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REPORT

OF FIRST TRIENNIAL CONGRESS

HELD AT

CAMBRIDGE (ENGLAND)

JULY 1928

ON THE SUBJECT OF

FUNDAMENTAL RELATIONSHIPS
BETWEEN ALL SECTIONS OF THE
INDUSTRIAL COMMUNITY

IN TWO SECTIONS

SECTION I

CONTAINING REPORTS FROM COUNTRIES EDITED IN THE
ORIGINAL LANGUAGES FOR THE MEMBERS OF THE CONGRESS

TO BE OBTAINED FROM THE SECRETARIAT OF THE ASSOCIATION
JAVASTRAAT 66, THE HAGUE, HOLLAND

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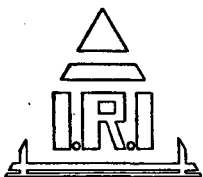
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INTERNATIONAL ASSOCIATION FOR THE
STUDY AND IMPROVEMENT OF HUMAN
RELATIONS AND CONDITIONS IN INDUSTRY



PRELIMINARY
PROGRAMME
OF THE
1928 CONGRESS

TO BE HELD AT GIRTON COLLEGE,
CAMBRIDGE, ENGLAND, FROM
JUNE 27TH (EVENING) TO
JULY 3RD (MORNING)

SUBJECT

FUNDAMENTAL RELATIONSHIPS BETWEEN
ALL SECTIONS OF THE INDUSTRIAL COMMUNITY

**SPEAKERS, CHAIRMEN,
OPENERS OF DISCUSSION**

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Prof. T. H. PEAR M.A., B.Sc., Professor of Psychology University of Manchester, England.
Dr. H. M. VERNON M.A., Investigator for the Industrial Fatigue Research Board, London.
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SECRETARIAT I.R.I. 66 JAVASTRAAT THE HAGUE HOLLAND

THE AIM OF THE ASSOCIATION is indicated by its title. Membership is on an individual basis and is open to all who are engaged in any undertaking involving the employment of persons, or who are occupied in work of scientific research or social significance bearing on Industry, and who are in sympathy with the aims of the Association.

A meeting ground is thus offered within Industry itself for the fulfilment of these aims by cooperation among Directors, Managers, Engineers, Forepeople, General Employees, Personnel (Welfare) Workers, Psychologists, Factory Doctors, Factory Inspectors, Officers of Employers', Workers' and other Industrial Organizations, Industrial Research Workers, Industrial Educationalists, Industrial Social Workers.

At the present time the Association draws its Members from 27 countries, thus giving a wide scope to its studies and findings.

There exist few platforms which provide an opportunity for the dispassionate study and consideration of the basic matters in Industry from all angles and from every point of view. To provide such a platform is precisely the aim of the Association, open as it is to all alike in the Industrial Community

Too little recognition has hitherto been given to the great truth that all in Industry are mutually dependent, each in his own place forming a link indispensable in the chain of Production.

In choosing for its first Congress the subject of "Fundamental Relationships between all Sections of the Industrial Community" the Association was guided by a desire to search for and define the natural elements composing each section, to promote within the industrial world a fuller knowledge of their relative value and to awaken a greater consciousness of their underlying unity.

LE BUT POURSUIVI PAR L'ASSOCIATION ressort de son titre même.

Peuvent en être membres tous ceux qui se trouvent amenés à sympathiser avec les buts poursuivis par l'Association et qui participent à une entreprise impliquant l'emploi d'un certain nombre de personnes, ou bien qui s'occupent d'un travail de recherche scientifique ou d'une oeuvre de portée sociale ayant trait à l'industrie.

Ainsi se trouve établi un terrain de rencontre, au sein de l'industrie même, pour la réalisation de ces buts déterminés, grâce à la collaboration de toutes les personnes: directeurs, administrateurs, ingénieurs, contre-maitres, ouvriers et employés, surintendants, psychologues, médecins d'usine, inspecteurs de fabrique, fonctionnaires des organisations patronales et ouvrières, ou de toute autre organisation industrielle, investigateurs industriels, pédagogues et travailleurs sociaux en général.

A l'heure actuelle, les membres de l'Association se recrutent dans 27 pays différents, diversité qui a pour résultat d'élargir intensément la possibilité des études et des découvertes.

Il n'existe que bien peu de tribunes permettant d'étudier et de discuter sans passion les questions fondamentales relatives à l'industrie et de les examiner sous tous leurs aspects et à tous les points de vue.

Créer une telle tribune, c'est là précisément le but de l'Association puisque elle accueille indifféremment tous ceux qui participent à la Communauté Industrielle.

Jusqu'à présent on a trop peu voulu reconnaître cette grande vérité que tous, dans l'industrie, nous dépendons les uns des autres, chacun formant, à son poste, l'un des anneaux indispensables dans la chaîne de la production. En choisissant pour sujet de son premier Congrès "Les Relations Fondamentales entre toutes les diverses Sections de la Communauté Industrielle", l'Association a obéi au désir de rechercher et de définir les éléments naturels composant chacune de ces sections, au vœu d'accroître, au sein du monde industriel, la véritable connaissance de leur valeur respective et à l'espoir d'éveiller une conscience plus distincte de l'unité qui leur est à toutes sous-jacente.

DIE ZIELE DER VEREINIGUNG gehen aus ihrem Namen hervor. Mitglied der Vereinigung können alle Personen werden, die als Arbeitgeber oder -nehmer in einem mehrere Personen beschäftigenden Betriebe tätig sind oder die in betriebswissenschaftlicher oder sozialer Arbeit in irgend einer Beziehung zur Industrie stehen, und sich den Bestrebungen der Vereinigung anschliessen.

Das Gebiet der gemeinsamen Interessen liegt also in der Industrie selbst. Die Verwirklichung der Ziele der Vereinigung soll in einem Zusammenwirken von Direktoren, Betriebsleitern, Ingenieuren, Werkmeistern und Vorarbeitern, Arbeitern und Angestellten, Betriebswohlfahrtspflegern und Personalbeamten, Psychologen, Fabrikärzten, Gewerbeinspektoren, Beamten von Arbeitgeber-, Arbeitnehmer- und andern industriellen Organisationen, Betriebswissenschaftlichen Forschern, Pädagogen und industriellen Sozialarbeitern erreicht werden.

Die Vereinigung zählt jetzt Mitglieder aus 27 Ländern, die für ihre Untersuchungen und Arbeiten einen weiten Rahmen bieten.

Selten findet man einen geeigneten Boden und die Möglichkeit, Grundfragen der Industrie objektiv von allen Seiten her und unter Berücksichtigung aller Gesichtspunkte zu studieren und zu diskutieren.

Es ist das Ziel der Vereinigung, die allen an der Industrie Beteiligten offen steht, einen solchen gemeinsamen Boden zu schaffen.

Bisher hat sich die Erkenntnis noch zu wenig Bahn gebrochen, dass alle an der Industrie Beteiligten von einander abhängig sind, und dass jeder so an seinem Platz ein unentbehrliches Glied in der Kette der Produktion bildet.

Bei der Wahl des für den ersten Kongress in Aussicht genommenen Themas: „Grundlegende Beziehungen zwischen allen an der Industrie beteiligten Gruppen“ wurde die Vereinigung von dem Wunsch geleitet, die Elemente jeder Gruppe zu erforschen und zu bestimmen, in Wirtschaftskreisen eine grössere Kenntnis ihrer relativen Bedeutung zu verbreiten und ein tieferes Verständnis für ihre innere Verbundenheit zu wecken.

PREFACE

The volume here presented is the first section of the Report which will record the full proceedings of the first triennial Congress of the Association* to be held at Girton College, Cambridge, from June 28th - July 3rd 1928.

The present volume contains reports from countries which have been prepared in advance of the Congress, both with a view to making the most economical use of the time available for meeting together and in order to allow for a preliminary orientation on the part of Congress members.

Of the 27 countries where the I. R. I. has established contact, reporters from 18 countries were in a position to respond to the request for a report.

The lines along which these reporters were invited to draw up their reports were those indicating the development of fundamental relationships within industry, chiefly as affected by: Cooperation within and between the various Groups in Industry; Education and Training for all Groups in Industry; Industrial Welfare Work, including Personnel and Employment Management; Scientific Management; Industrial Psychology and Vocational Guidance.

As the size of the reports had to be kept within very restricted limits, they are naturally not intended to give more than a bare outline of the position in each respective country.

An exception has been made for the Report of the United States of America, which territory must be regarded as a continent rather than as a country. Also the U. S. A. is showing trends and developments in Industry which are being observed on that continent, as well as in Europe and other parts of the world, with an almost universal interest.

* Since its inception at Flushing, Holland, in 1925, the Association has organized two smaller meetings, the first in 1926 at the Rigi-Scheidegg, Switzerland, the second in 1927 at Baveno, Italy, the latter taking the form of a Summer School.

PREFACE

Attention must be drawn to the fact that the majority of the reports here presented are a sequence to those given at the 1925 Flushing Congress dealing chiefly with the general industrial background of each country, and that the information available in those reports - edited in 1925 - has not here been repeated.

THE HAGUE, June 1928.

PRÉFACE

Le présent volume constitue la première partie du Rapport destiné à retracer l'ensemble des travaux accomplis par le premier Congrès triennal de l'Association, * devant avoir lieu au Girton College de Cambridge, du 28 juin au 23 juillet 1928.

Ce volume est formé des rapports relatifs aux différents pays. Les rapports eux-mêmes ont été rédigés à l'avance et préalablement au Congrès de manière à faciliter, d'une part, l'emploi le plus économique possible du temps dont on disposera pour se réunir et, d'autre part, à permettre une certaine orientation préliminaire chez les membres du Congrès.

Sur les 27 pays avec lesquels l'I. R. I. se trouve en contact, il y en a 18 dont les rapporteurs ont été à même de répondre à notre demande d'un exposé.

Ces rapporteurs ont été invités à établir leur travail selon des directives permettant de montrer le développement des relations fondamentales dans l'industrie, particulièrement dans le mesure où ces relations se trouvent influencés par les facteurs suivants: la collaboration dans et entre les différents groupes de l'industrie; l'éducation et l'entraînement professionnels dans tous les groupes de la vie économique; le service social industriel, y compris la direction du personnel et de l'embauche; l'organisation scientifique; la psychologie industrielle et l'orientation professionnelle.

Les rapports ayant dû être maintenus dans les limites fort étroites, on s'est naturellement borné à y tracer de simples tableaux d'ensemble de la situation dans chacun des pays respectif.

Toutefois, on a fait une exception en ce qui concerne les Etats-Unis d'Amérique, dont le territoire doit plutôt être

* Depuis sa création à Flessingue, Hollande, en 1925, l'Association a organisé deux réunions de caractère plus intime, la première en 1926, à la Rigi-Scheidegg, Suisse, la seconde en 1927, à Baveno, Italie, cette dernière ayant pris la forme d'un Cours de Vacances.

PRÉFACE.

considéré comme un continent, et non comme un pays particulier. Les Etats-Unis, de plus, manifestent, dans l'industrie, des tendances et des développements qui suscitent un intérêt à peu près universel de la part de l'observation tant européenne que les autres parties du monde.

Il convient d'attirer l'attention sur ce fait que la majorité des rapports ici présentés font suite aux rapports donnés au Congrès de Flessingue, en 1925, et traitant des bases générales de la vie industrielle dans chaque pays; les informations contenues dans ces rapports antérieurs - édités en 1925 - n'ont donc pas été reproduites dans le présent volume.

LA HAYE, juin 1928.

VORWORT

Der vorliegende Band bildet den ersten Teil des Berichtes über die Gesamtverhandlungen des Kongresses der Vereinigung, der vom 28. Juni bis 3. Juli 1928 in Girton College, Cambridge, als erster der alle drei Jahre zu veranstaltenden Kongresse stattfindet. *

Dieser Band enthält die Berichte der Länder, die sowohl im Interesse grösstmöglicher Zeitersparnis während der Tagung wie der vorausgehenden Orientierung der Kongressteilnehmer schon vor dem Kongress zusammengestellt worden sind.

Von den 27 Ländern, mit denen die I. R. I. in engerer Verbindung steht, haben Berichterstatter aus 18 Ländern der Bitte um einen Bericht entsprechen können.

Die Berichterstatter waren gebeten worden die Entwicklung der grundlegenden Beziehungen in der Industrie zum Leitgedanken ihrer Berichte zu machen, unter besonderer Berücksichtigung der folgenden Entwicklungsfaktoren: Zusammenarbeit innerhalb und zwischen den verschiedenen Gruppen der Industrie; Ausbildung und Schulung für alle Berufsgruppen in der Industrie; Betriebswohlfahrtspflege einschliesslich Personal- und Anstellungswesen; wissenschaftliche Betriebsführung; Berufspsychologie und Berufsberatung.

Da der Umfang der Berichte sehr beschränkt werden musste, so können sie selbstverständlich die Verhältnisse in den einzelnen Ländern nur in grossen Umrissen darstellen.

Eine Ausnahme bildet der Bericht für die Vereinigten Staaten von Amerika, die weniger als ein Land, sondern mehr als Kontinent anzusehen sind. Die Vereinigten Staaten zeigen ferner Wirtschaftstendenzen und -Entwicklungen auf, die auch in Europa und in den anderen Erdteilen allgemein mit Interesse verfolgt werden.

* Seit ihrer Gründung in Vlissingen, Holland, 1925, hat die Vereinigung zwei kleinere Tagungen veranstaltet, die erste im Jahre 1926 auf Rigi-Scheidegg, Schweiz, eine zweite 1927 in Baveno, Italien, die den Charakter einer Sommerschule hatte.

VORWORT:

Es muss in Betracht gezogen werden, dass die meisten in diesem Band enthaltenen Berichte eine Fortsetzung der Referate bilden, die 1925 auf dem Kongress in Vlissingen über die allgemeine Wirtschaftslage der einzelnen Länder erstattet worden sind; daher sind die in jenen Berichten enthaltenen Angaben - die 1925 veröffentlicht worden sind - hier nicht noch einmal wiederholt worden.

HAAG im Juni 1928.

CONTENTS

INTRODUCTORY

	Page
PREFACE	8
PRÉFACE	10
VORWORT	12

REPORTS

THE UNITED STATES OF AMERICA . . . compiled by Committee Chairman: Glenn A. Bowers	16
BELGIQUE Mme. Schurmans de Keghel et Mlle. Goffart	129
DENMARK Fru Gloerfelt-Tarp and Fru Dr. Ragna Schou	138
DEUTSCHLAND. Frau Dr. Hildegard Böhme.	146
ESPAGNE José Mallart	155
FINLAND. Fröken Helny Bergbom.	163
GREAT BRITAIN compiled Miss S. M. Bevington B.Sc.	168
IRELAND. R. M. Fox	189
ITALIE Dr. Annibale Correggiari	196

CONTENTS

JAPAN . . .	by Mr. Yamada and Mr. Sekiya	222
ÖSTERREICH . . .	„ H. Mars B.A.	228
POLOGNE . . .	„ Abbé Woycicki	239
ROUMANIE . . .	compiled „ Mme. Ottila Trybalski	248
SCHWEIZ . . .	„ Frau Dr. E. Züblin-Spiller	254
SWEDEN.	„ Fröken S. Fredholm.	262

ADDENDUM

CZECHOSLOVAKIA	by V. Verunáč, Doc. Dr.	269
FRANCE.	„ Mlle. L. Roux	287
INDIA.	„ Jai Mangal Sinha	294

UNITED STATES OF AMERICA

REPORT on the development of fundamental relationships
within industry in the United States of America

as affected by

SCIENTIFIC MANAGEMENT,

by H. S. Person, Ph.D., Taylor Society, New-York.

INDUSTRIAL PSYCHOLOGY,

by W. V. Bingham, Ph. D., Personnel Research Federation, New-York.

EDUCATION AND INDUSTRY,

by C. R. Mann, Ph.D., American Council on Education, Washington.

PERSONNEL ADMINISTRATION,

by W. J. Donald, Ph. D., and Edith King Donald, American
Management Association, New-York.

LABOR MOVEMENT,

by Florence C. Thorne, American Federation of Labor, Washington.

SOCIAL AND ECONOMIC BACKGROUND,

by Glenn A. Bowers, Industrial Relations Counselors, Inc., New-York.

with a preceding summary by committee consisting of

Lillian M. Gilbreth, Ph. D.,
Consulting Engineer, Montclair, New-York.

Mary van Kleeck,
Director Department of Industrial Studies, Russell Sage Foundation, New-York

Glenn A. Bowers, Chairman.

SUMMARY OF REPORT BY COMMITTEE

LILLIAN M. GILBRETH, PH. D., MARY VAN KLEECK, GLENN A. BOWERS

In the United States of America the fundamental relationships of people in industry are rapidly changing and the influences responsible for these changes are many and complicated. They are so inextricably woven into the fabric of political, industrial and social life that it is bewildering to try to isolate any one. What are the most influential factors? How are they inter-related? What is the actual effect of each? No reasonable person pretends now to know. Yet the definite trends that are discernible are evidences of efforts to work out some sort of coherent system. In few instances do these efforts represent the concerted endeavor of all those interested. On the contrary, one of the conspicuous habits of the past which has been carried over into the present is that of regarding each phase of industrial relationships as a unit to be approached and dealt with separately. Frequently also those interested in one particular phase completely ignore the activities of other groups or even oppose them.

There are, however, in America indications of a desire to coordinate these group philosophies and activities, also of similarity of approach to outstanding problems. Already this spirit of consideration for all aspects of the total situation is of practical usefulness. In the preparation of this report the facilities of seven substantial organizations were immediately available. The historian of the future may possibly look back upon such cooperative projects, of which this is but one example, as the beginnings of a new viewpoint in the efforts to resolve conflicts in industry. Indeed, if there be one outstanding characteristic of labor relations in American industry in 1928, it is the approximate uniformity of philosophy and modus operandi of dominant groups. It is encouraging to note that organized and unorganized employers and employees are pinning their faith on constructive cooperation for the advancement of their respective group interests and are using similar and often identical language in voicing their aspirations.

In this brief summary of six papers only hasty reference can be made to some of the most important influences in American industry. The five factors in the development of fundamental

SUMMARY

relationships especially considered are those of primary interest to the I. R. I., namely:

SCIENTIFIC MANAGEMENT,
EDUCATION,
INDUSTRIAL PSYCHOLOGY,
PERSONNEL ADMINISTRATION,
LABOR UNIONISM.

These fields of interest inevitably overlap. The functions and tentative accomplishments of each of these will be treated here under the following six categories:

- I. THE WORKER AND HIS WORK.
- II. THE WORKER AND HIS IMMEDIATE SUPERVISOR.
- III. THE WORKER AND HIS FELLOW WORKERS.
- IV. MANAGERS AND WORKERS.
- V. OWNERS, MANAGERS, AND WORKERS.
- VI. THE ENTIRE CIRCLE OF CONTACTS.

In each of these six areas the above named factors have been influential in varying degree. As to present day objectives in industrial relationships, there is general agreement among the organizations representing the viewpoints of management, workers, and scientists which have cooperated in this report: public and private pronouncements of the several representative bodies include the following in various forms of expression:

I. THE WORKER AND HIS WORK.

Discover and present in concise form the requirements of the job.

Evaluate, insofar as possible, special abilities of the worker.

Develop training facilities appropriate to the job.

Conserve the workers' energy through finding the easiest and most natural ways of doing the work, thus reducing fatigue.

Increase the quality and quantity of output.

Provide fullest opportunity for growth, individual expression, initiative and advancement of the individual in proportion to his ability.

SUMMARY

Encourage workers' participation in improvement of methods and conditions of work and in the elimination of waste.
Compensate the individual in proportion to his special ability and contribution wherever practicable.

II. THE WORKER AND HIS IMMEDIATE SUPERVISOR.

Provide clear and definite instructions in work assignments.
Make the immediate supervisor a skilful instructor and an understanding helper of his men.
Assure the reasonableness of work requirements through the determination of a proper day's work.
Set up safeguards against the misuse of powers of supervisor over individual.
Develop and maintain the workers' appreciation of his share in responsibility for the product.

III. THE WORKER AND HIS FELLOW WORKERS.

Provide equality of opportunity and remove discrimination between individuals.
Develop an esprit de corps which will harmonize competing interests, real or imaginary, for the attainment of the common goal.
Preserve freedom of association of workers for the advancement and protection of special group interests.
Devise and preserve a wage plan which is equitable as between workers.

IV. MANAGERS AND WORKERS.

Share responsibility for the development of sound policies of administration.
Facilitate the association of workers for joint dealings with management through a predetermined orderly procedure.
Provide regularity of employment.
Pay the highest practicable wage consistent with enduring operation under existing competitive conditions.

V. OWNERS, MANAGERS, AND WORKERS.

Develop clear understanding of functions, rights, and responsibilities of these overlapping groups.

SUMMARY

Devise and maintain an orderly procedure for harmonizing the interests of each group.

Seek an equitable distribution of rewards among workers, management, and capital.

Yield earnings for employees which will permit a rising standard of living and the accumulation of adequate reserves for incapacity in old age.

VI. THE ENTIRE CIRCLE OF CONTACTS.

Combine in each producing unit the efforts of all persons associated with it for efficient output in quality and quantity.

Discover by methods of science how the requirements of industry and the capacities of men may be adjusted.

Coordinate the needs of industry and society through training and education.

Conduct the industrial enterprise that it may best serve the society of which it is a part.

Such are the goals of American industry. How is this master job being approached? What has been accomplished?

The methods used by various groups are again great in number and of wide variety. Foremost in the technique common to all groups is reliance upon "facts". In the search for facts about industry, regardless of the manner in which those facts are to be used, the methods of science are almost universally acclaimed. The amount of research into man's relation to work now under way in our universities is enormous. Industrialists, both managers and workers, are watching these experiments for the first glimmer of results and frequently undertake to apply them prematurely and without adequate preparation. Direct attempts are also being made by companies, manufacturers' associations, technical and professional bodies, trade unions, and the government to discover the meaning of current situations and to anticipate new developments.

Unquestionably this fever for research has resulted in important changes of method in certain sections of industry, in the creation and use of mechanical appliances, and in the develop-

SUMMARY

ment of new management procedures. Yet only a beginning has been made in the economical conservation and application of man-power. In this field great progress has been made in the reduction of accidents through the use of mechanical safeguards and awakened caution among workers. Two factors contributed to this end: accident compensation legislation and voluntary efforts of employers and employees in organized campaigns. Both of these approaches began about 1910.

Attention is now being turned toward similar reduction in the sickness hazard. The average loss per worker on account of sickness is between eight and nine days per year which is about seven times that due to accidents. The total loss from illness has been reliably estimated as \$2,000,000,000 per year.

The industrial loss due to irregularities in employment and to unemployment fluctuates, of course, with the state of industry. No adequate public statistics are available to determine its extent. A dozen relatively small employers have set up unemployment compensation plans for regular employees, while several unions of the needle trades have developed such plans under joint agreement with employers. Not more than 50,000 workers are covered by plans of this type.

Wastes due to strike or lockout are naturally the most spectacular. No national machinery exists for the avoidance or settlement of such conflicts, although the principle of arbitration is widely accepted and used. The conciliation service of the United States Department of Labor frequently exercises a potent influence in critical industrial disputes.

The application of man-power on the job also affords a vast area for improvement. In not many plants do conditions exist which permit the exercise of the workers' best sustained efforts. Failures in planning and routing materials and supplies and in providing working conditions and human relations of the right sort result in untold waste. In fact, rarely is a full day's work definable under present circumstances.

This brief recital of existing industrial wastes serves but to focus the problems for which employers, employees, and industrial scientists are seeking solutions. The most promising

SUMMARY

field of rapid development lies in the direction of better human relationships.

Present programs for solutions are of very recent origin. Scientific management as originated by Frederick Taylor has had the longest history among those here considered, yet it did not receive widespread attention until 1910. Industrial psychology, notwithstanding its twenty years of struggle, has not yet made a perceptible mark on American industry as a distinct science. Consciously planned personnel administration had its beginnings between 1910 and 1915 and after radical changes in basic notions has only now become a recognizable function of management. The readjustment of educational curricula to meet the needs of twentieth century industrial society is a post-war development, while the present changing policies of organized labor are as yet in an embryonic stage.

The methods of industry for improving the relations between the worker and his work are much the same in all groups. Discovery of the requirements of the job and the capacities of individuals calls for a technique in which there is little occasion for difference of opinion. Actual accomplishment in job specification already has been substantial in that practical pattern forms have been devised and are in daily use in large and small establishments. The extent to which these are applied throughout industry is, however, limited. The analysis of individual capacities is still in the experimental stage. Universities and colleges are developing many forms of objective testing and hundreds of thousands of individual case records, which will eventually permit comparison with life histories. Industry in general is skeptical of this attempt at appraisal of personal capacities. A generation of workers and managers will doubtless pass through industry before this tool is adequately developed and widely applied.

This experimentation is all aimed at securing freedom of opportunity that releases individual energy. Meanwhile the selection, placement, and promotion of the individual worker is being made through the use of expediency measures, often reasonably successful for present purposes.

SUMMARY

In this concentration on the worker and his work, the supervisor plays an essential part. Upon the worker and his immediate supervisor rests the responsibility for the work in process. The foreman is as powerful an influence for good or evil today as ever. In former times his methods were commonly unquestioned by his managing superiors. He hired and fired upon his own authority and was expected to get production in his own way. Several influences within the past two decades have been focused on the foreman and his job. The practice of basing decisions on facts serves to limit the range of his responsibility through the development of planning, scheduling, routing, stockroom orders, and other tools of scientific management.

The growth of trade unions and company employee representation plans at first curtailed the freedom of the foreman particularly in stating what he could not do. More recently, however, 'he tide has turned and the foreman is taking on a new kind of responsibility. He is now the key administrator through whom practically all personnel activities become effective. His authority is enhanced by providing him with more effective tools of administration. The workers' relations with the foreman have become more closely interrelated as a result of the more intelligent efforts at cooperation in efficient production.

The introduction of training programs is an aid to the foreman first by helping him to study his own task, second by placing more capable workmen on the job in shorter time, and third by teaching him how to train both new and older workers to work more effectively.

Relationships between the worker and his fellow worker are of three general types. Historically and even predominately today the worker is related to other workers only as an individual. In a sense each is a competitor for the job of his neighbor. Fortunately there have been enough jobs for all, except during intermittent periods of depression. Secondly, some 4,000,000 or more workers are associated in trade or industrial unions for the protection and advancement

SUMMARY

of their group interests. Thirdly, workers of many individual establishments are associated in the company or plant for direct organized contact with management. Perhaps 1,700,000 are under this form of joint relations. Within these latter two types there are many variations in form.

It is doubtful that scientific management, industrial psychology, or education had any noteworthy influence upon the development of these particular group or joint relationships just mentioned. The labor union and the employee representation movements were rather sponsored respectively by employees and employers. Labor organized primarily to improve working conditions in backward industries. Employers subsequently devised company organizations of employees because they felt that the community of interest between the employees of a single company was greater than that between employees of a craft or industry; also because they did not like the outside control which ordinarily accompanies trade union recognition. Trade unionists maintain that this type of joint relations does not best serve the interests of workers because of inequality of bargaining power. They believe that the first requisite of any organization of workers is that it must be able to establish and maintain itself by economic force, if necessary.

Up to the war period labor unions had been engaged mainly in a struggle for recognition and the establishment of certain minimum standards. Some of the older unions which had already attained an accepted status had also shown an interest in, and capacity for working with management to solve problems of operation. This was notably true in the share which the typographical union had in the introduction of the typesetting machine into the printing industry. But the struggle for recognition in most cases had been accompanied by bitter industrial strife and methods were used which were not a credit to either party. At least, there developed a distrust between union leaders and managers which precluded, for the time being, cooperation for constructive purposes. The desire for cooperation with employees in plans of repeated strikes and lockouts prompted certain employers to set up the new form of employee-employer relationship with the company or

SUMMARY

plant as the unit. The idea of cooperation had a magic appeal. Although cooperation did not always result from the new plan, employee representation on a company basis did serve to crystallize in American industry the function of cooperation between the parties immediately involved.

Principally as a result of war-time joint relations, but also as a natural evolution of thought, managers and owners came to accept the principle of collective bargaining. Some, however, refuse to limit this operation to dealings with unions and insisted that agreements arrived at with employees of a single company, frequently with arbitration provisions, also constitute collective bargaining. Whatever may be the correct view, it is certain that many of the company plans established or stimulated by employers could not be abandoned without a strike of the employees under it.

Thus changing relationships between the worker and his fellow-workers have brought about a new status individually and collectively between managers and workers. The post-war extension of this philosophy of cooperation has not been limited to any one group or any one type of joint relationship. A momentous development has taken place grounded on the principle that increased wages and standards of living can only be attained through efficient production. In company plans, employees have cooperated with management in the elimination of accident hazards, the reduction of scrap and other forms of waste, and to the making of suggestions under systems of reward. In certain unionized industries there has grown up union-management cooperation of a substantial sort. The employment of technicians and engineers as aids in this participation in management has been especially noteworthy. In this two-phased cooperative movement the ultimate goals sought by the trade unionists and the advocates of the company employee representation movement, as expressed by the leaders of these groups, are identical. Both want a prosperous industry which will pay high return in the form of wages, salaries and profits. Both believe that enduring prosperity will result only under conditions which free the creative abilities

SUMMARY

of all involved in the enterprise. Whatever may be the form of joint relations, the methods used by workers and managers cooperating constructively are of the same order and kind. Such methods include participation in planning, suggestions for improvement of methods and working conditions, conferences, and in the exercise of other functions and procedures involving judgment. Although the form of organization does not in itself induce or prevent the use of cooperative tactics, it is a vital factor when trade union recognition is questioned. In such cases the immediate goal of the workers is recognition. In fact, some observers have regarded the willingness of unions to cooperate primarily as a bid for further recognition.

Managers and workers are in this manner being drawn into a community of interests which have hitherto prevailed only to a limited degree.. This has been enhanced somewhat by the changing relationships between owners, managers and workers. On the one hand owners and managers have become separate entities as the corporate stock form of industrial organization has taken the place of managing partnerships, while on the other hand the spread of capital ownership has made the employee a factor as an owner of securities. This new employee position is not confined solely to employee holdings of stock in the company for which he works, but includes also investments in savings banks, insurance policies and the potential business operations of trade unions. It is true that these evidences of employees as capitalists do not carry with them much direct power over industrial policies. Such power is being attained rather through the demonstration of ability to aid in determining policies in an increasing number of situations which permit it.

An important element in this changing economic status of workers is the present widely held theory that high wages enhance purchasing and that industry thus expanded yields increased rewards for all parties. It yet remains to be seen how long this theory will prevail in actual practice. Widespread unemployment or a general industrial depression would put the theory of high wages to a crucial test.

SUMMARY

It may be seen, therefore, that the manager and the worker are enhancing their positions in the triumvirate with capital and that the interdependence of the family circle - the entire circle of contacts is more clearly recognizable. In fact this philosophy of mutuality of interests, multiplicity of responsibility, and integration of purposes and methods appear to be the emerging ideal of American industry. However, if this be the goal it is yet a long way from accomplishment. The hopeful sign lies in the apparently narrowing area of conflict and the extension of the area of cooperation.

It would be extremely unwise to attribute to any one movement the blame or credit for the industrial relationships which exist in the United States today. There is plenty of stigma and glory for all. Each has had its influence, either in one direction or another. In some cases there has been unanimity of purpose and methods; in other instances there have been divergent viewpoints. Nevertheless, out of this mosaic the following outstanding accomplishments may be credited each to the movement which was dominant in seeking it.

SCIENTIFIC MANAGEMENT has contributed a new viewpoint and a new technique; it has laid the groundwork for the recognition of functional relationships in industry; and it has set up operating situations which develop habit patterns of understanding, cooperation and high productivity.

INDUSTRIAL PSYCHOLOGY has focused attention on the individual worker and his job; it has brought into the foreground mental processes and emotional reactions in industry as fields for scientific study.

EDUCATION is developing a basis for creating situations in which the individual will have maximum opportunity to do the work he is best fitted to do and his natural aptitudes will be given free range of expression through individualized training.

PERSONNEL ADMINISTRATION has demonstrated the importance of meeting personal needs of workers and adjusting them to the requirements of the individual producing unit; it has

SUMMARY

applied many of the tools of science without calling them scientific.

ORGANIZED LABOR has been a prime and potential factor in raising the standards of living of American workers; it has been a strong force in support of capitalistic industry, and is contributing substantially to the enlistment of workers' full efforts in production.

Finally, the existing relationships in industry have doubtless developed as they have in America because of influences that are more basic than, or at least precedent to, the five especially considered in this paper. For one hundred and fifty years Americans have been engaged in conquering a continent of vast natural resources under a political organization peculiarly their own. A philosophy of individualism clearly expressed in the early days of the republic has laid its imprint on industrial development. Only in this century has the doctrine of the priority of public interest come to be generally accepted, and even yet its application is far from general. Scientific management, industrial psychology, education, personnel administration, and the labor movement each represent conscious attempts to direct the development of fundamental relationships within industry in ways which will benefit all those concerned, whether immediately or remotely.

SCIENTIFIC MANAGEMENT

BY H. S. PERSON, PH. D.,

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The factors involved in the organization and co-ordination of specialized efforts for the accomplishment of a common purpose are numerous, variable and difficult of casual valuation. Too frequently policies, plans and procedures are based on individual authority, opinion or snap judgments, and consequently energies are misapplied, results disproportionate to efforts, rewards inequitably distributed, and human nature violated.

Scientific Management by the utilization of investigation and experiment seeks to eliminate superficial variables, discover the laws of each particular managerial situation and, through appropriate procedures, to substitute these laws for personal authority and opinions. It aims to economize energies, secure maximum rewards, make self-expression and self-respect realizable in every task, and generally to promote human welfare through harmonious co-operation in livelihood activities.

This involves primarily a state of mind towards managerial responsibility and a method of approach towards the solution of managerial problems; not the speedy installation of an inflexible system of procedures. It involves purpose, ideals, investigation, understanding, and prolonged and patient effort. It involves human sympathy and capacity for co-operation.

The capacities of organizations for the development of these characteristics vary greatly. Therefore scientific management varies greatly in both fundamental and superficial aspects as between different plants. There are few examples of complete development, but there are many instances of varying degrees of partial development, and American industry as a whole has been profoundly influenced by scientific management.

