained teachers if the State were not keenly alive to the value of their co-operation and gave them corresponding help.

That help consists of—

1. A loan not exceeding 5,000 kr., free of interest, that shall be applied in the extension and improvement of buildings, class-rooms and furniture. The loan not to be called in, as long as the seminary remains recognised. The State calls for suitable security, but does not insist on a mortgage.

2. A grant is given that amounts to one third of the salaries paid to teachers on the staff, the principal's remuneration for this purpose being calculated according to the average salary of his colleagues. The grant under this head not to exceed 3,200 kr.

3. A further sum of 5,000 kr. which is distributed among the private seminaries, for carrying out repairs; one half is

assigned according to the number of successful candidates during the last three years ; the other half is given according to the Ministry's discretion.

Further help that may be needed is decided when each year's estimates are passed.

4. A yearly grant of 1,200 kr. is made to each seminary for the expenses of the normal school (and the local authority which has so many children taken off its hands makes a further grant of 25 to 28 kr. for each child).

5. When a teacher has worked fifteen years in such a seminary he may expect a pension (1,000 kr. was granted in a recent case).

6. The students of the private seminaries share equally with those of the public seminaries in the 80,000 kr., which is distributed every year in bursaries of 300 kr. and under, to students needing help.

The four public seminaries cost the State 145,000 kr. a year, and the thirteen private seminaries 51,000 kr., without reckoning the cost of the examenskommission and that of the bursaries to students.

Students both in public and private seminaries defray the cost of board and lodging (about 300 kr. a year). The cost of instruction in the public seminaries is 40 kr. a year. In the private it varies ; but 150 kr. may be regarded as a usual sum. This larger fee, with some small profits from boarding arrangements and the grants from the State, provide an income, far indeed from sufficient to tempt a man's cupidity, but enough for the modest wants of men and women who find their happiness in such work. They find in it a career alike honourable and useful, whose monetary reward, if small, is yet higher than that of many a parish clergyman. As one sees them at work or hears of the regard in which they are held, it is impossible not to admire the process of natural selection, by which men and women of such ability and earnestness have been drawn to the help of the State. They are not, of course, more able and earnest than their public brethren ; some of them may be less able. But their greater freedom makes their work tell more ; their very position obliges them to turn their opportunities to best account. They add freshness and variety to the work ; and in training freshness and variety are some at least of the elements of efficiency. Two of these private training colleges are worked in connexion with girls' secondary schools, and the abler members of the staffs work both in school and seminary ; one is conducted along with a Folkehøjskole ; two others, in east and south-west Jutland, are near State secondary schools, whose staffs give much assistance in their spare time. In one seminary there is a Grundtvigian leaning ; another is favoured by the friends of the " Indre Mission " ; but most of them have no special ecclesiastical bent ; and all are owned by individuals. Three are for men only ; four for women only ; in

six co-education is found. The four in the capital have on their staffs many men from the university, who would not be available in the country; of the rest, one is in S. Zealand, one in Fünen, one in Bornholm and six in Jutland. It is not the least advantage of this wide distribution that many students of slender means can pass through the seminary whilst living at home. In more ways than one it seems clear that these private seminaries make both for efficiency and economy.\*

#### SECONDARY SCHOOLS IN THE CAPITAL.

The supply of Secondary Schools in Copenhagen and its suburb Frederiksberg is such as to call for very special treatment. It is of three kinds. Of the first kind of schools, those that prepare for Artium, there were in 1902 fourteen, with an aggregate of 5,062 pupils (1,858 in the gymnasial classes and 3,204 in the Realskoler attached to thirteen of them). Of the fourteen, one—the *Metropolitanskole*—is a State School with 200 pupils; it is the only one of the fourteen without a Realskole attached. Two are girls' schools, and the remaining eleven are for boys. A fifteenth school, a mixed school for boys and girls, was added in 1903. But as one of the others was discontinued the same year, the total remains the same.

Schools of the second kind are Realskoler only. Of these there are seven for boys and ten for girls, with an aggregate of 3,438 pupils. Both these kinds of schools are, of course, under the control of the State. To these eighteen Realskoler, one of a new kind was added some years ago, the *Belønnings-skole* (Reward School) in Istedgade; and it received the examination right for the first time in 1903. It is a Communal School and consists of a hundred of the best boys (twenty-five every year) chosen by competition from the Elementary Schools of the City. Two-thirds of these Elementary Schools are free; at the remaining third there is a fee of one krone per month. Of the boys who are successful in the competition, more than three-fourths come from the latter kind of school. The fee in the Reward School is one krone a month; with this school is connected a *Borgerskole* of 345 boys, held in the same building and taught by the same staff. The *Borgerskole* has fourteen as the usual leaving age, i.e., it lacks the two higher classes of the Realskole. It is open to the children of every citizen on the payment according to age of two to six kroner a month (somewhat less than half cost price). This combined school is the same, in a developed form, as that discussed on page 605 of Vol. 1 of Special Reports, whose first unfortunate effect

\* Professor N. A. Larsen in *Vor Ungdom*, January, 1907, notices some defects in these private seminaries. He would in particular have the entrance examination made more comprehensive. And he urges, on certain prescribed conditions, an increased State grant,

was to draw 150 pupils from neighbouring State-recognised Realskoler. Fifty per cent. of the pupils are sons of master artisans or journeymen, and it may be concluded that at least half the pupils would not be able to pay the ordinary fees in other Secondary Schools. It seems strange that the girls have no share in this Reward School.

These aided boys have not the option of proceeding either to the *Belønnings-skole* or (by means of scholarships or free places) to one of the eighteen State-recognised Realskoler in Copenhagen, for neither State nor Commune has provided free places in the latter, whether for boys from the Elementary School or for others, though this is freely done by both in the country.

From Cordt Trap's *Kjöbenhavns-Skolestatistik* (1900) it appears that of all the children in school attendance in Copenhagen in 1844, 10·8 per cent. (all boys) were in these two kinds of Higher Schools under the supervision of the State; and that in 1900 the percentage was 13·5 (8·3 boys and 5·2 girls).

Schools of the third kind comprise all schools, whether ordinary Private Schools, Denominational Schools, or schools of benevolent societies, that lie between the State-recognised schools already considered, and the Communal Elementary Schools (*Folkeskoler*). All these schools, unlike the corresponding schools in Frederiksberg and the provinces, are recognised in a very special way by the Commune, for in Copenhagen, by a law passed in 1844, five years before the country received its constitution, no school may be opened without consent from the Commune. (Vol. 1. Special Reports, page 607.) And that consent is not given unless the applicant shows either that he is a graduate, or a seminarist with adequate knowledge of German, English or French; that he has been teaching with success for three years, is twenty-five years of age and of good character; particulars must also be given with regard to the aim of the school, the number of classes and the subjects taught; and the School Commission of the parish must be satisfied with regard to the buildings. A Direktor with two Vice-Direktors, one for the Elementary Schools and one for the Private Schools, exercises oversight over all the schools in the capital, except those the State is responsible for. The Directors may visit the schools when they will; they are invited to the various school functions, and receive copies of the school reports. But it will be understood that their oversight makes itself more felt in giving or withholding consent to establish the school than in the conduct of the school once established. There were in 1902, 4,453 children in schools of this kind—660 in schools supported by their own means, 948 in schools partly so supported, and 2,845 in schools entirely supported by school fees (756 boys and 2,089 girls). To these must be added 1,836 children in corresponding schools in Frederiksberg, which has a separate municipal government from that of Copenhagen.

*State and Commune not Animated by the same Spirit.*

Though the Commune, by thus licensing these schools in the capital, gives a guarantee that they do not fall below a minimum standard, there seems to be no evidence that it has ever sought to secure the continued existence of even the best of them, or to guard them from its own impossible competition. Since 1844, both at top and bottom, they have been slowly but steadily decreasing. The schools at the top one by one seek and gain recognition, and so pass from the oversight of the Commune to that of the State; and those at the bottom, as the Board Schools increase in number and quality, have shrunk more and more, especially in recent years. They have shrunk absolutely from 6,900 pupils in 1894 to 4,450 in 1902; and they have shrunk still more relatively. In 1844 Copenhagen had a population of about 126,000; and 46 per cent. of children in school attendance were in these schools, unrecognised by the State, but licensed by the Commune, whilst 42 per cent. were in the Board Schools. But in 1900, when the population had more than trebled, and the artisans had begun to form a much larger percentage of the population than before, the 46 per cent. had sunk to 10 per cent., and the 42 per cent. risen to 76 per cent. Of the 10 per cent., two-thirds are girls and one-third boys; and most of the boys belong to various Denominational and Benevolent Schools, supported by private funds—are, in fact, in schools not very different from the Board Schools. The licensed private schools for boys are, therefore, all but extinct. It will thus be seen that such schools have little chance of continued existence in Copenhagen, except they have a full complement of classes of such excellence as to win the higher and more difficult recognition of the State; and even that exception, as we have seen, does not in every case hold good.

It will now be clear that what was said above of the Danish State cannot be said of the Commune in its capital, viz., that "it has not with its long purse entered into ruinous competition with other providers of education. It has not discouraged, but encouraged, the educational employment of capital." It exhibits at least a tendency (and the same thing may be said of the Commune of Christiania,) not to care for the good of education as a whole, but to fight for its own hand, and subject its competitors to a slow but inevitable death. How far the tendency will go it is impossible to say; but if it go much further, two things will happen: (1) The freedom and variety of educational effort will be so much diminished as to impair general educational efficiency. It has already been said by one competent observer (the late Frk. Frederiksen in *Vor Ungdom*) that the progress of Board Schools in Copenhagen is outward rather than inward, and that they are not furnishing to the State such men of mark as have come from the humbler schools in the country. (2) Capital will be frightened away from the schools—already, in fact, begins to be frightened away. In 1901 nine of

the principals of the large Latinskoler, whose activity did not seem likely to be affected for years to come by anything the Commune could do, were not unready (as we shall see below) to avail themselves of an opportunity of extricating their capital from their undertakings. The remuneration for anxious and responsible work, whether for principals or assistants, is already too low; and should it sink only a little lower, either State or Commune will be involved in an unwelcome expenditure, without any corresponding increase in the efficiency of the schools, or the life and energy with which they are carried on.

*Secondary School Attendance in Copenhagen compared with that in large English Cities.*

There are therefore in Copenhagen and Frederiksberg, which have a united population of 408,000, 15,000 boys and girls in schools usually classed as secondary, or 3·6 per cent. of the population. And in Christiania we saw that the percentage is not lower. We have not in England as yet any means so efficient as in these northern countries for ascertaining the exact number of children in secondary school attendance, and the figures of our 1897 return must therefore be somewhat under the mark. It is there stated that the population of England (excluding Monmouth) was, in 1897, 29,140,945, and that in June, 1897, there were 291,544 pupils in secondary schools, or just over 1 per cent. And this is the percentage that also obtains in our largest cities—in London, Birmingham, Liverpool, Manchester. It is only in cities like Bristol (with Clifton) and Brighton that the percentage rises as high as 2½. The difference does not end there, for these schools across the North Sea are not only more, but better. The English schools are of every degree of excellence or the want of it; but those in these Northern capitals satisfy, as to two-thirds of them, the somewhat severe requirements of the State, and more than half of the remainder satisfy those of the Copenhagen Commune. Danish and Norse parents, moreover, have incomes much lower than ours. What is there about these schools that nevertheless makes them appreciated to such an extent? It might be difficult to give an exhaustive answer. But it is quite certain that at the time and place neither State Schools nor Communal Schools nor yet Private Schools (as we know them in England) could have produced such a result. In these two capitals it is schools compounded of State recognition and private initiative which have both created the demand and supplied it—schools that lack the rigidity and excessive adherence to use and wont that too often characterise the State School, and that, on the other hand, display but little of those deficiencies in buildings and equipment, and that poverty of qualifications in the staff, that cling, at least in part, to too many of our own Private Schools and small Grammar Schools. In



Copenhagen 95 per cent. and in Christiania 85 per cent. of the secondary instruction is given in Private Schools. It is wise co-operation, and not ruinous antagonism or sublime indifference on the part of the powers that be, that has enabled private initiative so all but completely, and on the whole so efficiently, to cover the field.

#### *Co-operative Secondary Schools in Copenhagen.*

Of the thirteen private State-recognised Latinskoler existing in Copenhagen in 1901, nine were amalgamated in that year into one institution. It came about in this way. These schools in the previous twenty years had renewed their buildings in a very handsome fashion ; and finding the consequent burdens hard to bear, they presented a petition to the Ministry in 1892, asking for the same amount of help as was given to Latinskoler of like kind outside the capital. The Ministry thereupon asked if it would not be possible for the schools to form themselves into one institution, and thereby effect considerable economies in management, besides securing other advantages. Nothing came of the suggestion at that time, but some relief was given two or three years later by the substitution for the second mortgage of a State-guaranteed loan. It is no wonder that in the next petition (autumn, 1896) 339 assistants joined 18 principals in asking for some State contribution for the increase of salaries, and for the formation of a Pension Fund. For in the previous ten years a change had taken place in the staffs of the schools, and the salaries that were formerly fairly sufficient as long as some considerable portion of the staff were young students on their way to other employment, became far from sufficient, now that a larger proportion of the teachers was on the permanent staff, through the popularity of the special teacher's degree (*candidatus magisterii*) which had been instituted in 1883. It was found that whilst the headmasters were not receiving for their labour, capital and risk more than £300 to £400 a year, the 264 men assistants were remunerated at the average rate of 1s. 3d. an hour, and the 142 women teachers at the rate of 10d. Though it was felt that a substantial increase was imperatively necessary, it was not easy to see from what source it should come, for it was shown that as long as the income of the schools remained unaltered, an increase of salaries to the extent of 10 per cent. would bring the schools to "the verge of insolvency, and an increase of 20 per cent. would ruin them."

The petition was referred by Parliament to the Ministry, who in 1899 appointed a Commission to consider the matter. This Commission consisted of Departementschef A. F. Asmussen as chairman, of a merchant who was a member of the Upper House, of a banker, of four of the headmasters, and two assistants. Their report is dated 5th February, 1900, and is printed at length at pp. 194 *sqq.*, of Asmussen's *Meddelelser* for the school year 1899-1900.

The report concludes with thirteen recommendations, the essential parts of which are as follow :—

(1) The eight schools to form, from 1st August, 1900, one institution, to be carried on under the control of the State. (The actual date of the amalgamation was one year later than this.)

(2) The sum for which buildings, land, furniture and apparatus are to be bought is fixed at 1,414,416 kroner.

(4) From the purchase money is to be subtracted 714,813 kroner, amount of two mortgages, for which the institution makes itself responsible. The difference between the purchase money and the mortgages to be defrayed by a loan (ultimately fixed at 600,000 kroner), the interest and repayments of which are to be guaranteed by the State.

(6) The institution to continue the present headmasters in their office at a salary, on conditions set forth in the documents annexed.

(7) A pension fund to be established to which headmasters and assistants are to contribute 2 per cent. of their salaries. (This fund came into existence 1st August, 1903. To the teachers' 2 per cent. the institution adds 3 per cent.; and in spring, 1904, a Bill was passed through Parliament to enable the State to add 3 per cent. more. The pensions provided are on such a scale that a teacher retiring at the age of sixty-five after forty years' service becomes entitled to a pension amounting to two-thirds of his salary.)