Scientific management has a number of objectives, according to the point of view from which it is examined. The following are outstanding: to make enterprise successful by good judgment in gauging the demand for the commodities or services to be produced and by economical application of the human and material energies involved; to make work agreeable in its physical conditions, human relations and the satisfaction of a job well done; and to promote human welfare by increasing productivity, improving distribution and raising the standard of living.

It was a practical human relations problem arising out of an effort to secure productivity that in 1880 stimulated Taylor, then an inexperienced boyish foreman, to those researches out of which scientific management developed. ¹

At that date mechanization of American industry was under way, operations were becoming specialized, workers were more

¹ F. B. Copley, "Frederick W. Taylor", Vol. I, pp. 3, 157-189, 205-245.

SCIENTIFIC MANAGEMENT

scattered throughout larger plants, experience with unemployment had generated a spirit of "make work", recent experience with the cutting of piece rates had caused distrust of management, voluntary effort was at a low state of efficiency, supervision had not adjusted itself to the new conditions, and generally morale and productivity were low. Advanced from worker to foreman, young Taylor not unnaturally imitated the bosses under whom he had worked and attempted to force production by driving the workers, which was the method of foremanship then customary.

A fight with the men resulted. Taylor won out, but the experience hurt what was a sensitive and sympathetic nature and disillusioned him. "I was a young man in years, but I give you my word I was a great deal older than I am now, what with the worry, meanness and contemptibleness of the whole damn thing", he said years later; "I made up my mind either to get out.... or to find some remedy for this unbearable condition."²

The youthful foreman did some hard thinking and decided that management was chiefly at fault. Throughout American industry its only concept of a proper day's work was what it could drive workers to do. But it is management's business to know what is a proper day's work. The only way to know is by research and experiment. Thereupon Taylor secured permission to conduct "some experiments", the purpose of which he kept to himself. He did not think they would take over six months, but they continued more than twenty-five years. Almost immediately, however, they yielded results in the nature of measured possibilities of work which put supervision and management in that shop on a factual basis. Output was planned, controlled and increased under conditions agreeable to the workers. Never again did Taylor have controversy with workers under his supervision, and never have any of those who have followed his methods faithfully.

The body of procedures which grew gradually out of these investigations and experiments came to be known as "The Taylor System", and to the doctrine and principles later

² Copley, Op. cit., p. 5.

SCIENTIFIC MANAGEMENT

derived from these procedures were given the name "Scientific Management".³

Scientific management, says Taylor, is primarily a mental attitude towards work, and only secondarily a system of practices. "The essence of scientific management consists in the application of certain broad general principles, and the particular way in which these principles are applied is a matter of entirely subordinate detail... there is not one who uses the same methods in any two successive establishments", he wrote to a friend.⁴ Briefly, this mental attitude involves "the substitution of exact scientific investigation and knowledge for the old individual judgment or opinion, either of the workman or the boss;"⁵ and "the substitution of peace for war, ... of hearty brotherly cooperation for contention and strife; of both pulling hard in the same direction instead of pulling apart; of replacing suspicious watchfulness with mutual confidence."⁶

But the manner in which a mental attitude expresses itself in conduct is hardly less important than the attitude. Although the practices of scientific management may vary according to their adaptation to particular circumstances, nevertheless, if the attitude is definite and consistent, there must be a permanent nucleus of practice which reflects the consistent attitude. Considering both mental attitude and practice, and looking back from 1928 over forty-eight years of its development, scientific management may be restated as involving:

The discovery by investigation and experiment of a factual basis for every determination of policy, program, product, material, machine, tool and method in the operation of an enterprise;

A system of control of operations, in terms of standards determined by the research and experiment, which brings

³ The term "Scientific Management" was adopted by a group of engineers called in conference late in 1910 by Louis D. Brandeis, then an attorney for the shippers in the Eastern Rate Case hearings, now an Associate Justice of the Supreme Court of the United States.

⁴ Copley, *Op. Cit.*, Vol. II, p. 309.

⁵ *Ibid.* Vol. I, p. 12.

⁶ *Ibid.* Vol. I, p. 11.

SCIENTIFIC MANAGEMENT

individual specialized efforts into coordination with the result of a minimum expenditure of the human and material energies involved;

Both research and procedures which, although in design and application chiefly the work of specialists, must be open, reasonable, just, acceptable to all individuals concerned, and expressive of a common purpose and good-will. ⁷

It is obvious to one experienced in human affairs, and particularly in enterprises in which many types of individuality must join in common effort, that here is not an inflexible system of procedures which can be bought and installed like a boiler or a loom; that on the contrary here is something of an organic nature which, although conceived and guided by an outstanding leadership, grows out of a harmony of desires and understandings within the group. That is one reason why there are so few complete developments of scientific management, even though American industry generally has been profoundly influenced by its spirit and has come to utilize many of its mechanisms. On the one hand there are too few managers of vision, leadership and energy who do not require the compulsion of circumstances to undertake the patient development of something new; on the other hand, because of natural basic conditions of prosperity there has not been any general serious urge towards ideals and methods marking a radical departure from opportunism. The urge for a consistent and well-rounded development of scientific management, as distinguished from unconscious influence of its spirit and conscious appropriation of some of its waste-saving mechanisms, has been felt chiefly by those rare leaders who are capable of response to ideals of perfection in technical accomplishment and in human relations.

Another reason is that the American executive has not taken to doctrines, theories or systems. A doctrine or a system consists of an integrated group of detail beliefs or practices,

⁷ For a picture of an outstanding case of scientific management, see the description of Kendall Mills Incorporated, a group of seven cotton textile plants, in *Bulletin of the Taylor Society*, Vol. XII, No. 6, December 1927.

SCIENTIFIC MANAGEMENT

many of which may be held or practised by individuals who do not accept or even are not informed concerning the doctrine or the system as a whole. The American industrialist has lived in a period of opportunism, has been concerned chiefly with dynamic problems of frontier industry, and has been engaged in doing things rather than in reading and thinking about things. Doctrines and systems do not excite his interest; in fact, a new doctrine or system is likely at first to invite rejection without serious consideration, although in time it may have great influence if it has integrity and vigor. The planning room, for instance, is now common in American plants, and the concept of high wages and low labor costs now has considerable vogue; yet many do not know that the mechanism came from Taylor, and that in the introduction to "Shop Management" he said: "This book is written mainly with the object of advocating high wages and low labor cost as the foundation of the best management".

Appraisal of the influence of a movement is a matter of historical research, analysis and judgment. One who searches the literature of American management since its beginning will find abundant evidence that the aims, principles and procedures first presented by Taylor have, like the ripples of a stone cast into a pool, spread out into American industry, although many a management of 1928 may not know the source of that which it believes or practises.

In addition to such direct and indirect influence of scientific management, it should be noted that its influence has been enlarged and extended by supplementary forces of independent origin. Those who have made research and experiment the basis of the pursuit of their special interest in management — whether in human relations, merchandising or general administration — have found themselves developing techniques and expressing philosophies essentially identical with the technique and philosophy expressed by Taylor nearly half a century ago. Even the very recent developments of psychology in the field of management are more closely related to Taylor's early empirical studies of fatigue in shoveling, handling pig iron and inspecting balls for ball bearings, than to the intro-

SCIENTIFIC MANAGEMENT

spective psychology which was contemporary with Taylor. He had a vision of such things. Asked why he had not turned attention to scientific management in other phases of management than production, he replied that life was too short, that the best he could do was to make a thorough demonstration in the field of production management, leaving to others the problem of carrying the development into other fields.⁸

The phenomena of mechanization and mass production, so characteristic of American industry during the past quarter century, and so economical in the production of large quantities of identical items, should not be confused with scientific management. Scientific management and mass production may coincide, but they are not the same thing. Where they are found together the results are noteworthy; but frequently where mass production and a high degree of mechanization dominate a scene, scientific management is not found. Mass production has its origin in large markets, a huge volume of orders, standardized products, and the possibility of economical fabrication by means of a steady flow of materials through single-purpose machines and highly specialized workers; and these factors are not infrequently accompanied by some degree of monopoly advantage. If such is the case - and there are such cases - the enterprise may be highly successful by pursuing lines of least resistance which do not include scientific management.

In contrast to mass production, scientific management had its origin in and is to be found today chiefly in small and medium sized plants making variable items, or standard items variable as to detail characteristics, on multiple-purpose machines which require human regulation and attention as work varies. While mass production makes its gains almost entirely by the economies of a ceaseless flow of material through specialized machines, scientific management makes its gains chiefly by eliminating the wastes of misapplied human effort, misused materials, and lack of coordination of efforts where variability is present. Both mass production and scientific management use equipment which is scientifically designed; but scientific

⁸ Bulletin of the Taylor Society, Vol. IX, No. 2, p. 55.

SCIENTIFIC MANAGEMENT

management is a management which is itself scientifically designed. Management is necessarily a matter of study and design in plants making variable products in varying volume on variable machines, for in such plants numerous wastes of maladjustment are possible.

In the United States there is great variety as to size of plants, nature of the processing - continuous, intermittent or variable - and as to the kind and quality of management. The numerical proportion of large mass production establishments is small, but the proportion of workers which they employ and their output is enormous. Some have been strongly influenced by scientific management, some moderately and some very little. There is a very considerable proportion of medium sized plants some of which may have continuous processing in one or more departments, although they would not be classified as mass production establishments. These also have been influenced more or less by scientific management. The dominant proportion of establishments - chiefly, although not altogether, of small size - have managements representing inherited patterns modified by casual imitation. Among all of these classes can be found only a small handful of well-rounded developments of scientific management.*

The large class of plants dominated by tradition and imitation has naturally appropriated some of the mechanisms of scientific management, and although the net result has been a gradual raising of the level of management in such plants, this result has not been achieved in all cases. Very serious damage in individual instances to managerial efficiency and harmonious relations with workers, and to the good repute of scientific management, has resulted from failure to adopt ideals and spirit along with mechanisms. It is in this class of plants that the superficial "efficiency engineer" has found his clientèle, and as he has not hesitated to seek the advantage of proclaim-

* The literature of management has so featured interesting cases of mass production that many students in other countries than the United States have received the impression that American industry is made up of "Fords". The following data will be enlightening. Of establishments having an annual product of more than \$5000, the distribution in 1925 was as follows (Statistical Abstract of the United States, 1925):

SCIENTIFIC MANAGEMENT

ing himself a representative of scientific management, the harm he has been able to bring temporarily to scientific management has been considerable. But American managements are becoming more discerning, discriminating and cautious, and the baneful influence of the "efficiency engineer" appears to be declining.

The concern of scientific management for harmonious industrial relations, and workers' prosperity and goodwill, has always been deep, for one of the first discoveries of research in management is that goodwill is a productive power independently of the efficiency of the equipment and method, and adds to the efficiency of the equipment and method. But scientific management considers workers' welfare and goodwill, not as something which can be generated effectively as a thing apart from the spirit and methods of management, but as something which is dependent on and a consequence of these. Good management and workers' welfare are the two terms of an equation; it matters little which term is put first.

The lines are many along which scientific management contributes to workers' welfare and goodwill, and to harmonious industrial relations. The entire list enumerated below can

Classes by Value of Product	Per cent of Establishments	Per cent of Workers	Per cent of Total Product
\$ 1,000,000 and over *	5.6	56.8	67.6
\$ 500,000 to \$ 1,000,000	5.2	13.5	11.0
\$ 100,000 to \$ 500,000	22.5	20.0	15.3
\$ 20,000 to \$ 100,000	36.8	7.9	5.2
\$ 5,000 to \$ 20,000	29.8	1.9	1.0

And from the United States Census of 1919:

Classes by Number of Wage Earners	Per cent of Establishments	Per cent of Workers
1 to 5 wage earners	56.2	3.3
6 to 20 wage earners	22.2	6.8
21 to 50 wage earners	10.0	8.9
51 to 100 wage earners	4.9	9.6
101 to 250 wage earners	3.9	17.3
251 to 500 wage earners	1.4	13.7
501 to 1000 wage earners	0.6	13.2
Over 1000 wage earners *	0.4	26.2

* The enterprises which an American would classify as representative of mass production are to be found in the upper strata of those classes identified by an asterisk.

SCIENTIFIC MANAGEMENT

be achieved only by a management of superlative vision, understanding and leadership ability, yet the total group of items in the list is true of a particular enterprise which the author has in mind, and other enterprises have achieved a greater or less proportion of these items, according to the capacity for leadership and cooperation present in both the management and the workers in particular instances. Scientific management aims:

To gauge industrial tendencies and the market,¹⁰ in order thereby to regularize operations in a manner which will conserve the investment, sustain the enterprise as an employing agency and assure continuous operation and employment.

To assure the employee not only continuous operating and employment by a correct gauging of the market, but also to assure by planned and balanced operations a continuous earning opportunity while on the payroll.

To earn, through a waste-saving management and processing technique, a larger income from a given expenditure of human and material energies, which shall be shared by workers and management. Scientific management plants generally pay wages above the market.

To make possible a higher standard of living as a result of increased income to workers.

To assure a happier home and social life to workers through removal, by increase of income, of many of the disagreeable and worrying factors in the total situation.¹¹

To assure healthful as well as individually and socially agreeable conditions of work.

To assure the highest opportunity for individual capacity

¹⁰ Where there are huge investments of capital in fixed and specialized form this may mean a consideration of social desirability, or long-run fundamental usefulness, as bearing on long-run demand.

¹¹ Says one exponent of scientific management concerning his group of seven mills; "while not unmindful of the importance of stability that is coupled with material success, their interest is quite as much in producing better citizens as in securing profits." *Bulletin of the Taylor Society*, Vol. XII, No. 6, p. 525.

SCIENTIFIC MANAGEMENT

through scientific methods of work analysis and of selection, training, assignment, transfer and promotion of workers.

To assure by training and instructional foremanship the opportunity for workers to develop new and higher capacities, and eligibility for promotion to higher positions.

To develop self-confidence and self-respect among workers through the opportunity afforded for understanding of one's own work specifically, and of plans and methods of work generally.

To develop self-expression and self-realization among workers through the stimulative influence of an atmosphere of research and valuation, through understanding of plans and methods, and through the freedom of horizontal as well as vertical contacts afforded by functional organization.

To eliminate factors of the environment which are irritating and the causes of frictions, and to promote common understandings, tolerances, and the spirit of team work.

These aims - some of them results of early experience with scientific management which have been adopted as the aims of subsequent activity - have not been achieved with equal success in all scientific management plants, and are not the exclusive possession of that small group of plants which may properly be classified as representatives of scientific management. But the literature of scientific management reveals that these have consistently been its aims; most of them from the beginning of the movement, and others as experience has disclosed their importance and practicability. Scientific management has always been characterized as progressive in its concepts of the solution of the problems of industrial relations. Investigation and comparison of plants reveal that generally the more complete the development of a technique of scientific management, the more completely are these aims represented in policy and procedures, and the more favorable the response of workers. The reason for this correlation is not difficult to understand. Scientific management seeks, and the more completely it is developed in a plant, realizes a stability of conditions and sureness and economy of effort

SCIENTIFIC MANAGEMENT

which are impossible without the goodwill and cooperation of the workers. The achievement of the goodwill and cooperation of the workers has consistently been an objective and has never been a problem for scientific management plants.

Entirely distinct from the reactions of workers employed in scientific management plants, and chiefly representing the reactions to scientific management as a theory on the part of organizations of labor not strongly represented in such plants, was the opposition of nationally organized labor for a period of about six or seven years prior to the war. This opposition fortunately has practically disappeared and can be analyzed as are other historic events.

Scientific management came to public attention in the United States through certain hearings before the Interstate Commerce Commission in the winter of 1910-1911. Newspapers and magazines discovered its news value and deluged the public with articles concerning it. And although organized labor had given it no attention during the first thirty years of its slow development, now that the public was becoming interested, labor also became interested. It analyzed scientific management as a doctrine and found grounds for opposition. These grounds were not unreasonable inferences from the inadequate early expositions of scientific management. The reasons for opposition, some declared and some not declared, may be reduced to four:

Organized labor had had a long and hard struggle to achieve status in the face of strong opposition of industry, and its natural and not unreasonable assumption was that anything new originating in management and by management was for ownership's advantage and presumably to labor's disadvantage.

Assertions concerning the development of a "science for each operation" and the reductions of operating methods to easily understood instructions, caused a fear of the loss to labor of craft distinctions and of the power of labor in the possession of craft knowledge and skill.

Numerous statements concerning economies which had been

SCIENTIFIC MANAGEMENT

effected by scientific management, especially in the nature of labor saving, called up at once the instinctive fear that a general adoption of scientific management would cause widespread discharges and unemployment.

Inadequate explanations of the use and limitations of time study and of reasons for increase of productivity, led to an assumption that scientific management means a speeding up, wearing out and eventual casting aside of the individual worker.

In view of the atmosphere of distrust between industry and organized labor at that time, these arguments of opposition were not unnatural. They were assumptions and were wrong. The replies to them were based on experience, but an experience not documented, and were unconvincing. There was no solution for the controversy in argumentation, and labor was not disposed to investigate the facts. From the point of view of the historian in 1928, it was necessary for the course of events to bring its own enlightenment through larger experience. That is what has come to pass.

The first ground of opposition disappeared during the war. Employers and leaders of organized labor laid aside their differences as they worked side by side on war committees. They learned to understand each other better as human beings and to value each others' motives. And organized labor observed that the scientific management group was the most consistent of all employing groups in regarding and promoting labor's interests and in the desire to conserve labor's gains after the war.

The second ground of opposition disappeared through gradual observation of the facts. A "science for each operation" does not destroy craft skill; it may modify its content sometimes, but it as frequently gives it wider scope. Labor has observed also that the procedures of scientific management require in addition to old skills, a skill in cooperation through understanding of purpose and methods. A scientific management plant strives to bring all workers in a craft to the level of skill of the best, and is more dependent on uniformly high

SCIENTIFIC MANAGEMENT

intelligence and skill within a craft than any other kind of plant.

The third ground of opposition also disappeared through observation of facts. Labor saving through better management, as distinct from labor saving by an occasional epoch-making invention, although easily described, takes research, education and time to achieve. One can tell in one minute about a saving of labor energy which has taken a year or more. Savings are generally by small increments through a long period, and adjustments are effected during the period. The rate of saving rarely amounts to the normal rate of voluntary quits.¹² Scientific management may involve reassignments — and for the first time in the life of many workers assignments on the basis of investigated capacity — but it does not often involve discharge.

The fourth ground of opposition also gradually disappeared with experience. Improvement and standardization of machine conditions and of methods may or may not result in increased speed of production, and with or without increased speed of the operative; it depends upon the particular machine, the particular operation and the particular circumstances. It should be borne in mind that machines and operations vary greatly in the relation of workers' handling time to machine time, and that the problem of speed and of fatigue varies accordingly. In operating a punch press, for instance, the worker is active all the time, fatigue becomes an important element of the situation, and experiment may disclose that a reduction of speed or introduction of rest periods will increase productivity; but in the operation of a large lathe the worker is but a watcher and adjuster for a major portion of his time, and increase in the speed of the machine has only remote fatigue relation to the worker. And in many instances the increase of speed is merely a mathematical result of dividing the total output into the total time taken and securing an average time per piece; for when conditions are improved so

¹² The December 1927 report of the Metropolitan Life Insurance Company, New York, of the average annual voluntary quit rate of more than 300 reporting companies is 14.9 per cent.

SCIENTIFIC MANAGEMENT

as to eliminate waiting and other idle time, the average time per piece may be reduced without any increase of actual speed. It has come to be understood that speed and fatigue are problems of each particular operation, and the more carefully a correct speed is sought by experiment and measurement, the more reasonable, just and permanent will be the standard of output agreed upon.

It is the judgment of many observers that the tempo of machine work is higher in the United States than in Europe. There have been no researches into the relation of speed to particular systems of management, particular methods of wage payment or particular industries. Competent observers report that it is apparently highest in extremely mechanized mass-production plants, and that tension appears to be least in scientific management plants.

The opposition of leaders of labor to bona fide scientific management has practically disappeared, and during recent years there has been noteworthy cooperation between scientific management leaders and labor leaders.

The first striking evidence of labor's interest in good management and increased productivity was the association in 1920 as editors of a volume entitled "Labor Management and Production",¹³ of Samuel Gompers, President of the American Federation of Labor, Morris L. Cooke, an outstanding disciple of Taylor, and Fred. J. Miller, President of the American Society of Mechanical Engineers and an exponent of scientific management. A few years later other labor leaders contributed to a similar volume.¹⁴ In December 1925, William Green, successor to Gompers as President of the American Federation of Labor, participated by a noteworthy address in a meeting of the Taylor Society,¹⁵ and a few months later other representatives of labor participated in another meeting of that society.¹⁶ In the spring of 1927 the General Labor Union of

¹³ Annals of the American Academy of Political and Social Science, Vol. XCI, September, 1920.

¹⁴ *Ibid.*, CXI, January, 1924.

¹⁵ Bulletin of the Taylor Society, Vol. X, No. 6, December, 1925.

¹⁶ *Ibid.*, Vol. XI, No. 1, February, 1926.

SCIENTIFIC MANAGEMENT

Philadelphia had a two-day conference on cooperation between management and labor in the development of better methods of production, in which scientific management was sympathetically discussed and scientific management engineers and executives were active participants. This led to other similar conferences under the auspices of organized labor. In the Cleveland, Ohio ladies' garment market, organized employers and organized workers have agreed upon a program involving measured standards of output, and the stop watch is the accepted instrument of measurement. On the Baltimore and Ohio, the Canadian National and two other railroads there is organized cooperation between management and workers in the development of better methods and the workers have on their payroll an engineer concerned with improvement of methods.

Misunderstandings and disagreements concerning scientific management as a doctrine have given place to cooperative inquiry into conditions and methods of its utilization. Scientific management had its origin nearly fifty years ago in an inspired effort to solve serious problems of productivity and personal relations in a capitalistic regime of industry already becoming highly mechanized. It has become a philosophy and a body of practices pertaining to management *per se*, independent of any particular regime of industry, and usable in whatever system of industrial society men and women may desire to work together in specialized cooperative efforts toward a common objective. And because it endeavors to base policies, plans and procedures on scientifically determined facts of human nature as well as of mechanics, it is a great force for amelioration of human relations in industry.

INDUSTRIAL PSYCHOLOGY

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Influences limiting the progress of industrial psychology in the United States have been: the backwardness of the science itself; the demand for services of psychologists in other directions, notably in education; and the tradition among psychologists that many questions of industrial psychology are the exclusive prerogative of the management engineer.

Psychological problems have been recognized in connection with the individual worker's relations to his work, his fellow-workers, his supervisor, the management, and the entire circle of contacts outside the factory. The social psychology of relations between groups, of workers, managers and public, is no less important. These industrial relations have been influenced in three ways: by psychology as science, as point of view, and as method.

Facts about the nature of individual differences, the specificity of abilities, and the laws of learning, of interest and attention, have modified industrial practice. Use of statistical techniques is spreading, but controlled experiment has been sadly neglected.

In conclusion, mention is made of agencies for furthering industrial psychology in America.

In what directions and to what extent has the science of psychology influenced industrial thought and practice in the United States? What trends have been discernible during the past twenty years? What influences have operated to bring industrial problems into the purview of psychologists, and to bring psychological doctrines to bear on the thinking and practice of business executives, industrial engineers, labor managers, trade-union leaders, and students of social science whose primary interest centers in industrial relations? How keenly are the masters of American industry aware of the profound problems of individual and social psychology that have been brought into the spot-light of inquiry as a result of mass-production and minute division of labor, with the resulting tendencies toward repetitive processes, shorter hours, better wages, modification of many skilled trades, demand for highly specialized, non-transferable skills, and decreased need of mere physical strength in the worker? What help have the practitioners of scientific management or the administrators of personnel policies received from the science of psychology?

No damage will be done through frank admission at the outset that the significant and constructive contributions of industrial

INDUSTRIAL PSYCHOLOGY

psychology in America have been pretty meagre. Psychology is a rapidly growing but still youthful science. It has been absorbed in the task of putting its own house in order. Within the past generation it has had to win the co-operation and respect of its elder sisters, the biological sciences. New techniques of research have had to be devised, new hypotheses formulated and put to the acid test of controlled experiment. Efforts in these directions have met with such success that there has been a wholly unprecedented and disproportionate demand for the services of psychologists as instructors in university and college courses in psychology. Then, too, the applications of psychology to problems of elementary and secondary education have absorbed a large share of the energies of the most brilliant of American psychologists. One need only mention the names of such leaders of psychological research as Thorndike, Terman, Judd, and G. Stanley Hall, to illustrate the force of the contention that careers in educational psychology have attracted some of our ablest men. And today, if industry is to bring it to pass that the attention of eminent psychologists shall be focussed on the problems of human relations and conditions in factories and offices, it must be prepared to compete not only with the instructional budgets of the universities and the considerable financial rewards that accrue, through publication, to those who greatly improve the techniques of public education; it must compete as well with enticing research opportunities now opening up to the psychologists on problems arising in the fields of political science, law, criminology, child guidance, and social betterment.

Not only have psychologists been under pressure to bend their efforts toward non-industrial problems: they have been content to see large areas of psychological inquiry in industry pre-empted by capable investigators whose training has been primarily other than that of the psychological laboratory. Many of the best contributions to the study of industrial fatigue, accidents, illumination, and simplification of work, have been made not by psychologists but by industrial engineers and specialists in scientific management. A canvass

INDUSTRIAL PSYCHOLOGY

of the contributions of Frederick W. Taylor and his associates, for example, reveals numerous studies in the subject-matter of industrial psychology. Hence an unwarranted tradition has prevailed, to the effect that questions of time- and motion-study, incentives, factory training, and the design of tools, machines, benches and chairs to fit the requirements of the worker, are exclusive prerogatives of the engineer. Theoretically it has been recognized that each of these subjects has its psychological aspects, to which it might be presumed that a psychologist could contribute. Practically, the management engineer has known these problems so much more intimately in their industrial setting, that the psychologist unversed in factory practice has for the most part preferred to turn his energies in other directions. Indeed, it may be confessed that certain timid forays by amateur industrial psychologists into this territory have been ludicrous enough in their outcome to lend emphasis to this unfortunate tradition.¹ But enough by way of apology and explanation. What benefits, if any, have accrued to industrial relations in America because of the work of psychologists?

Some of these benefits we shall find are broad and general. Some are specific and detailed. They can best be envisaged after we have listed the chief industrial problems which are primarily psychological or which present psychological aspects.

PSYCHOLOGICAL PROBLEMS OF INDUSTRY.

Psychology is variously described as the positive science of conduct, the science of behavior, the science of experience. Whatever the limitation of scope implied in any such definition, the fact is that one finds today in any systematic volume on psychology, a wealth of fact and generalization with respect

¹ Industrial executives must share in part the responsibility for these fiascos. Over and over again they have engaged as psychologist a novice whose only claim to the title was that he had studied a few elementary courses in college, or perhaps had been an assistant in routine psychometric work in the Army or in a child guidance clinic. One cannot help smiling at such choices, made by business men who would never for a moment think of dumping a complicated problem of mechanical development or chemical research on the shoulders of an inexperienced or half-trained engineer.

INDUSTRIAL PSYCHOLOGY

to human nature. Those problems of industry may be considered psychological which involve questions of human nature.

Foremost are the problems which have to do with the worker in relation to his work. Many such problems arise in helping the worker find the simplest, easiest, most natural ways of doing his work; conserving his energy; reducing fatigue; increasing quality and quantity of output; eliminating personal injuries and lost time due to accidents; removing unnecessary fears and irritations connected with the work; reducing unrest, discontent and dissatisfaction with the job and with the working conditions surrounding it; and increasing the laborer's store of contentment, pride and satisfaction in his accomplishment. These are all basic practical problems of industrial management, most of them capable of at least partial solution through the application of shrewdness and common sense, but all of them offering a challenge to the psychologist to apply his science, and to supplement common sense by analysis, objective measurement and experimentation, very much as he has done in the public schools, in greatly shortening the time required by a boy to complete the job of learning how to read and to compute. Common observation of the behavior of workers engaged in heavy labor or in work requiring close attention, might well have suggested to any sensible supervisor the economy of insisting upon appropriate, properly spaced rest periods; but the fact is that this device has rarely been employed except where science and controlled experiment have first demonstrated its worth and indicated the optimal distribution of rests for the particular tasks in hand. Scarcely more than a good beginning has been made in the scientific understanding of rest periods in relation to fatigue, monotony, workers' reveries, outbursts of temper and radicalism. Here, as in a thousand other aspects of the job in its relation to the individuality of the worker, the psychologist has significant opportunities for industrial application of his science.

A second group of psychological problems arises out of the relations between a worker and his fellow-

INDUSTRIAL PSYCHOLOGY

workers. How to harness the impulse to competition, and insure a healthy rivalry for high quality of output or freedom from accidents; how to eliminate the conflicts, irritations and jealousies which sometimes clog the human machinery of the factory; how to prevent loss of working time in idle banter while supplying on appropriate occasions ample opportunities for good fellowship - these are questions which are ordinarily left to chance or to common sense. More basic is the best means of developing a substantial group solidarity, a ready helpfulness, a willingness of the experienced workers to take the new employees in hand and teach them the practices and ideals of the shop. Then, too, workers sometimes tend to teach each other various fears and notions leading to conscious restriction of output. They may spread an apprehension of lay-off or of piece-rate cutting, when no genuine basis for it exists in reality. Here the problem arises as to how such unwholesome influences of workers on one another can be minimized, or replaced by influences which make for better mutual education and cooperation. These are complicated problems of practical social psychology.

Yet a third group of problems centers in the relations of the worker and his immediate supervisor. These relations may be harmonized by making sure of the reasonableness of the work requirements; by making work assignments and instructions clear and definite; by introducing an equitable routine procedure of distributing work and materials, to do away with the possibility of partiality or favoritism in these regards; and by making the supervisor a skillful instructor and an understanding helper of his men, as well as a fair and just disciplinarian. The psychological aspects of these processes are sufficiently obvious.

No less psychological in essence are many of the problems arising out of the worker's relations to the management. Consider, for example, the assurance of steady employment. This has often been made possible through improved market analyses, business forecasting and careful scheduling of production. The effect produced on the worker by relief from the overshadowing fear of lay-off is a psy-

INDUSTRIAL PSYCHOLOGY

chological fact of major importance. So, too, with many questions of wage rates, methods of payment, and policies regarding stock-ownership, insurance, pensions, housing, loans, vacations, facilities for education and recreation, and the like. The adequacy of the machinery provided for the airing and prompt adjustment of grievances reflects the management's grasp of practical industrial psychology. The same may be said of its success in providing suitable recognition of merit and competence, not so much through resort to non-financial rewards and recognition, (although these have their value and are often prized), but rather through proper payment by results, and adequate provision for advancement. Many economists are prompt to insist today that the problem of wages has its psychological aspects.

Group relations of workers and management have presented continuing problems whose psychological aspects are sometimes almost as perplexing as their more obvious economic phases. The reader need only remind himself of the misunderstandings, the mutual suspicions, the conflicting preconceptions and unyielding prejudices which too often have beclouded the thinking of workers' representatives and employers alike, when collective vs. individual bargaining, trade-union vs. shop committee organization and similar issues of joint relations have been brought forward.

Both parties have at times resorted to espionage in their fact-finding, a practice as unsound in its psychology as in its ethics. Both have been prone to color their inquiries with preconceived conclusions. Better methods of ascertaining the truth about actual and imaginary grievances, and the purposes and practices of employer and employee alike, will tend to bring about more wholesome industrial relations. The duty of undertaking to improve these techniques of fact-finding is one which the psychologist must not hesitate to accept. Already J. D. Houser, B. V. Moore and L. L. Thurstone have made a promising start in this direction.

The psychology of leadership requires clarification. It is not implied that there is any need for more argument or pooling of opinion as to the personal qualities which make

INDUSTRIAL PSYCHOLOGY

for effective leadership within the ranks of labor or of management. What the psychologist demands is first of all a new, minute, comprehensive description and analysis of what the real, successful industrial leaders do. When this factual foundation has been properly laid, the drafting of better plans for discovering and developing the leaders of the future will not seem so complicated. Provision of opportunity and reward for exercise of constructive leadership and originality by workers and executives of whatever status, will probably then seem a most natural policy. If the channels are open for the flow of ideas and ability from one department or level of the organization to another, if real leadership wherever revealed is given its chance, both individual and group relations may be expected to benefit.

Relations of workers and management are already profiting from the studies which psychologists and educators have made regarding the development of leaders. Consider the function of an executive as a trainer of men. Studies of the techniques of teaching particular skills, habits, attitudes and items of essential information have led to many generalizations with reference to the processes of training. Excellent methods have been evolved for making the necessary preliminary analyses of the work to be done, the difficulties encountered, the items to be taught. Procedures have been developed for determining the content and outlining the successive steps in a training program. Practicable techniques for giving preliminary instruction and for training on the job have been evolved. Investigations have even been made as to the difficulties met in getting executives themselves to learn and to use these improved techniques of teaching their subordinates, and as to the best ways of overcoming these difficulties. In such ways the methods of research are being profitably applied to the educational problems of industry and business. As the results of these researches gradually find their way into the practice of supervisors and executives, the relations of workers and management cannot fail to profit thereby.

One now hears more than formerly about the psychological importance to industry of yet another group of relations, those of

INDUSTRIAL PSYCHOLOGY

the worker to his family and, indeed, to the entire circle of contacts outside as well as inside the factory gate. Psychologists with a psychiatric background have been properly reminding management that careless accidents, temper, trouble-making, insubordination, absenteeism and other sorts of objectionable behavior often have their roots in worries traceable to conditions far from the immediate setting. The magnification of these worries during periods of excessive fatigue has been demonstrated. Attention has been called to the damage suffered by certain temperaments as a result of pessimistic reverie during the course of long-continued monotony. One obvious implication is, that a sound industrial psychology must reckon not only with the temperamental differences between workers and their relative susceptibility to the effects of different sorts of repetitive or taxing labor; it must know not only the conditions in the plant predisposing to monotony or fatigue; it must realize also the influence of the varied conditions that modify the employee's anxieties and hopes, his fatigue and recuperation, both during and after working hours.