(8) The governing body to consist of the nine headmasters, and of three assistants chosen for three years at a time by their colleagues. Its first duties shall be (a) to choose a business director, (b) an executive, which shall consist of three of the headmasters, the business director, and an outside member, a non-teacher, chosen for three years at a time. (The present holder of this office is Kontorchef Weis.) One of the three headmasters to be chairman both of the governing body and the executive.

(9) The governing body to choose each year from its members a Finance Committee, consisting of two headmasters and two assistants. The yearly budget and audited accounts to be laid before this Committee, which shall have a consultative voice in all financial questions, and may, in special circumstances, require its decisions to be laid before the Ministry.

(10) The audited accounts each year to be sent to the Ministry.

(11) In case a headmaster's office is vacant, the governing body lays three names before the Ministry, which makes the final choice. The governing body may propose that a headmaster be dismissed, but the Ministry makes the final decision.

(12) No teacher on the permanent staff to be dismissed until the matter has been laid before the executive, who must on such occasion be reinforced by the three assistants who are members of the governing body. If the position of one of these three be in question, his place on the executive must be taken by a deputy.

(13) The question of erection or reception of new schools, or of bringing old ones to an end, to come first before the Finance Committee, reinforced by the business manager, who lay their proposition before the governing body. The decision to be sent to the Ministry for approbation.

There still remained one obstacle that prevented these recommendations from being accepted by both sides. The difficulty the State found in giving the help asked for lay not so much in the fact that the schools were in private hands, as in the further fact that they were institutions subject to competition; and that any help given to them might be rendered inoperative by the erection of new schools in excess of the demand, whose competition would soon bring down teachers' salaries to the former rate. In Denmark no Latin school can come into existence without State permission. And the nine headmasters thought that it would be necessary for the success of the institution that it should have the right, at least for a term of years, of granting or withholding this recognition, so far as new schools in the capital were concerned. Though the Ministry did not meet this request with a direct negative, but gave it a further investigation, they were hardly likely to hand over to another body a power they had themselves never exercised—the power, to wit, of arbitrarily limiting the number of schools. Thereupon (October, 1900) the assistants came forward and saved the situation. They had formed themselves into a strong union, practically embracing all secondary teachers in the capital, and were so warmly in favour of the Institution, as set forth in the Commission's report, as to say, "That they will be no parties to bringing on the Institution a disloyal competition . . . and are persuaded the teachers can only obtain tolerable terms if they themselves contribute to give the Institution a quiet and assured existence." In other words, if new competing schools be opened, there will be no teachers to serve in them. And as the desired limitation was thus brought about in another way, the headmasters were induced to withdraw their embarrassing request.

The next thing was to obtain the money to buy the schools from their previous owners; and early in 1901 there appeared in the Budget a proposal to guarantee the interest of a loan of 600,000 kroner to the Institution (the difference between the value of the schools and the amount of the two mortgages). In the report of the Commission in the previous year it had been remarked that

“in case of some future re-organisation of our entire school system it might be of importance if the private Latin schools in Copenhagen formed one united institution in such a way as to reserve to the State the right either of taking over the same at any time; with all assets and liabilities, but otherwise free of cost; or, as perhaps is more likely to happen, of transferring it to the Commune (*i.e.*; the municipality), with the advantage of thus rendering it easier to bind the lower and higher schools closely together.” The proposal was debated in the Folketing in January, and again in March, and was agreed to by fifty-six votes to nine.

And so from August, 1901, the schools ceased to be purely private, and became, in Danish phrase, a “self-owning Institution,” secured by a legal deed, the terms of which may be inferred from the Commissioner’s recommendations quoted above.

In at least two other cases have private schools in Denmark, on attaining somewhat unwieldy dimensions, passed into similar self-owning institutions. The first was Miss Zahle’s higher school for girls, for many years the only school of its kind in the country; and the second the advanced Folkehøjskole at Askov, of which more below. But in neither of these cases was any representation of the whole staff provided for.

It may not be without interest to add a few notes on the working of the Institution during the two or three years of its existence. From August, 1901, the fees have been raised 2 kroner a month each pupil, so as to provide higher salaries for the teachers. This brings the fees in the last two school years to 22 kroner per month, *i.e.*, 12 × 22 kroner per year. But much of the effect of this has been neutralised through a loss of 300 pupils, due for the most part to an increasing migration of families to suburbs outside the city limits. The 27,000 kroner a year applied to the augmentation of salaries (an average increase of 15 per cent.) has therefore chiefly come out of economies rendered possible by the amalgamation. One school was found to be working at a loss, and has been discontinued, and its pupils drafted into one or other of the remaining schools, whilst the headmaster and the staff have found employment in the same schools at their former salaries. The tendency of the Institution (as with our own Girls’ Public Day School Trust) is thus to have fewer schools and larger, as it is only the larger schools that can be worked at an appreciable profit. This on educational grounds is to be regretted. The building was disposed of to the State to serve as a new home for the *Statens Lærerkursus* (Special Reports, Vol. 1, p. 591). One headmaster has retired through ill-health, and his place has been supplied in the way described.

Of the 2,690 pupils that were in the schools in 1903-4, 409 have their fees reduced to the aggregate amount of 36,000 kroner (88 receive an education entirely free, and 321 at a reduced rate). The Commissioners, at p. 197 of their report, desiderate on the

part of the State, the Commune, or private benefactors a still ampler provision of free places or places half free ; but no step of this kind has yet been taken. If these 409 pupils had the fees paid from one of these three sources, or all three jointly, it would of course be at once possible to double the recent increase of salaries.\*

Though the influence of the Institution is extending in consequence of most of the seven Realskoler for boys being also brought under its management, it cannot be said to have fulfilled the expectations of many of its promoters ; and its deficit in 1905 is such that it has applied to Parliament for a grant of 100,000 kroner. It cannot be surprising, under the circumstances, that everything has been subordinated to the provision of more adequate salaries for the staff. But this increase, modest as it is, has been obtained at some cost. It is impossible in the long run that the headmasters can be as much on their mettle as before ; nor can they, having lost so much of their influence on the appointment of their staffs, be as full of resource and initiative. It is therefore to be feared that in the future the peculiar function of private schools, that of making experiments and initiating improvements, must pass in some measure to those other private schools that have retained their independence.

#### DEFECTS IN DANISH SECONDARY SCHOOL SYSTEM.

It is now time to draw attention to some defects of the Danish Secondary School system. These are, in the main, two : (1) The large number of unrecognised schools that lie between the recognised Higher Schools and the Elementary Schools ; and (2) the low rate of remuneration in the recognised private schools (and *a fortiori* in the unrecognised).

##### *First Defect—Too Many Unrecognised Schools.*

The unrecognised private schools fall into two divisions (*a*) those in the capital already described ; and (*b*) those in about fifty towns and the country districts. The schools under (*a*) being recognised by the municipality, may here be left out of account. It is the condition of the unrecognised schools under (*b*) that constitutes such a blot on the Danish system. Outside Copenhagen no permission to open a private school other than a Latin School is necessary any more than in England. But it is a duty imposed by law on the School Commission of each parish (consisting of four members elected by the Parish Council, with the parish clergyman as *ex officio* chairman) to ascertain that the children in private schools " possess the same degree of knowledge and capacity in the prescribed subjects " as the average pupil in the Public Elementary School.

\* The Frederiksberg Commune is offering 25,000 kr. a year on condition that the State also makes a grant.

This may be done either by requiring their attendance at the half-yearly examination in the Elementary School or by allowing them to be examined in their own school. If the latter course be preferred, the principal must "at least three months before the (first) examination give notice of his school's existence to the School Commission, must show that it has a constant attendance of at least ten children, and lay before the Commission such evidence of his efficiency as it may deem sufficient. . . . It then becomes the duty of the Commission to hold the examination at the school itself, with the school teachers acting as examiners under the direction of the Commission," and, of course, in presence of such of its members as choose to attend. The Commission must also be satisfied of the fitness of the school buildings. A private school thus enters into a sort of relation to the public school. If in provincial towns and country districts the average number of pupils in a class exceed thirty-five and thirty-seven respectively in two successive years, one of the six ways prescribed by the law of 1899 for relieving the pressure is to come to an agreement with a private school to take over so many of the children at a fixed rate of payment. If the school Commission is not satisfied with the school it can oblige the pupils to leave it and attend the Public Elementary School. These powers, when fully used, are sufficient to terminate the existence of a worthless school. But they are exercised in very different ways and with very different results from Commune to Commune. The best results are, perhaps, found in the case of large and wealthy Communes that are able to employ a salaried expert as School Direktor, to take a general oversight of all the schools for which the Commune is responsible. For instance, in the Commune of Frederiksberg, which forms the western suburb of Copenhagen, the powers given by the law are exercised in such a way that the Commune is able to describe every private school within its area as "recognised," *i.e.*, by the Commune (not, of course, by the State).

But it is when we get away from the capital that the evil of schools which are not only unrecognised, but seriously defective, assumes large proportions. In *Vor Ungdom* for 1899, p. 153, will be found some statistics with regard to fifty towns which the editor of that journal collected, with the help of many friends. These figures go to show that on an average 70 per cent. of the children in these towns are in the Elementary Schools, 10 per cent. in State-recognised Realskoler, and 18 per cent. in unrecognised private schools, the rest being taught at home. With these figures the Government returns published in 1900, which are compiled from materials furnished by the Skole-direktion of each Amt, fairly agree. According to these returns, there were in towns outside the capital 8,193 children in recognised Latinskoler and Realskoler, and 16,660 in unrecognised private schools of a secondary or preparatory character. When we ask in what sort of schools

the 16,660 are taught, we learn from *Vor Ungdom* that the condition of 90 cubic feet for each child is generally complied with; that premises, staff, ventilation, playgrounds are often defective; and that in girls' schools foreign languages are best taught, whilst arithmetic and *Anskuelsesundervisning* (*Anschauungsunterricht*) are weak. The picture reminds one of private schools in England before the days of local examinations. In the country the state of things is even worse. There were at the same date 1,850 children in recognised secondary schools (mostly private) and 14,991 in unrecognised private schools. Of these 14,991, 7,000 are children in Grundtvigian Friskoler, which do the same work as the Elementary Schools on freer lines. They draw their inspiration from the Folkehøjskoler, and have powerfully affected the ordinary schools, and been in turn affected by them. By the law of 1899, the State gives them a grant of 35,000 kroner a year, lately increased to 45,000 kroner, on condition that the Commune give a grant also. Deducting the 7,000, we find there are in the towns twice as many pupils in the unrecognised private schools as in the recognised schools, private and public, and in the country four times as many. The broom sweeps cleaner in Norway. In that country there are 4,013 pupils in unrecognised private schools, whilst in Denmark, in a population of like amount, there are 24,600 (without reckoning the 4,500 in Copenhagen, which stand in a class by themselves.) It would be a pity that these schools should entirely disappear in either country, for it is well to have some Secondary Schools that do not work for examinations. It is, however, difficult to resist the conclusion that they are both too numerous and too irresponsible in the provinces in Denmark. But if (1) the Elementary Schools in the country be improved, and (2) the parish skole-commission become more alert, if (3) more of the private schools seek and gain State recognition, and (4) the Communes become more active in Secondary School work, a better state of things must soon come about. None of these four conditions is entirely inoperative; and all four acting together must, if some little stimulus be applied, speedily produce the desired result. That stimulus may well be found in the example set by the two neighbours on the north, and on the east.

#### *Second Defect—Low Salaries.*

With regard to the second defect, the low rate of remuneration in recognised schools, so much has already been said incidentally that it is not necessary to do much more than bring together the various scattered facts. The evil is perhaps greatest in Copenhagen, for there the staffs are of unusual excellence. But that it is also great in the country will be seen from the fact that the State, in drawing up the conditions of recognition in the Act of 1902, felt obliged to fix the minimum average salary of teachers in full employment (thirty-six hours a week) as low as 900 kroner

(£50). It would be misleading to compare such minimum salaries with those in most other countries; but they may usefully be compared with the salaries in Danish Elementary Schools in the same neighbourhoods. According to the Elementary School law of 1899, teachers in towns (and it is in towns that most Realskoler are found) are paid either on the lowest scale, on the middle scale, or the highest scale. The beginning salary on the lowest scale is 900 kroner for men, and 700 kroner for women—amounts which are gradually raised until after twenty years' service they become doubled. The minimum in the Realskoler, therefore, must not fall below that for men in the Folkeskoler; but there is no provision that the salary of the Realskole teachers shall be doubled after twenty years' service.

It must not be supposed that the State in fixing this minimum average salary as one of the conditions of recognition regards it as sufficient. It would be truer to say that the State has placed the figure as high as it can at present venture to do, taking all the circumstances into consideration. That this is so may be seen by giving the actual salaries paid five or six years ago at a school in a town of less than 4,000 inhabitants—a school which may be regarded as typical of many others. It arose thirty years ago from the smallest beginnings, and has now nine classes with 110 boys and girls in them, thirty-seven of whom have school fees paid in whole or in part by State, Commune, or the school itself. There were, including the headmaster, eight permanent teachers on the staff, two of whom were giving half their working time to the school and the rest full time. The first assistant, a university man, had 1,600 kroner a year; the second, also a university man, who was working half time, had 837 kroner; the third, a seminarist, working twenty hours a week, had 337 kroner, with board and lodging, reckoned at 500 kroner; the fourth, a lady seminarist, had 800 kroner, with board and lodging; the fifth, a trained governess, had 576 kroner; the sixth, a lady teacher, with no stated qualification, 420 kroner; and the seventh, the youngest member of the staff, and a lady seminarist, was paid at the rate of 450 kroner plus board and lodging. There were also three visiting teachers, with an aggregate of thirty hours a week. The headmaster, a seminarist, was receiving 200 kroner more than his first assistant, but had five or six boys living with him in his house, and so added materially to his income. If it be added that the fees are from £2 to £6 a year, according to age, and that the greater part of the 2,000 kroner granted yearly by the State, and of the 700 kroner granted by Amt and Commune, is earmarked for the provision of free places, it will be seen that the alternative does not lie between this school and a better one, but between a school like this and none at all.\*

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\* The school now numbers nearly 300 boys and girls. I had special opportunities of watching its working in 1906; and can speak highly both of the excellence of the tone that rules in it and of the work done there.



If, in cases like this, the State had insisted on higher salaries the school must have lost the inspiration and encouragement that come with State recognition in Denmark. Its conditions at the best are far from ideal, but it meets a want, is conducted with spirit and energy, cheerfully rises to the level of State requirements, and without it the boys and girls must have taken a daily railway journey of several miles or gone to a boarding school, or dispensed with the higher education altogether.

But great as has been the success of these schools in covering the whole land in one generation, in bringing the higher education so near to middle-class homes, in awakening a desire for it and then satisfying it (all things considered) so amply, their condition cannot be looked upon as sound so long as the simpler work of the Elementary School is rewarded with the higher salary. Their ablest teachers meet with no adequate remuneration, and are often drawn away to other work; and too many of the rest, however devoted and successful in their labour, have not had the advantage of any complete training.

#### *Attempted Improvements.*

The State is unremitting in its efforts to remedy these defects. The second it seeks to diminish by the opportunities of the *Statens Lærerkursus* already alluded to; and with regard to the first, we have seen that the State, besides increasing its grants 50 per cent., has recently instituted a valuable Pension Fund, and made participation in it necessary to a recognised school.

The Department not only keeps itself posted in the strong and weak points of these particular schools, but takes care (by publishing such particulars as those given on page 75), that each citizen, if and when he will, be kept well posted also. It is as though a strong searchlight were continually directed on the schools, and thereby a public opinion created which has given the force needed for carrying out the recent improvements. It would be hard to think that this force has already spent itself, for it has surely much other work to do.

#### CLASSIFICATION OF SECONDARY SCHOOLS.

Secondary education in Denmark, as apart from technical and professional education, falls into three groups—the *Lærdeskoler* or *Latinskoler*, the *Realskoler*, and the special schools which constitute Denmark's chief contribution to educational advancement—the *Folkehøjskoler*. The thirteen Royal *Lærdeskoler* with their 2,500 pupils, which make up one-half of the first group, have their revenues supplemented by a State contribution of 368,000 kroner a year; the *Folkekojskoler*, all of them private, draw for their 7,000 pupils 400,000 kroner; whilst the *Realskoler*, with close on 22,000 pupils, cost the State 208,000 kroner, of which 131,000 kroner is drawn from

the surplus funds of Sorö Academy, and only 77,000 kroner falls upon the taxpayer. Within the last quarter of a century these schools last-named have, with the concurrence and encouragement of the State, wedged themselves in between the Latinskoler and the Folkeskoler, both of them long-established and powerful institutions which could hardly be expected to regard the new school with particular favour, or to bestir themselves in order to get for it that amount of help and consideration which is necessary for the consolidation of its work and the welfare of the State. The Folkehojskoler have shot up scarcely less recently than the Realskoler; but the ground they hold so effectively was previously entirely unoccupied, and this seems to be the reason why their work has been aided so much more readily and fully than the equally indispensable and useful work of the Realskoler.

#### THE NEW LAW OF 1903.

It now remains to indicate the leading lines of the new secondary school law of April 24, 1903. It consists of 28 paragraphs, whose chief points for our purpose may be arranged under the following ten heads:—

(1) The secondary school, which consists of a four years' Mellemskole (*i.e.*, Middle School), and a three years' Gymnasium is in future to be built (precisely as in Norway) upon the elementary school. That is,

(2) Children from the elementary school pass into the Mellemskole after their eleventh year; and no subject must be taught in the first year of the secondary school which the children of the elementary school are not prepared to enter upon.

(3) The foreign languages in the Mellemskole are English and German. Permission may be given to begin Latin or French in the fourth year. The beginning of Latin in that year will be necessary for any pupil who intends to pass to either of the language lines in the Gymnasium.

(4) At the end of the fourth year an examination (Mellemskole-examen) is held. This is confined to the last year's work, and must be passed before the pupil can enter the Gymnasium or present himself at the Real examen described in (7) below.

(5) But instead of this examination may be substituted a more informal entrance examination (*Optagelsesprøve*, held not at the school the pupil is leaving, but at the one he wishes to enter), sufficient to prove that the candidate will be able to undertake the first year's work in the Gymnasium. (The idea seems to be that the pupil who has gone through all the seven classes of the elementary school shall with some private preparation pass straight into the Gymnasium without entering the Mellemskole; and it is understood that the ministry

attach great importance to this provision. This entrance examination will also serve, both in regard to those who have passed the Mellemskole-examen elsewhere, and those who have not passed it at all, to protect the gymnasium from the influx of pupils not ripe enough to profit by its instruction.)

(6) Sloyd is to be one of the subjects of the Mellemskole, with Domestic Economy for the girls (but this is to become compulsory only by degrees, as the necessary apparatus and rooms have yet to be provided. State recognition is usually granted for three years at a time ; and, at the next renewal of the recognition, the opportunity will come for arranging the date when the Sloyd instruction shall begin.)

(7) Those who do not contemplate going to the Gymnasium may, after passing the Mellemskole examen, stay one year longer at the Mellemskole and pass the Real examen, which is an equivalent to the present Präliminär examen. (That is, they must pass two elaborate State examinations within twelve months. There is moreover nothing in the Law which puts these examinations into relation with one another. The two examinations cannot exist side by side. One must kill the other. The time-table is not to be identical in this final year of school life ; it may embrace, in addition to the obligatory subjects, certain others that may vary from neighbourhood to neighbourhood according to arrangement with the department.)

(8) The Gymnasium comprises three different lines :—(a) the classical line with Latin and Greek ; (b) the modern language line (with Latin but no Greek) ; (c) the mathematical scientific line with neither Latin nor Greek. Only six of the State schools are to have all of these three lines. It will be seen that this three-fold division follows the example of Sweden. The addition of line (b) is a great boon to the Gymnasium.

(9) From 19th of August, 1908, no teacher is to be appointed in any State school unless he has passed an examination in Pedagogik and shown his ability to teach. Here the influence of Sweden has made itself felt. In 1883, a royal ordinance established a new university degree for schoolmasters, entitled *Candidatus Magisterii* (Cand. Mag.) ; and it has since been taken by a large number of the best men entering the profession. That ordinance, after fixing the subjects of the examination, established in addition a proof year or year of practical training for those seeking employment in the State secondary schools. But the last paragraph added that this practical training would be dispensed with "if a candidate has worked at least two years at a school, and has his skill in teaching tested by an *examenskommission*. . . . consisting of three experts appointed by the Ministry, for that

purpose." Not more than one or two candidates have actually gone through this year of training. All the rest have preferred to teach for two years in some private school. The private schools in Denmark, as in Norway, have been the training ground for the teachers in the public schools.

(10) Section 27 of the law enumerates ten matters, some of them of mere detail, which remain over to be decided by "Royal Resolution," *i.e.*, by the Department after conference with school experts. Such a resolution certainly has the advantage that it can be varied or rescinded according to circumstances, without having recourse to Parliament; and so the working of the Act is rendered more flexible.

Before considering the effect of the new law, it may be well to premise that the Danish constitution dates only from 1849; and that although there has often been a decisive radical majority in the lower house, it has not, until the Deuntzer ministry was formed in 1901, been allowed to come into power. No wonder then that the ministry has been eager to make hay while the sun shines and has not paved the way for the new law by such careful, deliberate investigations on the part of all parties concerned as were made in Norway, and more recently in Sweden. Had the Left been accustomed to their fair share of political power, much more time must have been allowed for the preliminary investigations and inquiries.

We saw that in Norway the corresponding law of 1896 introduced four great changes *viz.* (1) an organic connexion between the primary and secondary school; (2) co-education in all State schools; (3) the exclusion of Greek from the secondary school, with the provisional and exceptional retention of Latin in the last two years of the gymnasium; and (4) obligatory sloyd up to the fifteenth year (*i.e.* in the *Middelskole*).

In Denmark changes have been made in all these directions, but in a mitigated form, with the sharp edges rounded off.

1. The first change carries with it as a consequence that the time table up to the eleventh year shall be the same for all children, whether their school education is to end at the earliest possible moment or at the latest. It introduces a cast-iron uniformity. Whether the child be of the most promising aptitudes or of the least promising, it is not contemplated that he shall begin any foreign language, learn anything in fact beyond the three R's, with a sprinkling of history and geography, before his eleventh year. The old method of almost entire disconnexion and want of relation between the primary and the secondary school must be wrong. But it is not clear that the method of connexion which Denmark has adopted from Norway is the absolutely right one.

Accordingly the recognised private schools are using their freedom to begin one foreign language, generally English, at the age of ten instead of eleven. And this they are able

to do, because the law in its entirety affects the State school only. The position of the communal and private secondary schools is determined by section 18, which says that the right of holding the various State examinations "may be granted by the Minister to communal or private schools for a certain term of years and upon the conditions which the Minister appoints." This enables the Minister to take all the special circumstances of the case into consideration.

2. Co-education in both countries was begun in private schools, and on its proving a success was introduced into the State schools (except the *Metropolitanskole* and *Odense*). And now it is obligatory in most State schools, and optional in the private.

3. Greek in Denmark may now be taken at the age of fifteen on one of three lines ; formerly at the age of fourteen, or one of two. Latin, which was formerly begun at twelve, may now begin at fourteen in the last class of the *Mellemskole*. The modernizing example of Norway has pulled its two neighbours, Sweden as well as Denmark, a certain distance, and there they seem likely to remain for many years to come. These northern countries do not possess, in the mother-tongue, languages of more or less universal currency like English, French or German ; and are, therefore, obliged, if they will keep in touch with the other culture lands, to lay greater stress on foreign languages in their schools, and to be foremost in deferring the study of Latin and Greek to a later age.

4. Sloyd is to be found in every recognised school in Norway ; but it may be many years before it is found in every such school in Denmark. These are the exact words of the law : "Instruction in Sloyd or other handwork, and in Domestic Economy for girls ought to be given by and by, as suitable teachers can be obtained, and in so far as circumstances in the Minister's opinion permit of it." And of course, as long as some schools have it and others not, it cannot, as in Norway, form any essential part of the examination that closes the *Mellemskole* course.

The new law is the result of a compromise and bears on the face of it marks of not having been thought out in all its details. And it is not easy to see how it will work out. Some of the matters, which might have been thrashed out in a year or two before a Royal Commission, remain to be thrashed out, after the passing of the Act, by public agitation. The immediate result of the organic connexion between the primary and secondary school will be that the communes will pay increased attention to secondary education. As it is no longer a question of providing a school of different type, but merely of adding one or two stories to the schools they already provide, we may expect to find in the future more communal

secondary schools than in the past. Six or seven communes that previously undertook no secondary school work have already started Mellemskoler; and in three cases the schools are absolutely free. If this last example be widely followed, one of two things must take place. Either the communes will sweep out of existence not only the weak, irresponsible schools, of which, as we saw, Denmark had far too many, but also the State recognised private schools whose healthy competition and more flexible methods cannot be dispensed with; or public aid in much larger amounts must in Denmark, as in Finland, be forthcoming for the latter school. The former is taking place in the smaller towns, where there is room for only one school. In these cases the commune buys the school and either gives the owner a pension or takes over the whole or greater part of the staff, revising at the same time the scale of fees.

The idea of the *Enhedsskole* or Unity School—that the school should be one from bottom to top—has quite a fascination for many minds. It looks beautiful on paper, but in practice is beset with difficulties. The idea is more deeply rooted in the national mind in Norway, more in consonance with the national character, than in Denmark. Even there we saw how keenly alive the authorities were to the attendant dangers, and by what safeguards its practical adoption was surrounded. But to precipitate changes in this direction, to disregard the historical development of the schools, to destroy or endanger a structure that all parties in the State have carefully and successfully built up, to discourage and render impossible the educational employment of capital on lines which the State itself has laid down, is a serious matter indeed. In a circular issued in October, 1906, by the Department itself, it is stated that the new system was pitchforked (*indført ret hovedkulds*) into the schools, that the schools are thereby left to grope in the dark (*arbejde noget famlende*), and all the more so, because the textbooks already in existence contain either too much or too little for the new requirements. Some schools have been unable to find any remedy for the inconveniences and defects that encounter them and have reverted to the old order. And if others too find the situation intolerable, the Department encourages them to take the like course, and urges them to do it without delay.

The *Enhedsskole* meets a democratic sentiment much more than it satisfies democratic needs. For, in Denmark as in Scotland, no boy of parts has ever found any insuperable difficulty in making his way to the University. Many such, like Madvig and Rasmus Rask, have made their way there from the poorest homes. Real democratic needs, as we shall soon see, are met more amply and generously in Denmark than elsewhere, in a school of citizenship attended by young people of all classes in their most formative years, which has given a new zest to life and its occupations, has imparted a marvellous skill to industry, and trained ordinary men and women to take a deeper, more abiding, and enlightened interest in public affairs.

## V. THE LAW OF 1904 IN SWEDEN.

The last of the three countries to reorganise its secondary education was Sweden.

In 1899 a Royal Commission of fifteen persons (*Läroverks Kommitén*) was appointed to draw up a report, which appeared in three thick volumes at the end of 1902. This was circulated and opinions obtained from different quarters with regard to its proposals. An abstract of these opinions and of petitions arising from them was published in 1904 (pp. 208). And finally the Government proposals, bearing date the last day of 1903, were formulated in a document that runs to 310 pages. It is a great tribute to the care and wisdom with which the Commissioners' report was drawn up, that the law which passed the two houses in May 1904 differed to such a slight degree from their original proposals.

I cannot do better than follow in the main Overdirektor Ernst Carlson's very lucid account\* of the improvements introduced by the new law.

## REALSKOLA AND GYMNASIUM.

(1.) The secondary school in Sweden (*det allmänna läroverket*) is in future to be divided into two stages intended for different ages and different degrees of culture—the realskola and the gymnasium. The whole work of the secondary school in Sweden and in Finland has hitherto been arranged with a view to the leaving examination (now to be called *student examen*) at the age of nineteen, though the bulk of the pupils have been obliged to leave school before that age. This was to sacrifice the many for the sake of the few. And even those who went through the entire course and passed the leaving examination were not in many cases well prepared for the business of life. A Swedish merchant with an office in London has told me he has often taken such youths from Stockholm or Helsingfors into his London office, and after some years' trial has found that a London Board School boy who has attended evening continuation classes has proved himself superior in office work to men who have passed a leaving examination which is almost, if not quite, as difficult as a University pass degree. One wonders that Sweden has been so much longer than the two sister countries in removing this reproach.

The secondary school is, as heretofore, to be built on the third year (instead of the fifth, as in Denmark and Norway) of a good elementary school; nor, considering how small are the expenses of secondary education for boys in Sweden, relatively to other

\* *Skolfrågans lösning vid 1904 års riksdag och dess betydelse för vår nationella kultur och sociala utveckling*, pp. 32. Another useful brief account by P. E. Lindström, who served on the Royal Commission with Mr. Carlson, is to be found at pp. 206-210 of the *Almanack för Alla för 1905*.

countries, has any attempt been made, as in the sister countries, to carry on any portion of secondary school work within the walls of elementary schools. The first five years of secondary school life (formerly, the first three years) are to be the same for all pupils, whether they leave the realskola at sixteen, or at fifteen go up into the gymnasium and leave at nineteen. The gymnasium is either a Latin gymnasium (with or without Greek) or a Real gymnasium with none but modern languages.

The drift of opinion that has prepared the way for the modernising of the secondary school in Sweden up to the age of fifteen is not perhaps so striking there as in Norway. It is nevertheless very striking, as will appear from the following figures. Of the 7,895 pupils in the six highest classes in 1883, 5,506 were on the Latin line and 2,389 on the Real line. Twenty years later there were out of a total of 10,693, 4,011 on the Latin line and 6,682 on the Real line.

#### LATIN DEFERRED UNTIL THE FIFTEENTH YEAR.

(2) This five years of common life has been rendered possible by deferring Latin from the thirteenth to the fifteenth year. And so a boy's destination in life need not under the new arrangements be fixed until the latter age, and opportunity is given for humanistic training on modern lines. More time is made for the mother tongue and modern languages. German occupies the place given to English in the corresponding school in Norway, *i.e.*, rather more time is given to it than to the mother tongue. The time now given to Latin is six hours a week for four years, three-fifths of the time given formerly. But as it now comes later, when attention and industry are developed, the loss is not so great as it seems.

#### REALSKOLEXAMEN.

(3) The last class of the Realskole, ending with the sixteenth year runs parallel (as in Denmark, but not in Norway) with the first gymnasial class, having a separate organisation of its own, so as to form a rounded completion, designed solely in the interests of the pupils who are now to pass out into the active occupations of life. It is remarkable, by-the-by, that Sweden, the home of Sloyd, makes no definite place for Sloyd in the time-table of its new realskola; and in this respect differs from Denmark and still more from Norway. Provision is made for it, out of school hours, for those who desire it. The realskola has for its final goal a State examination (Realskoleexamen), which gives admittance to various technical schools, to the Handelsinstitut (Business College), to forestry, agricultural and mining schools, and qualifies for various appointments in the post office or telegraph service, on the State railways and the like.