But it is one thing to recognize the importance of the total situation in determining a worker's inner feelings and outward behavior, and quite another matter to infer that, therefore, wise personnel practice will seek to inquire into intimate personal and private circumstances in order better to be able to help make suitable adjustments. There must be no trespass on the worker's independence and self-respect. It is a neat problem of practical psychology, how to mould conditions so as to effect a maximum of well-justified contentment and willing efficiency, without risk of wrecking the whole morale through resentment against uninvited paternalism. Mr. Ford marched up this hill, and then marched down again. The practical solution reached by some executives has been to leave with the workers themselves the opportunity for initiative in such matters, and for management to stand ready to move only when, as, and if needed and invited so to do.

The psychological problems of industry have been surveyed as they present themselves to the student of the worker in his relations to his job, to his fellow workers, to his immediate

INDUSTRIAL PSYCHOLOGY

supervisor, and to the management of the industry in which he is engaged. Not only his relations as an individual employee have been considered, but also his relations as a member of a group which, as a group, has vitally important relations both with the management of the particular concern which gives him employment and with the industry as a whole.

While there is little doubt that the most varied and intriguing psychological problems arise in studying the worker in relation to his own work, there is no question but what the psychological aspects of the situation are of vital importance in considering each of these other relations also. It is now appropriate to ask in what ways the science of psychology has influenced industrial thought and practice with reference to these industrial relations.

HOW PSYCHOLOGY HAS INFLUENCED INDUSTRY.

Industrial relations in America have been influenced by psychology in three ways. Industry has responded to psychology as science, as point of view, and as method.

Psychology as Science.

Psychology as a science consists of a systematized body of facts and generalizations about human nature. Foremost among the industrially significant facts of modern psychology are those which reveal the enormous range and variety of differences between people. Scarcely a generation ago American thought and practice was still somewhat under the influence of the political doctrine of equality which had been held most fervently at the time when the nation was born. To be sure, no one had seriously contended that all men are created equal in talent; but scarcely anyone had realized how vast are the differences in native endowment and capacity for achievement until Cattell, Boss, Thorndike and others, exploring the trail originally blazed by Sir Francis Galton, found ways of quantifying and measuring individual differences. They gave graphic and mathematical expression to their measurements.

While studying the wide range of differences which people exhibit in their capacity to discriminate colors, sounds, extent

INDUSTRIAL PSYCHOLOGY

of arm movements and other sensory data, they also carried forward investigations in reaction times which showed how greatly people differ in motor capacity. After many of the relatively simple processes had been examined, differences in types of attention were observed. Other investigations were centred on the measurement of differences in ability to localize sounds, to perceive special relations, to remember, to manipulate and construct.

The discovery of the possibility of devising units and scales for use in measuring such differences of ability was an epoch-making invention. Its application was rapidly extended to the measurement of achievement in school work and has had a profound influence on educational practice. Meanwhile procedures were devised - following the pioneer work of Binet and Simon - for measuring the rate and extent of mental development. The concepts of mental age and the intelligence quotient became current. Convenient means for examining large numbers of persons at the same time were perfected; and during the war, data were secured which revealed in spectacular relief the vastness of the spread of human abilities as well as their proneness to cluster about the central tendency of mediocrity.

The differences between individuals not only in abstract intellect but also in social and mechanical abilities were studied. Certain trade tests, for measuring proficiency in different occupations, were standardized. People's interests were made the subject of inquiry, and techniques were developed for quantifying differences in mental attitudes, likes and dislikes, occupational preferences and personal tastes. More recently the ambitious task has been undertaken of measuring the strength of volitional tendencies. Character, as well as intellect and temperament, has come within the range of quantitative measurement; and while the reliability of the methods so far developed for measuring character is so low that few psychologists will venture as yet to draw practical inferences from them, it is nevertheless significant that the idea of mental measurement has now been extended until it comprehends the entire personality.

INDUSTRIAL PSYCHOLOGY

Partly as a consequence of these researches, it is recognized, more clearly than formerly, how much individuals differ from each other in originality and initiative, in output of energy, in fact or in social sensitivity, and in self-control, as well as in general intelligence, and in a long array of specific abilities. All these facts, tersely put by Cattell and Thorndike, and emphatically reiterated in public address and in semi-popular writings by Walter Dill Scott, Münsterberg, Goddard, Terman, Hollingworth and many others, have influenced the thinking and practice of industrial leaders.

Many of these industrialists, it may be recalled, were themselves students of elementary or advanced psychology in college when these facts about individual differences were first stressed. Later, in positions of business responsibility, some of them recognized acutely the need of personnel procedures which give due emphasis to these facts of human nature. Functional organization of personnel activities in factory and office, and development of techniques for personnel classification, transfer and promotion, job analysis, employment interviewing, placement, training and follow-up, probably proceeded somewhat more rapidly because of what psychology had done to make more evident the nature and extent of individual differences.

Of practical moment also have been the findings of psychology regarding the relationship between various abilities. For instance, the law of compensation has been found inapplicable. Common belief had held that the person who is greatly superior to his fellows in some regards is probably inferior to them in others - that if he is very talented in mathematics, for example, he is probably something of a dullard in athletics or in art. The facts have been found to be quite the opposite. Persons who are found to be highly superior in one ability are more often than not above the average in any other desirable trait. In other words the correlation between favorable traits is quite generally positive. At the same time, the correlation is in most instances low. Psychologists have often been surprised to find how slight is the association between abilities apparently very similar. If as Spearman and others

INDUSTRIAL PSYCHOLOGY

contend, there are certain general factors characteristic of a person's make-up - call them intelligence, energy, perseverance or what you will - it is certain that there are also a great number of quite specific abilities, very largely independent of one another.

These findings have lent emphasis to the need for the employment interviewer to be very cautious in inferring future accomplishments from fragmentary data, whether these data are in the form of impressions gained in conversation, mental test performance, school record, or reports from former employers. He needs all the information he can get. He especially needs to find out which items are really significant, under the conditions of work which prevail in his own plant and in the local labor market.

Another inference from these facts regarding the specificity of abilities has to do with the nature of industrial training. There is sound warrant for the tendency toward better training on the job rather than toward more formal training of a general sort.

To precisely what extent industrial practice in the United States has been modified by the body of psychological knowledge regarding individual differences and the correlation of abilities, who shall say? It is obvious that the tendencies of the past twenty years in employment, training, supervision, transfer and other personnel functions have been in the direction of greater recognition of and provision for wide differences in endowment. Public school practice has also been modified in many ways which have made it possible for multitudes of young people more easily to effect a satisfactory adjustment with the working world. Such changes might conceivably have taken place, even though psychologists had not been measuring, analyzing and comparing so many aspects of so many people. It seems reasonable however to suppose that the findings of these kinds of psychological research have directly as well as indirectly had a real influence in industry.

Much the same might be said regarding the generalizations from research in educational psychology. One outstanding

INDUSTRIAL PSYCHOLOGY

characteristic of man is his educability, and psychologists have steadily been prying deeper and deeper into the laws of learning. The principles governing the formation of habits, the acquisition of skills, the mastery of technical knowledge, the elimination of gross defects of personality, the development of social effectiveness, the modification of likes and dislikes, the inculcation of ideals and attitudes - all these are applicable in offices, stores and factories as well as in school or college. Some of the best data regarding effects of practice and of fatigue on the work-curve have come from experiments in psychological laboratories.

The doctrines of interest, and of attention and distraction, have had their application where safety devices were to be invented and installed; where jobs were to be classified according to their psychological requirements; where workers and students were to be advised with reference to their future vocational plans. The psychological theories most prevalent a dozen years ago regarding instincts and the fundamental drives which motivate human conduct, have influenced the thinking of industrial leaders regarding financial and non-financial incentives, group spirit the damage done by fear, and the value of insuring to manager and worker alike his sense of self-respect and his belief in the worth-whileness of his labor. Men like Robert Valentine, Carleton Parker, Ordway Tead, Z. C. Dickinson, Robert Bruere, H. C. Metcalf and Whiting Williams interpreted these doctrines for economists and engineers, bridging the gulf that too often divides the psychologist from the industrialist.

Perhaps enough has been said to illustrate the way in which the subject matter of psychology has tended to affect industrial practice. A single case, more concrete than those already mentioned, will serve as a sample of repeated instances in which the discoveries of the psychological laboratory have found useful application.

For many years Professor C. E. Ferree in the psychological laboratory of Bryn Mawr College has concentrated his research on problems of the efficiency of the eye under varying conditions of illumination. He developed new apparatus and more

INDUSTRIAL PSYCHOLOGY

precise procedures for measuring the fatigue of vision. Using these methods he worked out the principles which must apply to all determinations of the relative effectiveness of different intensities and distributions of light. He compared the merit of direct, indirect and semi-indirect systems. When his conclusions were first announced they ran counter to the tenets currently held by engineers; but today they are commonplaces of illuminating engineering practice. Thousands of factory employes, now doing their work under more favorable conditions of illumination, will never know that they have in part to thank a research psychologist for their relief from the annoyances of unnecessary glare, distraction and eye-strain.

Psychology as point of view.

Less tangible than the effects of these concrete products of psychological research, but none the less real, has been the influence on American industry of what may be called the psychological point of view. In essence this point of view consists in a more than ordinarily tenacious belief that human experience is understandable, that human behavior is not a spiritual mystery but a natural phenomenon like other phenomena of the organic world. Such a belief leads to the persistent attempt to understand one's fellows, to appreciate their motives and ambitions, to comprehend their shortcomings and their possibilities. It makes one impatient of superficial explanations of unsatisfactory employee behavior as due to "carelessness" or "laziness" or "pure cussedness". One asks, "Why was this motorman careless?" and proceeds to get the facts about his previous training on the job, his treatment by supervisors, his length and distribution of working hours, his health, his eyesight, his scope of attention, his worries and tendencies to reverie. Then such a vague blanket trait-term as "carelessness" drops out of one's vocabulary. Moreover, the psychological point of view prevents an executive from letting his personal feelings warp his judgment. It helps him to be at once more objective and more intelligently aware of other points of view than his own.

The psychological point of view is that of the scientist trained

INDUSTRIAL PSYCHOLOGY

to focus the searchlight of inquiry on every puzzling problem of human adjustment. It is identical with the point of view of scientific management in so far as scientific management concerns itself with the human problem of industry. If there has been any vital difference in point of view between industrial psychologists and management engineers, it is with reference to their primary purpose. The industrial psychologist has wanted first of all to help the worker, in simplifying his methods of work, bettering the conditions under which his work is done, improving his training, and developing personnel techniques which will facilitate his adjustment to the occupation in which he will find the most satisfaction. Incidentally the psychologist may believe that these services will perhaps benefit the industry, the management and the social order also. The engineer has similar objectives but is ordinarily thought of as placing as his first concern the economic stability, prosperity and usefulness of the enterprise. The personal satisfactions accruing to competent, well paid, well trained employees are his secondary objectives.

While this contrast of point of view of psychologist and management engineer may have some historical warrant, particularly in England, it cannot be said to hold universally in America. The writer knows personally Taylorites who seem to him to place considerations of human betterment first, and to regard the industry which they plan for or manage merely as a means to the self-realization of the workers and supervisors who constitute its personnel. He also confesses an acquaintance with psychologists as well as engineers both in America and in Europe who have shown themselves willing to place their talents at the disposal of employers with a single eye to profits.

This difference in attitude and primary interest is not inherent in the science; it is a personal matter. It may depend on temperament, or on the social philosophy one holds.

The question of priority of objective might be a matter of more grave concern at this point, if it were not that the far-sighted investigator - be he psychologist or management engineer - sees clearly that he must travel much the same road

INDUSTRIAL PSYCHOLOGY

in either event. After all, there is a considerable identity of interest of employees, managers, owners and public. An industrial psychologist in a chocolate factory recently stated his objective as follows: "The purpose of the psychologist is, to see that the workers leave the plant at night neither fatigued, nor irritated, nor nervous." He showed not a trace of interest in increasing the owners' profits. But when I asked the president of the corporation why he had his psychologist in his factory, the prompt and decisive answer was, "I find it pays".

Psychology in America has contributed to the point of view that it pays in the long run to attempt to understand the deep-lying motives and ambitions of people, and to work with the current of human nature rather than counter to it. It has made the point of view explicit in its application to problems of vocational adjustment, including placement and training, in conformity with the individual's proclivities and talents. In other directions, also, the psychological point of view is coming to be more frequently taken, with promise of leading to better mutual understanding and more cooperative relations throughout industry.

Wholesome as such a point of view may be in approaching questions of human relations in industry, it will not carry the manager far toward practical solutions of his difficulties unless he has at hand the necessary appropriate techniques for problem solving. This brings us to the third way in which psychology has influenced American industry; through its method.

Psychology as method.

The main methods of psychological research are two: experiment and statistics.

The task of any natural science may be stated in most general terms to be the determination of the relationship between variables. The variables with which psychology deals include the environmental forces and conditions which influence behavior, as well as the innate capacities, habits and attitudes of individuals in interaction with the world in which they work and live.

INDUSTRIAL PSYCHOLOGY

It is sometimes said that the biological sciences, of which psychology is one, differ radically from the physical sciences in that the variables with which they have to deal are more numerous, complex, and difficult to control. Wherever all the variables, or all but one, can be controlled, the ideal method is that of experiment. Here the ingenious investigator can test his hypothesis by setting up a crucial situation and making observations or measurements which are decisive as to the manner in which the independent and the dependent variables are related. If, however, there are independent and uncontrollable variables which make impossible the resort to experiment, the scientist has recourse to the method of statistics. This is a method which, thanks to Pearson, Spearman, Thorndike, Kelley, Thurstone and others, has been developed extensively in its application to psychological data. It has proved to be an invaluable complement to the methods of the experimental laboratory.

The refinements of statistical procedure evolved in connection with psychological research have been slowly finding their way into industrial personnel studies. If, before the war, one talked to American business men about correlations, scatter-diagrams, regression lines, central tendencies, standard deviations, or measures of reliability and validity, they listened with amused tolerance, if at all. Today these concepts are fairly well recognized as a necessary part of the mental furniture of anyone who undertakes to deal precisely with the data of human behavior. They have found their place in the thinking and writing of many who are undertaking to understand the more fundamental aspects of human relations in industry.

The method of the controlled experiment on the other hand, although simpler to understand and often more decisive in its findings, has unfortunately not been as generally adopted by industry. To be sure, there have been innumerable so-called experiments tried, in industrial relations. But most of these have not been carried out according to the canons of science. A manager has decided, for example, to try the experiment of changing his method of remuneration. In place of an hourly

INDUSTRIAL PSYCHOLOGY

wage he has introduced a straight piece-rate; or instead of piece-rate he has tried one of the currently popular task-and-bonus systems. But in most instances he has introduced at the same time several other variables. He has changed foremen, or improved the routing of materials, or insisted on a more thorough coaching and follow-up of new employees, or installed a better ventilating system. So when, after several months, his accounting department reports a decided lowering of unit labor costs, it is still a matter of opinion whether these economies are to be credited to the new method of payment by results. Industrial management cannot hope to reap the full benefits of the scientific method as applied to the study of the human problems of the factory, until it is ready to make a larger number of genuinely scientific experiments.

Psychology has demonstrated the usefulness of the methods of experiment and of statistics in solving some of the complicated problems of human relations. It has developed refinements of technique which are readily carried over into industrial research. Responsibility rests with the individual investigator, however, to furnish the penetrating insight and the ingenuity which alone can formulate brilliant and industrially significant hypotheses for scientific study.

Psychological techniques have sometimes been borrowed by industrial engineers, as in the case of recent fatigue studies, - earlier investigations having failed because the effects of suggestion were not controlled. In other instances, the psychologist has been borrowed as well as the technique, as when Thorndike helped carry out the research of the New York State Ventilation Commission, which established the primary importance of air movement. The Society for the Promotion of Engineering Education has repeatedly called into its councils such psychologists as Seashore and Thurstone. And so the general methods and specific techniques of psychology, - as well as its point of view and its subject-matter, - are gradually being appropriated by industrial engineering.

AGENCIES FOR FURTHERING INDUSTRIAL PSYCHOLOGY.

A sketch of the influence of psychology on fundamental relations

INDUSTRIAL PSYCHOLOGY

and conditions in American industry would not be complete without mention of certain agencies which have been carrying forward psychological research and slowly spreading throughout the texture of business and industry some familiarity with psychological content, method and point of view.

Chief among the agencies which have been furthering psychological developments are the universities. Every university has its psychological laboratory for research. It also offers courses of instruction which are taken by great numbers of students. While many of these courses are general in nature, some of them treat specifically the psychological problems of business, such as advertising and selling, and also touch upon applications of psychology to vocational selection, learning, fatigue, incentives, group relations in industry and other problems of management and of individual adjustment. These courses of instruction in applied psychology are for the most part designed to be rather elementary, and broad in scope rather than intensive. During the past twenty years they have served to introduce many thousands of young people to the basic principles of industrial psychology as first outlined by Münsterberg and as formulated from time to time in the books of Scott, Hollingworth, Poffenberger, Swift and others. Such books have had some circulation among mature business men as well as students. Unfortunately the readers have often, especially since the war, been so intrigued by the chapters dealing with mental tests and other devices for the measurement of individual differences that they have overlooked the relatively more fundamental psychological considerations which alone can give to mental test procedures their true significance.

In a few universities there exist also centers for advanced training and research in industrial and commercial psychology. Among the foremost at the present time are the University of Michigan in Ann Arbor, the University of Pennsylvania in Philadelphia, Columbia University in New York, and the University of Chicago, Stanford University in California, Northwestern University in Evanston-Chicago, the University of Pittsburgh, the University of Minnesota in Minneapolis, the Univer-

INDUSTRIAL PSYCHOLOGY

sity of Iowa in Iowa City, the University of Ohio in Columbus, and some of the other state universities are hospitable to such research. Promising developments are now taking place in the Harvard Graduate School of Business in Boston, and in Yale University in New Haven. Curiously the emphasis in nearly all these centers has been on the psychological problems of commerce rather than of industry. Curiously, too, the great engineering schools or institutes of technology have completely neglected psychological research. The outstanding exception to this sweeping generalization is the Carnegie Institute of Technology in Pittsburgh, where the writer established in 1915 the first Division of Applied Psychology in any American institution, and later, the first Bureau of Personnel Research, and where, for eight years, a notable group of psychologists were engaged in research on problems of importance to cooperating industries and business concerns.¹ Kenagy and Yoakum's book on "Selection and Training of Salesmen", Strong and Uhrbrock's "Job Analysis and the Curriculum with Special Reference to the Printing Industry", and Craig and Charters' "Personal Leadership in Industry" record some of the more enduring products of these studies. One outgrowth of this movement at Carnegie Institute of Technology was the establishment in 1917 of the Research Bureau for Retail Training. This Bureau, now permanently endowed and affiliated with the University of Pittsburgh, has recently published a summary volume covering ten years of continuous psychological, economic and educational research. The influence of its work on personal practice in department stores has not been limited to the local constituency but has been felt throughout the nation. That competing firms have cooperated in the support of such investigations, is significant. That the findings have in large part been passed on to other firms for the benefit of all and for the public good, is evidence of broad-mindedness. It well illustrates the growing conviction in American business and

¹ An historical account of this development was published in the *Scientific Monthly*, February, 1923, pp. 142-159. A bibliography of publications of the Division of Applied Psychology up to that time contained 63 titles.

INDUSTRIAL PSYCHOLOGY

industry, that the ancient practice of maintaining trade secrets wherever possible is sometimes an unprofitable if not a ludicrous form of selfishness.

Such limited psychological research as has been carried forward by individual corporations has likewise for the most part been open to the inspection of any visiting scientist or personnel manager. A few street railway and taxicab companies with laboratories of their own for investigating individual susceptibility to accidents and related psychological problems of transportation, have not hesitated to exchange methods, data and results. Among such firms as the Eastman Kodak Company, the Western Electric Company, the General Electric Company and the American Telephone and Telegraph Company, to mention a few examples from other types of industry, there has been free exchange of specifications for psychological laboratory equipment and of other technical information.

Several of these companies contribute to the support of the Personnel Research Federation which maintains a clearing-house for the exchange of research information, as well as a staff for consulting work and for carrying forward specific studies. Among its current investigations is one on the effects on accident reduction of individual attention to workers who are found to have a susceptibility to accidents. Another investigation, designed in the end to facilitate the flow of correct information from workers to management, consists of a study of the technique of the personal interview. In this task of jointly furthering the scientific approach to the human problems of industry, a number of government agencies, university departments and independent research organizations likewise cooperate. The Engineering Foundation, the National Research Council and the American Federation of Labor initiated this cooperative movement which signaled a definite recognition of the need for coordination of research plans and extensive stimulation of sound research developments in industrial psychology and related aspects of personnel science. The Personnel Journal, now entering upon its seventh volume, furnishes the record of accomplishment to date.

INDUSTRIAL PSYCHOLOGY

The establishment of the Personnel Research Federation followed upon the research developments at Carnegie Institute of Technology already mentioned, and other undertakings which had received an impetus from the wide-spread interest in applied psychology awakened by the military accomplishments of psychologists and personnel managers during the war. The Scott Company, for example, with Walter Dill Scott as its guiding spirit, for four years operated as a firm of personnel consultants to large business concerns, and made familiar to American industry a number of psychological concepts, principles and techniques recorded in the volume, "Personnel Management", by Scott and Clothier (1923). The immediate stimulus toward the establishment of the Personnel Research Federation, however, came from two sources. One was a series of significant investigations as to the value of the psychiatric approach to industrial problems, made by the late E. E. Southard, M.D., at the request of the Engineering Foundation. The other was a recognition by the National Research Council, of which James R. Angell was then the head, and of its Division of Anthropology and Psychology, of which the writer was Chairman, that the problems of industrial psychology were of increasing importance and that there was some danger of duplication of research effort unless there existed an agency to facilitate exchange of information, to survey the field as a whole, and to plan constructively in the light of known needs and facilities for research.

The National Research Council, which represents mainly the physical and biological sciences, has continued its efforts to further practical psychology, for example in its applications to problems of highway safety. More recently the Social Science Research Council has come forward, and as one of its activities is helping to plan and to finance selected investigations in industrial psychology. Both of these Councils also offer each year certain fellowships for advanced students of psychology, and a few of these investigators have chosen as their topics for study, problems in industrial psychology and related aspects of personnel science. The Psychological Corporation, founded by J. Mc-

INDUSTRIAL PSYCHOLOGY

Keen Cattell in 1921 as a means of making the services of American psychologists conveniently available to industry, has served useful purposes, not least of which has been to inform inquirers as to who and where the real psychologists are, in contradistinction to the dilettantes, charlatans, character analysts and pseudo-scientists who prey upon the public in America as in Europe.

The readiness of business firms to cooperate for the advancement of knowledge in the common interest, may again be exemplified by their support of such national associations as the American Management Association, and the Taylor Society (an international association to promote the science and the art of administration and of management). Both of these organizations have from time to time encouraged discussions of psychological problems and of psychological research before their membership. It is a wholesome sign that the participation of psychologists in the work of these associations has grown somewhat during the past four years.

Papers of industrial significance are occasionally but all too rarely presented before the American Psychological Association. These most often are related to problems of vocational selection and placement, since American psychologists have concerned themselves with determination of interests and abilities by means of various techniques of testing, rating and individual appraisal, more often than with problems of the simplification of work, industrial fatigue, monotony, incentives and similar practical problems of the factory.

One exception to this indictment is Mrs. F. G. Gilbreth who years ago had a clear vision of the problem. She worked jointly with her husband to spread among industrial engineers some understanding of the psychological point of view, especially with reference to fatigue, and to develop ingenious techniques for use in motion study and work analysis. In her private institute she has continued to introduce each year a few engineers to this point of view and to the refinement of these techniques. Another exception is C. S. Yoakum whose contacts with the motor industry and with business concerns have enabled him to formulate specifically problems of personality

INDUSTRIAL PSYCHOLOGY

study, work histories, personnel accounting and measurement of the effects of management policies, and whose psychological researches in vocational guidance are basic. Elton Mayo, to mention yet another, has brought the findings of psychopathology and the doctrines of Janet stimulatingly to bear on problems of irritation and irrationality in the factory. A number of younger psychologists are engaged in work which has its industrial bearings, and the temptation is strong to touch upon their individual contributions. Our generalization would, however, apply to the most of them, namely, that they are more often interested in employment psychology than in the psychology of the worker at work.

This paper, already too long, must be brought to a close with a word about industrial psychology in relation to government agencies. It may surprise European readers to learn that the federal government of the United States has never established an agency for research in industrial psychology, such as the Industrial Fatigue Research Board of Great Britain. Some admirable research has, to be sure, been done by the Bureau of Mines in cooperation with the Public Health Service. The Department of Labor and the Federal Board for Vocational Education have published many studies on topics related to industrial psychology. But the research work, at least so far as the writer is aware, has been done for the most part by economists, educators, physicians or engineers, rather than by investigators whose training has been primarily in psychology. Only one agency of the National government has on its staff a well-known psychologist: L. J. O'Rourke, of the U. S. Civil Service Commission. In a strategic position, he is changing for the better the character of the postal service and other government offices, by judiciously applying the techniques of psychological science to the procedures used in selecting and placing government employees. A few municipal and state governments are similarly benefiting by psychological research, and this movement is being fostered by the Bureau of Public Personnel Administration.

And so, in conclusion, it is admitted once more that psychology

INDUSTRIAL PSYCHOLOGY

is influencing industrial relations and conditions in the United States most directly through its contributions to vocational selection and the understanding of individual differences. Within other equally important areas of inquiry, the influences of psychological content, methods and point of view have been more indirect, and probably less potent than they will be after labor and management come to a clearer realization of the essentially psychological nature of many of their difficulties, and after more psychologists, in turn, have had the opportunity to come to grips with these difficulties, not as they are defined in books, but as they crop up in the daily relationships of factory operation.¹

¹ Typical of influential books written by economists in order to make fruitful for industry the doctrines of psychology, may be mentioned Carleton Parker's "The Casual Laborer", Veblen's "Instinct of Workmanship", Tead's "Instincts in Industry", Z. C. Dickinson's "Economic Motives", and Whiting Williams' "Mainsprings of Men".

Full of practical suggestions for self training and development of supervisors and young executives is Craig and Charters' "Personal Leadership in Industry". C. R. Allen's "The Instructor, the Man and the Job" is at once psychologically sound and immediately useful.

In employment psychology we have had the books of Link, Chapman, Kingsbury and Kornhauser, Laird, Snow, Griffiths, Kitson, Bingham and Freyd, and Burt.

Of general interest are Overstreet's "Influencing Human Behavior", Helen Marot's "Creative Impulse in Industry", Mary Follett's "Creative Experience", and John Dewey's "Human Nature and Conduct".

The two most substantial manuals on personnel principles and procedures are Tead and Metcalf's "Personnel Administration", and Scott and Clothier's "Personnel Management". The latter emphasizes psychological considerations. Among volumes of narrower scope but more intensive treatment, "The Selection and Training of Salesmen", by Kenagy and Yoakum is outstanding, because it embodies the findings of years of research and experiment in its field.

Three periodicals should be mentioned: The oldest of these, "The Journal of Applied Psychology", publishes technical contributions by psychologists not only to business and industry, but also to law, medicine and other fields. "The Personnel Journal", also technical, is, on the other hand, narrower in scope and confines itself to the subject-matter of its title, with emphasis upon educational and vocational adjustment, but on the other hand is more inclusive, approaching the personnel problem from the economic as well as the psychological angle. "Industrial Psychology" is edited for the business executive, and interprets for him the pertinent findings of psychological research and discussion.

EDUCATION AND INDUSTRY

BY C. R. MANN, PH. D.,

American Council on Education

In the U. S. A., education is now regarded as a process that continues throughout life. The purpose of schooling is to give the young: tools and attitudes of social living; opportunity for self-expression and growth through useful work; habits of self-education. Since work occupies about two-thirds of a normal life, business, industry and the professions are recognizing that they are educational institutions and that their greatest success depends on how far the daily work is educative to the worker. The world's work is being analyzed to discover what are the tools and attitudes of social living so that schools may impart them effectively. Many experiments with objective tests and other methods of appraising personality are being made to find practical means of guiding each to the work he can do best. Success in Democracy is measured by growth of people.

Education in the United States has made remarkable progress in the last ten years. Attendance at secondary schools and colleges has more than doubled. In most municipal budgets school costs constitute the largest single item, amounting generally to 40 per cent and in cases to 50 per cent of the whole. Total expenditures for public education are now more than two billion dollars per year, equalling the Federal expenditures for war debts and pensions. In many localities public school buildings are among the most attractive features of city architecture.

These facts merely indicate the material growth of facilities for public education. The really significant progress lies within. For from the beginning American public schools have had equality of opportunity as their ultimate aim. During the 19th century, this was interpreted to mean the same opportunity for everyone. In accordance with this idea, the common school curriculum was fairly rigid, leading to college and a life of scholarship. Keep the road open for everyone from kindergarten to university was the accepted aim. Children who did not conform were "retarded" and considered "subnormal". The public accepted this judgment as a matter of course. They acquiesced in the conclusion that if Johnny did not make good in school, there must be something the matter with Johnny.

At present equal opportunity no longer means the same opportunity for all. Rather, it means for each opportunity to do

EDUCATION AND INDUSTRY

the thing he can do best. Therefore a new public demand has arisen, based on deep-seated convictions that every child can do something well, and that it is the duty of the school to help each child both to discover what that something is and to find appropriate opportunity to do that something well. The public is now forcing the school to find out what Johnny can do best and to lead him to it.

To meet this new public demand, the schools are experimenting everywhere. Many of the larger systems now have research departments. During the past five years three hundred public schools have been cooperating with the Department of Superintendence of the National Education Association in intensive experimentation directed toward reorganization of curricula and methods. Thousands of teachers are experimenting with general intelligence tests, with aptitude tests, with new type examinations, with achievement tests, and with other forms of detecting specific trends and abilities and of measuring individual achievement in particular types of work. The world's work is being analyzed from many angles to discover what different types of activity are needed and what the special personal qualifications required for each are. The whole educational profession is busily engaged in trying to find practical methods for appraising individual capacity and opening opportunities for its fullest realization.

This is not the time or the place to discuss this great educational movement in detail. Here interest focuses on its bearing on human relations in industry. That its bearing is intimate is evident at once from the fact that industry is vitally interested in fitting men to jobs. Business and industrial managers everywhere know the difficulty of finding the right man for the place. They understand fully the importance for industrial production of so organizing that every man, as far as practicable, works at the particular thing he can do best. Industry is establishing personnel departments which are endeavoring to develop practical methods of solving this fundamental human problem. Therefore the new conception of equality of opportunity as opportunity to do the thing each can do best, which has now taken possession of the schools, has opened a

EDUCATION AND INDUSTRY

new possibility for cooperation between industry and education. Both now see that their basic aims are in reality identical. They are ready to join in a united attack on this great common problem of discovering human talent and releasing it in constructive work.

In the past, efforts at cooperation between education and industry have usually resulted in business men telling school men how to run the schools, and school men telling business men how to operate business. With the new orientation, a new plan of cooperation has developed. It is now recognized that the great service which business and professional men can render the schools is to keep school men accurately and fully informed concerning how business is actually conducted and what its guiding principles are. School men do not now have this information. Until they know definitely what types of opportunity actually exist in life, they are handicapped in their efforts to guide young people to the opportunities they seek.

On the other hand, business and professional men are so absorbed in other work that they do not clearly visualize what types of human ability may be available and how these are best appraised and released in constructive work. It is the chief business of educators to do this, and they should keep the business and professional world informed concerning their findings. Coöperation of this type, in which each supplies the information which he knows best and each receives the information which he himself cannot gather at first hand, leaving both free to utilize the information received from the other in a manner that best benefits both, gives a sound basis of fact on which to build toward practical and worthwhile results. The Chamber of Commerce of the U. S. is stimulating this type of cooperative experiment in several large cities.

If this mutual exchange of information is to be effective, the facts exchanged must be so stated as to be comprehensible to both cooperating groups. Descriptions of the world's work prepared by industry may be so unintelligible to school men as to give them no real help. Similarly, estimates of personal qualifications of young people made by school men may be

EDUCATION AND INDUSTRY

unintelligible to business and professional men. The project does not become practical until patterns or forms of statement have been evolved which are intelligible to both and comparable with one another. Such patterns are the tools and measuring instruments which enable all concerned to work intelligently toward mutually helpful solutions and better human relations everywhere.

Considerable progress has already been made in developing such tools and instruments of measurement. A pattern form of job specification has been evolved by cooperation between the American Council on Education and several industrial firms. This enables industry to describe its work in a manner that is beneficial to it and that yet conveys to school men the kind of information they need. Some 3,000 job specifications written in this form by eighteen different firms are being analyzed for curriculum content. Similarly, personal record cards and rating scales are being developed by cooperation between schools and industries under supervision of the American Council on Education in such manner as to make the appraisals of human qualifications by school men intelligible to men of affairs. Similarly, the Personnel Research Federation is evolving pattern procedures for personal interviews. It is proving a difficult problem to determine what actions are sufficiently symptomatic of personal bent to warrant recording them. It is equally difficult to determine what kinds of ratings by school men have significance in industry. Nevertheless, in all of these directions progress is being made, and with that progress comes improved adjustment of the individual to his work.

The new conception of the aim of American education and the new type of cooperation with the world's work are producing a new orientation of schools toward their task. When schools merely tried to give the same educational opportunity to everyone, their task was finished when they had given everyone as great control as was possible over the instruments of economic and social life. Education ended when the child left school. After that he went to work.

But when the ultimate aim is to liberate, discipline and guide

EDUCATION AND INDUSTRY

constructive energy into useful channels, education continues throughout life. Therefore, the school's duty is only half done when it merely equips young people with tools that enable them to get along in life. It must in addition develop habits and attitudes of self-education and an ambition for self-development which will keep every man and woman growing through self-education for the rest of their lives. The realization of this larger purpose requires far-reaching changes in present school practice. The American school system is at present definitely striving to discover what changes are needed and what new methods lead effectively to better achievement of this, its new aim. The recent organization of the Adult Education Association and the study by the Alumni Council of how universities may help alumni continue growing, point in the same direction.

This movement for closer cooperation between schooling and work does not try to make scholars of all men. Yet it gives those who have scholarly genius better opportunities to achieve high scholarship. It does not kill culture, but secures truer culture by crowding into every kind of work all the excellence it will bear. It dignifies both labor and learning. It does not commercialize education nor create class distinctions. It disciplines men through struggle with difficulties inherent in the tasks they determine to achieve.