As this examination has not yet been held, no detailed account of it seems here necessary, especially as such a full account was given of the corresponding examination in Denmark and Norway.



IN RELIEF OF OVER-PRESSURE.

(4) In order to avoid over-pressure, and to allow of a pupil's devoting himself to some special study for which he displays marked aptitude, some options (*Valfrihet*) are allowed in the last two years of the gymnasium. For instance, of the thirteen subjects which a pupil in the Latin gymnasium studies in his last two years (religion, mother tongue, Latin, Greek, German, English, French, history, geography, the outlines of psychology and logic, natural history, physics, and drawing), he may with his parents' consent drop entirely any one of the heavier subjects or any two of the lighter ones, always provided that the mother tongue and (except in case of a dissenter) religion be not among the omitted subjects, provided also that the number of hours he is excused do not exceed six a week. So also, *mutatis mutandis*, with a pupil in the Real gymnasium. And the relief is to be complete; he is not required to substitute any other subject in the omitted hours. The need of some alleviation had long been felt; and it may fairly be said that a satisfactory solution of the problem in Sweden was first reached by Rektor Palmgren in the freedom of a private school.

CHANGES IN ALL STATE SCHOOLS.

(5) We saw above that Sweden had seventy-nine State secondary schools for boys, viz. :—

- (a) Thirty-six with the full number of nine yearly classes;
- (b) Twenty-two with the first five classes;
- (c) Seventeen with the first three; and
- (d) Four Pedagogier with two classes or one only.

The re-organisation has given the opportunity of extending the usefulness of nearly all these, and especially of (b) and (c).

The number of schools in the first class has been increased from thirty-six to thirty-seven; and some of them, that before had only one line in their gymnasium, now have two; and all the thirty-seven, in addition to the nine classes, following one upon another, have now a tenth, the special realskola class, parallel with the first gymnasium class. Each of the thirty-seven therefore contains both a full gymnasium and a full realskola.

Seventeen out of the twenty-two schools in (b) have had one higher class added and four schools of those in (c) have had three higher classes added, so that the State has now twenty-one six-class realskolor, pure and simple. In addition to these, five schools in (b), twelve schools in (c), and two in (d)—nineteen in all, in places with an average population of 3,500—have the opportunity given them of being transformed into State samskolor. (co-education schools, with one-half the teachers men and the other half women), which in all essentials will conform to the realskolor. Five schools in (c) and (d), with an average of twenty pupils each, have been dropped, so that the number of State schools now stands

at seventy-seven. If to the forty realskolor and samskolor be added the thirty-seven realskolor connected with the gymnasium, it will be seen that the Swedish State in its new departure sets out with an array of seventy-seven fully equipped realskolor, which give four and a half hours a week to the mother tongue for six years, five hours a week to German for the same time, three and a half to English for three years, seven and a half to mathematics and physics, besides lessons in religion, history, geography, writing (for the first three years), drawing and gymnastics. The secondary school in Sweden, then, is to consist in future only of ten-class schools and six-class schools, each class lasting one year.

Such a State school will also serve, as in the adjoining countries, for a model or standard, to which other schools that seek recognition and help must in essential features conform. The State provision is already so ample and the charge for tuition still so trifling, so much below cost price, that it is not easy to foresee the amount of the contribution that in a few years will be forthcoming from private effort. The contribution cannot certainly attain the proportion it reaches in Denmark, where the private realskoler that have received State recognition do much more than twice as much as the Communal and State realskoler put together. It may even fall short of the proportion reached in Norway and Finland. But the State in Sweden has shown itself so keenly alive to the value of approved private effort, has indeed been so deeply indebted to it for essential features in the new organisation it has just given to its secondary school, and has by grants so steadily supported it and made its existence possible in the past, that the contribution from this source is not likely to be diminished and may even be increased.

#### INCREASED SALARIES OF TEACHERS.

(6) Opportunity has also been taken to revise the scale of salaries and pensions in the new law. An adjunkt formerly began with 2,000 kr. a year. He now begins with 3,000 kr. (nearly £170); and every five years may have an increase of 500 kr., until he reach 5,000 kr. or rise to the higher grade of lektor or even rektor. Out of the 3,000 kr. he must pay 65 kr. a year (and higher amounts with each rise) towards his pension, which amounts to 3,400 krs. a year, after 35 years' service. There is also an increase amounting to 20 or 25 per cent. in the salaries of lektors and rektors. A lady teacher in a State samskola begins with 1,500 kr. a year, out of which she pays 30 kr. a year towards a pension of 1,500 kr. after 25 years' service.

The consequence of this increase in staff and in salaries has been an added expense of one-fifth (885,000 kr.) on account of the State secondary school. To meet this, at least in part; a fee of 20 kr. a year in the realskolor and 30 kr. in the gymnasium has

for the first time been charged. But as with the charge for school repairs and school library (which, with the charge for light and fire, have hitherto been the only payments at a State secondary school), so with this school fee. Any boy may for due cause be excused the fee in whole or in part; and there is a specially appointed local committee for each school, whose duty it is to receive applications for remission and decide on them, after a consideration of all the circumstances; *i.e.*, not merely the means of the parents, but also the number of their children, the cost of living at the place, and the distance of the boy's home from the school. These school fees are paid into the State Treasury and bring down the extra yearly expense to the State, caused by the re-organisation, to 465,000 kr. (£25,000).

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CO-EDUCATION.

(7) With regard to the principle of co-education, it will be noticed that, though it has made considerable progress in Sweden through the new law, it has not been adopted to the same extent as in the adjacent countries. The chief ground for its acceptance is the economical one. The first school of the kind in Sweden (Rektor Palmgren's) was begun in 1876; and there were at least eleven others at work, all private, whose experience was available for guidance in the new departure. Dr. N. G. W. Lagerstedt\* says of four of these, three in Stockholm and one in Uppsala, that "they all strive to work for reforms in other respects also, for greater freedom in the choice of subjects, better methods in the teaching of languages and other subjects, and a more general use of Sloyd as a school subject"; and the same may no doubt be said in a measure of the rest.

The Swedish State does not make itself directly responsible for the higher education of girls; and so the expenses of these State *samskolor* are met not quite in the same way as those of the boys' schools. The establishment of a State *samskola* is conditional on the payment by the Commune, within whose limits the school is situated, of a sum corresponding to the fourth part of the initial salaries of the teachers; and the Commune in return is allowed to keep all the school fees, which in the case of other schools have to be paid into the State treasury. Of these two sums the first varies very little, whether there be 50 pupils or 150, for a *realskola* must have a separate teacher for each of its six classes. But the second sum varies with the number of pupils. These nineteen schools that are to be turned into *samskolor* had in 1903 an average of seventy-one pupils each. If they remain as before, without any great influx of new pupils, the Communes get back one-third

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\* *Sveriges Undervisningsväsen* p. 62. Edited by Dr. C. G. Bergman Stockholm. 1897. A German translation by Dr. G. Elmquist was issued at the same time under the title *Das Schwedische Unterrichtswesen. Kurze Uebersicht*, p. 170.

of what they have paid into the treasury. But if the Communes bestir themselves, take an interest in the new schools and send to them as many girls as boys, they get back two-thirds. If this be satisfactory to the Communes, it is no less satisfactory to the State. For the State, when it has at great expense planted a body of earnest capable teachers in a small country town, can never be satisfied if it sees them turning out only half as many capable citizens as time and strength easily allow.

It is one serious drawback to the establishment of these nineteen State samskolor that in seventeen out of the nineteen places where they are situated there already exists a Higher Girls' School; and the competition of the State samskola with the fee of 20 kr. per year must act prejudicially on the Higher Girls' School which charges five or six times as much.\*

#### THE HIGHER COUNCIL.

(8) The last change (one that the Royal Commissioners did not venture to propose) is that a Higher Council for secondary schools be established consisting of five experts appointed for five years at a time to act as inspectors, to conduct the examinations, to take measures for the appointment of teachers, and generally to take care that the reform resolved upon shall become a living reality. The powers formerly exercised by the Bishop and chapter, by the Direktion for Stockholm's Undervisningsverk, and by the head of the secondary education department are henceforth transferred to this new body. The Bishop's influence is limited to oversight of the religious teaching. The five members must, as a rule, have been ordinary teachers at a State secondary school or the higher seminary and must represent the various branches of school instruction. The chairman receives 8,000 kr. a year and the other four members 7,000 kr. It will be seen that in the extent of their powers they resemble the Higher Council in Helsingfors. (*Öfverstyrelse för skolväsendet*) rather than the *Undervisningsraad* in Christiania. Their powers extend not only over State schools but also over all others that are recognised or aided. Their duties are defined at length at pp. 141-157 and at pp. 94-97 of Bergqvist's *Nya Läroverksstadgan*.

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\* Many of these Girls' Schools have already ceased to exist.

## VI. PEOPLE'S HIGH SCHOOLS.

I have kept the best to the last. Most of what has gone before is an original modification of educational arrangements in Germany but is not itself original. It is work which in varying degrees submits to conditions and conforms to rules imposed by an outside authority. But the schools for adults I am about to describe are original both in their conception and in their methods of working, forming the chief contribution which these northern nations, and more particularly Denmark, have made to educational progress. They are conditioned only by the needs and requirements of the population around, as these are apprehended by the teachers themselves and their friends; nor are they confined within any limitations except such as are inherent in the capacities of teachers and students. Though they thus differ indefinitely from one another in details, they all conform to one type impressed on them by a common devotion to their founder. It might be thought that schools having a freedom so uncontrolled, schools moreover that in most instances are the property of a single individual, were unfit objects of public support. But we shall find on the one hand that the very best results flow from this large liberty and on the other that the schools are able to give abundant evidence that the State gets good value for the large sums of money expended on them. It is to this latter point that inspection is chiefly directed. The State inspector in our sense of the term is a very shadowy person indeed. His visits are not frequent. His duties begin and end with the collection of information going to show that the schools are or are not fulfilling the objects for which the grants in aid are given. To interfere in the arrangements of the school, to impose or modify a time table, to curtail one subject or to extend another, even to offer suggestions on any large scale would be as much outside his duty; as it would be for an English Government official, when a large subsidy has been given to the Cunard Company for carrying the mails, to object to the composition of the Board of Directors, to find fault with the construction of their ships, and to insist on other ways of carrying on their business. This absolute freedom, this undivided responsibility, the Folkehøjskole teacher regards as essential to the full success of his work.

The feeling against examination for such schools as these is intensely strong. Rather than submit to it, the schools would surrender their grants. In at least one instance, where some patron or generous supporter of a school has insisted on examination of the pupils, the consequence has been the entire discontinuance of the school. Some of the teachers do not hesitate to describe examination of their pupils as actually degrading. And indeed if we remember the aim of the most characteristic part of their work, it will be seen that examination of pupils would be as

incongruous as if some one were to insist that Englishmen on leaving St. Paul's or the Metropolitan Tabernacle should be required to show in writing that they understood or remembered what they had heard and were in agreement with the doctrinal standards upheld in Cathedral or Tabernacle. For the aim, the primary aim, of the schools is to inform (in the proper sense of the word) rather than to impart information. No doubt every student at the end of his four or five month's course knows many things he did not know before. But whether he knows many or few, is a matter of small concern, so long as a new hope, a new life, a new spring of energy within him be called into being. The Folkehøjskole teacher, whilst leaving all distinctive religious instruction to the Church of which he is an attached member, so teaches history, both that of his own and of other countries, as to show that there is a divine purpose running through the ages, that behind all human events there is a higher and spiritual influence making for all that is good and right, in conformity and in union with which he may gladly work for the establishment of a Kingdom of God upon earth. The whole spirit of the schools, as evidenced most of all in the unique historical songs that begin and close each lecture, most of which have been sung so often as to be known by heart, enforces the conviction that:—

“There's a divinity that shapes our ends  
Rough hew them how we will.”

#### THE HIGH SCHOOL IN DENMARK.

##### *Vallekilde.*

In order to bring out still more clearly the nature of these schools, it may be well, though at the risk of some slight repetition, to transcribe here the account, given by Valdemar Bennike to some English visitors in August, 1905, of an ordinary day's work at one of the largest Folkehøjskoler in Denmark (Vallekilde). It must be premised that Folkehøjskoler are of three kinds (1) Folkehøjskoler pure and simple which give the elements of a liberal education. (2) The second group are like the first with the addition of one or two branches or departments of a technical character, which give instruction in agriculture, dairy work, horticulture, building construction or navigation. (3) The third group of schools are technical only; but having been developed out of the successful branches or departments of the second group they are all happily in close connexion and harmony with the schools of culture pure and simple, drawing from them their best pupils. Vallekilde, we shall see, belongs to the second of these groups.

“The main object of this school,” says Mr. Bennike, “is not to impart to our pupils a mass of useful information—that is only a secondary aim. The principal aim is to impart to them a spiritual view of life, so that they may see there is some sense in their exist-

ence and some connexion in all that happens, in little as in great events. They will thus be prepared to enter on the work of life with good hope and faith, the faith that there is a direction from above in all that happens. The students are of all ages over eighteen years, most of them between twenty and twenty-five, and come from all parts of the country and all classes of society, though the majority belong to the class of small freeholders and cottars, which is so numerous in our country.

" Now I should like to give you the picture of a single day here in the winter months, when we have from 190 to 200 young men under our care from the beginning of November to the end of March.

" The bell rings them up at 7 o'clock in the morning. They then dress, make their beds, sweep out their rooms, wash and at 7.30 are ready for a cup of coffee and a bun.

" At a quarter to eight the principal (Mr. Poul Hansen) has morning prayers with his household ; there also, are to be found most of the students, though attendance is not compulsory. First, a hymn is sung, then are repeated baptismal vows, the Apostles' Creed and the Lord's Prayer. Another short hymn brings the service to a close.

" At eight o'clock, four mornings in the week, I give a lecture on geography, and thereby I try to show the audience what relation there is between man and the earth, and how far the people in the various countries have succeeded in reducing the soil to subjection. A song suited to the theme is sung both before and after all lectures. On the two other mornings our Free Kirk clergyman lectures on Church history.

" Breakfast comes at 9.15 and consists of a couple of sandwiches and a glass of home-brewed ale.

" At half past nine the artisans go to a special department in a house a few minutes' walk from here, where they are taught what belongs to their various trades ; carpenters in one room, bricklayers in another, painters in a third, and on so. Most of their time there is taken up in learning to execute working drawings. Likewise the fishermen go to their special department, where they are taught navigation and the natural history of fishes and other water-animals, sea-plants, etc.

" The farm-lads stay here in the central building and are divided into four classes held in various rooms ; and for two hours practise writing and drawing. From twelve to one the principal gives a lecture on the history of Denmark, the political history as well as the history of civilisation, dwelling more especially on the lives of noted men and women of the last century, whose work we are continuing.

" At half-past one comes dinner in the large room below.

" At half-past two the artisans and the fishermen go to their own departments again until six o'clock. The farm-lads in the meantime are taught accounts and arithmetic for an hour in two

classes. At half-past three these last have gymnastics according to Ling's system.