This new public attitude toward education in the United States is having a no less fundamental effect upon industry and the professions. In proportion as the schools graduate young people who are eager to continue growing and set in habits of self-education, opportunities for growth and self-education must be found in the world's work. The public demands that industry and the professions supply the needed opportunities. This is not a matter of charity for industry, for herein lies the greatest chance for further industrial progress. Research in natural science and scientific management of production have made possible the present high wages and low costs. The reservoir of human energy that is not yet released in productive effort because of mal-adjustment of workers to their work is now the greatest latent source of further advance, not only

EDUCATION AND INDUSTRY

in industrial achievement but also in human happiness. The habit of fitting men to jobs is becoming a habit of fitting jobs to men.

The most significant fact in American industrial and professional life at present is this steady transformation of industry and the professions into educational institutions. The American people seem to realize that their greatest material success depends upon the degree to which each worker finds the right opportunity for self-education on the job. Growing men and women are happy and productive workers. They grow when each does the thing he can do best, for that is the thing he loves to do. This idea is now working in a number of industrial organizations. When wisely worked, turnover decreases and production increases.

This conception of the common problem of industry and education is peculiar to the United States. A century and a half ago our forefathers established a political system intended to maintain political conditions under which men could achieve liberty through self-government. It has taken 150 years for the American people to develop the conception of an educational and industrial system that is consistent with these ideals of government. The new conscious attitude of the people toward schools and workshops is forcing gradual development of ever expanding opportunities for that self-education which fosters continuing growth. Thus finally may we justify our national existence, since the success of a democracy is not measured by the efficiency of its administration, but by the growth of its people.

PERSONNEL ADMINISTRATION

BY W. J. DONALD, PH. D., AND EDITH KING DONALD,

American Management Association

Beside the trend toward decentralized responsibility in personnel administration, several tendencies are apparent in selection, training, labor supply, research, the make-up of personnel departments, wages and salaries, profit-sharing, compensation of executives, hours of work, vacations for manual workers, pensions, stock purchase and savings plans, insurance and benefit plans, vocational adjustment, health and sanitation, safety, service to employees and joint relationships between employers and workers.

A growing interest in personnel administration includes a consideration of sales and office personnel problems, inasmuch as new forms of competition have necessitated cost reduction. Factory executives who have long been cutting costs are now urging that similar economies be devised by the marketing and office departments. Attention is now being concentrated on those personnel activities which make for sound business, increased earnings for workers as well as profits to the company, increased purchasing power for the community and consequent business prosperity.

There are so many different industrial sections of the United States of America, each of them influenced more or less by the dominance of different types of industry and affected by different stages of industrial development, that any attempt dogmatically to indicate the personnel trends in America is likely to be subject to so many lines of dispute as to make the effort almost reckless.

This paper will, therefore, attempt simply to survey the most outstanding new developments and to indicate trends which are likely to become most marked in the next few years.

ORGANIZATION FOR PERSONNEL ADMINISTRATION.

The time was when personnel work was largely regarded as the job of the personnel man and there were many persons who argued that the personnel department should have entire control of personnel administration. This was true particularly of the period from approximately 1914 to 1920 when personnel administration was being rapidly developed and when personnel men were struggling for a degree of recognition, influence and even authority which previously they had not had. The natural result was that with notable exceptions there was an over-emphasis of the authority of the personnel man and an under-emphasis of the personnel functions of the line or-

PERSONNEL ADMINISTRATION

gization from foreman to president. This resulted in many conflicts of jurisdiction and authority which were very disturbing to the effective working out of a personnel program.

Since the great depression in 1920 and 1921, including among many other things some deflation of the personnel movement, a rather different point of view has grown up.

In the first place, it has become a generally accepted principle that personnel administration is a function of every person who supervises others in the organization. One hears speakers and finds writers discussing the qualities of foremen in terms of whether or not the foreman is a good personnel man and there are even references to presidents and general managers as good personnel men. There are not a few presidents of companies who openly make the statement that they are the chief personnel directors of their companies.

As a result, personnel men, instead of claiming that they have absolute power in selection, placement and dismissal of workers regardless of any preference or conviction on the part of the foreman, are now claiming that it is the function of the personnel department to facilitate the work of the supervisor in dealing with the personnel problems involved in management. "Facilitation", the admirably expressive term used by Mr. Oliver Sheldon in his excellent book on "The Philosophy of Management", is a term which is beginning to make its influence felt in the United States and a term which gradually is being used more and more generally. The personnel department is thus being recognized as a facilitating department, its functions being to assist the organization in the preparation and execution of personnel policy through research, advice and cooperation.

FOR SELECTION.

An employment manager, for instance, does the initial job of weeding out the applicants for employment, selecting those who would have a fair chance of fitting well into the organization and referring them to the supervisor who is in need of additional help. In making this selection, the employment man-

PERSONNEL ADMINISTRATION

ager, of course, weeds out persons whom the supervisor might be disposed to employ, but who would not fit well into the organization. It is still true and probably will continue to be true in the majority of companies that no supervisor will be permitted to employ men who have not had the approval of the employment department. But the power of employment managers to prevent a foreman from dismissing an employee from his department has practically disappeared. Every foreman has, or should have, the power to dismiss from his department, referring the employee to the employment department either for a final separation from the company or for transfer to some other department. On the other hand, most personnel departments have the responsibility of transferring men from one department to another within the company even against the wishes of department heads who may wish to keep men in their respective departments. Of course, in common practice, department heads have been shown the value of cooperation in this matter and transfers are made without friction.

In the light of this newer point of view responsibility for results is clearly indicated and there is no confusion as to authority in regard to the administration of any department of a company. In cases where supervisors have unusual turnover or seem unwilling to cooperate with the employment department, either by releasing men for transfer or by accepting a reasonable proportion of men selected by the employment department for employment, the solution of such difficulties lies in the possibility of the employment department recommending to executives, higher up than the offending supervisor, the possibility of the removal of the foreman or the correction of the abuses for which he has been responsible.

In the development of this principle that personnel administration is an integral part of management, there have been several other evidences of progress. For instance, it is customary for supervisors to participate in the preparation of such documents as a manual of employment procedure or a syllabus of instructional outlines for training of employees. The net result is that the line organization, including the foreman, are much more likely to be cooperative in helping to carry out

PERSONNEL ADMINISTRATION

the personnel program when they have had a part in the preparation of the policy and program and the tools which are used in carrying it out.

One very logical corollary of the newer point of view is an effort to train the supervisor in the process of carrying out the company's personnel program. In some companies, this, of course, has been done informally for years and is simply instinctive good management. Indeed, there often is no thought-out philosophy with regard to such interpretation of policy. It just happens because of the good sense or natural inclination of the leaders of the business. But in very large organizations, even though the upper executives have such spirit and vision, it becomes extremely dilute before reaching the lowest ranks of supervisors. Therefore, it is highly desirable that some more or less formal steps should be taken to convey this policy effectively down through the organization.

In the last two or three years a few companies have begun to train the supervisor in carrying out the company's personnel program. Without such steps, the personnel work of a large organization is likely to fall down at its weakest point, and all the energetic, intelligent and well-informed efforts of the director of personnel will scarcely get past first base unless steps are taken to strengthen all the positions on the team by which the personnel program of the company must be carried out.

FOR TRAINING.

This educative point of view finds expression most clearly in a company's program for the training of employees. The training of rank and file employees has been conspicuous in American industry for nearly 30 years. At first the emphasis was primarily on what might be called education as distinguished from training. In a good many cases such an educational movement was initiated by an executive officer of the company who himself had had comparatively few educational advantages and who was inspired to give advantages to his employees which he had not had himself. The motive was essentially philanthropic rather than economic and the driving power was

PERSONNEL ADMINISTRATION

emotional rather than intellectual. A contributing factor was the need for training in English and citizenship for the large numbers of non-English speaking immigrant workers. A good deal of the instructional material had little bearing on training for the job and might be regarded as a substitute for the work of the public schools.

During the war and its attendant industrial boom, industry was forced to lay emphasis on training for the immediate job and the consequence was a rapid growth of vestibule schools which provided quick instruction in the elements of performing the job. Consequently, there was a shift from an emphasis on what may be fairly called industrial education to job training.

Meanwhile, industrial training was influenced by different pedagogical ideas. Whereas the earlier instruction offered by companies was conducted by what was called "corporation schools" with formal class rooms, instructors, etc., the newer tendency was for training the worker on actual production under an instructor foreman, and this change in method brought such quick and effective results, that it was a very large factor in making possible the increase in wage levels which took place during the long boom period from 1914 to 1920.

Into American business has come of recent years a group of advanced pedagogical thinkers from the university schools of education. They brought with them the project method of teaching involving what we now commonly call training on the job and the preliminary steps that were taken during the war have, in some quarters, been carried much further to the extent that the supervisor, regarded as the real teacher of the worker, is being trained in the process of teaching so that he may perform his functions better than ever before, better than the training function was performed by corporation schools, and better than it was performed by the foreman or the journeyman before the era of corporation schools began.

One of the largest electric manufacturing companies has practically done away with all formal classroom instruction of employees and is concentrating its efforts on training the foreman to train. A syllabus for supervisors in an electrical

PERSONNEL ADMINISTRATION

public utility company consists largely, practically 90 to 95 per cent, of material which deals with teacher training for foremen, the assumption being that in order to make the training program really effective, steps must be taken to make the training of the worker continuous from the time of entering the plant until he leaves it, and on the principle that the best training is that training which is given in connection with actual work under normal circumstances of supervision, incentive and responsibility.

The president of one of our most progressive companies has frankly said that management is in large measure, 80 to 90 per cent, an educational and training job. He illustrates by saying that on one occasion a number of executives of his company analyzed exactly what management is in terms of specific operations, and that after classifying all of the typical operations, nine out of ten of them were listed under education and training.

The reasonable inference from this analysis is that the great proportion of training is the function of the supervisor, and a logical and necessary corollary is that in order to get that training done effectively the supervisor must be taught to train. This naturally raises the question as to what is the function of an educational or training department where one exists. The answer is that it logically comprises four main headings:

To provide that enthusiasm and promotive quality which spreads interest in training throughout the organization and creates desire and willingness on the part of every supervisor to take part in the training process.

To help to prepare the instructional outlines to be used by supervisors in the training of their workers. One says "help" advisedly because it may easily be recognized that when the supervisors themselves have prepared the instructional outlines with the help of an educational department, they are much more likely to take an interest in the training program and to feel a definite responsibility for making it effective.

To prepare, improve, and constantly revise the procedure

PERSONNEL ADMINISTRATION

for carrying out the training program, thus facilitating the work of the supervisor.

To take a very active part in training the supervisor to train.

On this point it might be argued that the upper executives ought to have the responsibility of training the supervisor to train, and doubtless as time goes on there will be more of their participation in this step in the training program. There are instances where a general manager has actually taken this position and, having done so, has expected his associates next in line to repeat with those further down in the organization.

LABOR SUPPLY.

When the personnel movement first began in America, chief emphasis was on those problems which have to do largely with the manual working force. This was intensified during the war period by the comparative dearth of labor. There is, of course, no less attention to these problems today than ever before, thanks partly to immigration restriction and the fact that were it not for increased output per man hour due to "labor saving machinery", "labor saving management" and better morale, the United States would be faced with a serious dearth of labor today. The labor supply problem in America is likely to continue to be important. Indeed, there are those who believe that the present situation in which there are comparatively few strikes and a small surplus of labor for employment, may not continue for many years.

During the last three or four years an outstanding amount of improvement has been made in the output per man, through vast installations of effort-saving machinery and introduction of incentives for factory workers and other similar measures, but there is a serious question whether the ratio of increase of output per man hour can be kept up and whether with the growth of American industry and continued immigration restriction, a dearth of labor will not reappear again seriously in the course of the next decade.

RESEARCH.

Reference has been made to the advisory relationship of a

PERSONNEL ADMINISTRATION

personnel department to the line organization. It will be recognized, of course, that the effects of sound advice must be based not only on the personality and promotive qualities of the director of personnel activities, but also on scientific research in the field of personnel. Incident to this changing conception by reason of which the personnel job has been squarely placed back on the shoulders of the supervisor, the personnel department has been, to a considerable extent, relieved of what may be called operating personnel responsibilities, and is thus left time for more intensive research on the personnel problems of the company. Consequently, personnel departments are less disturbed by the five to ten minute interruptions and are more able to concentrate on more fundamental investigations of personnel problems. These have taken many directions such as research on hours of work, bonus plans, pensions, profit-sharing systems, group insurance, suggestion systems, employee investments in company securities, savings plans, mutual benefit plans, discovery of methods of labor stabilization, even developing wholly new lines of product to fill out seasonal gaps in employment.

SALES AND OFFICE PERSONNEL PROBLEMS.

All the world knows about post-war competition due in part to excessive plant capacity at the end of the war, but America is becoming familiar with new forms of competition - competition between lines of industry which produce substitute commodities - the radio begins to take the place of the talking machine, cement begins to make inroads in the construction industry, giving brick and steel construction a new line of competition more severe than they ever experienced from within their own industry. New methods of transportation bring territorial sources of supply in competition with each other more severely than ever before.

The result has been a severe pressure on the manufacturing end of business to reduce costs to an extent that the factory executive has begun to protest and to urge that the same economies and the same reduction of unit costs shall be made

PERSONNEL ADMINISTRATION

effective in the marketing end of the business and in office administration.

As a consequence, the interest in personnel, which at one time was largely confined to the manufacturing side of business, is directing itself equally toward the distributing and office ends of business. Office personnel departments and sales personnel departments have been established in many American companies during the last few years. Banks and insurance companies are giving as much attention to office personnel problems as was formerly given to manual workers by manufacturing companies. The careful selection and training of salesmen is as important and popular a subject as the training and selection of labor. This process has really only begun.

ORGANIZATION OF PERSONNEL DEPARTMENTS.

Another result is that it is not infrequent to find that a company may have several personnel departments: for instance, an office manager who is also a manager of the office personnel department; a factory personnel department and also a sales personnel department. In a company having several plants, there are usually managers of personnel departments at each of the factories, with a central personnel department which has no authority over the personnel men in the various factories or other units, but which cooperates by providing information and by advising the personnel men in the units and also by advising the major executives of those units. There are even instances of marketing organizations which have managers of personnel departments in branch offices.

Some years ago it was not unusual for companies to have several personnel men; for instance, a employment manager, a manager of the educational department, a secretary of the pension committee, a secretary of the mutual benefit association, a safety engineer, etc., etc. In recent years there has been a tendency to coordinate these several activities into one personnel department with a chief in charge with several assistants specializing in the various problems of personnel within the organization. One typical personnel department is headed by a supervisor of industrial relations who has as his associates

PERSONNEL ADMINISTRATION

a safety engineer, a manager of employment department for headquarters, a personnel statistician, an educational director, a manager of the company store and a medical director. Most of these have an advisory relation to the executives of branch offices and factories as well as to personnel men in those respective units.

It may be of interest to discuss the position of the personnel man in a company by reference to the titles under which he operates. There are a number of instances of personnel men who are staff vice-presidents of their companies. Employment Manager was a very general title a few years ago, but in many instances it has been superseded by titles involving the word "personnel". For a time, the term Personnel Manager was spreading rapidly, but more recently the use of such titles as Director of Personnel Activities, Supervisor of Industrial Relations, etc., has been increasing. The comparative abandonment of such terms as personnel manager reflects the point of view that the personnel man does not manage or direct the personnel, but rather manages or directs the work of the personnel department. The management of the personnel is in the province of the line supervisor.

There are, of course, a great variety of titles: Manager of Personnel Activities, Service Manager and a great many special titles like Manager of Training Activities, Secretary of the Personnel Committee, etc.

It may be of value to touch on the outstanding evolutions and trends, so far as they may be discovered, with regard to certain special personnel activities. A good deal has already been said regarding the trend in respect to training.

WAGES AND SALARIES.

There has been a very marked tendency toward the growth of extra incentive methods of compensation of employees. There are, of course, a great variety of formulae for setting up a compensation plan, about 25 of them being known by the names of the men who invented them. There are, in addition, a great many others which are adaptations of these.

One of the most significant developments is a comparatively

PERSONNEL ADMINISTRATION

rapid growth of group bonus plans for manual workers, the group receiving compensation on the basis of the output of the group. Sometimes these groups consist of men who are doing exactly the same work in which several men have to cooperate. In other cases, the group consists of men who carry an operation through several steps. In some cases the foreman is included in the group, or at least receives extra compensation based on the output of the group.

One of the distinct advantages of the group bonus plan is that it puts a premium on cooperation, encourages workers to insist upon their fellow-workers doing a fair share of work, being on the job promptly each day and in some cases, it encourages the worker to help train his fellow-worker.

Extra incentives through commission plans or bonus plans are becoming very general as a means of compensating salesmen. The tendency is growing.

Until very recently, however, there have been comparatively few instances of compensating office employees on the basis of a measured output. This has been due, in large measure, to the difficulty in measuring the output of various classes of office employees. In the last few years, however, some very substantial work has been done in developing methods of measuring office output, the number of companies which are applying them has rapidly increased and new techniques have been evolved for measuring certain classes of office work which previously were never measured.

This development is making it possible to compensate office employees on the basis of output and the next few years will probably see a very substantial growth in this direction.

An intermediate stage in compensation of office workers has been the development of what is usually referred to as job classification and salary standardization in which jobs are rated and classified, and minimum and maximum limits set for classes of jobs.

PROFIT-SHARING.

In general, it may be said that the growth of profit-sharing as applied to rank and file workers has practically stopped in

PERSONNEL ADMINISTRATION

America, many plans having been abandoned. The conviction has grown that while profit-sharing may be an excellent arrangement as applied to persons of some responsibility, it has comparatively little effect on the rank and file, and is always in danger of creating an adverse effect when a period of low profits or of no profits arrives.

Incentives which are based on the actual output of the individual and extra compensation paid very shortly after the production period has been completed has, in large measure, taken the place of profit-sharing as applied to rank and file employees.

COMPENSATION OF EXECUTIVES.

In the days when ownership and management were almost identical the compensation of the manager was equivalent to the profits of the business, but with the practical divorce of management from ownership which came with large scale industry and the development of the corporation, the first tendency was to put the manager on a salary, his dividends from stocks comprising a comparatively small part of his total income. There were, of course, many private "deals" in which the manager was paid a salary and received as additional compensation either a bonus based on profits for the year or the dividends on stocks which were assigned to him and which, by good management, he might make extremely valuable. These cases applied, however, chiefly to the president or general manager of a company and to some extent to general sales managers on the basis of a bonus, usually on the total volume of sales.

In recent years there has been a distinct tendency toward applying the principle of extra incentive to other executives - factory managers, district sales managers, the foreman and other supervisors and even to staff men, the results of whose efforts it is usually comparatively hard to measure.

Some of these plans take the form of the more or less old-fashioned profit-sharing plan. In general, the tendency, however, has been to base the extra compensation, so far as possible, on a measurement of the results of the efforts of the

PERSONNEL ADMINISTRATION

particular individual. The net result of this departure is to reintroduce into large scale business in America some of the elements of incentive which were general when business was small and when the manager was also usually owner and thus had a direct interest in the business.

HOURS OF WORK.

The work time per day and per week has been decreasing in America over a long period of years. The greatest public issue was the steel industry's 12 hour day which, three years ago, became a thing of the past. The elimination of the 12 hour day in the steel industry does not seem to have in any way justified the alarming predictions which some persons were disposed to make. In fact, there were many people in the steel industry who believed that it could have been done long before.

During the last two years the most significant occurrence was the adoption of the five day week by the Ford Motor Company and the growth of a good deal of propaganda in favor of the general spread of the five day week. There has been comparatively little evidence that the movement is spreading widely, but there are those who predict that five or ten years from now, the five day week will be as general then as the five and a half day week is today.

VACATIONS FOR MANUAL WORKERS.

Vacations with pay for executives and offices workers have long been general, only a comparatively small number of companies holding out against vacations with pay for office workers.

Vacations for manual workers are becoming more general. In some quarters the opinion is held that this vacation with pay increases the loyalty and efficiency of the worker and that it pays profits to the company even though it does somewhat upset the production schedule. A great deal depends upon the custom of the industry and the custom of the community.

It may fairly be said that while there is no well thought-out attitude on the practice of vacations with pay and that the

PERSONNEL ADMINISTRATION

practice is more or less a matter of expediency, nevertheless, it is probably gradually becoming an unwritten part of the contract of employment.

No American state has made vacations with pay a legal requirement - not even in Canada where this step has been agitated with considerable force by labor organizations.

PENSIONS.

Pensions have been rapidly creeping into the industrial fabric of America, at first slyly in the form of informal pension plans which were more in the nature of special treatment of individual cases and later more openly through the adoption of formal pension plans. The topic is subject to a great deal of dispute and some companies which established pension plans some years ago on a rather liberal basis are beginning to find that the accumulating pension cost is much higher than they had contemplated. One tendency, partly in order to keep down the pension cost of companies, is an inclination to put pension plans on a contributory rather than the non-contributory basis on which most of the earlier pension plans were based.

STOCK PURCHASE AND SAVINGS PLANS.

A good many companies have provided for the purchase of the securities of the company by the employees. At first such plans were established largely in the expectation that they would affect the loyalty of the employees to the company and the efficiency of their work by giving the employee an interest in the company. Some of these plans were very generous, the company in many cases making a partial contribution.

More recently, the emphasis has been placed on the thrift and savings aspect of the purchase of company securities by the employees and the contemporary stock purchase plans have therefore taken on a somewhat more conservative aspect.

One large company has established what is practically an investment trust, an affiliated securities corporation, the shares of which employees buy. The securities corporation in turn purchases a variety of securities, including the bonds, preferred and common stocks of the manufacturing company, as well as the securities of other companies.

PERSONNEL ADMINISTRATION

INSURANCE AND BENEFIT PLANS

Group life insurance has been one of the substantial developments of the last ten years. Altogether there is approximately six and one-half billion dollars of group life insurance in effect at the beginning of 1928.

At first, a large proportion of group life insurance plans were non-contributory, that is, the company paid the whole cost, but more recently there is a very strong tendency toward having the employee share in the cost.

Similarly, there has been a great growth of benefit plans, a movement which began earlier than group life insurance. These benefit plans provide a scale of benefits for certain disabilities, including accidents, sickness and death.

In many cases they exist side by side with group life insurance. In other cases they are more or less a substitute for group life insurance.

As in the case of group life insurance, there has been a strong movement toward contribution by the employees as well as a contribution from the company, and also a strong tendency toward administration of the mutual benefit fund by an employees' committee with the advice and cooperation of executives of the company.

VOCATIONAL ADJUSTMENT.

The preparation of job descriptions and job specifications has been much discussed, but until recently, much more discussed than acted upon. Both of these results of job analysis are almost essential for any plan of job classification and salary standardization, both of which have been growing. One distinct tendency in job analysis is the setting up of a statement accentuating the "job difficulties".

The introduction of new employees to their jobs, especially to the foreman and to the fellow-workers and the environment is being performed more effectively than ever before with distinct advantages not only to the company, but also to the employee through increased output and increased earnings during the initial period of employment and reduced turnover among new employees.

PERSONNEL ADMINISTRATION

Gradually the idea of transfers and promotions from within the organization is spreading, without, however, taking the form of a rigid rule which prevents the recruiting of necessary specialists from outside of the organization.

The rating of rank and file employees which was prominent a number of years ago has largely been eclipsed by the growing attention to the rating of persons of possible eligibility for promotion to executive positions of greater responsibility.

Promotion out of the company is a policy adopted by a few companies with good effects on the morale of the organization.

HEALTH AND SANITATION.

Promotion of health and sanitation has been probably the least effective of all movements in personnel administration, but this is a subject which is beginning to attract a great deal more attention. The costs to the company and to the employees of ill health, consequent absence from work or inefficiency on the job, are regarded by many as vastly more important than the accident problem to which a great deal of attention has been given.

In nearly all large companies, medical examination prior to employment is the rule, but compulsory periodic medical examination for those already on the payroll has not made rapid progress, though there are those who have this policy and are emphatic in their praise of it, denying that it has been attended by any serious complications or objections on the part of employees.

In most companies, however, emphasis has been placed on health education rather than compulsory examination and the best practice has been to concentrate, not so much on the rank and file employees, as upon the supervisors who in turn carry the message of the health program to the employees. This is another good illustration of the advantages of a decentralized responsibility in personnel administration.

SAFETY.

Because of the spectacular losses resulting from industrial accidents a great deal of effort has been expended on reducing

PERSONNEL ADMINISTRATION

the number and seriousness of such accidents. Workmen's compensation legislation has been passed in all but three of the states and safety work is vigorously promoted in many companies both large and small.

Results from this phase of industrial relations work can be isolated more easily than from any other and this very quality of tangibility has undoubtedly had a great deal to do with the interest shown in accident prevention. Certainly the record of accomplishment is so remarkable in companies where sustained and intelligent effort has been made that it should serve to convince any set of officials of its worthwhileness.

Figures issued yearly by one large corporation indicate what can be done. From 1906 to 1926 serious and fatal accidents have decreased 60.22 per cent and from 1912 to 1926 disabling accidents (including all accidents with loss of time greater than the working turn) have been reduced 83.81 per cent. This decrease has been concurrent with a marked expansion in properties and in numbers of employees. The results have been accomplished by careful engineering which has removed physical hazards in the plant or on machines; by keeping complete records of accidents sub-divided by cause which indicate where added precautions are necessary; and by a ceaseless campaign of education. Each is necessary but perhaps the educational campaign has yielded the greatest returns.

About \$ 20,000,000 has been spent on accident prevention since January 1, 1912. Had accidents continued at the 1906 rate, however, far more would have been paid out under the various state compensation laws to the injured and their families. If, as a large insurance company recently stated, it is true that to every dollar of compensation cost resulting from an accident must be added four dollars to pay for lost time, labor turnover, waste of materials, interference in production and other conditions arising out of the accident, the saving from accident prevention is many times greater.

While for some years safety education was directed largely toward rank and file employees, it has been found by another very large company that still greater improvement can be made by concentrating the safety educational attack on the

PERSONNEL ADMINISTRATION

foreman - another illustration of decentralization of personnel activities and of carrying out the personnel program through and by the line organization.

SERVICE TO EMPLOYEES.

In the early stages of the personnel movement in America, a relatively large proportion of attention was devoted to what was called welfare work, comprising such activities as social clubs, recreational activities, camps, athletic activities, employee publications, company stores, sales and discounts for company products, legal aid, housing, restaurants, etc.

Probably as much is done by companies today as formerly along these lines, but this general group of personnel activities is much less conspicuous than formerly because it is being overshadowed by many newer and relatively more important activities.

There has also been a tendency to eliminate certain classes of personnel service and to continue only those which have a direct bearing on the efficiency of the employee, his earning capacity and, by implication, his value to the company.

Other activities which have a much less direct bearing on the company's interest are being turned over more and more to actual administration by the interested employees themselves, and many of these are financed almost entirely by the employees. This gives employees an increased measure of autonomy and a more self-respecting status. This tendency is a good illustration of the trend away from a paternalistic attitude toward employees.

JOINT RELATIONSHIPS.

The term "joint relationships" is used in the United States to designate the dealings between management and employees on matters of mutual interest, particularly as affecting such vital subjects as wages, hours, and working conditions; discipline and grievances; and efficiency and economy of operation. In industries in which employers recognize trade unions, joint relationships usually are handled between the management and the union organizations. Union contracts customarily cover

PERSONNEL ADMINISTRATION

wages, hours of work, and general conditions in the shop, and occasionally they include agreements for the mediation or arbitration of disagreements, for unemployment insurance or for other subjects outside the routine of ordinary union negotiations. There has also grown up in some industries a system of union-management cooperation, having for its purpose joint endeavors toward the promotion of operating efficiency, the reduction of costs, and the building up of morale. The union labor movement is treated in another paper in this series.

Perhaps the most impressive development of recent years in connection with joint relationships in American industry is employee representation. Under this classification are included all formal agreements for direct dealing between management and representatives elected by and from the employees in an individual company or plant.

The representation movement as a conspicuous part of industrial management dates from about 1915 and the period of its greatest growth did not begin until after the United States entered the World War. In the period of business depression beginning in 1921, a considerable number of plans were abandoned, but in the last five years representation has shown a steady growth.

Under the typical plan of employee representation the workmen of a single company elect representatives from among their own number, usually by voting districts arranged in such a way that each representative has for his constituents fellow-workers with whose conditions and jobs he is intimately familiar. These employee representatives deal with representatives of the management through joint conferences and joint committees and in other ways. The authority of the shop committees or works councils and the scope of subjects which they are authorized to consider vary in the procedure of different companies. While in a few cases, employees are prohibited from joining unions or from joining a particular union that has been in active opposition to the employing company, it is usual for a representation plan to provide explicitly or tacitly for the indiscriminating employment of union and non-union men.

PERSONNEL ADMINISTRATION

In addition to the organized practices in joint relationships that have been discussed, there are many less formal methods of dealing on subjects of mutual interest. In some companies the approach of the employees to the management is limited to line officials, with whom the individual workman is required to take up grievances or suggestions. In others the personnel department functions as the point of contact between management and employees. There are infrequent cases in which employees elect members of company boards of directors.

An important function of any procedure in joint relationships is the exchange of information and opinions between management and work people. Sometimes this is effected through a representation plan or an agreement for union-management cooperation; sometimes through employee's newspapers or other plant publications, and sometimes through more or less formal suggestion systems under which workmen are encouraged to submit to the management their ideas as to improving conditions or methods of operation. Usually these suggestion plans include the payment of awards for valuable ideas that are adopted.

INTEREST IN PERSONNEL ADMINISTRATION GROWING.

In the last few years there have been times when, on the surface, it might seem as though the personnel movement in America had received a set-back. This was due largely to the fact that at various times there seemed to be an unusual number of personnel men who were looking for positions. Actually, many of these had become interested in personnel administration and were anxious to return to the work.

Virtually, there is vastly more interest in personnel administration in America than ever before and that interest is on a sounder basis. For some years it was difficult to get the factory manager or the president or other line official to take an interest in personnel problems, the inclination being to refer all such matters to the personnel man.

With the growing recognition that personnel administration, on a sound basis, has a definite relation to the business success of the organization, much of this has disappeared.

PERSONNEL ADMINISTRATION

Furthermore, it is being recognized that sound management has a very definite relation to the interests of the employees and that the introduction of effort-saving machinery and labor-saving management and the development of better morale almost inevitably result in greater output as a result of which the employees receive increased earnings.

An interest in personnel administration has become eminently respectable especially as the subject matter is approached in terms of management. Indeed, it would be practically impossible to keep the subject of personnel out of any meeting of executives discussing almost any management problem, whether it be treasurers or comptrollers at a conference on financial management; factory executives at a conference on production; sales executives at a conference on marketing; office managers discussing office management; or at a round table of the presidents discussing problems of general management.

What appeared to be a period of declining of interest in personnel administration from approximately 1920 to 1924 may now be interpreted as a period of transition following which attention is being concentrated on those personnel activities which make for sound business, increased earnings for employees as well as profits to the company, increased purchasing power for the community and consequent business prosperity.

NEW DEVELOPMENTS IN THE LABOR MOVEMENT

BY FLORENCE C. THORNE,

American Federation of Labor

The American labor movement has distinctive policies and agencies to meet New World conditions. Its outstanding characteristics are its philosophy of voluntarism, emphasis on economic agencies, rejection of the class conflict philosophy, and advocacy of cooperation to promote the interests of all concerned in production. The interest of the American trade union centers on the job itself. It seeks betterment in hours and wages as the medium to other opportunities. American trade unions have declared that increasingly higher standards of life can be maintained only through increasing productivity, and thereby recognize their interest in more efficient production. This brings the union to a concern for work processes.

The American Federation of Labor is emphatically advocating educational methods and research, and is taking the lead through its official journal.

The most significant development of American trade unionism is union-management cooperation. Where collective bargaining has provided fair conditions of work and mutual confidence, it is possible for workers to make a constructive contribution in the work itself. These contributions represent craft or creative interest in the job and are of various forms - such as the engineering production service of the printing pressmen, maintenance of craft membership by the full fashioned hosiery workers, up to provisions for specific organization for union management cooperation developed for railroads.

Standard labor unions in the United States are the only agency that maintains social standards for the workers and serve to unify and stabilize terms of employment throughout the industry to accord with progressively higher standards.

Before considering the new tendencies of American labor, a summary of the distinctive characteristics of the American labor movement is necessary in order to interpret current developments. American trade unions reflect in their policies and methods the outstanding features of community life of which they are part. American civilization developed in a pioneer country. There were rich natural resources in bountiful supply but industrial pathfinders were necessary. The heroes of that age were those with the spirit of adventure necessary to cope with pioneer environment. Distinction is still the reward of those with daring and faith for additional progress and achievement.

Industry in practically every instance has preceded political development in its field and has relied upon individual initiative and voluntary undertakings. As there are wide areas to serve, industries have followed plans commensurate with business possibilities. The relative absence of traditions has brought

LABOR MOVEMENT

flexibility in thought and procedure. There is a notable willingness to adopt new techniques and meet new opportunities. Our rapid progress has been due to leaders of the pioneer type accustomed to find their own paths and assume responsibilities. The American labor movement developed out of this new world environment has adapted its methods and agencies to meet its specific problems. Though many labor ideals were of old-world origin, they have been adapted to a new world atmosphere and experience.

The American labor movement is now expressed through the American Federation of Labor to which are affiliated the more important national and international labor unions with the exception of the four railroad brotherhoods in the operative service of the railroads and the Amalgamated Clothing Workers' Union. Due largely to the fact that its leadership was practically unchanged from 1886 to 1924, the American Federation of Labor has a most distinct personality. With the death of Samuel Gompers in 1924 and the election of William Green to the presidency, there has been no change in the fundamental philosophy of the Federation. Its policies are unchanged, though Mr. Green gives new emphasis and new presentation to constructive functions of the union. While in no way minimizing the necessity for militant defense, he insistently points out that the way to progress for all concerned in industries lies through the conference table to daily co-operation between management and unions in doing the day's work, each group contributing of its work experience and assuming responsibility for its functional contributions. Co-operation of self-dependent groups will, the Federation maintains, give industry the richest contributions of creative thought and work.

The distinctive characteristics of the American labor movement are:

Voluntarism as the basic philosophy.

Primary emphasis on economic agencies and economic objectives.

Rejection of the class conflict theory and acceptance of the

LABOR MOVEMENT

idea of mutuality - but not identity - of interest of all concerned in production.

American trade unions have made voluntary principles the cornerstone of their philosophy. They believe that relationships between persons should be based upon consent, and that as individuals and groups make progress in experience and understanding, voluntary relationships will be on successively higher planes. Unions believe that the individual worker finds opportunity for personal growth and progress through voluntary association with others in the same craft or occupation. Each work group is regarded as the best judge of its own needs and abilities to contribute to industry, and retains for its own decision changes and adjustments in the terms and conditions under which work is performed. The union, which is the repository of the human and work experience of those who handle the tools and materials of industry, makes an essential contribution to the development of industrial order and procedure.

The American labor movement put first in its program higher wages and shorter hours, believing that these two objectives controlled the opportunity and the means to social, material and spiritual progress. It believes that problems involved in making changes in the terms and conditions of work are best understood by those in the industry, and that therefore economic agencies can most effectively deal with these problems. American labor looks to its unions for special services for workers as a group and to governmental agencies for services which embody social ideals of concern to the nation and to workers as citizens. American workers, feeling that in their civic and social relationships there are no fixed classes, look for progress through the development of democratic ideals and institutions for all society. This fundamental feeling for equality is reflected in the disinclination of unions to seek legislation to decide their problems, in addition to their conviction that economic methods and agencies are more effective in dealing with economic problems because they are a part of the matters they seek to control. The fact that American unions

LABOR MOVEMENT

have not looked to partisan methods has centered efforts on economic progress, which has been a factor in giving the United States the highest wages of all countries.

The main dependence of American workers is therefore on the initiative of unions and collective bargaining. The unions are the only agency that maintains social standards for the workers and serves to unify and stabilize terms of employment throughout the industry to accord with these progressively higher standards. The standard trade union is the only organization through which workers have as yet made a functional contribution to industry.

In the new world chance is recognized as inseparable from opportunity. American unions prefer the hazards of chance to the securities of more definitely fixed conditions. Reduction of hours of work and higher wages open to workers control of more time and more opportunities for development. The main demand of American labor is for opportunity. This attitude has been fundamental in making collective bargaining as the basic machinery for putting the union program into effect. As various unions have been successful in collective bargaining they have found new opportunities for the union to serve industry. In this field of collective bargaining important new trends are developing which are reflected in the five-day week goal and in wage demands based on productivity. Both these new standards represent concern that Labor shall share more fully in social progress in the benefits of improved production technique, increasing productivity, and in more leisure. These demands represent ideals of trade unionists and reflect more advanced understanding and organization of industrial relations and definite appreciation of the significance of productivity.

There has been sustained progress among organized wage earners in establishing the eight-hour day. Some unions have secured a forty-four hour week and more recently considerable progress has been made in securing the five-day week for building tradesmen.

During the past winter, when seasonal unemployment had been added to unemployment resulting from mechanization of

LABOR MOVEMENT

industry, new emphasis has been given to arguments for shorter work hours as a necessary accompaniment of increased productivity. According to the Census of Manufactures there were for 1927 8,076,500 wage earners as contrasted with 9,096,500 in 1919, although value which they add to manufacture is 25,171,400,000 as contrasted with 25,041,700,000 in 1919.

Manufacturing industries 1919—1927.

Year.	Total Wages.		Total Number of Wage Earners.	
1919	\$10,533,400,000	100	9,096,500	100
1927	\$10,510,000,000	100	8,076,500	89
Year.	Wage per Wage Earner.			
1919	\$1158	100		
1927	\$1301	112		
Year.	Value added by Manufacture.		Value added by Manufacture per Wage earner.	
1919	\$25,041,700,000	100	\$2753	100
1927	\$25,171,400,000	101	\$3117	113

American trade unions have officially declared that increasingly higher standards of life can be maintained only through increased productivity. This position of the American Federation of Labor has been developing over a number of years.

In the early years of the twentieth century demands for wage increases were simply demands for higher absolute wages. Next came demands for wages based upon consideration of cost living and higher purchasing power to wage earners. Then, with increasing use of mechanical power and technical progress, productivity in industries increased greatly. Workers found there were definite limits to industrial prosperity through increased productivity unless there was corresponding increase in purchases on the market. The American Federation of Labor therefore formulated a new wage policy which finds additional grounds for wage increases in the fact that they were helping to produce more and that unless wage earners shared in social progress the depression tendencies of the business cycle were strengthened. The initial step in formulation of this latest wage policy was a declaration in 1919

LABOR MOVEMENT

pointing to the relation between research and industrial progress. In the years following were declarations pointing to the relation between productivity and wage increases and finally a formal declaration adopted in 1925:

"We hold that the best interests of wage earners as well as the whole social group are served by increasing production in quality as well as quantity, and by high wage standards which assure sustained purchasing power to the workers, and, therefore, higher national standards for the environment in which they live and the means to enjoy cultured opportunities. We declare that wage reductions produce industrial and social unrest, and that low wages are not conducive to low production costs.

"We urge upon wage earners everywhere: that we oppose all wage reductions, and that we urge upon management the elimination of wastes in production in order that selling prices may be lower and wages higher. To this end we recommend cooperation in study of waste in production which the assay of the Federated American Engineering Societies covering important industries has shown to be 50 % attributable to management and only 25 % attributable to labor, with 25 % attributable to other sources, principally managements in industries producing commodities for any single industry under consideration.

"Social inequality, industrial instability and injustice must increase unless the workers' real wages, the purchasing power of their wages, coupled with a continuing reduction in the number of hours making up the working day, are progressed in proportion to man's increasing power of production."

This policy can be applied only when workers know the facts of productivity, and it at once carries wage discussion to the realm of fact determination. The first research work which the American Federation of Labor undertook in the wage field was a study of wages as related to productivity. This study was based upon the Census of Manufactures of 1925. The Federation began in October 1927 the computation of an index of labor's share in production and consumption based upon both wholesale and retail prices respectively. This index is published monthly in the "American Federationist".

Though the entrance of the Federation into the research field is important in itself, there is added significance in the fact that the research is for the purpose of giving practical aid for handling economic problems. It will tend to strengthen the emphasis which American labor has placed upon economic methods.

LABOR MOVEMENT

Since September 1927, the American Federation of Labor has been gathering data on employment among trade unionists. The data show the percentage of unemployment in the more important industrial centers. Local unions cooperate in the study. The data will constitute measuring rods to indicate the relative stability of employment which is an important element in annual earnings.

Another trend in the American labor movement of incalculable potentiality is the assumption by unions of various degrees of responsibility for production and the development of various types of cooperation between unions and managements.

The rejection of the theory of irreconcilable class conflict results in an entirely different mentality and vocabulary for American labor from that of European labor movements. Acceptance of the principle of interdependence of interests, makes possible the Federation's policy of cooperation with other groups to work out mutually acceptable plans for progress. The Federation through various representatives is co-operating with such widely different organizations as the American Bar Association, National Broadcasting Company, National Bureau of Economic Research, Social Science Research Council, Personnel Research Federation, Economic Foundation, U. S. Chamber of Commerce, American Legion, and many other representative groups.

This same tendency to seek a synthesis that will harmonize the views of groups concerned instead of the dominance of a single group or class point of view, is evidenced in the efforts of the American Federation of Labor to enlarge the scope of social text books used in public schools to include an impartial discussion of labor implications in history and other social sciences. In its work in connection with public schools, as well as in its promotion of adult education through the Workers Education Bureau, the Federation has maintained broad constructive purposes based upon recognition of interdependence of interests as opposed to propaganda and the strengthening of opposing interests which promote conflict between groups.

With the development of the concept that both employers and employed may benefit through the progress of the industry,

LABOR MOVEMENT

came the opportunity for cooperation between workers and management which is the most significant development in our field of industrial relations. Cooperation between management and trade unions is a further development of joint relationships resting upon a foundation of collective bargaining. It represents a sense of responsibility on the part of wage earners for progress in industry not only as a means for betterment for the groups immediately concerned but for social progress. Responsibilities result from recognized and established rights. This sense of responsibility is expressed by unions in widely different constructive services to industry up to the more recent developments of participation in what were formerly regarded as exclusively management matters.

Lines of division in industrial conflicts have not been based upon class divisions and conflict, but on protest against temporary inequities in sharing the results of production. Since the background is not irreconcilable conflict between classes, concern is focussed upon establishing collective bargaining or developing adjustments where collective bargaining exists. In industry where traditions of employers' individualism prevent practical individualism for workers which can be realized only through collective action, issues still turn on the right to collective action through trade unions or voluntary agencies. There is a wide range in the degrees of progress represented in labor organizations in various industries.

Practically all trade unions assume some responsibility for maintaining standards of skill among their membership. Many craft unions have had provision for apprenticeship training under union control. Formerly training was within the shop, but with changes in industry, shop training has been supplemented by instruction in schools or by correspondence. The International Typographical Union and the shop crafts on the Baltimore and Ohio have developed successful correspondence courses. The printing pressmen have a technical school which also helps members with practical problems. The unions in the construction industry usually join their employers in cooperative undertakings with public schools. The trend is

LABOR MOVEMENT

toward a wider basis of instruction to promote understanding of the industry. Encouragement for further development of craftsmanship is furnished by the New York Building Trades Congress through special distinctions for applied craftsmanship on construction undertakings. These are beginnings of an effort to replace vanishing skills by new standards and ideals of workmanship. The unions are aware of the effects of repetitive or mass production, and are considering the new production methods for the purpose of finding the type of training to substitute new standards of skill for older manual skills in order that mass production may not mechanize workers also. It is significant that American unions, as a rule, do not oppose machinery, but seek to prevent disadvantages to the workers through mechanization of industry or more efficient production methods. There has been a distinct change in organized labor's attitude toward scientific management following fundamental changes in scientific management.

In the past twenty-five years a number of organizations have been merged as production changes wiped out old craft lines. The formation of departments within the Federation was a step toward providing joint action for an industry and has brought varying degrees of unified action for the building trades, the metal trades and the railway shop employees.

Unions have given considerable thought to the complete breaking up of a craft through mass production where the worker is responsible only for a process instead of a finished product. They have given evidence in special decisions with regard to jurisdiction over automobile workers of flexibility necessary to be adapted to industrial changes.

Another and most significant development in American trade unionism is participation in the problems and decisions of management through union-management cooperation on five railroads - the Baltimore and Ohio, Canadian National, Chicago and Northwestern, Grand Trunk Western, and Chicago, Milwaukee and St. Paul, affecting 75,000 employees. The provision under which union-management cooperation was first established was a simple protocol written into the agreement between the railway shop crafts and the Baltimore and Ohio.

LABOR MOVEMENT

This protocol pledged the union to cooperation in finding "improvements in the service and economy in operating and maintenance expenses".

For cooperation in working out better shop procedure, joint shop committees were created of the regular representatives of the trade unions and the management. These committees hold regular bi-weekly meetings and keep records of transactions. All members of the committee submit proposals, some of which may be referred to special joint committees for investigation and report. Realizing that they were entering upon cooperation in the technical field, the unions retained a high grade consulting engineer experienced in the railroad industry. Technical counsel has given the unions confidence to proceed under the agreement, for they do not feel hampered by fear that the technicians of management can take advantage of them, and they can freely give their most valuable suggestions and experience, knowing that all will benefit thereby.

The records of the meetings of joint committees show whether proposals originated with the employee group or the management group and their disposition. During the three years union-management cooperation has been in operation on the Baltimore and Ohio Railroad, more than 18,000 suggestions have been made, 16,000 of which have been adopted and incorporated in shop procedure; 500 are still under consideration, and 1,500 were dropped by mutual consent as impracticable or too expensive. An analysis of a representative number of these suggestions shows that:

51.2 per cent resulted primarily in more efficient management, initiating more efficient methods or savings in materials;

43.4 per cent affected the workers primarily, such as improvement in working conditions, better work equipment, better handling of supplies;

35.4 per cent affected both sides equally.

The nature of these detailed propositions is revealed from the

LABOR MOVEMENT

following analysis of 2,214 propositions, which originated at 14 points on the Canadian National Railways:

Shop methods and practice	417
Repairs to machinery and plant, change in location of machinery, etc.	421
Maintenance of locomotives and cars	156
Standardizing of materials	74
Materials and supplies, storage, delivery shortages, handling, etc.	199
Manufacture of and repairs to equipment	94
Purchase of new equipment and enlarging of plant	184
Reclamation of material, conservation, stoppage of waste, etc.	85
Defective materials	29
Standardizing forces	19
Working conditions in shops, lighting, heating, cleanliness, etc.	181
Safety and first aid	81
Care of tools	40
Operation of cooperative plan	40
Bonus system and measured production	40
Alterations to standard designs for locomotives and cars	33
Maintenance of equipment costs, output records	9
Promotion of employees, hiring, wages, overtime	14
New business, prospective business cards, hotel patronage, etc.	17
Apprentice instruction	—
Cashing pay checks at plant	5
Cooperation in production, improved quality of workmanship, punctuality on the part of employees	12
Miscellaneous subjects (unclassified)	57

Of 1,057 cooperative propositions originating at five points on the Baltimore and Ohio Railroad, analysis revealed that 864 (or 81.7 per cent) originated with employees, and 193 (or 18.3 per cent) originated with the management. Further, that of 629 propositions originating on the B. and O., 13.4 per cent were jointly considered to be of primary benefit to the employees, 51.2 per cent to the primary benefit of management, and 35.4 per cent to be of equal benefit to employees and management.

Understanding of the principle that the interests of those employed in an industry are mutual has been put to a number of tests under union-management cooperation. The unions have held to their purpose even when the benefits of cooperation did not bring convincing immediate material returns. In tangible form, benefits to the workers came first through greater stability of employment and later through wage increases.

LABOR MOVEMENT

One of the greatest hardships of the railway shop work was its irregularity. This was overcome in the following ways:

By doing all work in railroad shops, thus avoiding contracting out. Thus the industry became self-dependent and there was more employment for workers.

Being self-dependent, it was possible to develop a standard work force. Better organized work prevented peak loads for which workers had been temporarily employed and as a consequence periods of slack work decreased.

Budgeting of work and funds resulted in further improvements in work plan. Certain kinds of work and types of repair were reserved for slack seasons. Budgeting of funds created an equipment reserve fund.

The effort toward stabilization in each shop was supplemented by a placement service for furloughed men who were advised of work opportunities in other shops where they have priority before new men are hired. The unions and the management handle this transfer service which benefits the railroad by keeping available experienced workers.

As a result of these efforts to stabilize production, the railroad company saved on repair costs and frequency of repairs, and each worker gained in stability of employment an increase of two week's work yearly.

That the cooperative method has promoted good will and understanding is shown in the decrease in number of grievances. Before the institution of union-management cooperation there was an average of one grievance per year for every 58 employees, while in 1925 the average was 1 to 131 employees.

A fundamental principle involved in union-management cooperation is the sense of interdependence of interests of the whole work group, first by shops and finally as represented by the whole railroad. That industry is an associated undertaking is an important social principle, manifest under this cooperative agreement. The focus is on creative initiative which brings a spirit of responsibility and mutual concern to

LABOR MOVEMENT

the whole work group and receives financial reward as the industry prospers. The management has been more reluctant to make public estimate of the value of cooperation, but has been unreserved in its recognition of the morale sustained under cooperation. This morale results in better service and alert concern for the interests of the railroad. Trade unionists have solicited patronage for the railroads among tradesmen and those who travel. Cooperation has opened the way for more equal relationships between men and management, which makes for confidence. The problem of measuring the benefits under the new plan is being worked out by joint committees. Since cooperation has been in effect, the shopmen have received wage increases averaging 8 per cent, the restoration of time and a half pay for Sunday and holiday work, and steadier employment, the net effect of which has been to increase their average wage increases by 15 per cent.

Experience on the Canadian National Railways is similar to that on the Baltimore and Ohio. The plan has more recently been adopted by the Chicago and Northwestern and the Grand Trunk Western.

The Pittsburgh Railways Company of Pittsburgh in 1926 entered into a cooperative agreement with the union of its employees. The street car system had to meet competition with bus lines and other means of transportation and realized that service was vital to success. Service is possible only through a unified group. Although operative but a short time, both union and management find the results gratifying. The machinery of cooperation is similar to that on railroads. Thus far the suggestions through cooperation include:

- Additional service at peaks on certain routes.
- Changes in certain car-loading points.
- Advisability of an early morning car on a certain route.
- Loss of time in dropping trailers.
- Children's five-cent school tickets.
- Additional service on certain routes.
- Schedules, sanding equipment, cleaning cars.
- Thermostats, lights, switches, signals, etc.

LABOR MOVEMENT

There are in many trade unions, developments akin to phases of union-management cooperation but lacking the same definiteness of agreement and machinery because the will and understanding of cooperation are not yet sufficiently developed on the part of management. Examples of such developments are: the Printing Pressmen's Union retains three production engineers to help its membership secure the highest standards of craftsmanship on jobs done for companies with which the unions have collective bargaining. The Photo-Engravers Union has for a number of years been urging upon employers joint industrial research for determining the relative values of materials instead of the commercially controlled service now supported by employers. This union maintains its own apprentice training schools, and establishes and maintains high standards of craftsmanship. It is a craft which is rapidly changing technique, and the craftsmen must continually learn new methods. Its local unions maintain employment bureaus and unemployment benefits.

One of the textile unions, the full-fashioned hosiery workers, employed in work that necessitates high quality standards, has assumed responsibility for supplying workers of adequate ability and for helping to develop proper work procedure and morale. The officers of these unions perform definite management functions.

The union has entered into an agreement with its employees for joint research in the industry.

A similar result was worked out by the women's garment workers' union of Cleveland, which cooperated with management in developing production standards.

A number of paper makers' unions cooperate with management in the paper mills to improve quality of work and mill procedure. An upholsterers' union proposed that the office of foreman be abolished and that the union assume responsibility for managing the shop.

Federation headquarters is continually finding new examples of the constructive work of trade unions. For example, a conference on the elimination of waste in industry held in Philadelphia in 1927 under trade union and workers' education

LABOR MOVEMENT

auspices, disclosed in a striking way new examples of the service unions render to industry. Employers, technicians and trade unionists participated in a discussion of how wastes could be eliminated. Reports on undertakings in progress, given by these groups from different approaches, all indicated a common interest in promoting better management within industry. That the more efficient management depends on the cooperation of all associated in the undertaking, is a principle which this conference helped to impress upon employers and employed alike. The papers and discussions of this conference were published in the official journal of the American Federation of Labor and in reprint form were made widely available to workers, study groups and trade unions.

Practical cooperation for the elimination of waste such as constituted the discussion in this conference is possible only through trade unions after collective bargaining has been established. When terms of work have been mutually determined, and agencies for adjusting grievances have been established, a basis is laid for that spirit of confidence and good will which make possible a focus of attention and energy upon work itself. This attitude makes for the release of creative energy upon a joint problem, a real work partnership, all contributing, according to capacity, to the joint undertaking. Then only will the work lives of wage earners reach to the levels that should characterize all human experience. Each constructive effort of the union to assume a responsible share in production is evidence of a creative urge that finds expression when the spirit of cooperation replaces opposition or arbitrary management. But this spirit is possible only when there is freedom and organization for cooperation upon a mutual basis. Union representatives have served on committees created under the Department of Commerce for the development of simplification standards and for preliminary planning necessary for the elimination of duplications and wasteful practices.

There are, in the United States, industries which, while they prefer a more limited form of organization than that of the trade union, nevertheless acknowledge the need of a method

LABOR MOVEMENT

of mobilizing the work forces. Management in some of these industries has extended its scope to provide employees organizations. In some cases the corporations refused to permit their employees to unite in standard trade unions and for this reason trade unions have called this form of organization "company" unions and have applied this same term to all plans for employee representation that do not originate entirely from the initiative of the workers and are not connected with the trade union movement.

The company union is found chiefly under corporate types of industrial organizations where management was early recognized as a separate function from ownership and hence has developed a more highly organized technique. Some managements have felt that this more restricted form of organization is necessary to get the cooperation of workers in more efficient production. The American Federation of Labor holds that this can be done equally well through trade unions, and asserts that only through trade unions can industrial and social standards be kept uniform throughout the country. Such standards are important for the industry, the workers and society.

An agreement recently signed by the Amalgamated Association of Street and Electric Railway Employees of America and the Trade Union of Street Railway Employees is significant as to future possibilities. The agreement provides for a merging of the methods of cooperation through a company union plan and the other functions of trade unionism as carried out through the standard trade union. The result should mean the utilization of the best in both developments.

The capacity of trade unions to perform constructive service in industry, and to assume greater responsibilities, together with evidences of the social and economic value of union-management cooperation, constitute a challenge to the company union theory. Union-management cooperation gives evidence of capacity to develop between management and workers a spirit of real partnership in the work of the world. It is based upon an understanding of the interdependence of human interests and responsibilities, and at the same time safe-

LABOR MOVEMENT

guards ideals of voluntarism which underlie human freedom and opportunities for continued growth.

As American trade unions have been successful in promoting the interests of their members, they have become important investments of both energy and accumulated revenues held for specific purposes. This stage of development means it is necessary for the union to realize management and entrepreneur problems.

In addition to investments in offices, old age homes, labor temples, labor banks, etc., unions have developed insurance companies. The two most important are The Union Co-operative Insurance Company and the Union Labor Life Insurance Company. The former was organized by the International Brotherhood of Electrical Workers to provide benefit services for their members and families. The latter was organized after careful investigation by the American Federation of Labor to enable unions to have a better financial basis for benefits, many of which are not on an actuarial basis. Increased responsibility made union officials look for better handling of finances, more accurate accounting and sounder policies.

In dealing with this problem the unions have followed their traditional policy of relying upon union resourcefulness rather than asking for legislation or governmental insurance.

It is significant that in dealing with problems of investment and management the unions are increasingly turning to technical counsel. For banking and insurance undertakings, technicians are employed. For research and for special problems, the unions are beginning to employ technicians. The leadership of President Green has given a new emphasis to efforts to promote mutual understanding in industry and to the function of fact-finding in promoting this end. Mr. Green has repeatedly declared unions must rely upon educational methods for future progress, and he has given unreserved support to the advancement of worker's education undertakings so that there may be a more comprehensive understanding of union problems and thereby a more effective development and application of constructive methods.

LABOR MOVEMENT

During the past winter there has been a striking application of educational methods to concrete labor problems in a series of unemployment conferences organized by the Workers Education Bureau. In these conferences representatives of various community groups have met with the workers to discuss the causes of unemployment and its prevention. The conferences have served to emphasize the need of the community and labor for facts to indicate industrial trends and mutual concern for the hardships growing out of unemployment. Unions have as a result turned to the problem of stabilization with new expectations.

The Workers Education Bureau itself, sponsored by the American Federation of Labor, is tangible evidence of the new dependence which American trade unions place in education. The Bureau is helping to provide trade unions with opportunities to equip themselves to approach labor problems as opportunities for progress.

In its contacts with labor movements of other countries the American Federation of Labor is following the same instinct for functional relationships that it has followed in other matters. It has economic development as the basis for its relations with the workers of Canada. There is a definite unity in the economic interests of Canada and the United States, which has its roots in geographic continuity, economic resources and financial interdependence. Jurisdictions of unions of workers in industries generally include both Canada, Porto Rico, the United States, and sometimes Mexico. There is organizational inter-connection between the American Federation of Labor and the Canadian Trades and Labor Congress, with functional division of responsibility on a continental basis.

There are both economic and political reasons for close interdependence of interests of all countries of the Western Hemisphere which governmentally is expressed in the Pan-American Union and from a labor point of view in Pan-American Federation of Labor. This organization was primarily due to the effective support which the American Federation of Labor gave the workers of Mexico in their recent revolution to restore constitutional government in Mexico. As labor or-

LABOR MOVEMENT

ganizations in Latin American countries are not as yet well developed, the Pan-American Federation of Labor serves as a clearing house for information for workers in those countries which are trying to build up labor organizations. The Mexican Federation of Labor has utilized the essential fundamentals of the American trade union movement and adapted them to Mexican conditions. Methods and practices of American trade unions will thus have a determining influence in shaping the development of the labor movement of the Western Hemisphere. These regional developments should lead logically to international relations when a mutually satisfactory basis can be reached.

Progress in accord with the high ideals expressed in official declaration is not uniform among American trade unions, but it is of significance that such ideals are shaping the progress and development of the American trade union movement. They forecast the future.

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SOCIAL AND ECONOMIC BACKGROUND

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America has inherited most of its economic and social philosophy from Europe. Capitalism with its recognition of private property, industrial law with its doctrine of master and servant, the factory system with its concentration of population, trade practices, the wage system, and social customs with their inequalities of position and standards of living - all were transplanted to American soil from Europe. The subsequent growth of industrial society in America has been therefore the application of inherited principles to a new environment. Changes wrought have been mainly those which grew out of new situations. Because of early isolation, the bonds of tradition were less potent and new viewpoints in government, education, and industry were easily adopted. Those industries which had already become set in their traditions, notably textiles, have been the slowest to accept new methods. These adaptations in the social and economic philosophy that came to America from Europe have amounted to the development of a new spirit, a new point of view and a distinct identity.

The United States is yet a youthful country with vast possibilities. An over-crowded Europe sent her people to develop the bounteous gifts placed by nature on the American continent; the use of these gifts will be determined in the future more than in the past by international considerations. Natural and inherited endowments, unique in history, combine to make the United States a perpetual debtor to the world. For the stewardship of this nation, the child of Europe, during the short century and a half of its existence, there is no ground either for apology or for boasting, although the vastness of area and resources sometimes excites extravagant words of description. Rapid development with its frequent revolutions in modes of life has given birth to an exuberance frequently viewed at home and abroad as arrogance.

Many have attempted to generalize about the United States and to reduce the picture to a simple formula. There are those who understand the United States only as a country

SOCIAL AND ECONOMIC BACKGROUND

of mechanical people, of mass production and of adding machines for counting dollars. Others see in modern industry the road to a social order in which comfort and leisure will have entirely replaced misery and toil. Both these views are, of course, extreme. Certain it is that industries in the United States today contain all degrees of development from that of the pioneer industry up to the highly refined scientific management. In the cotton industry alone the entire range of conditions is to be found and in the coal industry some of the methods are most medieval. There is a long road yet to travel in raising to a respectable standard some of the backward industries.

Perhaps as wide a variety of geographic, climatic, and environmental influences exists in this country as in all European countries combined. It is often overlooked that in the majority of our states agriculture still stands as the leading industry. The large industrial cities in which visitors from other countries usually obtain their impressions are happily not yet representative of American life. In 1925, 45.6 per cent of the population was rural, living outside of towns having 2,500 inhabitants or more.

It is impossible in this paper to present an adequate picture of what the United States has been or is today, but a short review of historical events followed by a consideration of fundamental changes may provide a background for the industrial movements described in the accompanying papers.

What are fundamental relationships within industry in the United States? Certainly they include questions of ownership, functions and status of persons engaged in industry, methods and procedures of work, division of the rewards, distribution of products and the consequent effect of the entire industrial process on social standards.

Until a half-century ago agricultural economy was predominant in the United States. Great reaches of land spreading to the west offered a livelihood to any energetic man with a team of oxen, an axe, and the strength to meet the open country. Life was simple and circumscribed; necessities

SOCIAL AND ECONOMIC BACKGROUND

were produced at home by painstaking effort and in small quantity. Altogether existence was so primitive and individualistic that it could not fail to leave its mark on later periods. Gradually there developed trade between the western settlers and the eastern markets on the Atlantic seaboard. Industrial expansion, proceeding slowly and in face of opposition from the southern planters, received great stimulus from the Civil War which shifted political and economic power to the northern states.

This was only sixty years ago. The thirty-one million people then making up the population were concentrated chiefly in the east and the New England states were the center of the meagre industrial life of the period. Steam had largely displaced water power in manufacturing plants but the use of electricity was as yet unheralded. The construction of railroads had barely begun. While most of the important cities were thus connected, the horse and carriage or wagon was still the mainstay of transportation. Most of the major fields of industrial development had been tapped but none of them had really got under way.

With the turning of attention in the late '60s from internal warfare to reconstruction pursuits, everything favored industrial expansion. The steam railroad had passed through its experimental period and was ready to push its lines across the continent. Within the boundaries of the country lay rich deposits of coal, iron, copper, gold, silver and petroleum; untouched forests covered the hills; the fertile soil of the plains was able to support millions of people; abundant water power was available in many regions.

Not only were the resources of the country unexcelled but there was a minimum of restrictive influences on their exploitation. Pioneer conditions still prevailed under which individualism flourished. Where all stood a chance to win, no one wanted to set up hazards and cramping conditions. A friendly government acted as a powerful agent in speeding industrial development through low taxes and a high tariff. Labor was as yet unorganized. Never has there been such a paradise for the individualistic industrialist.

SOCIAL AND ECONOMIC BACKGROUND

A certain ruthlessness and carelessness of social consequences characterized the period from the Civil War, 1866, to 1900. Natural resources were wasted with utter disregard because such a course was the immediately profitable one. Little attention was paid to working conditions; both employers and employees worked long hours; labor disputes grew in number and in violence.

Industrial expansion was accompanied by and was largely dependent upon an increase in population, an increase accounted for in part by the millions of Europeans who came to this country to help settle its lands and take part in its industries. The early immigrants were largely from the British Isles and northern continental countries, while in recent years those from the southern countries and Russia predominate. Largely through the efforts of organized labor this influx has been reduced within recent years to small proportions.

The growth of basic industries tells the story of the economic development of America. Agriculture, lumbering, mining, transportation and communication underlie all industrial and social life.

There are approximately one and one-half billion acres of actual and potential farm land in the United States. By 1860 something over 400,000,000 acres had been placed under cultivation. Between 1860 and 1900 another 430,000,000 acres were added. Some of this land on the margin of economic utility has since been abandoned. There are yet over 600,000,000 acres of potential agricultural land, much of it fertile, which needs only clearing. Because of the relative ease with which land could be obtained, independent land-owning farmers have prevailed. Farm labor has been at a premium partly because any aggressive worker could within a short time get a piece of land of his own and partly because industry offered attractive inducements. Agriculture was thus forced into economy of labor rather than of land. Scientific agriculture and the use of motor power and machinery increased the output, in the period 1920-1926, of the American farmer in spite of the fact that the farm population had decreased.¹

¹ Frederic W. Wile, editor, "A Century of Industrial Progress", New York; Doubleday, Doran & Co., 1928, p. 9.

SOCIAL AND ECONOMIC BACKGROUND

The place of lumbering in American life is often overlooked. Wood is basic or important in more than half of our industries. There is used in the United States six times as much lumber per person as is used in Europe and more saw timber than all the rest of the world combined. More than a million people are employed in lumbering and wood working industries.

It has been said that "the development of the mind perhaps is what sets us off from other animals, but it is only man who uses minerals and without them he would have neither the means nor leisure for mental culture. Except for the minerals and the art of mining and metallurgy founded on them, there could be no civilization". Certainly, without enormous supplies of coal, petroleum and the metal ores, iron, copper, lead, gold, silver, and others, present-day civilization in America could not have been developed. With a population of 120 million, the work output of the nation, derived mainly from mineral fuel, is equivalent to a population of four billion million hand laborers. Although there had been some mining in the Appalachian mountains and the Piedmont plain of the east, it was not until the discovery of gold in California in 1849 and the subsequent discovery of other metals in the Rocky Mountains and Great Lakes regions that the exploitation of minerals, unprecedented in world history, took place. Thus there was available material which made possible the use of machinery, power, and rail transportation when the great industrial development of the late nineteenth century took place.

Just as transportation facilities have made possible the exploration and development of new lands throughout the world so in the United States the spread of population and industrial expansion have depended in rapid succession upon the railroad, the automobile, and now conceivably upon the airplane.

Life in the United States before the extension of railroads in the '70s and '80s was vastly different from that of the last quarter of the nineteenth century. Railroads made possible the bringing together of coal, ore and lumber to the

SOCIAL AND ECONOMIC BACKGROUND

centers of manufacture usually located at places which nature had provided as logical transfer points. Here developed the industrial cities where ships met rails. Later there grew up inland other cities nearer the supply of raw materials and power. Centers of distribution were established which facilitated the further increase of agriculture.

While steam transportation was in its heyday, a new fuel was being developed from the recently discovered petroleum. Life was again revolutionized in America by another means of transportation - the automobile, an invention from Europe. 1900 to 1910 witnessed the establishment of the automobile industry among the leaders in manufacturing. Eventually a hundred million people took to the road. An automobile for every seven persons now makes possible the movement of the entire population at one time. The significance of the automobile in social life is enormous. For millions the center of recreation has been shifted from the home to the countryside and pleasure resorts. Daily life has become more complicated by increased speed and multiplied contacts of people. What the effect of air transportation will be is beyond calculation.

It is impossible to dissociate from transportation the telephone, telegraph, wireless and radio transmission of messages. The use of these means of communication goes hand in hand with increased speed in transportation, in reducing the time required for transacting business, or for making a social call. Together they amplify haste and tensivity in doing things and are a symbol of American eagerness for physical progress.

The foregoing time-sketch of industry in the United States leads to a consideration of certain basic movements in present-day industry. Changes in structure of business organizations, changes in methods of operation, and changes in the status of participants, go on apace. These constitute a continually evolving set of "fundamental relationships". They take form in three broad trends which condition all other industrial currents. First, there is the shift from individualism towards collectivism. Ownership and operation of industry is no longer a matter of individuals but of groups. Second,

SOCIAL AND ECONOMIC BACKGROUND

mechanization is rapidly replacing handwork in manufacture. Third, there is the emergence in importance of the worker himself individually and collectively. These three trends are interdependent and are in varying degrees both cause and effect.

Changes in organization and structure of industry have been predominantly in the direction of large unit administrative control with a consequent increase in the importance of large companies. Not only has this meant the readjustment of internal organizations; it has also brought forth extreme interdependency between companies and industries.

Concentration and control of industry in the United States was made possible by the legalizing of the joint stock corporation with limited liability. Under this form of organization, combinations of small units became numerous in the latter part of the 19th century in order to take advantage of the greater economies of centralized control. In the early years of this trend abuses of the newly acquired power appeared. Anti-trust laws were enacted for the preservation of competition through the prevention or restriction of monopoly. These laws have in recent years come to be retarding forces in the efforts of American business to reach more of the world's markets. They have also become important factors in limiting the action of labor unions.