"At five various teachers lecture to the farm-lads only, on physics, on the geography of Denmark, on hygiene, and the history of the world.

"At six supper is taken.

"From 7.30 to 8.30 lectures for the whole school are given on the history of Danish literature by Mr. Hansen, and on various subjects by the other teachers, Mrs. Hansen twice a week reading aloud from the best of our poets, and I once a week showing lantern slides or glass photographs from all parts of the world, and explaining them to the pupils.

"From 8.30 to 9.30 the artisans and fishermen have their gymnastics while the others have leisure time for the rest of the evening. But you will understand there is not much leisure time for any of them; what there is, is used for writing letters, reading, conversing, playing or short walks.

"At 10.30 the electric light is put out in the schoolrooms."

An Englishman can only wonder that some time in this long, busy day is not found for organised societies and organised games. The women's course, as numerously attended as the men's, extends over May, June and July; and whilst the lectures are much the same as those for the men, every kind of work done with the needle takes the place of the men's technical classes. Danes take to such a school as ducks take to water. Since Vallekilde School was begun by the late Ernst Trier, in 1865, it has had 11,416 pupils—6,391 men and 5,025 women.

#### *Askov.*

The first of these Folkehøjskoler, founded in 1844, though not, until quite recently so numerously attended as Vallekilde, is even more famous. It was situated at Rödning in North Schleswig; and one of its main objects was to keep alive the feeling of Danish patriotism in the majority of the inhabitants.

But after the war of 1864 the school had to transfer its activities to the north of the new boundary. Here at a point midway between the east and west coasts of South Jutland it found a new home in some farm buildings at Askov, near Vejen Station. Ludvig Schröder, a young graduate in divinity, had become its principal two years before it left its first home; and it is he, zealously supported by comrades and friends, who by his energy and enterprise has developed it to its present proportions.\* A great step onward was taken in 1878, when to the single course

\* There are two of Professor Schröder's books which I have had constantly before me in writing these pages: (1) *N. F. S. Grundtvigs Læved, pp. 223. Copenhagen, 1901*; and (2) *Den Nordiske Højskole, p. 488, Copenhagen, 1905*. In 1906 Mr. Schröder retired from his post as principal and was succeeded by his son-in-law Mr. Jacob Appel.



which is the rule at all other Folkehøjskoler was added a second year course for men, and in 1885 for women also. So, if we visit Askov any time between the beginning of November and the end of April we find first-year students, both men and women, taught in one series of classes; and second-year students, both men and women, taught in another; whilst in May, June and July there is just an ordinary course for women only as in the other schools. Co-education is found at one or two other Danish Folkehøjskoler, though not nearly to the same extent as at Askov. This widening of the school activities was undertaken in the interests of the movement at large, and received in the early and more difficult years much help from leading teachers in some of the other schools. For these two-year courses begin where most of the other schools leave off; and Askov has in this way provided a training ground, a real *alma mater*, for no small portion of the teachers and more advanced pupils in other schools both in Denmark and the neighbouring lands.

Since 1892 when the State grant was increased from 5000 kr. to 13,000 kr. (£730). the school has by the further help of a State loan added to its buildings to such an extent that it has passed from private hands and become a "self-owning institution," i.e., the school has been formed into a trust for the public benefit with four of its leading teachers as trustees.

There are no bread-and-butter sciences at Askov.\* But although a student in one of the winter courses will have had as many as 360 lessons in history (including Scripture and Church history), 313 in natural science, 243 in mathematics and book-keeping, 205 in the mother tongue and so on,† both teachers and pupils are in closest touch with hard reality. They are as far as possible from becoming mere dreamy students. For all around, in rich variety, are spread works of practical utility, carried on by the teachers or by former students, which are quite independent of the school courses, but yet lie open for observation and inquiry from day to day. First comes the Agricultural Experiment Station of forty acres, the largest in Denmark, managed by a staff of six experts and visited every year by 2,000 farmers and others. Here at any given time hundreds of experiments are going on with all sorts of seeds and plants on varying soils (clay, sand, moss). Close to the school is the research windmill, built by the State, in which Professor Poul La Cour has learnt how to harness the wind and make it generate

\* There are rather more High Schools of the Askov type than the Vallekilde type. Mr. Alfred Poulsen, who has a school of the former type, but who formerly taught for several years at a school of the latter type, affirms that the technical work brings bustle with it, and breaks in upon the quiet concentration, which is necessary, if the High School is to produce its full effect.

† Of course these numbers vary somewhat from year to year. These particular numbers are true for the Session 1893-4.

electricity. And a further walk of 200 or 300 yards brings one to a farm with windmill and power of its own, besides light at will in farmhouse, cowsheds and pigsties. Then there is also the principal's model farm, and a model orchard, showing what kinds of fruit trees thrive best on a sandy soil; a Sloyd school; a school of domestic industries; and one for home weaving. Many of the visitors are cottars, small peasant proprietors, travelling round with help from various funds, in search of practical hints. Mr. Schröder himself tells what generally happens at such a visit. After they have seen all they can out of doors, they ask to go in to lecture, which is flexible enough to allow of a few words for themselves. He calls to their remembrance item by item all they have just seen, and shows how it puts to shame the charges brought from time to time against himself and colleagues, perhaps in the very districts from which his guests have come, of taking up the time of his pupils with what from the practical point of view is often regarded as "useless nonsense." If they had seen so much at Askov on the part of its teachers and former pupils that showed capacity in the practical world, the reason was that the school in putting a new spirit into its pupils and enlarging their outlook—all "useless nonsense" from the practical point of view—was in an indirect way promoting the disposition and increasing the courage of its pupils, to accomplish some capable work in the world outside. And Mr. Schröder goes on to add: "After thirty-six years in the service of the Folkehøjskole, I have not been able to give up the faith with which I began my work. Our way through life goes from within outwards; if that which is within a man be set in the right direction it will bear fruit in the whole of his outer activity; a real enlightenment of spirit in the man of full age will call forth the energy, capacity and perseverance, which are more necessary than acquirements, when we come to the solution of practical problems."\*

#### *Bishop Grundtvig.*

How did such schools come to be? It was not much easier to get them in Denmark than it would now be in England. Christian Flor, who helped the school at Rødding and at Askov so much, said with regard to the former, "every new thing that is to have great and weighty consequences has a painful birth, and must suffer hardships in its childhood." So the answer to the question is a story of sacrifices cheerfully undergone in a good cause.

The father of the People's High School was N. F. S. Grundtvig (1783-1872), who after being for more than a generation a *persona ingrata* to authorities in Church and State, received from the King on the fiftieth anniversary of his ordination the title of Bishop (without diocese) with rank next after the Primate. His home as

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\* *Verdens Gang* (Christiania), Sep. 26th and 27th, 1898.

a child was in South Zealand, but he was sent to be prepared for the Latin school to a bachelor clergyman who had been house tutor at home for his elder brothers, and now lived in Mid Jutland in an out of the way parish that bordered on the heath. Here for six years he was in his leisure time thrown much more than at home upon the farmers and the farmers' men for companionship and recreation, "amused himself with the peasants and the bees," and so developed an interest in working folk which displayed itself in all his after life.

In 1811 he was ordained and became his father's curate. But his father died in a year or two, and it was not until 1839 that he settled down for the remaining thirty-three years of his life to continuous pastoral work. In 1807 Denmark had lost her fleet; in 1814 Norway was taken from her. The country was bankrupt. Both Church and State for many years were at their lowest ebb. Animated by love for his country, Grundtvig did all he could, without regard to his own comfort or worldly advancement, to awaken both Church and State to greater activity and more vigorous life. Even his trial sermon prior to ordination ("Why is the Lord's word departed from His house?"), though it received from the University authorities the mark *egregie*, was regarded by the clergy of the capital as a reflexion upon themselves, and led to a formal complaint and reprimand; and this was one of the reasons why on his father's death he was shut out for some years from further clerical employment. Thirteen years later a much more pointed protest against the teaching of a young theological professor won so little sympathy from the bulk of people in authority that Grundtvig, instead of having his arguments duly met, was fined for libel and felt compelled to throw up the office he held in the Church; and so, for a second term of years, he turned to other work. These two prolonged periods of enforced leisure did much to determine the precise form of his educational activity in later years. In the first period he employed the seven years from 1815 to 1821 in putting the old chroniclers of Norway and Denmark, Snorre Sturlason and Saxo Grammaticus, into a Danish dress—into a form that would be acceptable to ordinary readers. He wished his countrymen to enter on their spiritual inheritance, to be animated by all that was noble in the ideals of the past. He did not think, as Carlyle some years after when discoursing of Heroes did not think, that there was no use in knowing *something* about this old Paganism of our Fathers. Unconsciously and combined with higher things, "this Norse religion, a rude but earnest, sternly impressive *Consecration of Valour* . . . is in us yet." But as the years went on, he found the printed page an insufficient means for his purpose.

During the second period, he spent at the expense of the State three successive summers (1829, 1830 and 1831) in England, studying the Anglo-Saxon manuscripts, then entirely neglected, in London,

Exeter, Oxford and Cambridge. The earlier history of England and that of Denmark are so intertwined that these MSS. are of equal importance to the two countries. But his visits taught him much else than Anglo-Saxon. He found us in the midst of our reform agitation ; and the free energy both of our political and our business life was just what he wished to see in his own land. He had no thought of urging his countrymen to agitate like Englishmen for the franchise. The time for that was not yet, for the Danish kings were still absolute and the Danish Constitution as yet unborn. He began to think in those days of a People's High School for grown-up folk, in which the chief, but not the only subjects of instruction should be history, the mother tongue, poetry and song. "From the Jews," Mr. Alfred Poulsen told us at Oxford,\* "he learned that all education must be historical, from the Greeks that it must be poetical ; and the life of the Roman people taught him to shun that amassing of knowledge which has nothing at all to do with the development of conscience and heart." He was a great ballad writer, and perhaps thought with "the very wise man," whom Fletcher of Saltoun tells us about, that if he "were permitted to make all the ballads he need not care who should make the laws of a nation." He had, moreover, been Dr. Whewell's guest for a fortnight at Trinity College as well as a post-graduate student at Valkendorf's Collegium in Copenhagen ; and the High School he desired to see must not be an evening school only, but a place where the ordinary citizen could for months together live a common life with men as eager as himself. Meanwhile a development in his theological position was influencing his educational plans. So far was he from regarding the Bible as the only religion of Protestants, that he said every written word must be a dead word. The young theological professor he had been contending with had maintained with somewhat greater freedom than usual that the origin, extent, genuineness and correct interpretation of the Holy Scriptures were often very doubtful matters. Grundtvig, considering that the common man, whose interests he always had at heart, had often neither time nor capacity for such questions, sought for a foundation of Christianity independent of Bible texts. And just as the Quaker apart from the sacraments finds such a foundation in the "inner light," so Grundtvig found in the two sacraments that have come down from primitive times (and he found it more especially in the Baptismal confession) a living voice speaking direct to the hearts of men. The Quaker and the Lutheran, in fact, travelling by different roads, have reached the same goal. It was easy, therefore, for Grundtvig when he dwelt on such thoughts and remembered too that the books that he had spent so many years over had failed to influence his countrymen as much as he hoped, to insist, in a similar way, on the living word that comes from the heart and goes to the heart, as the chief influence in his High School for

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\* See *Oxford University Extension Gazette*, Sept. 1894.

awakening men to a higher and nobler life. Only life could beget life. He even goes so far as to say (in 1838) that to him it has been given to discover in the living winged word "the great law of Nature for the working and propagation of spirit," of the spiritual and intellectual life in man.

And this conviction of Grundtvig certainly finds its counterpart in the high level of clear, popular, attractive utterance attained by the average High School Teacher.

The only assured constant income he had for the support of his family during these years was a Staté pension of £60 or £70 granted him for historical research. But a brother clergyman of ampler means helped him for many years, and so gave him the freedom from care that enabled him still further to enrich Danish psalmody. It may be questioned whether Danish psalmody as a whole is superior to English; but we have no English hymn writer, not even Charles Wesley or Isaac Watts, whose work in strength and beauty can compare with Grundtvig's.

In these years, then, of enforced leisure Grundtvig had been engaged in setting forth ideals of life, as preserved in history and song; he had extended these ideals by a close acquaintance with a kindred country; he had himself made notable contributions to history and song; he had faith to believe that men could be drawn from plough or bench for months together to have the noblest ideals impressed upon their minds; and the chief means of impression was to be not the reading of books but free human speech with the accent of conviction in it, and without the intervention of manuscript or note—speech of men who did not repeat slavishly what they had written in the study, but drew no small part of their inspiration from the looks bent upon them, and amplified or curtailed their message according to the indications they read there.

It will now be seen why Grundtvig is called the father of the High School. He laid down the lines, interested people far and wide in the plan, inspired the chief workers, and was ever ready, so far as he was able, to assist with purse, pen and voice. But he was never himself at the head of such a school, though on the seventieth anniversary of his birthday his friends presented him with a sum of money for "Grundtvig's High School," which was erected three years later in the northern environs of Copenhagen, and has since been removed a few miles further north to Lyngby. Here for some years he gave a few lectures every week.

Among those practically interested in the movement was the new King Christian VIII. (1839-1848), who while Crown Prince had as Statholder in Norway signed its constitution in 1814. But he died before the wealthy foundation at Sorø could be formed into the sort of school desired; and the plan, though often discussed, has never been carried out. Meanwhile, as we have seen,

a few men of academic standing, with Professor Chr. Flor as their chief helper, had in a private way made a successful beginning at Rödning in 1844.

*Kristen Kold.*

But it was Kristen Kold in Funen who, commencing seven years later in the very humblest way, first made it clear that the movement could affect large masses of the people and had really come to stay. He was the son of a poor shoemaker by the Limfjord; was sent to a training college, but did not do much good there until he was stirred by a religious revival conducted by a well-known lay preacher. An early experience gave him a horror of everything mechanical in teaching. The catechism with its long answers he had a special dislike for; and it was a joy to him to throw it aside and talk its contents to the children, and to find how glad they were to listen and how easy it was for them to understand and retain. But such an innovation frightened parson, bishop, and department, and further public employment became impossible. So he learnt book-binding, and helped a missionary in Smyrna for five years, supporting himself by the trade he had learnt. He was back in time for the three years' war in Schleswig-Holstein (1848-1850); but found his fingers too clumsy for musket drill. Soon after, during a house tutorship he took, he met with Grundtvig's "History of the World," and with its help was rejoiced to find a thread of purpose running through human events. It gave a new interest to life—an interest he felt he must communicate to others. He began in Ryslunge, soon moved to Dalby in N.E. Funen, and in the last years of his life had a hundred pupils at a time at Dalum, near Odense. When the young women wished to join their brothers, he started a summer school for them in May, June, and July, with such success that it has become a constant feature in every school since. Kold was a sort of rustic blend of Socrates and Pestalozzi, he had a ready store of idiomatic Danish, had thought much of life and its problems, had a keen insight into character, possessed an unlimited store of illustrations and experiences, and was consumed by a passion for communicating to others what had brought light and help to himself. Perhaps his very limitations helped him to attract some strata of his countrymen which his more thoroughly trained friends at Rödning could not so easily reach. It was Grundtvig who kept the two streams from flowing apart. If there are a hundred University graduates hard at work in the High Schools, there must be nearly twice as many teachers who have passed through a training college. A third large group have received their higher training at the High Schools themselves, especially at those with the wider courses. It is these three groups of teachers, working heartily together, that have made the Danish Folkehøjskole what it is.