Under the stock company, ownership has become widely scattered. Three forms of financial control are now exercised in the United States: individual ownership; majority stock ownership; and minority stock ownership. With the diffusion of ownership, an active minority group usually interested solely in financial rewards finds little difficulty in manipulating operations to meet its own ends. Happily, however, the increasing power of management basing its decisions on research and a growing code of industrial ethics is slowly but surely putting control on a different plane. Control dictated by the facts of the situation is replacing control based on ownership.

SOCIAL AND ECONOMIC BACKGROUND

With the spread of stock company form of organization, industrial financing has been nationalized through the passage of the Federal Reserve Act. This Act has served as a stabilizing influence while at the same time it has facilitated the flow of capital to the places where it is most needed.

Another evidence of consolidation is in the trade and business associations, of which there are about 9,000 now in this country. The co-operative programs of these organizations are a unifying force of deep significance. Simplification of practice and materials, uniform cost accounting, elimination of waste and other activities are promoted by committees and staff specialists through well developed educational procedures. The Federal Department of Commerce has led the movement for economic planning toward the prevention of industrial waste. As contrasted with the use of legislation alone, this functional cooperation between trade associations and the Department of Commerce may mark the development of a new governmental method.

These changes in the structure of industry have been themselves mainly changes in relationships. Community of interests has brought together larger and larger groups of people. The joint enterprise is outstripping the individual undertaking. Public interest has been read into practically all forms of private property and what is even more important, the directors and managers themselves have recognized the claims of society in industry. This conclusion is eloquently attested by one of America's leading industrialists who said a year ago:

"We think of managers no longer as the partisan attorneys of either group against the other. Rather we have come to consider them trustees of the whole undertaking whose responsibility is to see to it on the one side that the invested capital is safe and that its return is adequate and continuous; and on the other side that competent and conscientious men are found to do the work and that their job is safe and their earnings are adequate and continuous. Managers may not be able to realize that ideal either for capital or labor. It is a great advance, however, for us to have formulated that objective and to be striving toward that goal."¹

¹ Owen D. Young, address by, given at the dedication of the new buildings for the Harvard Graduate School of Business Administration, June 4, 1927.

SOCIAL AND ECONOMIC BACKGROUND

Looking into the industrial organization of the future this same man has said:

"Perhaps some day we may be able to organize the human beings engaged in a particular undertaking so that they truly will be the employer buying capital as a commodity in the market at the lowest price. It will be necessary for them to provide an adequate guaranty fund in order to buy their capital at all. If that is realized, the human being will then be entitled to all the profits over the cost of capital. I hope the day may come when these great business organizations will truly belong to the men who are giving their lives and their efforts to them. I care not in what capacity. They will then use capital truly as a tool and they will be all interested in working it to the highest economic advantage. Then an idle machine will mean to every man in the plant who sees it an unproductive charge against himself. Then every piece of material not in motion will mean to the man who sees it an unproductive charge against himself. Then we shall have zest in labor, provided the leadership is competent and the division fair. Then we shall dispose, once and for all, of the charge that in industry organizations are autocratic, not democratic. Then we shall have all the opportunities for a cultural wage which the business can provide. Then, in a word, men will be as free in cooperative undertaking and subject only to the same limitations and chances as men in individual businesses. Then we shall have no hired men."

Although this goal is yet a long way from realization, it is significant that such a statement should be voiced by a prominent business leader at the dedication of a school for the training of business men.

Changes in methods of production which have occurred in the United States are but a natural outcome of the extension of the factory system with its automatic machinery in an environment of limited labor supply and vast resources. When the factory method of production became general in the United States less than one hundred years ago, two conditions facilitated its extension and development on lines somewhat different from those which had previously developed in England and the European mainland, namely mobility of population which permitted the placing of factories at strategic geographical points and the existence of enormous sources of power from both water and coal. When the hardy pioneers undertook to utilize the resources, America was ready to cut

SOCIAL AND ECONOMIC BACKGROUND

and use the new patterns without having to discard the old ones. Already the idea of invention of mechanical devices to take the place of hand labor was widespread before the American wilderness was thoroughly explored. When the early industrialist met new problems of nature he literally met them with a machine as contrasted with the hand tool of former days. In a country where land, minerals, and power have always been more abundant than labor to exploit them, the stimulus has been to invent more and more labor saving devices. This disparity between manpower and opportunity has probably been the most potent force in the mechanization of industry in America.

Research and mechanization go hand in hand. Among the various aspects of their interrelation are discoveries in pure science, invention, industrial research, industrial application, and standardization. These exhibit interaction and combined are responsible in large measure for whatever success has been had in meeting problems and opportunities in this country.

Although there have been notable contributions in pure science in this country it has been principally in the stages of invention and application that the greatest progress has been made in the United States. Well over \$100,000,000 is spent here annually for industrial research.¹ Hundreds of laboratories are now to be found in industrial companies in which new products, new tools and new processes are being created. Research has been the prime agent in creating within a short period of twenty or twenty-five years such major industries as the automobile, motion picture, radio, and chemical and electrical products. The individual researcher has in numerous cases given way to organized research in which a single project is divided among a corps of specialized investigators. Although industrial research in America is probably only in its infancy its effect has already been conspicuous. An entirely negligible proportion of expenditures has been on research in industrial relations and problems involving the human factor in industry.

¹ Maurice Holland, "Research the Prime Mover of Industry", *The Scientific Monthly*, Vol. XXII, No. 4, Whole No. 127, April, 1926, p. 297.

SOCIAL AND ECONOMIC BACKGROUND

Yet certain leaders are beginning to sense the possibilities in this direction and are taking steps to explore them.

Not alone are new industries created but per capita production is increased. Notwithstanding a reduction in hours and days worked of roughly 10 per cent since 1914 there has been an increase of 40 per cent in output per worker. One typical illustration is that of a plant making automobile tires. In 1920 the daily output was 30,000 tires by 30,000 employees; in 1928, 16,000 men produce 50,000 tires daily and other products in proportion.

Mechanization is not merely a machine, it is an idea. When a chemical process is discovered which brings under control hidden forces of nature, when a procedure of management is devised which works automatically, there is mechanization as surely as if a machine were invented. Planned control of manpower, materials and machines is the vital coordinating agent of management in mechanized industry. Mechanization of a job frees men in industry for new fields to conquer with mind and hand. Not only is this new freedom come to the manager interested in reducing costs but also to the worker who formerly took hours, days or months of arduous and often worrisome labor to produce an article which now rolls out of the machine in large numbers better made than by former handwork.

Automatic machinery and the use of nature's power and materials have made possible increased worldly comforts for all mankind. Certainly there is now more inclination on the part of American workmen who have tasted abundantly the fruits of mechanized industry to accept each new automatic device as an added opportunity for greater freedom from physical discomfort and perhaps from intellectual bondage. Occasionally, however, there is heard a warning that mechanization is proceeding too rapidly and resulting in unemployment. Certainly in the United States there is an abundance of unemployment continually arising from the increase of labor-saving machinery. There is ground for the belief that this unemployment is created only temporarily, if at all, in those industries which have extended the use of the machine

SOCIAL AND ECONOMIC BACKGROUND

and that the more serious unemployment occurs in the industries whose markets are diminished or destroyed by mechanized competitors. This is yet an unsolved problem which needs to be met openly.

Experience has demonstrated so convincingly the social results which come from the conquest of the forces of nature, that there is in this country no limit to the imagination of the masses of the people as to what may next appear. The three or four generations which have been engaged in the industrial development of a new country are not enough to crystalize habits of thought or to form a routine civilization. The only thing to which Americans are thoroughly accustomed is change itself.

The relatively high purchasing power of the population as a whole permits the marketing of new products which in turn stimulates production. Mass buying at low prices is made possible by mass production. The economic cycle in which the worker is both a producer and a consumer can only continue upward as long as the balance is preserved and efficiency of production increased. Thus the constant pressure for lower production costs leads to more research. The belief of business men of the United States in the efficacy of research and their willingness to invest money in it will go a long way toward keeping the workmen of this country regularly employed while enjoying the highest standard of living ever attained by an industrial population.

Changes in the status of participants in industry have been the inevitable outcome of changes in organization structure and methods of work.

Wage-earners are increasingly being given opportunity to share in management and to assume the responsibilities of partners in industry. Managers are becoming detached from ownership and are developing an independent position. Owners have already lost much of their identity as individuals responsible for specific companies. Capital is more and more the servant of management, working for its wage. Employees own billions of dollars worth of stock directly in their own and

SOCIAL AND ECONOMIC BACKGROUND

other companies, and indirectly through savings banks and insurance companies. Such ownership, however, does not carry with it control over operations which, as previously indicated, is commonly lodged in minority groups but increasingly in management.

Feudalistic paternalism does not flourish under the joint stock company form of ownership. Although many family-owned companies still exist, they are exceptions to the common rule. The employee is beginning to exercise his right to a voice in the conduct of industry.

Furthermore, the separation of management from ownership promises the emergence of a group of professional managers. It has opened the way for an industrial code in which the spirit of trusteeship may predominate.

The specialization of functions and tasks in industry has brought forth the workman who is skilled in closely defined operations as contrasted with the jack-of-all-trades. Craftsmanship in the sense of ability in one man to make a complete product has practically disappeared but craftsmanship involving precision and perfection has taken its place. There has been much romancing about the destruction by the machine of the spiritual values of medieval craftsmanship. The story of the man who adjusts "bolt 476" in the Ford factory has been sadly overworked. Such viewpoints overlook the fact that a very small fraction of American industry uses the belt conveyor system and that relatively few machine workers are doing work which requires repetitive motions. It is conspicuously in the handwork industries that sweatshop conditions have prevailed - witness the needle trades where mechanization proceeded slowly. Monotony and over-fatigue do exist, however, in machine industry just as they did under the long hours of drudgery before the industrial revolution, and just as they exist today among the rug makers of Persia. These evils obviously must be reduced but the agent for such improvement will probably be more machines and more mechanization rather than less, accompanied by a more effective regularization and use of existing equipment.

The vast changes in methods which have become so con-

SOCIAL AND ECONOMIC BACKGROUND

spicuous in American mass production can not conceivably be expected to satisfy the conception of spiritual values which prevailed under an altogether different social order. It would seem obvious that spiritual values are distinct from the tools and products of man. Man's heart is just as black using an ancient sword as a modern machine gun and just as full of inspiration with a modern riveting machine as with an ancient hammer. Craftsmanship in mechanized industry depends for its spiritual values upon the inner man just as in the days "when knights were bold". And who is there to say that the shorter working day and other manifold fruits of science in industry through use of the machine have not opened the doors for millions of people throughout the world mentally, morally, and physically?

The modern problems of machine industry are rather of another kind. How shall man use his leisure time under the shorter working day? How shall the rewards of cooperative effort be more equitably distributed? How can the concept of stewardship be further developed in industry. Can an industrial government improve upon the now traditional forms of democratic political government? These are the unsolved puzzles which completely over-shadow the unimaginative cry against the machine which yet awaits its most intelligent use by man.

It is the search for this intelligence which commands the attention of the five modern movements described in this symposium. Each of these movements is an outgrowth of the environment and background in which it rests. Singly and collectively, they represent constructive forces of America for development of healthy social, political, industrial, and educational life in an industrial civilization.

BELGIQUE

PAR MME. SCHURMANS DE KEGHEL ET MLE. GOFFART

LE MOUVEMENT SYNDICAL.

Après la guerre le mouvement syndical s'est développé en Belgique, il y a environ 800.000 syndiqués. La reconnaissance patronale est acquise.

Il a un caractère nettement politique. Ceci semble d'abord illogique, mais en fait, en Belgique, ce sont les mêmes hommes qui ont donné cours au mouvement politique et au mouvement syndical, ils ont voulu coordonner ces deux puissances. Il y a 50 ans les syndicats, au lieu de s'intéresser aux améliorations immédiates, comme ils le font aujourd'hui, avaient pour but la transformation générale de la société (agitations politiques).

Les moyens d'action des syndicats sont centralisés - il existe un seul syndicat d'une Industrie pour toute la Belgique. Le nombre de femmes salariées faisant partie de l'organisation syndicale est insignifiant. Les socialistes font un effort pour au moins grouper la grande majorité d'entre elles. "Elles constituent, en général, une main d'oeuvre extrêmement mobile, elles sont moins accessibles que les hommes, ont plus de préjugés, et lisent moins que ces derniers." * Nombreuses sont celles qui abandonnent le travail au moment où elles se créent un foyer.

Le Mouvement syndical patronal est un mouvement de réaction contre les syndicats ouvriers. Il a pour but de protéger les intérêts des industriels vis à vis des consommateurs, de défendre les intérêts des patrons vis à vis des syndicats ouvriers. Ils sont plus récents que les syndicats ouvriers et n'ont pas la même discipline. Ils s'engagent à verser des cotisations proportionnelles aux salaires qu'ils payent aux ouvriers. Forment des caisses de résistance.

Le Comité Central Industriel règle les conditions de travail - démarches auprès du gouvernement.

LES COMMISSIONS PARITAIRES D'INDUSTRIE. **

L'organisation des rapports entre patrons et ouvriers. Avant guerre déjà, dans la plupart des pays industriels, patrons

* Mouvement syndicat 7 Mai 1927: l'Organisation syndicale de la femme.

** H. Autonopoulo. 1926.

BELGIQUE

et ouvriers représentant les principales industries étaient groupés nationalement et avaient pris l'habitude des négociations collectives.

En Belgique on s'inspira des formules anglaises de relations intersyndicales permanentes, sans que la question du contrôle fût posée.

Le contrôle ouvrier semble n'être encore, pour le moment, qu'une attitude d'esprit, qu'une tendance des travailleurs à conquérir le droit de participer à la direction de la production.

Une réalité importante existe néanmoins; c'est la volonté des ouvriers d'exercer ce droit de regard, d'obtenir cette part d'autorité, dès qu'ils peuvent le faire.

Organisation des Commissions paritaires officielles.

Elles sont instituées à la demande d'une des parties intéressées.

Généralement c'est le groupement ouvrier qui en prend l'initiative.

Les négociations se font par l'intermédiaire du Ministère du Travail.

Les délégués des partis sont désignés par les organisations syndicales respectives.

Après un accord de principe entre les deux délégations, un arrêté ministériel fixe la composition, la compétence et les attributions de la future commission.

Suivant que son action s'étend, pour une industrie donnée, à tout le pays, ou qu'elle se confine à une région industrielle, la commission est dite nationale ou régionale.

Toute commission paritaire se compose, par $\frac{1}{2}$, de délégués patrons et de délégués ouvriers. Ces membres ont, seuls, voix délibérative. Le Ministère du Travail leur adjoint un délégué, généralement choisi parmi les fonctionnaires supérieurs du département.

Le délégué gouvernemental préside la commission avec voix consultative. Il peut la convoquer d'office; généralement il la convoque à la demande des partis, parfois à la demande du Ministère du Travail.

BELGIQUE

Le nombre des membres de chaque commission varie avec la décentralisation de l'industrie considérée, sa diversité d'exploitation et l'importance respective des groupements syndicaux intéressés.

Nombre minimum de membres - dans le Comité National de la Glacerie: trois patrons et trois ouvriers.

Maximum de membres dans le comité régional du textile des deux Flandres: 37 employeurs et 40 ouvriers. Il a été réduit environ de $\frac{1}{2}$ en 1922.

En principe, la composition des délégations doit être paritaire, en fait elle ne l'est pas toujours. (Ex. Commission du textile, énoncée plus haut.)

Les organisations professionnelles nomment leurs mandataires à leur gré. Ce sont généralement les personnalités dirigeantes des groupements intéressés.

La délégation ouvrière est désignée par les comités exécutifs des centrales.

En fait, la délégation ouvrière est une délégation syndicale dans le sens le plus strict.

Parmi les attributions des commissions, il en est une qui, dans la pratique, acquiert une importance capitale au point de vue des relations entre employeurs et ouvriers.

Chaque Commission Nationale a le droit d'instituer des commissions régionales ou locales dépendant directement d'elle. L'exercice de ce droit est rendu extrêmement difficile par suite de la résistance qu'y opposent les organisations patronales. C'est qu'il soulève le problème du contrôle syndical, organisé à tous les degrés, pour l'exécution des conventions. En fait, seules, quelques commissions sont parvenues à organiser des comités régionaux et locaux.

Essais d'organisation contractuelle du travail:

Les commissions paritaires ont pour but d'obvier à l'antagonisme des partis.

Une entente entre les partis n'est donc possible que sur un accord transactionnel, adopté à la suite de négociations plus ou moins laborieuses.

BELGIQUE

De ce fait, l'activité des C. P. acquiert un caractère essentiellement contractuel, alors même que l'accord intervenu serait juridiquement nul.

L'opposition contractuelle domine les rapports entre chefs d'entreprise et travailleurs.

Les résolutions conventionnelles portent généralement sur les éléments mêmes d'opposition entre les partis: questions de salaires, de rendement, d'heures de travail, questions de protection, de sécurité et d'hygiène.

Il arrive parfois que les intérêts respectifs convergent, soit pour s'opposer aux intérêts de tiers, soit pour maintenir les concessions mutuelles déjà obtenues.

Il en résulte une certaine solidarité des groupements antagonistes pour la défense de ces intérêts qui leur sont communs.

Les principaux problèmes que les commissions paritaires ont à résoudre par voie contractuelle, concernent la fixation des salaires, la détermination des conditions d'hygiène et de sécurité des travailleurs et, avant tout, la réglementation de la durée du travail.

La fixation conventionnelle des salaires pour toute une industrie, réalisée, pour la première fois, par les commissions paritaires, impliquait nécessairement la fixation des minima.

La commission syndicale avait, dès le 8 novembre 1918, revendiqué un minimum général de 1 franc de l'heure pour toutes les catégories d'ouvriers.

Mais ce minimum fut rapidement dépassé. Par la force des choses, de fortes augmentations de salaires ont dû être progressivement consenties dans toutes les branches de l'industrie.

L'organisation conventionnelle et collective du travail, devait fatalement créer une tendance à l'organisation contractuelle de la production dans son ensemble.

Les conditions du travail étant déterminées par les parties, employeurs et employés devaient nécessairement chercher à surveiller l'application des décisions conventionnelles.

Mais alors que, pour le patronat, il s'agissait d'un simple contrôle des engagements contractés, les travailleurs avaient à

BELGIQUE

défendre une des plus importantes conquêtes ouvrières: la participation à l'autorité du chef d'entreprise dans la fixation des conditions du travail. En défendant les décisions conventionnelles, ils en défendaient le principe. Contrôle administratif des marchés, de la main-d'oeuvre, contrôle technique du travail et de la production, contrôle financier des entreprises, il n'y eut pas un domaine dont l'imagination hardie des dirigeants ouvriers ne s'empara peu à peu.

De nombreuses tentatives, vouées le plus souvent à l'échec, traduisent, au sein des commissions paritaires, cette volonté des ouvriers d'intervenir dans les conditions générales de la production, qui réagissent sur les conditions du travail.

Les ouvriers tâchent d'obtenir le contrôle sur les conditions de la production. Ceci est repoussé, dans les commissions paritaires, par les patrons. Pourtant certaines réalisations touchant les conditions de travail ont été établies; par exemple: La convention du 14 avril 1920, à la commission de la construction mécanique, établit l'égalité du salaire horaire de base entre hommes et femmes, lorsqu'il s'agit de travaux semblables. Règlementation des salaires des apprentis et des conditions pour leur admission.

Les ouvriers désirant influencer les méthodes techniques de production, font un effort dans cette voie au sein des organismes locaux institués par les commissions paritaires.

La commission des Mines est la seule qui ait organisé, au sein des entreprises, des organismes paritaires et des délégations ouvrières permanentes.

Une loi, du 16 août 1927, vient d'être votée, modifiant et complétant la loi du 11 avril 1897, instituant des délégués ouvriers à l'inspection des mines de houille.

La révision de cette loi a pour but une plus stricte application du règlement de police des mines; c. à d. de diminuer le nombre des victimes causé par les accidents trop fréquents.

Au lieu que des délégués à l'inspection soient nommés par le Ministre de l'Industrie et du Travail, les ouvriers demandent la nomination directe par les ouvriers eux-mêmes. (Voir, dans Revue du Travail d'août 1927, le texte de la loi.)

Toutes les commissions paritaires n'ont pas su instituer des

BELGIQUE

comités régionaux et locaux. Ex. Mines, sidérurgie, et construction mécanique.

Quand un différend surgit on institua une commission mixte temporaire pour le bassin du centre; puis un autre conflit donna naissance à une commission mixte pour le Borinage. Cette mesure fut généralisée à la demande des ouvriers, et ainsi se forma les commissions mixtes, régionales et locales.

Un règlement instituait "un organisme à quatre paliers comprenant des délégations ouvrières permanentes par puits et par postes, des comités mixtes de conciliation par charbonnage et des conseils paritaires par bassin minier."

Les commissions paritaires devaient prévenir les conflits, établir par contrats les conditions de travail, et appliquer, dans les commissions locales et régionales, les décisions prises par la commission paritaire nationale.

Étape vers le contrôle ouvrier.

En 1926 l'exemple des Mines n'avait pas été suivi dans d'autres branches d'industries.

Dans la sidérurgie, avril 1921, commissions régionales sans aucun règlement, faible activité. Même situation pour la Construction Mécanique "La Centrale des Métallurgistes a cherché à instituer dans chaque usine" un certain nombre d'éléments, qui, délégués par leurs camarades, devaient avoir pour mission de surveiller étroitement l'application des conventions arrêtées. A quelques exceptions près, toutes les usines possèdent une délégation d'atelier.

En somme le contrôle paritaire pour l'exécution des résolutions conventionnelles n'a pu être organisé que dans l'industrie des Mines.

Les commissions paritaires d'industrie furent chargées de concilier les conflits industriels. Elles ont su remplir leur lourde tâche avec succès.

Leur intervention se manifeste de diverses manières suivant les cas.

Si les deux délégués, patron et ouvrier, ne parviennent pas à s'entendre, ou si un des partis refuse d'admettre l'autre délégué, le conflit passera devant le président du Comité National.

BELGIQUE

Quand un conflit local surgit, généralement, les commissions désignent une délégation paritaire chargée de trancher le différend.

Les commissions paritaires, avec celles des Bourses officielles et de l'inspection du travail, forment le commencement d'une organisation de la conciliation et de l'arbitrage industriels.

En 1926 les commissions paritaires en Belgique étaient au nombre de seize. Et leur activité grandit et s'élargit de jour en jour.

L'ORGANISATION SCIENTIFIQUE DU TRAVAIL.

Le Congrès International d'Organisation Scientifique du Travail tenu à Bruxelles en octobre 1925 a démontré que plusieurs essais d'organisation scientifique avaient été tentés en Belgique; ces essais étaient tout-à-fait individuels. Le comité d'organisation du Congrès a provoqué la constitution d'un organisme belge permanent de l'organisation scientifique. Cet organisme a été créé en juin 1926.

Il a pour but:

d'encourager l'étude et l'application de l'organisation scientifique du travail dans l'industrie, l'agriculture, le commerce, la finance, les transports, les services publics;

de constituer un centre de documentation pour toutes les entreprises et personnes s'intéressant à l'organisation scientifique du travail;

de publier un bulletin contenant tout ce qui sera publié d'intéressant concernant l'organisation scientifique du travail dans le monde;

d'organiser des conférences, des excursions;

d'offrir aux membres un local de réunions journalières, ainsi qu'une bibliothèque.

Le comité national belge collabore avec le comité international pour le développement de l'organisation scientifique et représente la Belgique lors de Congrès Internationaux.

Après 7 mois de fonctionnement, le comité avait 227 membres effectifs groupés en 41 sociétés.

Les nombreuses demandes de renseignements faites au service de documentation montrent l'intérêt qu'éveille cette question.

BELGIQUE

L'Institut des Hautes Etudes de Belgique a organisé depuis cette année un cours d'organisation scientifique du travail.

PSYCHOLOGIE INDUSTRIELLE OU ERGOLOGIE.

Un cours de psychologie industrielle est donné par le Docteur Paul Sollier à l'Institut des Hautes Etudes de Belgique.

Ce cours se compose de différents points, dont les plus importants sont: vue d'ensemble de la P. I. à l'étranger; services rendus dans tous les domaines de l'organisation scientifique, etc. Nous développerons d'une façon un peu plus approfondie l'organisation de la P. I. en Belgique. Outre les points indiqués plus haut, le cours comprend la sélection professionnelle - avec les procédés d'embauchage et la monographie des métiers déjà étudiés.

Les influences des conditions, du milieu, les influences sociales et morales exercées sur le travail.

Etablissement des tests, avec appareils semblables à ceux employés dans le métier.

Recherche de l'adaptabilité, et recherche des conditions causales des accidents - fatigue, incompréhension, incapacité professionnelle, etc.

La P. I. est une science née de la nécessité de donner un maximum de rendement avec le minimum d'efforts.

Pour cela il faut connaître le travail, les effets sur l'homme, l'homme et ses aptitudes.

Les recherches sont faites surtout dans les métiers manuels, quelques-unes concernent les professions intellectuelles.

En Belgique on s'est spécialement occupé des menuisiers.

La psychologie industrielle étant en Belgique une science très jeune, on ne peut en donner que des résultats isolés. La P. I. est une des questions importants entrant dans le grand problème de l'Organisation Scientifique du Travail.

L'ORIENTATION PROFESSIONNELLE.

Un office d'orientation professionnelle communal ou inter-communal a été institué dans toutes les grandes villes et les principaux centres industriels du pays.

La Belgique, ayant une production trop forte pour ses propres besoins, doit exporter, elle doit donc avoir des ouvriers quali-

BELGIQUE

fiés, travaillant vite et bien, pour lutter contre la concurrence, en présentant sur les marchés des produits à prix modiques.

Le premier office d'orientation professionnelle a été créé en mars 1912 par la société belge de Pédotechnique, ayant à sa tête Monsieur Christiaens, et a commencé ses travaux par un bureau d'études.

En 1919 il fonctionne définitivement et devient intercommunal. Cette institution comprend 5 services:

Service de documentation. - Bibliothèque et appareils.

Service de propagande.

Formation des aptitudes pour métiers différents.

Service s'occupant de la préparation d'orienteurs pour les offices communaux.

Service s'occupant des cas nouveaux. *

Comme formation d'orienteurs nous n'avons réellement que les cours donnés aux Hautes Etudes, qui consistent en cours de psychologie de l'adolescent, etc.

En Belgique, une collaboration étroite existe entre les Bourses du Travail et les offices d'Orientation professionnelle.

Un service spécial de placement pour les apprentis fonctionne sous le contrôle d'une commission paritaire de surveillance. Tout adolescent se présentant au guichet de placement, non porteur du livret d'apprenti, est envoyé à l'Orientation Professionnelle. Il y obtient son livret après avoir passé l'examen d'Orientation Professionnelle.

Notons que cette organisation pourrait donner de meilleurs résultats, si Orientation Professionnelle et Bourse du Travail résidaient dans le même bâtiment.

Une grande propagande est faite pour éviter que les parents choisissent des métiers immédiatement rémunérateurs, mais n'offrant aucun avenir pour leurs enfants, car n'apprenant aucun métier qualifié, ils deviennent des malheureux, dès qu'ils ont dépassé l'âge requis pour ces travaux.

* L'examen de l'enfant est fait par un médecin, un psychologue et un technicien. Plusieurs communes ont déjà un service d'Or. Prof. travaillant tout à fait indépendamment. En 1914 l'Université du Travail de Charleroi a créé un service d'anthropométrie afin de voir le résultat du travail sur le sujet. L'oeuvre des Orph. de guerre a créé un bureau d'Or. Prof. où est fait un examen complet: médical, psychologique et social.

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Lady Factory Inspectors, Copenhagen

INTRODUCTORY.

During these last years we have had an unusually large amount of unemployment. Conditions in industry have been very bad. The Crown, which has been much depreciated, rose to par during 1926 and since then the price level in Denmark has been decreasing. Therefore we still have depression in industrial life.

COOPERATION BETWEEN THE VARIOUS GROUPS IN INDUSTRY is mainly represented by "Tillidsmaend" i. e. men who have the confidence of their fellow-workers. These "Tillidsmaend" are representatives of the workers organisations, they are themselves workers in the establishment, and they bring the workers' complaints etc. before the management. This system is a very usual one in all countries where workers are organized but it is specially developed in Denmark, mainly because a very high proportion of the industrial workers are organized here. The "Tillidsmaend" are protected by the agreements adopted by collective bargaining, the employer not being allowed to dismiss a "Tillidsmaend" without cause. In some undertakings there is very good cooperation between the employers and the "Tillidsmaend", and in such places the employers often discuss quite informally with the "Tillidsmaend", such matters as change of methods. In the agreements of February 1927 for the iron and metal trade there is a provision - concerning both skilled and unskilled labour - which entitles the "Tillidsmaend" to bring forward complaints and to make suggestions to the employer concerning sanitation and safety; and furthermore, at the request of the "Tillidsmaend", the employer is under an obligation to meet them once a month to discuss technical workshop questions and the like.

This is, I think, a small beginning towards better cooperation and towards works' committees.

In December 1927 a study circle was started in Copenhagen at the invitation of a Professor in Economics - the world-known Harald Westergaard - and two employers, one of

DENMARK

these being Mr. Mörup, from the firm of Messrs. Fog & Mörup, in order to study how to attain better cooperation between employers and employees, especially through Profit Sharing schemes. This circle contains several employers, representatives from the trade unions, some politicians, some civil servants and some engaged in work of social significance bearing on industry.

Here in Denmark we have had a few experiments for several years concerning profit sharing and copartnership schemes which have achieved more or less success. The most interesting and no doubt the most easy experiment to carry out is that of "Fog et Mörup" the main features of whose arrangements we now give:

Dating from 1918, 10 percent and from 1923, 20 percent of the net proceeds is given to everyone who has been in the service of the firm without intermission for 3 years and over. These proceeds are divided in proportion to each one's total yearly income, and remain deposited in the firm. 6 % is, however, paid on these proceeds, just as on the capital of the firm itself, according to the proceeds available. The personnel profit account takes its proportional share in any eventual deficit, but any eventual further profit is divided proportionally between the personnel profit account and the remaining capital. On leaving the firm an employee will receive at the end of the year 6 percent of his share, which is payable by instalments over a period of five years, the first payment not being due until one year after retirement. The firm is allowed to pay out the shares at any time whatever. The personnel shares may neither be conveyed, pledged nor distrained. The shares cannot be forfeited by military service, sickness, strike or lockout and do not affect the fixing of wages, which should be at the current rate. From this arrangement the firm "Fog et Mörup" have derived much pleasure, because all the employees and workers have declared their great satisfaction with it.

Another form of profit sharing is that of "A/S. Holbaek Amtstidende" (a newspaper in the provinces) which arrangement began on April 1st 1919 on the following lines:

DENMARK

The eventual net proceeds are divided in two equal parts, of which the one is given to the shareholders. Of the second, 10 percent is first put away for reserve, travelling scholarships etc., the rest being divided in proportion to the basic wage (which is at the usual rate) paid to every permanently appointed employee or to everyone who has been in the employ of the firm for at least three months. Of this share one half is paid cash down, the second remaining irredeemable for five years, during which period interest is paid on it at exactly the same percent as to the shareholders. The share does not entitle the worker to take part in the directorate.

In the firm "A/S. C. Schous Fabrikker" a similar arrangement has been practised since 1920 but here one-fifth of the net proceeds is paid cash down every year as an increase of salary. This arrangement has given satisfaction to the workers in question, which may possibly be due to the fact that these factories succeed so well that a share has been paid every year. The directors of both these last mentioned enterprises are, however, agreed with "Fog et Mörup" that no doubt the best method is not to disburse the shares, but to let them remain in the firm equally with the other capital.

A fourth experiment with profit sharing has been made in "A/S. L. Daehnfeldt", Odense, with the founding of "The employees and workers' percentage fund", of which shares are only paid out in case of death or incapacity for work on the part of the worker or employee. But these provisions were discontinued in 1923 because the enterprise did not succeed.

Finally a fifth attempt has been made which may be found within "The Danish Cooperative Alliance", a sugar factory in Kolding. This firm paid out from 1903 onwards, a share of the clear profit in proportion to the factory workers' basic wage, but after some years had passed, this was discontinued chiefly on account of the workers' dissatisfaction in the poorer years, when, having regarded the share as an increase of wages, the smaller proceeds appeared as a wage reduction. This too tells in favour of keeping the shares in the enterprise, as above mentioned.

Within Danish agriculture, Profit Sharing has also been in

DENMARK

existence. As early as 1873 Lensbaron v. Zyphten Adeler gave his workers a share of the clear profit, which at the time attracted considerable attention, even abroad. (The English agricultural paper "The Farmer" for 10/8, 1874.)

In the autumn of 1927 the Danish liberal party brought in a bill, mainly founded on the above described arrangement of "Fog et Mörup", which is considered as the best in Denmark, but this bill has not yet been discussed in Parliament.

EDUCATION AND TRAINING.

The elementary education and training in the different skilled trades takes place in the engaging of young persons of about fourteen years of age as apprentices, just after their passing from school, until the age of about eighteen, for working in the trades. During this time it is taken for granted that the master-workman gives them instruction in performing the different operations in the trade, in which they begin with the easier jobs and gradually work their way through the different sections of the trade. At first only a very small wage is paid (about 4 to 8 Kr. weekly) which is raised gradually towards the end of the fourth year, after which the pay is the usual pay for a journeyman (the pay for a skilled labourer) in the trade. The authorities require a contract, in which the master-workman is charged with the duty of seeing that the apprentice learns his craft creditably, and that the apprentice be allowed to follow a course of instruction in the technical schools, which the master is even required to pay for. This instruction is both a theoretical education and a continuation of the primary school education finished at the age of fourteen. (Denmark has compulsory school education up to the age of fourteen.) These technical schools are to be found up to the number of about 300 all over the country, so that in actual practice all young apprentices are admitted to such an education.

In the technical schools we have:

A Technical Section concerning craftsmen which lasts four years, extending over 3 to 4 days weekly; the instruction amounting altogether to nine hours weekly, from 6 or 7 to 9

DENMARK

p.m. The subjects are: professional drawing (e.g. theory of projection), Danish and ciphering.

Commercial Section lasting three years and including the following subjects: Danish, ciphering, commercial knowledge, mercantile correspondence and in some cases one or two foreign languages if desired. During the first year the course covers six hours weekly, the second and third year seven hours weekly.

Further may be found in Copenhagen "The Institute of Technology" in which the day school includes trade courses lasting from 1 to 8 weeks for everyone wishing to increase his knowledge of the materials on which he is working, the upkeep of machines and tools, modern methods of working, the commercial aspect of the handicraft, such as bookkeeping, the making of estimates, and other information to assist them in their work in the future.

The day school gives:

practical instruction including visits to factories.

theoretical instruction (lectures and examinations.)

In addition "The Institute of Technology" has an evening school intended to give the master-workmen, foremen, journeymen and workers in Copenhagen and environs, the knowledge so necessary nowadays for an understanding of and participation in modern social life, and for technical insight into the ordinary practice of the work.

This evening school offers general instruction through courses in:

Danish, commercial accounts and writing.

Bookkeeping, commercial science with commercial correspondence, commercial law and sociology.

English (both for beginners and advanced pupils), French and German,

Professional instruction, ciphering, paperwork, physics, chemistry, mathematics and technical English, combined with training in workshops, also instruction in commercial practice and foreign languages.

For this education payment is required to "The Institute of

DENMARK

Technology" but governmental support is available. The courses are completed with a final examination for which a certificate is given.

Some of the trades have founded a permanent trade-school, as for example the tailors, who have such a school in Copenhagen maintained by the employers' organization. The apprentices are required to attend the schools for a period of 4½ years, during 8 hours a day, for which they pay in the beginning 4 Kr. a week, and there they learn all about their trade. Four tailors are their teachers. They work at garments sent in by the employers. It is obvious that instruction in such a school is far more complete and efficient than in a workshop under just one master and the number of those applying for admission to the school is therefore always in excess of the vacancies available.

This refers to training of skilled workers. For the training of semi-skilled workers there are no special rules. Very often the newcomers work at time rates (the minimum wage according to the union agreement) at the beginning and afterwards, when they are supposed to have learnt the work, they go on piece-work. In other cases they only get a very small payment or no payment at all at first, e.g. women who learn to sew straws hats - who are mostly young persons under 18 - work 3 months in a factory under the direction of the forewomen without any payment, and after 3 months they go on piece-work. The law does not deal with this kind of special learning, no contract being demanded and no supplementary training at schools being obligatory as above mentioned for the apprentices.

SCIENTIFIC MANAGEMENT in its strictest American sense is not frequently found. We have very few large industrial enterprises; in 1925 there were only 286 factories which employed more than one hundred workers. Danish employers and employees are not usually very fond of what nowadays is called systematized work. The trade unions are not opposed to scientific management but it is felt that they - as in other countries - do not like changes in methods and, especially

DENMARK

from an economic point of view, they have no confidence in methods which require an increase in administration personnel. As a matter of fact there has been some change in the mentality of the employers and the employees during these last years. Engineers, economists, politicians and journalists have written and spoken of rationalisation, systematization, standardisation, planning in advance, organisation with a view to reduction of waste in industry etc., and even if there have not been many enterprises which have been totally reorganized, improved methods have been introduced in many special fields.

WELFARE WORK in general does not arouse much interest in Denmark. The workmen themselves, who are well educated, do not want the employers to take an interest in their private life, and welfare work in the factories, such as the provision of factory nurses or rest rooms, is a very rare phenomenon in Denmark. There is also not much systematical work done to find the best position for the worker, the best seat and so forth, such as might be called the optimum working conditions. At the same time it must be said that in some factories attention is given to such matters as seating, suitable seats being provided by cooperation between the factory inspection and the management.

During recent years it has been the custom in some tobacco factories for the workers to pay one of their colleagues for reading aloud one hour a day. During the past winter, the "Arbejdernes Oplysningsforbund", the workers' association for education, with the consent of some employers, has made attempts to get authors to read their own books aloud in tobacco-factories; people do not quite agree in their point of view concerning this experiment.

Employment managers exist in many enterprises. Most often they only deal with the personnel on monthly salary, but sometimes they also deal with the workers. For example one of the largest stores in Copenhagen has an employment manager who not only engages and dismisses the office personnel and the shop assistants, but also the workers in the sewing-rooms.

DENMARK

INDUSTRIAL PSYCHOLOGY AND VOCATIONAL GUIDANCE.

Since 1924 the Municipality in Copenhagen has had a psychological laboratory, which works together with the municipal central employment agency. Every minor of 14 or 15 years who seeks employment as apprentice through the municipal employment agencies in Copenhagen, is tested at the laboratory. The employers in Copenhagen have made the passing of these tests obligatory for typographers' and lithographers' apprentices. Admission to office work in the service of the municipality of Copenhagen and admission to the police force is in fact dependent on having gone through the test in the laboratory. About 1200 persons are tested every year.

The standard reached in the application of scientific management methods and of welfare work is not on a specially high level. Measured with a less modern standard, we have many well managed enterprises on a high technical level, with satisfactory hygienic conditions, and with good industrial relations, and both our factory legislation and our whole social legislation is on a relatively high level. There is a remarkable change in the mentality of employers and employees, and development towards a new conception of leadership and of cooperation between management and labour is evident.

DEUTSCHLAND

VON FRAU DR. HILDEGARD BÖHME,

Berlin

ALLGEMEINE WIRTSCHAFTSLAGE.

Die deutsche Wirtschaft hat in der Nachkriegszeit durch Revolutionierung der Vermögens- und Einkommensschichtung und durch die Verschiebungen auf dem Weltmarkt starke Strukturveränderungen erfahren. Nach der Stabilisierung der Währung sah sie sich vor die Aufgabe gestellt, die Produktion den veränderten Wirtschaftsverhältnissen anzupassen.

Dieser Umstellungsprozess, der sich auf die Rationalisierung der Kapitalwirtschaft und der technischen Betriebsführung richtet, ist noch nicht beendet; er wird kompliziert durch die drückenden Auslandsverpflichtungen - vor allem durch die von Jahr zu Jahr steigenden Reparationsleistungen -, deren Erfüllung wachsende Produktionsüberschüsse voraussetzen. Ein fast zehnjähriger Ausschluss vom Weltmarkt hat bisher noch nicht überwundene Absatzschwierigkeiten geschaffen; andererseits sind wir auf die Einfuhr von Nahrungsmitteln angewiesen. So konnten wir auch im Jahre 1927 trotz günstigerer Konjunktur unsere Ausfuhr in einer unseren Verpflichtungen entsprechenden Weise noch nicht steigern.

Zu diesem Wirtschaftsproblem, das aus Deutschlands Situation als Schuldnerstaat entstanden ist, tritt ein zweites hinzu: die Notwendigkeit, eine vermehrte Bevölkerung bei verengtem Nahrungsspielraum und sehr begrenzten Auswanderungsmöglichkeiten zu erhalten.

Nach der Berufszählung von 1927, deren Ergebnisse jetzt veröffentlicht werden, ist die erwerbstätige Bevölkerung im Vergleich zu der letzten Berufszählung von 1907 um 7,4 Millionen gestiegen. Von den 62 Millionen Einwohnern sind 32 Millionen = 51,3 % erwerbstätig. Im Vergleich zu 1914 hat Deutschland jetzt für 5 Millionen erwerbsfähiger Bevölkerung mehr Arbeit und Verdienst zu beschaffen. Die Zunahme der Arbeitskräfte entfällt fast zur Hälfte (2,3 Millionen) auf die Ausdehnung der Frauenarbeit.

Auf dem Arbeitsmarkt hat der Rationalisierungsprozess - besonders der Zusammenbruch und die Stilllegung unproduktiver Werke, sowie die Einsparung aller nicht unbedingt not-

DEUTSCHLAND

wendigen Arbeitskräfte erheblich eingewirkt. Die schwere Krise der Jahre 1925/26 hat daher auch zu einem rapiden Absinken der Beschäftigungsziffer geführt, die im Februar 1926 ihren Tiefpunkt erreichte. Die Arbeitslosenziffer in den Facharbeiterverbänden betrug damals 22,6 %, die der Kurzarbeiter 21,6 %. Erwerbslosenunterstützung erhielten 2 Millionen Arbeitslose. Im Jahre 1927 fand ein allmähliches Steigen der Beschäftigungsziffer statt. Das Jahr 1928 zeigt wieder einen allerdings zum Teil durch saisonmässige Konjunktur bedingten Rückgang auf.

Mit einer grösseren Beständigkeit der Konjunktur und des Arbeitsmarkts wird erst zu rechnen sein, wenn es gelingt, durch erweiterte Produktions- und Exportmöglichkeiten eine günstigere Zahlungsbilanz und grössere Unabhängigkeit vom Ausland zu erreichen.

Der Einfluss der wirtschaftlichen Gesamtlage auf den Stand der Arbeitskämpfe kommt zum Ausdruck in einer Art erzwungenen Waffenstillstands während der Krisis und einer Zunahme mit der Besserung der Konjunktur 1927. Es handelt sich zumeist um Lohnkämpfe in den führenden Industrien.

Von Seiten der Arbeitgeber wird betont, dass angesichts der wirtschaftlichen Situation die Senkung der Produktionskosten Vorbedingung für die Steigerung der Produktivität, die Kapitalneubildung und den Wiederaufbau des Wirtschaftslebens sei - während auf Arbeitnehmersseite die Beteiligung an den Ergebnissen der Rationalisierung durch Lohnerhöhung verlangt und die Steigerung der Kaufkraft der breiten Massen als Voraussetzung für die Behebung der wirtschaftlichen Depression behauptet wird. Die Gewerkschaften führen einen erbitterten Verteidigungskampf für den Tarifvertrag, dessen Vereinbarungen sie als Regelung von Minimallöhnen angesehen wissen wollen, während die Arbeitgeber sich gegen den Schematismus und die Starrheit der allgemein verbindlichen Tarifverträge, die die Existenzbedingungen des einzelnen Betriebes nicht genügend berücksichtigen, wehren.

Jedenfalls sind die letzten Jahre der inneren Befriedung wenig günstig gewesen.

DEUTSCHLAND

FORMEN GEMEINSAMER ARBEIT VON ARBEITGEBER- UND ARBEITNEHMER-ORGANISATIONEN.

Besondere Formen spontaner Arbeitsgemeinschaft zwischen Arbeitgeber- und Arbeitnehmerorganisationen haben sich in Deutschland nicht wieder gebildet, nachdem sich die 1918 begründeten Zentralarbeitsgemeinschaften in der Nachkriegszeit - teils infolge sozialer Spannungen, teils infolge Uebernahme wesentlicher Aufgaben durch den Reichswirtschaftsrat - aufgelöst hatten.

Auf gesetzlicher Grundlage findet ein Zusammenwirken statt im Reichswirtschaftsrat - dem Wirtschaftsparlament, - das sich aus Vertretern der Arbeitgeber- und Arbeitnehmerverbände und einer dritten Gruppe von Repräsentanten des Wirtschaftslebens, die von Reichsregierung und Reichsrat ernannt werden, zusammensetzt und das Recht der Begutachtung sozial- und wirtschaftspolitischer Gesetzentwürfe und Massnahmen hat.

In den Organen der Sozialversicherung und der Arbeitsvermittlung - die mit der Arbeitslosenversicherung verbunden ist - sowie in den Organen zur Schlichtung von Arbeitsstreitigkeiten wirken Arbeitgeber und Arbeitnehmer mit.

ZUSAMMENARBEIT IN BETRIEBEN.

Auf Grund des Betriebsrätegesetzes vom 4. Februar 1920 steht dem Betriebsrat, der nur aus Arbeitnehmern gebildet wird, das Recht der Mitwirkung in gewissem Umfange zu bei der Einführung neuer Arbeitsmethoden, (Beratung der Betriebsleitung) ferner - in Vertretung der Interessen der Arbeitnehmer - bei Erledigung von Beschwerden der Arbeiter, Schlichtung von Streitigkeiten, Aufstellung von Arbeitsordnungen, Einstellung und Entlassungen, Bekämpfung von Unfallgefahren, Verwaltung von Wohlfahrtseinrichtungen.

ARBEITSRECHT UND SOZIALVERSICHERUNG

haben in den letzten Jahren eine bedeutsame Ausgestaltung erfahren.

Mit dem Gesetz über Arbeitsvermittlung und Arbeitslosenversicherung hat eine Frage die gesetzliche Neuregelung ge-

DEUTSCHLAND

funden, die die deutsche Sozialpolitik jahrzehntlang beschäftigt hat. Die Grundzüge dieses Gesetzes sind die Festigung eines dauernden organischen Zusammenhangs zwischen Arbeitsvermittlung und Arbeitslosenversicherung, der Aufbau ihrer Organe auf dem Prinzip der Selbstverwaltung, die Verbindung des Arbeitsnachweises mit Lehrstellenvermittlung und Berufsberatung, die Sicherung eines Anspruchs auf Arbeitslosenunterstützung bei unverschuldeter Arbeitslosigkeit. Das **Arbeitsgerichtsgesetz** hat eine einheitliche Gerichtsbarkeit für alle sich aus dem Arbeitsverhältnis ergebenden Streitigkeiten geschaffen.

Aus der Vielheit der übrigen neuen Gesetze verdienen hier besondere Erwähnung: der Kündigungsschutz der älteren Angestellten, deren Lage sowohl infolge der Rationalisierung, sowie der stärker hervortretenden Tendenz, Angestellte über 40 Jahre auszuschalten, sich verschlechtert hat, das Gesetz über die Beschäftigung vor und nach der Niederkunft, das den Mutterschutz erweitert, während entsprechende Aenderungen der Reichsversicherungsordnung, die hierfür erforderlichen materiellen Grundlagen gegeben haben.

Dem Reichstag liegt der Entwurf eines Arbeitsschutzgesetzes vor, das eine einheitliche Codification und Erweiterung der jetzt sehr zersplitterten Arbeiterschutzgesetzgebung darstellt und ein Berufsausbildungsgesetz zur Neuregelung der Berufserziehung des jugendlichen Nachwuchses.

ARBEITSWISSENSCHAFT (ARBEITSPSYCHOLOGIE UND PHYSIOLOGIE).

Die Systematisierung und Intensivierung der Produktionsmethoden nach amerikanischem Muster, vor allem in der Form der Fließarbeit, findet in den Betrieben weiter Eingang; das Bestreben herrscht vor, diese Methoden nicht einfach zu übertragen, sondern sie deutschen Produktionsbedingungen anzupassen. Das Bedürfnis nach Bestgestaltung der Arbeit führt Vertreter der theoretischen und der angewandten Wissenschaften aus der Isolierung der einzelnen Disziplinen zu ver-

DEUTSCHLAND

einheitlichen Forschungsarbeiten und Lösungsversuchen zusammen. In weiten Kreisen der Industrie werden die Ergebnisse der Arbeitswissenschaft, d.h. der Erforschung von Beziehungen zwischen den Bedingungen und Wirkungen der menschlichen Arbeit mit intensivem Interesse verfolgt. In den letzten Jahren haben sich eine Reihe von Grossbetrieben den wissenschaftlichen Untersuchungen geöffnet; teilweise sind von der Industrie auch finanzielle Mittel zur Verfügung gestellt worden. Im Rheinland und in Westfalen sind in einer Reihe von Werken - besonders auf Initiative von Professor Poppelreuter, Bonn, - Begutachtungsstellen eingerichtet worden, die Arbeitsanalysen vornehmen und die Gewinnung von Berufsbildern auf psycho-physiologischer Grundlage zum Ziele haben. Die Untersuchungen des Kaiser-Wilhelms-Instituts Berlin (Professor Dr. Atzler) und des Instituts für angewandte Psychologie (Dr. O. Lipmann, Berlin) haben die wissenschaftlichen Grundlagen für die Anpassung der Arbeitsvorgänge und Arbeitsformen an die psycho-physische Konstitution der Arbeitenden und die Orientierung der Arbeitsorganisation an Optimalleistungen erweitert. Den meisten Hochschulen und Universitäten sind betriebs- oder arbeitswissenschaftliche Institute angegliedert.

Die Entwicklung der Berufseignungspsychologie hat zur Kombination verschiedener Methoden mit dem Ziel der Gewinnung eines Strukturbildes der Gesamtpersönlichkeit geführt.

Die Organisation der Eignungsprüfung für Zwecke der Berufsauslese wird seit Jahren lebhaft diskutiert, teils wird die Angliederung nur an wissenschaftliche Institute für wünschenswert gehalten, teils die Verbindung mit Berufsämtern oder mit den Betrieben selbst. Die grossen Werke wollen in der Regel, die Arbeiterauslese im eigenen Betrieb vornehmen. Sozialpolitiker und Berufsberater weisen auf die bedenklichen Folgen einer "negativen Berufsauslese" durch die Betriebe hin, die lediglich unter privat-wirtschaftlichen Gesichtspunkten erfolgt, und halten an der Vornahme der Prüfung durch neutrale Stellen fest, die dem eigentlichen Sinn der Berufsberatung gerecht werden.

DEUTSCHLAND

BERUFSBERATUNG.

Die Beziehung zwischen Arbeitgebern, Schule, Jugend- und Wohlfahrtsämtern und den Berufsberatungsstellen haben sich in erfreulicher Weise vertieft. Das Interesse der Arbeitgeber- und Arbeitnehmerorganisationen wird durch ihre Beteiligung in den Ausschüssen der Arbeits- und Berufsämter wach gehalten. Zurzeit bestehen in Deutschland fast 600 Berufsberatungsstellen, von denen im Jahre 1926 fast 400.000 Ratsuchenden Auskunft erteilt worden ist. Das Hauptkontingent der Besucher stellen die schulentlassenden Jugendlichen dar, doch werden die Berufsämter auch in steigender Masse von bereits in der Arbeit stehenden Personen in Anspruch genommen. In den grösseren Städten finden eignungs-psychologische, häufig auch ärztliche Untersuchungen statt. Die Ausbildung der Berufsberater und die Besetzung dieser Posten mit geschulten Kräften wird von Seiten der Zentralbehörden gefördert.

Verschiedene Zentralämter für Berufsberatung haben fruchtbare Arbeit für die Berufsforschung geleistet. Das Landesarbeitsamt Sachsen/Anhalt gibt im Einvernehmen mit dem Reichsarbeitsministerium ein "Handbuch der Berufe" heraus, das auf Grund gemeinsamer Arbeit mit Betriebspraktikern und wissenschaftlich-arbeitenden Persönlichkeiten zum ersten Mal eine Topographie der Berufe bietet. Es werden hier anschauliche Berufsbilder, Darstellungen des Arbeitsinhalts und der Arbeitsformen, der physischen und psychischen Anforderungen, der Gefahren und wirtschaftlichen Aussichten gegeben. Gerade diese Arbeiten, die es ermöglichen eine Uebersicht über die Struktur der Berufszweige, über die Verlagerung und Verzweigung der Einzelberufe und ihre Abwandlung in den einzelnen Betrieben zu verfolgen, werden sowohl für die Arbeitswissenschaft wie für die Praxis der Berufsberatung wichtige Handhaben bieten.

LEHRLINGSWESEN, ANLERNWESEN.

Der Arbeitsausschuss für Berufsausbildung, in dem die Reichsverbände der Industrie und des Handwerks, der Deutsche Ausschuss für technisches Schul-

DEUTSCHLAND

wesen u.s.w. vertreten sind, bearbeitet zentrale Fragen der Berufserziehung (Facharbeiterausbildung, Berufsschulwesen, Ingenieurausbildung). Durch die Aufstellung von Lehrgängen und die Herausgabe von Lehrmitteln, durch Propaganda für die Einrichtung von Lehrwerkstätten und Werkschulen ist das Lehrlings- und Anlernwesen in verschiedenen Industriezweigen in mustergültiger Weise planmässig neugestaltet worden. Nach einer Statistik von 1927 bestanden 111 Werkschulen.

Für die Auswahl und Schulung von Werkmeistern, Vorarbeitern usw., die mit der praktischen Anleitung und Anlernung der Lehrlinge und Arbeiter betraut sind, haben sich jedoch noch keine festen Formen herausgebildet. Meist entscheidet hier das berufliche Können. Auch in den Reformvorschlägen für die Ausbildung der Ingenieure haben diese Gesichtspunkte noch keine Berücksichtigung gefunden, obgleich die Arbeiten über die "Psychologie des Anlernens" (Prof. Rupp, Berlin) weitgehende Beachtung gefunden haben.

Das "Dinta" (Deutsches Institut für technische Arbeitsschulung) hat als erste Stelle Kurse für Ingenieure eingerichtet, die diese für die Organisation und Leitung von Lehrwerkstätten Vorbildern. Einige grosse Firmen des Einzelhandels lassen Instruktorinnen in mehrmonatlichen Kursen vorbereiten, denen später dann die Schulung des Verkaufspersonals obliegt.

GEWINNBETEILIGUNG, GENOSSENSCHAFTSWESEN.

Eine Gewinnbeteiligung von Arbeitnehmern kommt ausser bei wenigen grösseren Firmen, bei denen sie schon seit Jahren besteht z.B. Optische Werkstätte Zeiss-Werke, Jena; Heinrich Freese, Berlin usw., in nennenswertem Umfange nicht vor. Nach einer privaten Erhebung bestand Kapital- oder Gewinnbeteiligung im Jahre 1922 bei 29 Firmen; es ist anzunehmen, dass die Zahl inzwischen zurückgegangen ist.

Von den Produktivgenossenschaften haben sich nur die Baugenossenschaften stärker entwickelt. Die in den "Bauhütten" zusammengeschlossenen Gruppen von Facharbeitern werden zum Teil auch von öffentlichen Körperschaften finanziert und erhalten von diesen Aufträge.

Aus wirtschaftlichen Gründen hat die alte Genossenschafts-

DEUTSCHLAND

form fast immer aufgegeben und eine Umwandlung in Gesellschaften mit beschränkter Haftung erfolgen müssen, die zum Teil jetzt von ihren auf kapitalistischer Grundlage errichteten Dachgesellschaften gestützt werden. Diese sorgen dann für Kapital- und Auftragbeschaffung. So umfasst z.B. der innerhalb des Allgemeinen Deutschen Gewerkschaftsbundes begründete Verband Sozialer Baubetriebe 151 Betriebe mit 30.000 beschäftigten Arbeitern.

Im Anschluss an die Konsumgenossenschaften, die eine bedeutende Entwicklung genommen haben, sind grosse Produktionsbetriebe, Arbeiterbanken, Versicherungsgesellschaften, Verläge usw. begründet worden. Den beiden grossen Verbänden der Konsumvereine, die dem Allgemeinen Deutschen Gewerkschaftsbund und den Christlichen Gewerkschaften nahe stehen, gehörten 1926 vier Millionen Mitglieder an. Der Umsatz betrug fast 1 Milliarde.

Die Betriebe der Arbeiterverbände sind grösstenteils nach betriebswissenschaftlichen Grundlagen ausgerüstet; besonderer Wert war auf arbeits erleichternde Einrichtungen gelegt.

BETRIEBSWOHLFAHRTSPFLEGE.

Eine umfassende Zusammenstellung der Einrichtungen der Betriebswohlfahrtspflege besteht nicht. Das Archiv für Wohlfahrtspflege Berlin hat 1926 durch eine Umfrage bei über 100 Firmen Wohlfahrtseinrichtungen grösseren Umfangs festgestellt, besonders bei den grossen Werken, der Mechanischen-, Chemischen- und der Textilindustrie.

Haupttypen sind Einrichtungen für Speisung und Erholung in den Betrieben selbst, Wohnungsfürsorge, Fürsorge für Wöchnerinnen, für Kinder und die zumeist im Anschluss an die Betriebskrankenkassen angegliederten Einrichtungen der Gesundheitsfürsorge: Heilstätten, Sanatorien, Erholungsheime. Das Interesse, das man der Pflege der körperlichen Uebungen entgegenbringt, kommt zum Ausdruck in der Schaffung von Sportanlagen. Die Pensionskassen einiger grösserer Werke, die zum Teil durch die Inflation in Mitleidenschaft gezogen waren, sind wieder aufgerichtet worden. Ein Teil der Arbeiterschaft nimmt den Betriebswohlfahrtseinrichtungen gegenüber

DEUTSCHLAND

eine ablehnende Stellung ein, da sie besonders durch Inanspruchnahme der Wohnungsfürsorge in zu starke Abhängigkeit von den Werken zu geraten fürchtet.

Im Jahre 1926 waren in rund 100 Betrieben Fabrikpfliegerinnen angestellt. Die von Dr. Frieda Wunderlich 1925 gegebenen Darstellungen von Umfang und Formen der Fabrikpflege ("Betriebswissenschaft und Betriebspflege", 1925) sind auch noch heute zutreffend. Der familienfürsorgereisiche Charakter der Fabrikpflege hat sich noch stärker ausgeprägt; zur eigentlichen Mitarbeit an der Bestgestaltung der Arbeit in den Betrieben werden die Fabrikpfliegerinnen selten herangezogen. Diese Tendenz wird zum Teil durch die Stellungnahme der Arbeiterschaft verstärkt, die derartige Aufgaben den Betriebsräten oder anderen Arbeitsvertretern übertragen wissen möchte. Eine Sonderstellung nehmen die sozialen Betriebsarbeiterinnen in der Bielefelder Industrie ein, deren Arbeit von der Gesellschaft für Soziales Recht organisiert und gefördert wird. Hier ist neben der pflegerischen Arbeit der sozialen Betriebsarbeiterinnen auch die Möglichkeit zur Herbeiführung von Reformen im Betriebe gegeben.

Zusammenfassend lässt sich sagen, dass der Faktor Mensch in Betrieben in Deutschland wachsende Berücksichtigung findet, wenn wir uns auch nicht verhehlen dürfen, dass die Motive nicht ausschliesslich soziale sind. Die Einsicht, dass die Gesetze der Wirtschaft und die Gesetze der Menschenökonomie nicht diametral entgegengesetzt sind, sondern dass hier eine geistige Einheit besteht, stellt einen Fortschritt dar, der auch auf eine weitere Verbreitung der von der I. R. I. vertretenen Ideen hoffen lässt.

ESPAGNE

PAR JOSÉ MALLART.

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Depuis la fin de la guerre, la plupart des industries souffrent en Espagne d'une crise de surproduction. Pendant la guerre, la concurrence des produits étrangers, dans le pays et même à l'extérieur ayant diminué, on avait augmenté la capacité de production en améliorant l'outillage, en développant les affaires des industries déjà existantes et en créant des industries nouvelles. Une fois que les pays belligérants se furent mis à l'oeuvre de la reconstruction économique, la concurrence s'est fait sentir, non seulement sur les marchés de l'extérieur, mais aussi à l'intérieur du pays.

Les industriels, qui avaient assumé des frais pour améliorer leurs installations, et qui produisaient plus qu'ils ne vendaient n'étaient plus disposés à faire des sacrifices. Les concessions, qu'ils faisaient bon gré mal gré et généralement à la suite de grèves, durent s'arrêter au moment où le marché ne permettait déjà plus une marge suffisante de bénéfices pour les accorder. Cet arrêt dure encore à l'heure actuelle et s'étend aux oeuvres du service social qui demandent des dépenses un peu élevées et à l'adoption des nouvelles méthodes d'organisation industrielle.

Mais la crise, en faisant appel à l'économie des forces et au raisonnement, a été peut-être favorable à l'application des mesures de conciliation et à l'entrée d'une ère de collaboration entre l'élément patronal et l'élément ouvrier.

D'une part les ouvriers ont reconnu qu'ils étaient arrivés à la limite des concessions qu'ils pouvaient obtenir par la force: ils ont la journée de huit heures (7 heures dans certains travaux, comme ceux de l'intérieur des mines) ils ont un taux de salaires qui n'est pas inférieur à celui de la moyenne des pays de l'Europe; ¹ on a des tribunaux industriels où patrons et ouvriers sont également représentés, des lois de protection en matière d'accidents du travail et du travail à domicile, etc., des insti-

¹ Pendant la période 1914-1925 les salaires en Espagne ont augmenté en moyenne de 130 %, tandis que les indices du coût de la vie n'ont augmenté que de 100 % environ. V. Estadística de Salarios y Jordanas de Trabajo, Ministerio de Trabajo, Comercio e Industria, Madrid, 1927.

ESPAGNE

tutions de prévoyance et de secours, telles que "l'Instituto Nacional de Prevision et l'Instituto de Reeduación profesional de Inválidos del Trabajo". D'autre part, les patrons ont commencé à comprendre qu'ils ne pouvaient plus s'imposer d'une façon autoritaire, et qu'il fallait faire appel à la collaboration dans toutes les choses de la vie industrielle, où il n'existe au fond qu'un intérêt commun. La fermeture de quelques usines importantes, à la suite de grèves, à un moment où les circonstances économiques prenaient une tournure peu favorable aux concessions, a fait réfléchir patrons et ouvriers. Un exemple frappant en a été donné par la fabrique d'automobiles Hispano-Suiza, transférée de Barcelone en une autre région où les luttes sociales étaient moins accentuées.

La Commission Mixte du Travail, qui fut créée à Barcelone par Décret Royal en 1919, au moment le plus difficile des luttes sociales en Espagne, afin de prévenir les conflits et de chercher des solutions harmonieuses en ce qui concerne les relations entre patrons et ouvriers des diverses industries, ne put exercer son action que dans quelques branches (spécialement dans le commerce), et seulement au moment où, la crise économique s'accroissant, les luttes sociales devaient cesser par la force des choses. Ces conflits tendant à l'anarchie la plus effrénée, patrons, ouvriers inclinèrent à la raison et se rapprochèrent des idées d'association. Actuellement on procède à la création de comités paritaires pour chaque branche industrielle et dans chaque localité: les questions de fixation de la journée, de la rétribution, des conditions du travail, etc. commencent à être l'objet de délibérations au sein des Comités paritaires, où les forces patronales et ouvrières sont équilibrées. On arrive même à régulariser le travail à domicile. De cette façon les relations entre patrons et ouvriers obéissent à des normes juridiques et morales qui font appel aux intérêts des uns et des autres, ce qui porte à l'esprit de collaboration.

Cet esprit de collaboration se manifeste déjà par l'entrée de représentants ouvriers dans le conseil de direction et d'administration de quelques grandes industries. Il faut citer ici l'exemple de la "Compania Arrendataria de Tabacos", qui a le monopole de la préparation et de la vente des tabacs, sous

ESPAGNE

le contrôle de l'Etat, et qui a été des premières à avoir des représentants ouvriers dans son conseil d'administration.

Les organismes gouvernementaux avaient en quelque sorte préparé cet état d'entente qui commence à se manifester. Depuis 1903, existait à Madrid "l'Instituto de Reformas sociales" où siégeaient des représentants ouvriers et patronaux, à côté des techniciens de la législation sociale et de l'organisation du travail. Cet organisme officiel, transformé à présent en "Conseil du Travail" et en "Ecole Sociale du Ministère du Travail du Commerce et de l'Industrie", a été l'inspirateur de la politique sociale du gouvernement, et a contribué à la diffusion des idées de progrès social et de conciliation des intérêts dans l'industrie. Il a donné lieu à la création des "Comités de Réformes Sociales", qui étaient des organes mixtes (composés de patrons et d'ouvriers) chargés de résoudre les différends surgis et d'interpréter la législation sociale dans son application dans les diverses localités. C'est grâce à son action que la Loi du Contrat de travail a pu être promulguée en 1926 sans protestation de la part des éléments patronaux, c'est grâce à l'état d'esprit créé par les lois que cet organisme avait inspirées que le ministre, M. Aunós, a pu développer son vaste plan d'organisation corporative nationale et de constitution paritaire de patrons et ouvriers.

En même temps, la diffusion des principes de la psychologie industrielle a commencé à agir sur l'esprit des organisateurs et des directeurs d'entreprises. Les essais de participation aux bénéfices faits par des firmes telles que "La Papelera Espanola" et "Prensa Espanola", les systèmes de récompenses employés par des compagnies de chemins de fer et par plusieurs entreprises industrielles, constituent des germes actifs d'un renouvellement des relations humaines au sein des industries.

D'ailleurs, la création de services sociaux à la charge ou au bénéfice des entreprises a commencé à préparer le terrain à un développement coopératif. L'oeuvre d'hygiène et de prévoyance qui se poursuit sous l'impulsion des inspecteurs du travail et de quelques femmes de bonne volonté, recrutées un peu partout parmi les infirmières diplômées et parmi les an-

ESPAGNE.

ciennes élèves des divers centres de culture professionnelle et sociale, constituent un élément très important. Des oeuvres telles que les garderies d'enfants établies surtout à Barcelone sous les auspices des entreprises qui emploient des femmes; telles aussi que les colonies de vacances à l'exemple de celles de l' "Energía Eléctrica de Cataluna", les écoles pour les enfants des ouvriers dans les colonies industrielles du nord et de l'est de l'Espagne, les bourses d'études et de voyage créées par des compagnies telles que la Duro Felguera et certaines firmes de Catalogne, au bénéfice des plus doués parmi leurs ouvriers jeunes, sont des facteurs qui préparent l'état d'esprit nécessaire pour obtenir l'harmonie dans les entreprises.

Il n'est pas besoin de dire que les régions instruites sont les plus favorables au perfectionnement des relations humaines dans l'industrie. Les districts où existent des centres de culture ouvrière, des écoles d'apprentissage, des bibliothèques, des athénées à la portée de la majorité de la population ouvrière, sont arrivés aux bénéfices de l'organisation moderne sans grandes difficultés, presque sans luttes. L'exemple est donné par la plupart des petites villes industrielles de la Catalogne et des provinces basques, où le niveau moyen de culture ouvrière est généralement supérieur au reste du pays et aux grands centres industriels, qui ont toujours à résoudre de sérieux problèmes posés par l'immigration d'une population ouvrière illettrée ou peu disciplinée pour la vie sociale. D'une façon générale, on peut constater l'irradiation des centres de culture ouvrière, un peu trop clairsemés dans le pays, en suivant les étapes de ceux qui en ont reçu l'influence. Des institutions telles que le Patronat des Ingénieurs et Ouvriers à l'Etranger (Madrid), l'Institut de Culture et la Bibliothèque Populaire pour la Femme, de même que l'Ecole du Travail (Barcelone), ont fourni à l'organisation sociale des ouvriers et à l'industrie de très bons éléments de progrès et d'entente humaine.