*"Outward Loss, Inward Gain."*

Prior to the war of 1864 there were about twelve of these schools at work in Denmark, but many others sprang up immediately afterwards. In this and other ways the Danes justified their proverb, "Outward loss, inward gain." The first High School in Norway was opened in the very year of the war; the first in Sweden in 1868. Before Grundtvig died in 1872, his visionary fantastic plans (so they are still called at times) had become a brilliant success.

*Conditions of Success.*

The schools had had, and were still to have, a hard fight for existence. It was not much the pupils could pay; and the sums in aid, whether from central or local sources, are not great now, and were much less then. It was only where the principal possessed qualities not often found together—business ability, intellectual gifts, ready and forcible speech, a winning character, and popular instincts—that the schools could hold their own. It is possible where a man in one or two of these respects is not so strong as in the rest, his wife may more than make up for the deficiency. Then all may still go well. And there have been many noble women in the service of the High School. Where all these qualities have been found, help from some source, public or private, has been to hand; where they were wanting there have been failures, and schools have ceased to exist. But the successes have been more than the failures, and the schools are spreading in all the countries to which they have found their way. The number of men possessing such an array of qualities must always be small; and it is highly desirable that their activity should have its full effect. In all these countries no one has sought to exercise any hampering control. The grants become greater, but the teachers, *once they are recognised*, claim and receive, so far as Government is concerned, an absolute freedom. The pupils are grown men and women, able to judge for themselves, bent of course on securing the highest improvement their hard-earned savings will secure; and naturally gravitate to the teacher whom they find most inspiring and helpful. This is a much subtler, surer, and at the same time safer control than any other that could be exercised:

*Present Position of the High Schools in Denmark.*

So much for the rise and progress of the schools in Denmark. It remains to give some account of their present position in the different countries and of their influence on national prosperity.

In the year 1904 there were eighty-two recognised schools, all dealt with by the Government after the same fashion. Sixty-nine of these were Folkehøjskoler and thirteen agricultural schools (ten agricultural, two horticultural and one a school of minor husbandry).

Of the sixty-nine, rather more than half are Folkehøjskoler pure and simple, and the rest have some amount of technical work combined with the ordinary classes. At the sixty-nine schools there were 3,151 men in attendance, most of them for five months; and 3,186 women for three months. At the thirteen agricultural schools there were 1,054 men and seven women. The fifteen high schools with the largest attendance are Vallekilde (Z), Askov (J), Haslev (Z),—these three are nearly neck and neck—Vestbirk (J), Frederiksborg (Z), Ollerup (F), Testrup (J), Høng (Z), Nørre Nissum (J), Ryslinge (F), Hadsten (J), Rødkilde (M), Brøderup (Z), Lyngby (Z), and Vraa (J), where the capital letter denotes whether the school be in Jutland, Zealand, Fünen or Møen. The three largest agricultural schools are Ladelund (J), Dalum (F) and Tune (Z). Of these 7,378 students, 3,758 were sons or daughters of farmers (owning 26 to 150 acres), 1,642 of cottars (owning 3 to 15 acres), 218 of labourers, 817 of artizans, 214 of shopkeepers, 417 of teachers or of civil servants, and 310 of parents not designated; 5,607 were between eighteen and twenty-five years of age, 1,159 being over that age and 612 under. This concourse of pupils has been rendered possible by the homely, inexpensive way in which the schools have been arranged, and by the Government grants to schools and to the students in need of help. Nearly all the schools conform to the scale of payments fixed by the Association of High Schools and Agricultural Schools, to which most of them belong. The charge for board and lodging on this scale amounts to 100 kr. for five months; and for instruction the charge is 50 kr. for five months. If to this be added 10 kr. for books and appliances and 2 kr. for possible medical attendance, the total for five months is 162 kr., or £9 (less than 8s. 6d. a week). The corresponding expenses for the women's course of three months will be 102 kr., a little over five guineas. The charges at Askov and at the Agricultural Schools are 25 per cent. more than this.

The schools have received some help from the Government from the very beginning. And this was increased in the law of 1892 to 300,000 kr. (£17,000), of which 180,000 kr. was devoted to bursaries and 120,000 kr. was given in direct aid to the schools. In 1902 the total amount was further increased to 400,000 kr. (£22,500), of which 250,000 kr. is given in bursaries and 140,000 kr. goes to the schools; the remaining 10,000 kr. is a contribution to a pension fund for the teachers.

The County Councils are made the distributors of the State's bounty to the students needing help. These make their application to the Council on schedules, in which they make an attested statement of their means, give copies of one or two testimonials, say whether they have had a bursary before and state their expenses at the school they wish to attend (they are not confined to schools within their own county; they may choose any of the eighty-two schools in question). If they choose an agricultural



school, they must give evidence of a general education sufficient to enable them to follow the instruction. A bursary amounts on an average to 20 kr. a month at a High School and 24 kr. at an Agricultural School (this covers a little more than half the expenses). The 2,902 aided students make up nearly two-fifths of the whole number—7,398. The statistics show fairly well that no man, whatever his condition, can fail to find his way to the High School if he be determined. Take for instance the 1,172 men who had bursaries for the High School in 1904; 572 were in service on farms for the most part; 331 were either journeymen or apprentices; 100 were still at home with their parents; 71 were farm pupils; 42 artizans and so on. It is noticeable by the way that there were as many as 2,229 applicants for these 1,172 bursaries. This shows that the movement is far from having reached its limits.

Though the County Councils are thus responsible for distributing the State bursaries, they do not as rule help on the movement with any grants of their own. Here and there they do it. But the bulk of the local contributions come from private individuals.

In addition to these State bursaries, some of the schools have private funds placed at their disposal for helping students who have failed to obtain a State bursary. And the North Slesvig School Union provides bursaries for those across the border who desire to retain and extend their knowledge of things Danish. This Union in 1905-6 helped ninety-eight men and women to attend one or other of twenty-nine High Schools or Agricultural Schools. Down to the present day, 2,849 men and women from across the border have been helped by the Union to attend Danish High Schools, Agricultural Schools, or After-Schools (schools for those between fourteen and sixteen or seventeen). To these must be added those who needed no help.

The conditions enabling a school to share in the grant of 140,000 kr. are these. The school must be recognised, and the chief conditions for this are that it must have been at work at least two years, and must have a fixed minimum of pupils (ten for twelve months, or twenty-four for five months, or forty for three months, as the case may be). Every recognised school receives a fixed grant of 500 kr. and a further grant corresponding to last year's expenditure in salaries, equipment, repairs and interest. The intention seems to be that this further grant shall cover one-third of the expenses named. But in the ten years' interval between the last law and the one that preceded it the number of claims on this fund so increased as by degrees to diminish the grant from 33 per cent. to 16 per cent.

The High School is dissatisfied with the influence it has upon the towns. Of the 7,398 pupils in 1903-4, only 419 or less than 6 per cent. came from the towns. "Here," says Herr Schröder, "is evidently a problem we must desire to solve better and better

as time goes on, if the new Danish school for young men and women is to have the good fortune to fuse the various classes of the people into a real unity."

The reason of this seems to be that the people in the towns have no such command of their time as the freeholders and small peasant proprietors in the country, who are their own masters.\* And it is this that constitutes the difficulty in introducing such schools into England. When the Danes have solved Mr. Schröder's problem, when too the English yeoman makes his re-appearance, we may hope for a People's High School in our midst. But if in Ireland some Father Mathew could initiate a High School crusade with something of the Danish enthusiasm, Ireland's day of prosperity would have come indeed. In England, it seems, we must be content for a while with University Extension work, with Quaker Adult schools, University Settlements, Home Reading Unions, Co-operative Holidays, and institutions like Ruskin Hall and Woodbrooke. But of all these, it is only the last two that give the students for months together a common life with like-minded comrades. Before any institution of this last kind can be as widely successful in England as in Denmark, two conditions at least are required—to halve the present expenses; and, if some public help be needed for that end, to give it without hampering conditions.

As the years have gone on, the High Schools are losing any party character they may be supposed to have had, and are regarded as schools of the nation. They are attended in an increasing degree by all sections of the National Church and by all classes of the population. Four of the schools indeed (Haslev, N. Nissum, Børkop and Horne) are carried on by the earnest, low church, "Indre Mission" party. Though their outlook upon life and views of Christian doctrine do not coincide with those held by the two other Church parties, it is a subject of general regret that these four schools take no part in the work of the Association, of which the remaining schools are members. If the Salvation Army, too, in its search for wider training, sought to establish a High School

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\* Mr. Jakob Lange of Dalum, seeking to account for the greater success of the People's High Schools among the country people, says in a letter to me that "when the high-school idea was born, it found in the country a peasantry, spiritually speaking, ready to take hold of it. It must also be noted that the struggle for recognition as citizens equal, politically and socially, to the townspeople and educated classes, made the peasant look with favourable eyes to the High School, where an enlightenment and education were to be had, every bit as genuine as the German-Latin culture to be found among educated people. And although very few high-school teachers took an active part in the political struggle from the seventies to the nineties, it was everywhere felt that their sympathies were with the peasants. The thorough amalgamation of Christian and human elements in Grundtvig's work of enlightenment evidently came much more natural to the peasantry, whose schooling had hitherto been of an entirely religious kind, than to the town population with its more or less developed 'esthetic sense.'"

on its own religious lines, and to receive the same treatment from the State as the rest, it is difficult to see what objection could be raised.

When a pupil leaves a High School, it must not be supposed he has done with it for the rest of his life. In most cases it has left its mark on him, and he will turn it to again and again as opportunity serves. There is every year an autumn meeting for old pupils and friends, lasting over two or three days, with an attractive programme. In every large town there are High School homes or modest hotels, where High School men and women meet one another and have opportunities of engaging in work of a High School character. Or through one of the many lecture societies he may ask one of the more celebrated teachers to come and lecture in the village *Forsamlingshus* to his friends and himself. And if there be in his neighbourhood a *Valgmenighed* church (of which more by and by), he is at once brought into touch with the formative influences and the ideas of the High Schools.

#### THE HIGH SCHOOL IN NORWAY.

Of all the countries into which the Folkehøjskole has been introduced, in none has it had a harder struggle than in Norway, notwithstanding the gallant prolonged efforts of not a few of its promoters, and more particularly of Christoffer Bruun, whose *Folkelige Grundtanker* is one of the classical works on the subject. There were two chief reasons for this. The promoters, like their friends in Denmark, were attached disciples of Grundtvig, whose special doctrinal opinions were not at all relished by the prevailing school of orthodoxy in Norway. The second reason was more general. Sir Henry Lawrence was wont to say a mixture of romance and reality, of prose and poetry, best carried a man through life. It has been seen how thoroughly these two elements have been blended in the Danish Folkehøjskoler. But a Norseman would have in such schools the prose only, without the poetry; and so, eleven years after Anker and Arvesen erected the first High School at Hamar in 1864, the authorities in Norway established a system of Amtsskoler, which were like the Folkehøjskoler, inasmuch as the young men and women gave up several entire months in some country spot to self-improvement; and unlike them, because the subjects they studied were of a less generous, of a strictly utilitarian character. But in the course of a generation both these reasons have largely disappeared, and Amtsskole and Folkehøjskole now flourish side by side. And it sometimes happens that the Folkehøjskole student is found best fitted to direct the Amtsskole and make of it a good success.

In 1900 there were 1,717 pupils at the thirty-seven Amtsskoler and 634 at fifteen Folkehøjskoler, the corresponding numbers six years previously being 1,838 and 339. It would thus appear that

at last the Folkehøjskoler is beginning to look up in Norway. But its prospects have brightened still more of late. There was in 1898 a petition to the State for direct help to the Folkehøjskoler; its closing sentences are given below. After acknowledging the good work done in the Amtsskoler, it yet declares the work has not been quite of the right kind. They have for the most part been stepping-stones to the seminaries and other advanced schools, have drawn the smartest of the yeoman's sons away from life on the land to other occupations, instead of "enabling them to live the farmer's life as enlightened and interested citizens with the living sense for their father's life and ways and the ends their fathers sought to reach. And so they have helped on the belief which has become only too common among many young people that the farmer's life and work is something rather low and simple, which may be good enough for the more ignorant and uneducated but is something to be avoided by those who are gifted and well off. . . . The Amtsskoler have been arranged in such a way that they can hardly render the same service for us as the Folkehøjskoler do for Denmark. Erected as public institutions, directed from the first as State Schools with publicly appointed teachers, they can never do the work of a Free School for young men and women, which has grown out of the people's necessities, been upborne by the personality of their teachers, and whose chief *raison d'être* it is to preserve their inner relation to the conditions of life and way of thinking that prevail among ordinary folk. The free Folkehøjskole can more easily adapt itself to shifting times and requirements, and it will be able far better than the Amtsskole to perfect that part of the task of the school for youth that consists in creating life, interest, enthusiasm."

The petition goes on to plead that the State contribution be not made conditional on the previous consent of the local authority to give some help, alluding to the many instances where political and purely personal considerations or other unjustifiable reasons come in and cause the local contribution to be refused, or to be granted one year and denied the next, so rendering the position of the school very insecure.

In 1900 the Minister for Church and Education in Norway (Statsraad Wexelsen, now Bishop of Trondhjem) was a Grundtvigianer, as his father was before him. And the petition for direct help prospered as it hardly could have done at any previous time. The Department drew up a report favourable to the petition, which was considered with equal favour by the Parliamentary Committee, and the final grant made was as follows:—

(a) To the Amtsskoler 113,893 kr. on condition (1) that the scheme of the school, after being accepted by the County Council, be approved by the Department, and (2) that the County Education Committee be governors of the school and appoint the teachers.

(b) To the ordinary Folkehöjskoler and to private schools which have the same aim as the Amtsskoler 22,050 kr., on condition that a yearly report be sent in to the County Council and that the schools have the same oversight (*tillsyn*) as the Amtsskoler.

The wider freedom here will be noticed, *e.g.*, the school appoints its own teachers and, instead of submitting a plan before a course, sends in a report at its close.

(c) For bursaries in schools in (a) and (b) was granted 20,500 kr.

These three amounts, whose sum is 156,443 kr., are granted on condition that the County Council adds one-third as much again.

(d) As a direct contribution to the more advanced Folkehöjskoler 19,500 kr. was granted; and though this was done without any condition that the County Council should make additions thereto, such additions are nevertheless made.

There were five of these wider Folkehöjskoler in 1903, one at Klep, near Stavanger, a second at Voss, east of Bergen, a third at Sund, near Trondhjem, a fourth at Orsta (Söndmör), and the last at Seljord in Telemarken. The first three have 5,000 kr. and the other two 4,500 kr. And each of them has 2,500 kr. besides as bursaries for needy students. These bursaries are assigned by the teachers of the school.

Sund gets in addition from the County Council 3,000 kr. and 1,000 kr. for bursaries; and it is to be presumed that others do the same.

But misapprehensions die hard. On Constitution Day, 1903, a well-known Admiral exclaimed: "It is not on the wide poetic prospect furnished by the Folkehöjskole, but on the every-day prose of the work-school that a people's happiness must be built." And the remark called forth ready cheers. "The future must show whether the danger is past for the Folkehöjskoler" in Norway—is Mr. Schröder's final word on the whole matter.

#### THE HIGH SCHOOL IN SWEDEN.

In Sweden the course of the Folkehöjskole has been much smoother than in Norway, though it has not covered the country to anything like the same extent as in Denmark. In some measure it had an independent origin. Several far-seeing citizens were beginning to move in this direction. Municipal self-government had been resuscitated in 1862. In 1866 two chambers had been substituted for the four estates—nobles, clergy, citizens and peasants; and this had led to a large extension of the franchise. But it was not until the impulse came from Denmark that the schools for a wider civic training were opened and pupils gathered. The first three schools, Hvilan, Önnestad (both in the extreme south), and the school that is now located at Lunnevad, east from Lake Vetter,

were opened on two successive days early in November, 1863. Of these the school at Hvilan, between Malmö and Lund, whose principal is Dr. Leonard Holmström, is so near the Sound that it can easily be reached in little over two hours from Copenhagen. It was the first to begin a school for women (1873). It is the largest of the schools in Sweden, and has supplied several of the other schools with their present principals; and Dr. Holmström holds a position in Sweden corresponding to that of Professor Schröder in Denmark. Mr. G. Aldén (in *Sweden: its People and its Industry*, edited by G. Sundbäck, 1904) gives the following as a specimen of a first year's course in a Swedish Folkehöjskole: "Swedish language, 186 hours; history, 80; geography, 57; politics and municipal law, 56; rural economy, 23; natural science and hygiene, 120; arithmetic, 85; geometry, land surveying and levelling, 45; book-keeping, 47; architectural drawing and drawing tools, 63; writing, 46; singing, 46; and gymnastics, 69 hours; to which may be added reading aloud literary works, discussions, assemblies (i.e., mimic parliaments or town councils), and, in some schools, sloyd."

From this it will be seen that history and literature do not bulk so largely as in the Danish schools. Other minor differences are the somewhat greater use of text books and the partial boarding out of the students. The schools also are not so frequently the property of a private individual; but the Board of Management, nevertheless, having chosen the best man they can find, give him as free a hand as if he were the proprietor. The amount given by the State to the schools has since 1900 been 120,000 kr. with 25,000 kr. for needy pupils.\* This latter sum is too small to enable the Swedish school to attract so many pupils from the poorer homes as the Danish. There has been no Kristen Kold in Sweden; and the more enterprising teachers from the training colleges do not seem to share in the work to the same extent as in the sister country. But that the movement is in all essentials the same will be seen from these words of Dr. Bergman, one of the chief promoters of the school at Önnestad:—"The object of this school," wrote Dr. Bergman, "is to communicate to young men from 18 to 25 years of age the higher civic enlightenment, which must now be considered as necessary for every member of the free peoples of the north. In order to reach this end the activity of the school ought first and foremost to aim at awaking and developing in the young man the higher life slumbering within him, reflexion, love of country, and love of men in general; and next, to sharpen the judgment, to extend the pupil's spiritual outlook, to awaken pleasure in the work and activity he has chosen, in order and seamliness, and in the attainment of fresh light on, and practice of, everything which

\* These amounts in 1906 were 161,000 kr. and 35,000 kr. respectively. There were in that year 34 schools and 1,901 pupils (1,089 men and 812 women).

relates to our activity as Swedish citizens, as members of a parish, as heads of a family, as thoughtful householders, farmers, or members of any other profession. . . . The teachers must give the instruction preferably by word of mouth, in familiar lectures, or as answers to questions. The principal must be a man who is armed not only with a living fear of God, a love of his country and good knowledge of his subjects, but also with power to impart what he knows in a bright and living way; he ought to cherish a love of working folk, be familiar with their circumstances, and be able at once to win his pupils' affection and respect for the ends he wishes to attain."

At the thirty Swedish Folkehöjskoler there have been from the beginning until 1904, 19,177 men students and 8,751 women, in addition to which there have been 3,553 pupils at the second year's course. This makes a total of 31,480. The second year course in Sweden is entirely devoted to agricultural subjects. At twelve schools a thorough agricultural course has been arranged, and a special State grant is given.

#### THE HIGH SCHOOL IN FINLAND.

It was not until 1889 that the Folkehöjskole was introduced into Finland, the first attempt being made by a woman, Sophia Hagman (1843-1900). She had been a student at Askov and had also visited Folkehöjskoler in Sweden and Norway. There have been few winters since in which Askov has not had one or two students from Finland. A unique feature in the history of the Folkehöjskoler in Finland is the energetic help given by undergraduates' societies in Helsingfors in holding concerts, meetings, and bazaars, in order to collect money for school buildings. There are now sixteen schools with Finnish and six with Swedish as the language of instruction. Down to 1895 there had been 2,695 pupils in attendance, 1,832 at the Finnish schools and 863 at the Swedish. The summer in Finland is so short that neither man nor woman can be spared to go to school; and so all the schools in Finland (as well as the two northernmost in Sweden) meet only in the winter and are co-education schools. Their relation to the State is somewhat peculiar. The State gives them no support as Folkehöjskoler, but gives a grant ranging from 2,000 to 3,000 Finnish marks (=francs) for the agricultural teaching and the domestic economy classes in connexion with each school. On the other hand, a domestic economy and agricultural school must, as one condition of State help, give instruction in history, geography, and literature.

#### HIGH SCHOOLS IN THE UNITED STATES.

It is more than twenty-five years since the first Folkehöjskole was set on foot amongst the Danish colonists in the Western States

of America. Of such schools there are at the present time three in existence—one at Nysted in Nebraska, another at Danebod on the southern border of Minnesota, and a third, which has under the same roof a training college for clergymen and another for teachers, at Des Moines, in Iowa.

#### INTERNATIONAL MEETINGS.

There have been six general High School meetings of teachers from the various countries. The first was held in 1883 at Testrup in Denmark. The fourth was held at Askov on the fiftieth anniversary of the foundation of the first Folkehøjskole. No one who was present at the fifth at Seljord in the finest part of Telemarken is likely to forget it. It was held at the invitation of Viggo Ullmann, principal of the school there, who was just completing his fifteenth year as President of the Storting. The sixth was held in 1902 at Borghamn in Sweden.

#### RESULTS OF THE WORK OF PEOPLE'S HIGH SCHOOLS.

Four years before ever the first High School was begun, Grundtvig saw a vision "of a well of healing in the land, which will be sought by crowds from generation to generation, and win this fame, even in distant lands and the latest times, that there, past counting, the blind received their sight, the deaf their hearing, and the dumb their speech, that there the halt flung away their crutches and showed clearly that the dance trips it lightly through the wood."

There is a poetic glow in the words which can be pardoned only in a poet. But the prophecy remains the truest description. Under the influence, continued for months together at the most receptive period of a man's life, in places free from distractions, of living word, glad song, and genial comradeship, men's natures are expanded; dormant, unsuspected, faculties are awakened; the mental horizon is extended; prejudices fall away; desires for new activities arise. These are the purest, most lasting joys. Once gained, they can never be lost. They are independent of time and change. They lift life to a higher plane, and from this there can be no falling away. And so it may well be said that the chief result of this sixty years' work is a huge increase in the sum of human happiness.

But lest I be thought to be only romancing, I must add some results of a more palpable nature, which are but the outward, spontaneous, inevitable manifestation of that spiritual development the High School seeks to secure. Such palpable results may be found in the sphere of industry, in church life, and in public affairs.

#### *First Result—Heightened Industrial Efficiency.*

A correspondent describes the High Schools to me as "hotbeds" of the co-operative movement; and how far co-operation has gone in Denmark will appear from a remarkable list of agricultural



and co-operative societies which I derive from Mr. T. S. Dymond's account of a visit of Essex farmers to Denmark in 1900.\* Old High School students will be found plentifully represented amid the rank and file and more particularly on the governing bodies of all these societies.

The list runs as follows † :—

	Number.	Members.	State Subvention.
			£
(1) Agricultural Societies - - -	102	58,900	8,000
(2) Societies for the breeding of horses -	203	16,550	2,700
"                  "      cattle -	610	14,900	3,800
(4)    "                  "      poultry -	44	770	220
(5) Control Unions (for the oversight of dairy herds) - - -	188	4,100	1,700
(6) Co-operative Dairies - - -	1,029	150,000	
(7)    "          Bacon factories - -	25		
(8)    "          Societies for purchase			
(9)    "          and sale of agricultural produce -	640	46,000	
Farmers' loan societies or credit banks	147		240,000

(Loan from State.)

Some statistics exist showing how many of the chief officials in the co-operative dairies have been students in one or other of the eighty-two schools described above.‡ Unfortunately the statistics are not complete. But they go to show that every other chairman of committee, and much more than every other dairy manager has stood in that position. Mr. Alfred Poulsen tells us Englishmen, who consume so much Danish butter, that we "have come into a sort of contact with the High Schools," inasmuch as "the greater part of the men and women who manufacture this butter" have been pupils there.

When it is borne in mind that the whole population of Denmark falls below that of the West Riding, one can realize the amount of intelligent activity that the work of these societies denotes. No wonder Mr. Dymond comes to the conclusion that by co-operation of this amount and kind "(1) yield has been increased, (2) quality has been improved, (3) cost of production has been lessened, and (4) better prices have been obtained."

Since 1881, just before the first co-operative dairy began work in West Jutland, the exports of butter, bacon, and eggs have increased fivefold, making up nearly one half of the total exports of the country. And so it need not surprise us that when the countries of Europe are ranged according to the wealth per inhabitant, Mulhall sometimes places Denmark second and sometimes third, either just above or just below France.

\* Mr. Dymond's account was issued by the Essex County Council.

† For the fullest account in English of the work of these societies, see the report issued in 1903 by the Department of Agriculture in Ireland on Co-operative Agriculture and Rural Conditions in Denmark.

‡ See Prof. Povl La Cour's address at an Agricultural Congress in Stockholm, printed in *extenso* in *Mælkeritidende* (Odense), No. 31, Aug. 6, 1897, pp. 511 sqq.

*Second Result—A Freer and Richer Church Life.*

The Indre Mission and Free Kirk or Valgmenighed movement have in different ways done much for church life and social amelioration in Denmark. It is only of the latter I have to speak here. Though the Valgmenighed movement bears a strong resemblance to the Free Kirk movement in Scotland, it must not be supposed it has had or is likely to have, any such extension in Denmark as the Free Kirk has had in Scotland. But its twenty or twenty-five churches have nevertheless exercised an influence quite out of proportion to their number. If it can hardly be described as a product of the High School, it can nevertheless be said to be fostered by the High School and to flourish best in its near neighbourhood. Three different laws mark as many stages in its history. In 1855 the tie that bound the parishioner by pains and penalties to his parish church was loosed and he was permitted to attach himself elsewhere. In 1868 power was given to twenty heads of families, always at their own expense, to build a church of their own, choose their own minister, out of those legally qualified for office in the national church, and then have their choice ratified by the King, so as not to become dissenters. And in 1903 the various laws were consolidated, and permission further given to such communities to use the parish church for their services at times when it was not required by the usual congregation. The Valgmenighed are outposts of freedom. They have enabled many laymen to take a fuller share in church work. They promote a fuller, richer church life and set on foot new forms of social activity.

The most striking instance of this is to be found at Immanuel Church at the corner of Svanholmsvej and Forhaabningsholms Allé in a western suburb of Copenhagen. Here three years ago stood the church by itself, beautified time after time by gifts—mosaics and a fine altar picture—from the two artist brothers, Joachim and Niels Skovgaard, members of the congregation. Now it stands on one side of a quadrangle, two other sides of which\* are covered with buildings rich in varied usefulness. The fourth side lies open to the street and the afternoon sun. At right angles to the church and connected with it by an arch is a spacious gymnasium with a handsome campanile at the corner next the church. Over the gymnasium is an assembly hall that will hold 400 to 500 people. Next the gymnasium and in line with it is a five-storey building, the ground floor of which provides rooms for a club for lads from fourteen to sixteen years of age. On the floor above is the home of the *Højskoleforening*, long associated with the names of its first leaders, Harald and Gudrun Holm.\* This provides a club for 650 persons, men and women, engaged in business or in study in Copenhagen. Here they may have a meal, read the papers, consult reference books, borrow books from the library, join the

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\* See Special Reports on Educational Subjects, Vol. 1, p. 598.

Musical Society or the Cycling or Football Club, attend lectures of all kinds, or arrange a dance, or an excursion into the country—for a subscription of half a krone (7d.) a month. On the three higher floors is to be found a High School Home, *i.e.*, a simple neat hotel for High School folk and their friends. Everyone, in fact, is welcome, so far as room allows. On the third side of the quadrangle, the curate finds a home for his family on the right of the front entrance; and on the left, Miss Anna Boje, after doing an ordinary day's work in the city elementary schools, conducts, with the help of zealous friends, an evening school for 100 working girls. As this school is the most successful effort yet made to introduce the methods of the High School into city life, it may be well to add in her own words a fuller description. "These young girls," she writes, "in the course of half a year had a hundred lessons in history in four courses:—(1) The History of the Nineteenth Century; (2) The History of Denmark, Norway and Sweden in the Middle Ages; (3) The History of the Word" (*i.e.*, if I may venture an explanation of this enigmatical, Grundtvigian expression, the history of those critical periods, those turning-points, in the development of the human race, where some word of prophet, seer, poet, king, or other leader has been so far-reaching in its beneficent influence, has so moulded all the time to come, as to prove itself a very word of God); (4) Outlines of Church History; also 130 lessons in Northern Literature; besides Hygiene, Physics, Geology, Gymnastics, Singing, Danish Grammar, English, and several lessons every week in Arithmetic, Writing, and Book-keeping. . . . We have also had a course of Sunday lectures in our great hall, to which we invite the parents and friends of our pupils and at which we have received help from such lecturers as Dr. Nørregaard, Holger Begtrup, and P. A. Rosenberg. . . . The school's popularity is no doubt due to its extraordinary cheapness. The pupils pay only two kroner (2s. 3d.) a month for all subjects. We have set the fees so low because we have the city council's classes to compete with and also because it is young working folk we wish to get hold of. . . . Another reason for the popularity of our school is that children from the working classes are, in my opinion, easier to influence than others. Young people from humble homes as a rule do not know what it is to be *blasé*, and besides have a closer acquaintance than others with the difficulties of life. Life is a battle in their case, in a degree not known to others. And they feel that our desire is to stretch out a helping hand to them in this battle, that we will render them what practical service we can, that we will gladly make their hours of leisure bright and happy, by refreshing the spirit whilst the hand is at rest. But of course our work cannot be done without great sacrifices. It can go on only if all of us work for nothing. And even then there are many expenses that must be met by gifts."

To get through the whole of this programme, the pupils must attend from 4 p.m. to 9 p.m. six days a week, from October 1st to May 1st. And as many as fifty of them are found able and willing to do this. Twenty-six of these are engaged in the earlier part of the day in ordinary house work at home; eight in housework elsewhere; thirteen have business appointments as cashiers, shop girls, or seamstresses; one is preparing to be a teacher, another to be a hospital nurse, and a third to take a place in the telephone service. One could not but be struck, as one sat facing them at lecture, by the bright, eager, happy expression on their faces and by their evident appreciation of the opportunities provided them of improvement, of comradeship, and of friendly guidance.

So much for the ground floor of the quadrangle's third side. On the first floor are the church offices; on the second the pastor's residence. The third is let out as a private residence. On the fourth Fru Birgitte Nielsen, who like Miss Boje is engaged during the day in elementary school work, has a cookery and housekeeping school. The night I was there, I found thirty-five young married women learning how to be better cooks.

The way in which all this is done is peculiarly Danish. It is all individualist effort in a collectivist framework, ample enough for the free exercise of faculty and character.\* It is not the Church, as a Church, that is responsible for all this activity. But its members, acting as individuals, have taken shares in a company formed for the erection of these additional buildings. And the shareholders let this or that portion of the buildings to the individual or committee that seems likely to make the best use of them. Miss Boje, Mrs. Nielsen, and Mr. Rasmussen, the teacher of gymnastics, each pay a rent for the premises they occupy, and are solely responsible for that rent. In England collectivists and individualists are apt to regard themselves as opponents fighting to the death. In Denmark and its sister countries, as has appeared so abundantly all through my story, they join hands, devoting themselves to their appropriate fields of labour. Anything short of this is unworthy of the name of a State *System* of Education. It is like a description of the solar system with half the planets left out, as of no account. Compared with this harmonious union of tendencies, often thought of as mutually exclusive, dominant English methods seem\* (to one at least who has long been familiar with methods on both sides of the North Sea), absurdly wasteful, almost suicidal. We have not yet learnt in education, as we have long since learnt

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\* The collectivist framework in this instance may be understood in a double sense: (1) it may denote the opportunity provided by the body of shareholders for approved individual effort; but (2) it may also denote, when the school becomes entitled next year to the usual High School grants, the opportunity, the field of activity, recognised by the State as suitable for the exercise of approved, uncontrolled, individual action.

in business, to saddle the willing horse and give him his head. Until at least some considerable portion of our State-favoured education be of this freer, more fruitful character, as I have tried to picture it under varying forms above, we can never in any reasonable period cover the great distances to be traversed and make up for the time and opportunities we have lost.

*Third Result—Keener and more Intelligent Interest in Public Affairs.*

It was only to be expected that the High School man, with his love of country and his country's history should take an intelligent interest in public affairs. We have already seen what share he takes in co-operative work. When the new Parliament assembled in 1901, it was found that 30 per cent. of the members in upper and lower houses had been High School pupils.\* In the same Parliament, J. C. Christensen—who came as a young Bondekarl from a farm in West Jutland to "Grundtvig's High School" in 1874-5, then went to Gedved private seminary, and after twelve years' work in the elementary school was chosen a member of Parliament—became Kultus-Minister, and two or three years later Prime Minister.

From this it will be clear how very much larger must be the number of those serving in county, town, and parish councils, and in other positions of trust.

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\* The evidence of this is to be found in Brandsager's *Den Danske Regering og Rigsdag*, which appeared in 1901, the year in which the majority in the Lower House was for the first time allowed to determine the complexion of the Ministry.

## VII. THE QUINQUENNIAL SCHOOL MEETING IN THE NORTH.

If the unity of the school from bottom to top be for some nations a counsel of perfection, to be reached (if at all) by slow degrees, the unity of the teaching profession is at any rate an attainable ideal. It is an ideal which in these northern lands has in a high degree been long ago attained. And the attainment of the ideal brings with it the possibility of more frequent and more largely attended gatherings, not only among the different sections and nationalities, but among all the sections and nationalities together; and with the gatherings come full and varied opportunities of comparing and discussing and to some extent of witnessing new plans and fresh departures. To this is largely due the rich variety of educational effort and achievement, which I have endeavoured at least to indicate in this report. All these meetings culminate every five years in the great School Meeting (perhaps the most remarkable School Meeting in Europe) that gathers at each of the three capitals—Stockholm, Christiania, Copenhagen—in rotation. I may perhaps be allowed to reproduce here the account written at the time of the meeting in Christiania in 1900. It was attended by 1,600 Swedes, 200 Swedish-speaking Finlanders, 1,300 Danes, and 2,000 Norse. In Copenhagen, five years later, there were 7,000 teachers present. The meeting in 1900 was the eighth of its kind (*Det Ottende Nordiske Skolemøde*).

“Like our own Teachers’ Guild, it draws its members from every part of the teaching profession, from the highest to the lowest. The Minister for Church and Schools in Norway (*Etatsraad Wexelsen*) was present, and preached one of the opening sermons. There were many members of Parliament from the various countries, and some professors from the Universities. Eminent secondary teachers were well to the fore, both as readers of papers and as participators in discussion; but the great majority of the members were not secondary teachers, but teachers from the elementary schools. They found, on their arrival, a series of useful documents prepared for them—*e.g.*, full lists of the members from the different countries, a full programme of the meeting, containing maps, abstracts of the thirty-three papers to be read, and the words of twenty-one songs, mostly of a national character; also a brief historical account, drawn up by a score of experts, of the chief developments in Scandinavian schools since the last meeting (*‘De Nordiske Landes Undervisningsvæsen, 1895–1900,’* p. 136).

“Of the thirty-three papers read, twenty-one related to subjects interesting to teachers of all schools ; seven were of special interest to elementary teachers, and five to secondary. Five of the papers were taken at general meetings and twenty-eight at sectional meetings. Of the former, the most interest was shown in a set of three papers on ‘Co-operation between the Schools of the North’ ; in Dr. Nørregaard’s contention that the school-history should not be a history of Norway, or Sweden, or Denmark, but of all three in their relation to one another ; and in Rector S. Almquist’s paper on ‘The Period between Youth and Manhood.’ Of the sectional papers may be mentioned Miss Anna Sandström’s, on ‘The Method of Incorporating the History of Culture with the Ordinary History-Lesson,’ and a paper asking the question whether the development-hypothesis can usefully be introduced into the religious lesson in school.

“In the papers and discussions no Swede tried to speak Norse, nor did any Dane speak Danish in the Norse way. Each spoke as he speaks at home ; and it was interesting to see how readily each was understood. There is a greater difference in each country between the King’s speech and the more pronounced dialects than between any of the three languages and the other two. There was no sort of indication that the speakers came from three or four different countries of varying political conditions. They met as friends and brothers. In such easy interchange of opinion and plans going on every day in numberless newspapers and periodicals, and brought to a focus at the great meetings, every new departure in the schools of one country immediately becomes the subject of comment or criticism amongst its neighbours. In no country are the educational questions entirely different from those in the other three ; in no two countries are they entirely the same.

“It is interesting to watch whether a change in one country is adopted or not adopted by its neighbour, to notice how long the adoption may be delayed, whether the adoption be partial or entire, and what new elements may be introduced in the passage from one country to another. It is this that makes the North a quite unique laboratory of educational research. Of such research the Conference just closed constitutes, by its printed documents, by its discussions, and equally, perhaps, by its informal friendly meetings, a valuable five years’ record.

“It seems incredible that such developments taking place in countries so near akin to us in blood, in religion, and love of freedom should so long have been to England as an unopened book. If the introduction of comparative grammar revolutionised our study of language so that, as Prof. Skeat once said, we have made more progress in thirty years than in the previous two thousand, the study of comparative education must prove equally fruitful. It is a study that is, of course, always going on among cultivated peoples.

But in Scandinavia it is, in the circumstances of the case, closer, more varied, more fully informed than elsewhere." \*

It is to be hoped that no future meeting of this kind will lack its contingent of Englishmen. And if those who thus come a first time do not come again it will be for no want of warmth in their welcome. It is only through such visits that we shall see the arrival of the time, pictured by Hugo Grotius, when "any nation shall be called upon to effect that which is wanting in another, in order that things germinated somewhere may be seen to have sprung up everywhere."

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\* See *Educational Times*, October, 1900. An account of the meeting at Stockholm in 1895 will be found in the *Journal of Education* for October, 1895, p. 582; and of that in Copenhagen in the *Educational Times* for November, 1905.

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### VIII. THE FUNCTION OF PRIVATE SCHOOLS IN A STATE SYSTEM.

It will have been noticed that school nomenclature varies much from country to country. In the four countries we have been considering, any school for which state or commune is not directly responsible may be called a private school. And so the foundation school, (generally called in England the *public school*), the company school and the school owned by a private individual all rank as private schools. With us it is only the first two that are held in general honour; but in the north of Europe it is the third that bulks much more largely than the other two and has been in the van of progress and rendered the State unique service. What is the cause of the difference? It is not the number, greater or smaller, of poor, weak private schools which in England blinds the authorities to the excellence of the really good ones. For in Denmark they have as many poor weak private schools as we have in England. But it is rather the fact that the State in these four countries has for the last two or three generations had the insight to devise, and the determination year after year to apply, a ready means of discrimination between schools it could approve and schools it could not, and then to recognise and support the former, as supplying an indispensable element in the public provision of schools. The private schools which have achieved the triumphs enumerated above are not, in fact, private schools as we know them. They are neither public nor private but something between—schools which, giving guarantees and yet retaining their freedom, combine in themselves some of the strongest points of the public school and the private school. The steady support which such a school has received on the part of the powers that be in the north is no doubt due in part to the fact that they had to study economy, but it is also due to their grasping more readily than we the truth that it is through the good private school that needed improvements and reforms first make their appearance and win approval. In Sweden, where the number of private schools for boys is much less than in the other three countries, the importance of trying new ideas and plans was, we saw, so keenly felt, that the State at great expense made special provision for the establishment of such a school of research. And the result is that the school, which has now been in existence three quarters of a century, approximates more and more to an ordinary State school; and that a single private school in its neighbourhood provides, perhaps at one twentieth of the cost to the public purse, the needed experiments in much greater fulness and variety.

In Finland, the wide adoption of the co-education schools, which have proved so acceptable in that country, is all but entirely due to the private schools. In Norway we saw that it was Hartvig Nissen, a private schoolmaster, who re-organised the primary

and secondary schools of the State ; and that in the next generation it is still two private schoolmasters who lead the way in higher education. In Denmark also it is to private effort that schools, both secondary and primary, owe their chief developments, their freshest life. It was two private schools in Denmark that more than a hundred years ago introduced the modern school curriculum into these northern lands ; and it is private schools that have carried it into every corner of Denmark and made its influence more and more felt in the Higher School or Gymnasium. And if Grundtvig was the father of the private continuation schools called People's High Schools, his follower Kristen Kold\* was the father of the private elementary school called the Friskole (see p. 91), which, notwithstanding the poverty of its outward appearance, has, more than any other influence, by its humane methods and generous conception of education, transformed the Danish public elementary school from a place of torture and parrot-like repetition into a real home of education.

But we have seen that it is not only in the sphere of intension (if one may so speak), but also in that of extension that the school owned and directed by an individual, has, *when handled wisely*, rendered the State such welcome service. In the north of Europe such schools, such recognised schools, have, in varying measures, not only kept other schools from stagnation by introducing new methods and new subjects, and occasionally by raising the whole tone and conception of education ; but they have also, if we take one country with another, borne quite half the burden of providing adequate secondary instruction—and that at a less cost to the community (the State and the parent together) than the other half. If, with a wave of the hand, they could be swept out of existence the land would be bare indeed. In Christiania eighty-five per cent. of her secondary school pupils, and in Copenhagen ninety-five, would be left without instruction ; half the higher secondary schools of Denmark, with three-fourths of those that prepare for the higher ranks of business must disappear ; half the higher schools in Norway and more than half of those in Finland, with the best and the largest of the higher schools for girls in Sweden, must all go, not to speak of the People's High Schools in Denmark, upon which national prosperity so largely depends.

J. S. THORNTON.<sup>o</sup>

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\* Kold's influence was felt most in Fünen. In Jutland two of Grundtvig's disciples, Ludv. Kr. Müller, head of the State Seminary at Ranum, and Svendsen, head of the State Seminary at Jellinge, were working zealously in the same direction as Kold, so that Grundtvig's ideals are now widely spread among elementary teachers in Denmark. My plan has hardly allowed me to say as much of Kold as I desired. There have been many books written about him, including a life, by F. Nygaard (1895). But his own account of himself, given at great length, by Grundtvig's special request, at a meeting held in Copenhagen four years before his death, still remains, and is likely to remain, our best representation of his work and methods. It was reported in full, and is with reason held an educational classic in Denmark,

## APPENDIX.

### THE TEACHING OF HYGIENE AND TEMPERANCE IN DENMARK.

In the seminaries where country school-teachers receive their educational training in a three years course, Hygiene is not a special subject; it is taught in connection with: (1) Pedagogy; (2) Athletics; (3) Anatomy; (4) Physiology, and (5) Zoology. It cannot be said with certainty how much time is spent weekly on the teaching of Hygiene—probably not more than two or three hours.

Temperance is not taught.

In the public elementary schools Hygiene is not taught as a subject. The teacher of Zoology may, if he likes, give the pupils information in Hygiene, but this is entirely left to his discretion.

In the State High School for Teachers in Copenhagen (called *Statens Lærerkursus*, see above, pp. 88 and 93, and especially p. 591, Vol. I., Special Reports) 1½ hours are given weekly to the teaching of Hygiene, besides various demonstrations and visits to hospitals and other institutions. The following matters are also dealt with:—

*Water*: The requirements for good drinking water; personal cleanliness; skin treatment; baths.

*Nourishment*: The selection of stimulating and healthy food; its value as nourishment, etc.

*Articles of Food*: Their content of nutritive stuff; food injurious or dangerous to the health.

*Stimulants*: Detailed information as to the detrimental effect of alcoholic drinks.

*Houses*: Dampness; heating; cleanliness, etc.

*Work*: Overwork; rest; physical exercise; sport.

*Hygiene for Children*: The growing age.

*School Hygiene*: Risk run by teachers themselves of catching infectious diseases; measures to be taken against such, especially tuberculosis.

There is a special yearly State grant of 5,000 kr. (£278) for lectures on Pedagogy and Hygiene in the State High School, and 4,000 kr. of this are spent on Hygiene. This grant has been allowed since 1890 on the initiative of the "Selskabet for Sundhedspleje" (Society for the Teaching of Hygiene).

Teachers from the country generally visit the State High School in Copenhagen during their vacation, but the school is open all the year round, and the various courses are always attended by a sufficient number of Copenhagen teachers. The total State grant for the maintenance of this school is 200,000 kr. (£11,000) a year.

There is a special one-year course for teachers, on which 1,000 kr. is spent. This money is paid out of the general grant for education (kr. 200,000). The State has, in addition, during the last five years granted an amount of 5,000 kr. for lectures on Hygiene and Gymnastics, given by travelling instructors, who visit schools in the country.

It will be seen that in this way about 10,000 kr. (£550) are spent specially on the teaching of Hygiene.

During the last two or three years a considerable number of teachers have expressed a wish to have special lectures on the effect of alcoholic drinks and special courses have, therefore, now been arranged for this matter.

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The opportunities of this *Lærerkursus* of the State are intended chiefly (1) for elementary school teachers, especially those who wish to add to their ordinary duties some evening or continuation school work, and (2) for teachers in the *realskoler*. There has hitherto been no instruction in School Hygiene for teachers in the Latin School or Gymnasium. Henceforth, however, some provision will be made for it in connexion with the new Training Course for Higher Teachers, which the new law of 1903 (see p. 95) has made necessary. The theoretical training in *Pedagogik*, extending over 50 hours, is given by a University Docent, to whom is assigned 2,400 kr. a year; and that in School Hygiene (20 hours) by another Docent, who receives 1,200 kr. The general practical training is given in the schools themselves; and 4,000 kr. is divided amongst those teachers who are willing to add to their usual duties the oversight of the teacher candidates, whilst 1,400 kr. is set aside for such of the latter as need some assistance to complete their studies. Thus 9,000 kr. a year (£450) covers the yearly expense of this new training course for higher teachers. See Asmussen's *Meddelelser* for 1904-5, published in 1906, especially pp. 88-92).

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