Les effets de l'enseignement professionnel sont très sensibles. Un exemple typique en est fourni par la petite ville d'Eibar qui, avec son école d'armurerie, a donné non seulement des générations de travailleurs qualifiés, mais aussi des hommes ayant

ESPAGNE

une grande faculté d'adaptation sociale et qui ont collaboré à l'établissement de formes d'organisation industrielle telles que l'actionnariat ouvrier et la coopérative de travailleurs. On trouve dans cette ville, dirigée par des anciens élèves de l'école professionnelle, une coopérative ouvrière socialiste, qui s'est constituée à la suite de la crise des débouchés pour les produits de l'industrie des armes, et qui fabrique la première marque espagnole de machines à coudre.

D'ailleurs, c'est un fait généralement constaté dans le pays, que les entreprises industrielles les mieux organisées et celles qui sont arrivées, avec le moins de lutte, à un accord satisfaisant tant entre les membres du personnel qu'entre directeurs et dirigés, ont chez elles un certain nombre d'éléments influencés par l'école professionnelle. Dans bien des industries où l'on se préoccupe du facteur humain et des méthodes d'organisation scientifique, nombre de postes responsables sont occupés par d'anciens boursiers du "Patronato de Ingenieros y Obreros en el Extranjero".

Cette constatation est particulièrement intéressante en Espagne, où un certain nombre d'industriels avaient peur de l'instruction de l'ouvrier, pensant qu'elle pouvait être une arme contre leurs intérêts. Quand on a vu que les travailleurs sans profession définie et que les masses incultes étaient les plus à redouter dans les conflits sociaux, on a tourné les yeux vers l'enseignement professionnel. On a commencé à comprendre que c'est par l'élévation du niveau culturel de l'ouvrier que l'on pourra développer le vaste plan de renouvellement industriel qui anime maintenant la pays. La Loi de l'Enseignement industriel de 1924 (Estatuto de Enseñanza industrial) est venue donner une constitution organique aux initiatives de formation professionnelle. L'extension de l'Université Industrielle de Barcelone, la fondation de l'Université Industrielle de Madrid, la création de nouvelles écoles professionnelles à la charge de l'Etat, des provinces, des municipalités et des organismes économiques, sont des manifestations de la foi que l'on a mise dans l'enseignement comme moyen d'enrayer la longue crise économique et d'éloigner la possibilité des luttes sociales dont le pays a tant souffert ces dernières années. II

existe même plusieurs centres d'instruction professionnelle éparpillés dans le pays, créés et soutenus par des syndicats ouvriers, qui n'ont donné que de bons résultats au point de vue des relations humaines. Exemple, les écoles d'apprentis lithographes du Syndicat des ouvriers imprimeurs et l'École d'apprentis métallurgistes du Syndicat Métallurgique de Madrid.

Il faut souligner ici la tendance des publications ouvrières, même des organes de propagande syndicale et politique, à s'occuper des questions professionnelles et de la technique industrielle. Les problèmes de l'organisation du travail humain y sont présentés et discutés sur un ton généralement ouvert à la franche collaboration. Cette presse ouvrière exerce une influence évidente sur la vie du travail et sur les possibilités d'adaptation aux méthodes perfectionnées de l'industrie. La Coopérative ouvrière des Mines de San Vicente (Asturies), l'actionnariat de travail constitué par les ouvriers de Jávea pour la création d'une entreprise hydraulique, peuvent être considérés comme les premiers fruits de cette culture ouvrière que les travailleurs se sont donnée à eux-mêmes.

Mais, de plus, toute cette culture professionnelle, qui influence favorablement les relations humaines dans les industries, est accompagnée de l'action éducative sociale, dont le noyau principal s'est formé autour de "l'Instituto de Reformas Sociales" et de sa continuatrice, "l'École Sociale" du Ministère du Travail, avec des organisations telles que la Société pour l'Étude du Chômage (constituée en 1910), la Société pour le Progrès Social, "l'Instituto Nacional de Previsión" et de nombreux centres qui, par des publications, des cours, des conférences font parvenir à l'esprit des ouvriers et des patrons les résultats de la recherche sociale tendant à une organisation du travail toujours plus humaine et plus économique. Des prix, tels que la Fondation Marvá et le Prix Aunós, ont été créés pour stimuler les études sur les questions posées par l'organisation du travail, ce qui contribue aussi à incliner à une attitude sereine et scientifique, les dirigeants de masses ouvrières et les chefs des entreprises, en les détournant des chemins de l'égoïsme comme des intempérances romantiques.

Le fait même de voir que les hommes de science s'occupent du bien-être de l'ouvrier, de l'économie de l'effort, de l'élimination de la fatigue inutile dans le travail, a un grand effet conciliateur et harmonisateur chez l'ouvrier; nous avons pu le constater à Madrid, à la suite des conférences données sur ces questions à la "Casa del Pueblo" et à l'Institut de Rééducation Professionnelle. Mais, naturellement, le plus grand résultat est obtenu lorsqu'on s'occupe de ces questions dans la vie pratique de l'usine. Des entreprises telles que les "Fabriques Gal", la "Maquinista del Ebro", etc., nous fourniraient des détails intéressants à ce sujet.

Si nous examinons les résultats de l'orientation professionnelle, surtout de celle qui se fait scientifiquement, on ne peut qu'être très optimiste en ce qui concerne les effets produits sur les bonnes relations dans l'industrie. Il suffirait de remonter aux principes, et de considérer tout l'équilibre fonctionnel des individus et des collectivités que l'on pourrait obtenir en assignant à chacun la vraie place que lui destine la nature. Nous avons fait des constatations précises sur ce sujet à l'Institut d'Orientation et de Sélection professionnelle, à Madrid; mais on peut surtout rapporter une enquête faite par l'Institut d'Orientation professionnelle de Barcelone, il y a déjà quelques années. Il s'agissait, en les comparant avec les autres, de savoir dans quelle mesure les individus qui avaient suivi les conseils donnés par l'Institut, progressaient techniquement, avaient le goût du travail, se fatiguaient moins et donnaient un rendement supérieur. Eh bien, on a obtenu des réponses tout à fait satisfaisantes, qui prouvent l'efficacité de l'orientation professionnelle au point de vue de l'expansion vitale du travailleur et de sa collaboration au travail.¹

Devant tous ces faits, et les applications économiques et sociales, il s'est créé en Espagne une ambiance assez favorable aux études du facteur humain. Le récent Décret Royal chargeant le Ministère du Travail de la création de l'Institut de Psychologie appliquée à l'Industrie, la constitution du Comité National d'Organisation Scientifique du Travail, la création

¹ V. Compte-rendu de la III^{ème} Conférence Internationale de Psychotechnique appliquée à l'orientation professionnelle, Milan, 1923.

ESPAGNE

de nouveaux offices d'Orientation professionnelle montrent un mouvement assez important, dans lequel un rôle de tout premier ordre a été joué par un membre de l'I. R. I., Monsieur C. de Madariaga, directeur-général du Commerce et de l'Industrie. Ce mouvement nous annonce l'approche d'une ère de franche harmonie dans l'organisation des forces humaines dans le pays.

FINLAND

BY FRÖKEN HELNY BERGBOM,

Lady Factory Inspector, Helsingfors

CO-OPERATION IN INDUSTRY.

In Finland, as in the leading manufacturing countries, the industrial development has given rise to associations among workers as well as among employers, and these organisations naturally play a very noteworthy part in the industry of the country. The exports of Finland mainly consist of products from our forests, and at the present time are of considerable extent embracing: sawmill products, paper, woodpulp, chemical woodpulp; to which must be added dairy products such as butter and cheese. On account of this it is evident that the employers' associations representing these industries by means of their cooperation and organization exports, are of great importance in the national economy. Also in regard to labor disputes in particular establishments, or in the whole branch of industry, the existence of these associations among workers as well as employers is often of primary importance. Of a total of about 250,000 workers, about 70,000 belong to their respective labor organisations.

The great majority of the large industrial enterprises in Finland are run in the form of joint stock companies. At the same time the cooperative movement has been accepted with great interest, especially among people of small means. The cooperative movement has been particularly applied to commercial activities; nowadays there are cooperative stores almost in every village of any size, and the cooperative central-associations show an increase both in membership and in trade, which would be surprising even in more favourable circumstances. Alongside such purely commercial activities these associations are successfully developing industrial enterprises. Also as regards industrial hygiene and welfare work, our cooperative enterprises may well serve as good examples. The cooperative movement has, furthermore, gained a victory among the agricultural population. The farmer, operating on a small scale, welcomes this new method since it provides the opportunity of profitably cultivating and exporting the abundant annual surplus of dairy products.

FINLAND

INSTRUCTION AND TRAINING.

In accordance with the law of compulsory education, a public school graduate in a city, country-town or densely populated village is obliged to attend a continuation school for either one or two years. These schools differ in different towns but in general they lay more stress on domestic economy and needlework for the girls and on carpentry and metal work for the boys, than do the public schools. Considerable emphasis is placed on the theoretical side, since the main purpose is to give the young boys and girls a somewhat better general education and a more practical instruction than they have received in the public schools. This advanced obligatory instruction, however, is not yet carried on in all parts of the country.

For the public school graduate there are also vocational schools with somewhat the same curriculum as has been described but intended more particularly to give the young people a good basis for their future trades.

Vocational Training in our country is mostly given in factories and in workshops, in some vocations with a definite apprenticeship, in others with an indefinite one. For the promotion of vocational training, a law on apprenticeship was enacted in 1923. This law requires a written agreement between an employer and the guardian of a worker under 18 years of age, which agreement must be registered by the Vocational Training Board. The law is enforced by factory inspectors, and applies to those trades in which the apprenticeship is for 2 years or more, at the end of which period a public proof of skill must be given. Certain industries, as for example the printing trade, have arranged through the initiative of the employers, and with the support of the community, for their apprentices to attend a one-day school for theoretical and practical training. In the metal industry, one of our leading concerns has organized a half-day school and dormitory accommodation for 48, or half of all the apprentices, who are divided into 4 classes, each class remaining one year, this being the period of their apprenticeship. Each apprentice is exempted from work in the factory for 4 hours at a time, but is bound

FINLAND

to attend teaching in theoretical subjects pertinent to his vocation. In addition to this, he is given instruction in other theoretical subjects for 4 hours weekly in evening classes. The dormitory and the lecture hall are in the same building and both are looked after by the same person.

For demonstrating new work methods and systems, an organization interested particularly in this arranges short courses of 1 or 2 weeks for older trained workers who are engaged in the respective trades.

INDUSTRIAL WELFARE WORK.

Industry in Finland is comparatively young and only the large industrial establishments are interested in industrial welfare work. The country is sparsely settled and because the factories are most often located by waterfalls or rivers, it is necessary in order to secure good workers in these waste tracts, to build houses for them. Resulting from the industrial development and from the present standard of housing among our workers, the housing problem nowadays is of significance, and, from the social point of view, is perhaps the most important kind of welfare work because of its bearing on the well-being of the working-class. During recent years the type of housing has improved. The number of rooms has increased from one to two or three, attention being also paid to the needs of large families for larger quarters, proper location and surroundings. In short the aim is to give workers a real home, and not only a house to live in.

In spite of the fact that the Finnish population has come under the enervating influence of industrialism at a relatively late date, and that the population is healthy and vigorous due to the hard struggle against severe nature, welfare work has been concentrated to a remarkable degree on hygienic information.

During the past years special courses in social hygiene for trained nurses have been arranged, and these "health sisters" as they are called, have been much in demand by our industrial centers, especially in the country. Their work is

FINLAND

usually a combination of nursing of the sick and instructing in social hygiene.

The Kindergarten movement has become very popular in our country, the Finnish government covering a third of their running expenses.

The peculiar political circumstances and lack of capital in Finland have prevented realization of general old age pension and health insurance schemes, even though these questions have been in the forefront. At the present time the worker is entitled to old age pension only if he has been engaged by the same employer for a sufficiently long period, that is at least 20 years, and if he at the same time evidently is unable to work. Absence of general health insurance has to a great degree led workers in large establishments to found private funds under their own control. The employer usually contributes to them up to a considerable amount. In the case of illness the law provides compensation only during 14 days.

Even though our large industrial plants have not so far applied any definite plan or coherent direction by engaging a social worker or secretary, a great number of employers show interest and understanding at least in certain forms of welfare work. Sport, music, nursing of the sick, child welfare, vocational training etc. are more or less supported by most of the concerns.

It is natural that industrial welfare work is especially near to the heart of the lady inspectors of factories, and they have to a great degree succeeded in directing employers' attention to the need of healthy housing, organized nursing of the sick, the establishing of day-nurseries and Kindergarten and gardening for children, vocational schools, occupying workers in their leisure time etc. It is taken for granted, even by the majority, that for lady inspectors this kind of welfare work is their duty.

VOCATIONAL SELECTION.

The question of vocational selection is only to a certain degree practised scientifically. It is not however entirely omitted. The Board for State Railways has established a psychological

FINLAND

institute for their own needs, though outsiders are allowed to use it. Also in the upper classes of public schools and in certain associations, this matter has been under discussion, the direct positive result of this interest in Helsingfors being the establishment of two bureaus for advice in vocational questions.

Because the country is sparsely populated and because our main industries are out of town, the question of vocation is a rather simple one for those who want to stay in their home villages: there is little room for choice.

The year 1928 is a noteworthy one in the history of Finland, because it is the 10th year of independence. In social and economic matters the improvement is considerable. That we still are behind in certain forms of social legislation is due to our previous changing and dependent state. Our present legislation is in many cases even radical, and our labor laws in regard to working hours etc. show that it is not because of conservatism that old and sick workers have not yet been regarded with greater care. The gradually improving economy of the state together with satisfactory industrial cooperation are a guarantee that defects in our labor-legislation will soon be removed.

GREAT BRITAIN

COMPILED BY MISS S. M. BEVINGTON B. SC.,

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THE JOINT COMMITTEE MOVEMENT.

It is particularly dangerous to attempt to dogmatise or generalise on any subject in the realm of modern industry with its constantly changing conditions. The danger is further increased if there is an insufficiency of time and facilities to make a really adequate survey of any given field. At the same time a consideration of the many schemes in operation in works and factories in widely differing trades leads to the conclusion that there is at the present time a real development of the committee idea.

To understand the present position, the history of the 'past - in particular of the last decade - must be examined. The majority of pre-war committees appear to have dealt with "particular questions affecting the conditions and remuneration of labour in a given works", i. e. for the purpose (in the main) of collective bargaining. There were in addition some which dealt with the social well-being of the workers, and it is possible to detect the germ of the conception of co-operation in industry brought into prominence in the war and crystalized in the well-known findings of the Whitley Committee in 1918 "for securing a permanent improvement in the relations between employers and workers".

To many it seems that the high hopes then raised have been dashed to the ground. They point to the fact that of the seventy-three Joint Industrial Councils working in 1922 only forty-three survived in 1925, while according to the statistics given by the Balfour Report an even greater number of District and Works Committees have ceased to function. The passage of time has revealed some of the causes for the partial failure. The scheme was premature. "At the time of the appointment of the Whitley Committee there was a wide-spread belief that industrial relations had been permanently modified by war experience". This was not so and without honesty of purpose the Whitley scheme could not function.

Further it has been pointed out that it took no cognisance of the question of the relative reward of capital and labour and to some

GREAT BRITAIN

seemed essentially beside the point. There would appear to be in Great Britain a strong feeling in favour of each works forming its own committees and tackling its own problems from inside rather than removing them for settlement to what is regarded an "outside body" such as a National or District Council. In the words of one industrialist, "Far more important than a National Committee is the development of a scheme dealing with working conditions in the individual factory."

Again, the view has sometimes been expressed that the "Joint District Councils do too little work and the National Joint Executive too much." But if the ideas embodied in the reports have never been more than partially realised, they have on the other hand never been wholly set aside. There may be but few Joint Industrial Councils functioning now, and fewer still works committees in official connection with them, but the committee idea is very much alive. It has survived in numberless works councils, works committees, welfare committees, social committees, factory committees, etc. which under every conceivable form of constitution, and with innumerable difference in scope and declared object, are all ostensibly existing to promote harmony in industry.

Various features of the present position may be noted - changes resulting from the evolution in outlook both of employed and employers. There is a growing conviction in certain quarters that no lasting good can be accomplished or real co-operation achieved unless there is in existence a Joint Committee or Council consisting of representatives of both workers and management. The report of a special committee recently set up by an Employer's Federation into certain aspects of their Joint Industrial Council urges employers to attend Works Committees, "personal contact being the solution of most difficulties in labour matters". It is true that in some concerns the emphasis is laid on the importance and desirability of providing for "free and uninfluenced deliberations by the work-people", on the necessity for "freedom of discussion", which is sometimes interpreted to mean the setting up of a Committee composed of workers alone. Against this must be set the experience of other con-

GREAT BRITAIN

cerns which believe that the fundamental principle of the Council is that it provides an opportunity for Management and workers to discuss problems together and that "it is foreign to the spirit of a Works Committee for each side to make up their minds separately." The importance of direct contact in round table discussions is realised and this is clearly an advance on the idea that a Works Committee is a body of accredited representatives with whom the Board of Directors can communicate at any time - valuable as the latter idea is as a first step.

Again some Committees which at one time had regarded membership of a Trade Union as an essential qualification for membership of the Works Committee have rescinded this rule, for varying reasons but in no case in any spirit of antagonism to the Trade Union movement.

It is recognised that if a Works Committee is to function as it should, it must be taken seriously and "adopted as an integral part of the factory organisation just as any other vital function of a modern business." Even when fairly long periods elapse without any real need for consultation it is seen that real value exists in the "static potentialities". The right of appeal against dismissal, the power of revision of Works Rules, the compilation and alteration of Conditions of Employment or Contract of Service may be instanced as features of the work of some committees which have passed the initial stage of dealing with petty grievances. The inevitable development of the personality of those who serve on such Committees is a result which is now beginning to be seen and is a development fraught with more possibilities for the future than some may have imagined.

"Probably the most valuable work that the best committees are to-day engaged upon is that of preparation, of laying the foundations upon which it may be possible to convert into fact the vision of honest co-operation that was seen by the members of the Whitley Committee. That some firms are already far in advance of this preparatory work is well known. They are building on foundations laid truly and long ago: they are the leaders, but, they are also the exceptions".

SCIENTIFIC MANAGEMENT.

The development of Scientific Management in Great Britain may be divided into four periods. From 1910 to 1916 a few industrial companies had begun to study the work of F. W. Taylor and to some degree to apply his philosophy and methods to their own problems. Among these Hans Renold's were the most notable. At this stage applications of Scientific Management principles were deliberate and imitative. Those who were interested were avowed disciples of Taylor. The use made of his work was along the line of direct copying of methods and systems, rather than a free application of his philosophy to different national conditions.

From 1916 to 1921 the necessities of war-time production, particularly in the engineering trades, and the abandonment of trade-union restrictions, gave a great impetus to experiments likely to increase output. The various devices of Scientific Management were freely adopted, but the work was necessarily hurried and provisional: there was little time for careful experiment. The period however marked a great advance in national consciousness of the possibility of a new attitude towards industrial production and its administration. The question of output was recognised as a national interest. The knowledge and resources of the State were applied directly to the task of coordinating and making known the best available practice.

Thus the Committee on the Health of Munition Workers called attention to the possibility of a more scientific attitude towards industrial personnel. Towards the end of this period its work resulted in the establishment of the Industrial Fatigue Research Board and the National Institute of Industrial Psychology. The study of psycho-technology was definitely formulated as a factor in our national industrial administration. On the side of material, the end of the period witnessed the foundation of the Department of Scientific and Industrial Research, which has up-to-date resulted in the establishment of 25 Trade Research Associations. It also controls a number of State Laboratories specialised along various lines. The requirements of control forced many manufacturers to establish costings-

GREAT BRITAIN

departments. Finally the Ministry of Reconstruction gave an official blessing to a general policy of scientific management, and several of its pamphlets were devoted to the question.

The whole of this development was, however, deliberately dissociated from F. W. Taylor and his work, although it was entirely in line with his fundamental philosophy and teaching. The labour reaction against his methods, or rather the mis-application of his methods, had made great headway in the United States, particularly in the Navy Yards and other government establishments. The leaders of the far stronger British Trade Unions, many of which were on a craft-basis, fully shared the apprehension of their American colleagues as to the possible effects of "Taylorism" as they understood it. Throughout the period the power and position of the great trade unions increased unprecedentedly. There was therefore a natural tendency on the part of the State, scientists, and employers, while pressing forward in every way the application of new scientific discovery and of the methods of science to the problems of industrial administration, to avoid any direct association with F. W. Taylor's pioneer work or with the term "scientific management". There was little deliberate attempt to take industrial concerns and to reorganise them completely along scientific lines. The tendency was rather to apply new sciences and devices, psychology, physiology, mineralogy, costing, time-study and the like, piecemeal to specific problems.

This tendency was on the whole strengthened by the severe depression of 1922 to 1926. The readjustment from a war-time price level gave rise to many industrial disputes. Rigid economy was enforced on all departments of government. There was little money for new developments with the majority of businesses. There was a distinct set-back in the general interest taken in scientific management during this period. On the other hand the organisations established during the first flush of reconstruction continued to function. And in many instances, firms and industries faced with the increased costs and decreased turnover determined on radical reorganisation as the alternative to liquidation. There was a continuous

GREAT BRITAIN

extension of bonus methods of payment and of time-study throughout the engineering industries.

The position at the present juncture is far more promising than at any time since 1922. In certain obvious instances, such as coal and cotton, the older methods of management prevail over large areas of industry and partly account for their desperate economic plight. But even in these cases there are not wanting enclaves, such as the Egyptian section in the cotton trade, and the South Yorkshire coal field, which act as examples to their fellow-manufacturers, proving day by day the direct economic advantage of modern equipment backed by scientific organisation and management. In all the more modern enterprises there is alertness to possibilities of change and of greater efficiency along scientific lines. Certain factories provide the highlights. The amazing recovery of Austin Motors and Dunlop Rubber Company from financial difficulties is directly attributable in both cases to an extensive application of scientific management.

Employers in general are feeling out towards a wider conception of their duties and responsibilities. This movement is still largely unconscious and inarticulate. There are few deliberate applications of "Scientific Management" in the sense of a complete application of the Taylor system and methods. Indeed the day for a directly imitative policy is past. Taylor's contribution is beginning to be recognised for what it really is, not a series of devices, but a new philosophy, a fresh attitude of mind, in approaching problems of industrial management of all kinds. The opposition of organised labour to the conception of scientific methods is following the example of the American Federation of Labour, and rapidly changing.

Owing to the unpremeditated and unconscious character of this development it has not as yet expressed itself in any national organisation for the study of scientific management. But a number of technical and professional institutions, dealing with special aspects of the problem, have made steady progress. Among them the National Institute of Industrial Psychology, the Institute of Cost and Works Accountants, the Incorporated

GREAT BRITAIN

Sales Managers Association, the British Engineering Standards Association call for mention. The movement known as "Management Research Groups" is making rapid progress in uniting manufacturers in the study of their management problems. Sir Alfred Mond has arranged a joint conference of trade union representatives and leading employers which will undoubtedly have important results on similar lines. The Empire Marketing Board is doing valuable educative work on the distributive side. The Board of Trade has recently established a national committee for the discussion of simplification and standardisation.

In short, while, with important exceptions, the majority of British employers would confess to ignorance of F. W. Taylor's work, and deny any intention of applying scientific management in their factories, the undertakings which remain entirely immune from the general effects of his teaching are a rapidly decreasing minority. On all sides there is a growing recognition that the problems of industrial administration can and must be studied on scientific lines. The new knowledge and powers derived from such study may, it is true, be abused, and even directed to anti-social purposes; but properly applied and with adequate safeguards for labour, they must result not only in lower costs and increased productivity, but in higher earnings for the individual worker, a more interesting task, and greater security under an improved standard of life for the community.

PRESENT TENDENCIES IN EDUCATION AS APPLIED TO INDUSTRY AND COMMERCE.

It is clearly impossible to deal, except in the most fragmentary and superficial manner, with the question of education in industry and commerce within the prescribed limits of space. I have therefore confined myself to a series of references to present tendencies. The following sections of work are mentioned.

School Leaving Age.

General Education during Adolescence.

Apprenticeship and Training.

Physical Training.

Selection for Promotion.

Training for Positions of Responsibility.

Lectures for those already holding positions of responsibility.

General Adult Education.

In British educational circles there is at present the very controversial issue of the direction which should be taken by the next extension of educational facilities for the younger generation. Should the school leaving age be raised to fifteen, or should full-time education cease where it does at present, and be followed by part-time continuative education during three or four years of adolescence? Probably the opinion of teachers is in favour of the raising of the school leaving age, but industrial opinion is certainly divided, and the balance has not been effectively ascertained.

Organised introduction of the young wage-earner to industrial conditions has become more common during the past decade: one method is that of the Initiation School.

The number of Day Continuation Schools definitely associated with industrial or commercial houses is small. This type of education has never recovered from the set-back which took place during the period of industrial depression two or three years after the war. The state of affairs foreshadowed in the 1918 Education Acts for England and for Scotland has never been realised. It is, however, noteworthy that several well-known and progressive firms have proved their faith in the efficacy of part-time adolescent education by continuing to maintain or to support day continuation schools of various types, carried on with widely varying degrees of co-operation between the firm and the Local Education Authority of the district.

In regard to apprenticeship, increasing attention is being given to the more intimate co-ordination of theoretical and practical training. This is exemplified in various ways. An outstanding instance is the provision of a wide range of training workshops for the employees of the Gas Light and Coke Company, at Watson House, London. A very different example, but none the less valuable, is to be found on the productive side

GREAT BRITAIN

of Loughborough College - what may be called an instructional factory. Then there are several engineering and allied firms undertaking a considerable proportion of theoretical training for their apprentices themselves, thus ensuring a more intimate connection between theory and practice than can be attained by any other means. The Queen's Engineering Works, Bedford, and the works of Mather & Platt, Manchester, may be mentioned in this connection.

Training departments for the inculcation of right methods of manipulation among semi-skilled workers are also an established feature of some factories.

Very intimately associated with general adolescent education is the provision for systematic physical training and games. In many instances the physical side has been developed even where comparatively little has been done for general adolescent education, but the marked prominence given to gymnastics - and swimming to a certain extent - in the curriculum of works day continuation schools, is a very important feature.

In cases where day continuation schools are not provided we have an infinite number of forms of co-operation between employers and education authorities to secure and encourage attendance of employees at evening classes or, in some cases, at part-time day classes for apprentices and others. It is impossible here to give details or to cite examples, but it is interesting to note that the city of Edinburgh has for many years secured what is probably the highest ratio of evening class enrolments to adolescents living in the area.

In several firms the Education Department or, where that does not exist, the Employment Department is at present giving considerable attention to methods of selection by educational tests or tests of intelligence. Whether all the so-called intelligence tests of the present day really test intelligence as distinct from acquired knowledge can only be decided by the educationalists of the next generation. It is, however, reasonably established that those responsible for the making of promotions are justified in using tests which will enable them to discriminate between applicants who reach a certain previously determined standard of general education and in-

GREAT BRITAIN

telligence, and those who fail to reach that standard. The need for qualifying tests of this sort is rendered more urgent by the gradually rising educational standard of the younger generation of employees. The foreman or forewoman who has been denied the opportunities so freely offered to the present generation is seriously handicapped unless he or she takes steps to keep abreast of modern developments.

The three remaining questions referred to in this memorandum follow naturally. Firms in different parts of England and Scotland are making systematic efforts to discover and train young men and women, ambitious for advancement and possessing some at least of the necessary qualifications. In a few cases regular courses of lectures are provided, usually in the evenings, for those who wish to increase their knowledge, both of the methods of organisation of their particular firm and of the general economic principles on which this organisation is - or should be - based. An alternative - or supplementary method - is by selecting for employment young persons who have already matriculated, by encouraging them to follow definite courses of study, sometimes in preparation for the examinations of recognised professional bodies, and by offering financial rewards or incentives to those who obtain certificates, diplomas, or degrees of recognised standing. While some of the education undertaken in this connection is necessarily either technical or commercial, a good deal of liberal education is inevitably included. Courses of lectures and discussions, supplemented in some cases by visits to other factories or to conferences, are held for the foremen, forewomen and other branches of management in a good many works. In some cases the arrangement takes the useful form of a more or less social gathering, such as a lunch or a tea, followed by an address and a discussion. Self-government and democratic control are essential to success in efforts of this kind.

General adult education calls for some attention. A few firms have during the past few years awarded scholarships tenable at Residential Colleges where full-time general education may be undertaken, but the provision made for study of this kind

GREAT BRITAIN

is still relatively small and the opportunities offered are not numerous.

In the future some attempt should be made to raise the standard of accuracy and precision among those who take up either full-time or part-time adult education of a non-vocational character. Informed opinion seems to show that much of this work suffers through the inadequate nature of the preliminary general education. It is easy to realise that disappointment and perhaps even danger may result from this state of affairs.

It is important to ask whether the colleges and universities of this country are doing as much as they might to qualify men and women for taking up positions of responsibility in industry and commerce. Is it too much to hope that industrial management should be established as a modern profession having a technique of its own which can to some extent be developed by suitable education? Various forces are moving in this direction, but there is need for considerable acceleration.

Through limitations of space many important questions remain untouched in this memorandum. There is, for example, the outstanding and highly controversial problem of the position of university men and women entering commerce and industry, a question which calls for even more attention than it has already received.

It has also been impossible to discuss certain other schemes and arrangements which are educational in the truest and widest sense, e.g., school journeys, camp schools, organised foreign travel, popular lectures, week-end schools, debates, music, folk dancing, the drama, attractive environment, all things making for a liberal education.

One cannot conclude without mentioning the educative results of certain voluntary social activities, such as club work, committee work and even participation in suggestion schemes and other arrangements now fairly common in highly organised British factories.

To summarise briefly, I think it may be said that while a large proportion - perhaps the majority - of firms remain

GREAT BRITAIN

comparatively unaffected by educational influences, there are many indications that the place of education in industry and commerce is being increasingly recognised. It is also gratifying that education in industry is not being interpreted in any unduly narrow sense, but that, on the contrary, a liberal education is being regarded as an invaluable training in adaptability and other aspects of mental development. *

INDUSTRIAL PSYCHOLOGY.

The aim of industrial psychology is to discover, by scientific methods, the laws governing the healthy employment of the human mind and body in industry and commerce. On the basis of these laws the psychologist attempts to promote the conditions and methods of work most favourable to efficient production. In other words, he seeks to reduce the needless expenditure of human effort and to ensure that industrial environment shall be better shaped to meet the physical and mental requirements of the worker.

The development of industrial psychology in Great Britain has been the work of two bodies, the Industrial Fatigue Research Board founded in 1918 and the National Institute of Industrial Psychology founded in 1921.

THE INDUSTRIAL FATIGUE RESEARCH BOARD.

The earlier researches of this government committee were carried out in certain selected industries. Their outcome was the publication of a series of valuable reports on certain aspects of the metal, textile, boot-and-shoe, laundry and glass industries.

Its more recent researches have however been concerned with:

* Sources of further information:

"Education and Industry"; Association for Education in Industry and Commerce, June 1927.

"Why We Want Education in Industry"; A. E. I. C., June 1926.

"Commercial Education and the Requirements of Industry"; A. E. I. C., June 1926.

"Industry and the University"; A. E. I. C., June 1925.

"Education in the Factory"; Publication Department, Bournville, 1927. (3rd edition.)

GREAT BRITAIN

particular psychological and physiological problems of wide industrial interest,
specific problems submitted by government departments and industrial associations,
factory problems resolvable by laboratory inquiry.

Under the first heading inquiries have been made inter alia into:

the effect on the worker of different working spells,
the human factor in the causation of accidents,
the design of machinery in relation to the operator's comfort,
the physiology of ventilation,
the rate of acquiring skill.

Hours of Labour. Interesting data have been obtained showing the beneficial effects on output of the introduction of rest-pauses over a wide range of industries.

Accident Causation. It has been discovered that certain individuals are susceptible to repeated accidents: some progress has been made in devising tests which would obviate their engagement for dangerous occupations.

Machine Design. This inquiry is being jointly conducted by psychologists, engineers and physiologists: a first report has been issued dealing with certain general principles of design in relation to comfort.

Physiology of Ventilation. Use has been made of the kata-thermometer to determine optimum conditions of temperature under widely varying industrial requirements.

Acquiring Skill. These investigations have not yet arrived at the report stage.

Under the second heading some of the problems investigated by the Board on behalf of industrial associations of government departments have been:

The study of sickness due to artificial humidity in weaving

GREAT BRITAIN

sheds, the findings of this study have negated the existence of any special risk.

The physique of women in industry and optimum methods of carrying heavy weights.

The causes of telegraphists cramp, which has been diagnosed as of psychological origin and led to a further inquiry into the incidence of psycho-neurosis in various occupational groups.

The Board has now issued in all a series of fifty valuable reports purchasable through the government stationers. In addition to the subjects mentioned above, it has made inquiries into such matters as the effect of artificial lighting and heating on various processes, the relief of eyestrain, the demands of repetitive work on the operator, together with various statistical and bibliographical studies.

The constitution of the Board comprises eleven members representing the human sciences, engineering, industry, the civil service and trade unions: the direction of research is in the hands of two advisory committees. The main objects of the Board's work are:

to acquire knowledge of human behaviour under industrial conditions,

to educate public opinion in the economic and social significance of this knowledge.

Its relations with the Institute are harmonious: overlapping is avoided and several investigations have been jointly conducted.

THE NATIONAL INSTITUTE OF INDUSTRIAL PSYCHOLOGY.

The Institute differs from the Board inasmuch as:

It is a private body financed by fees, voluntary subscriptions and research-grants.

Its scope of inquiry is wider.

Its services are at the disposal of firms who require its investigators to introduce practical schemes for removing existing causes of human inefficiency and discontent.

GREAT BRITAIN

Its investigators must produce more immediate results and study a given situation from more points of view than those with which the Board's inquiries are strictly concerned.

The Institute's work may be ranged under five headings:

Factory-studies of the worker's movements, posture, work-place and equipment, of his working-spells and all environmental and incentive factors.

Study of occupational abilities and devising of tests to select and guide applicants.

Laboratory research into psychological and physiological problems.

Relevant training courses for investigators, executives and teachers.

Coordination of relevant research and publication of its findings in non-technical language. Educational propaganda is carried out by means of lectures, demonstrations and broadcasting.

In initiating an inquiry the investigator always aims at forming favourable mental attitudes, since the cooperation of managers, forepeople and employees is essential to the full success of his work. Psychological knowledge of human difficulties and of the instincts, desires and motives that underlie human action is invaluable in conducting such inquiries. Equipped with this background the investigator must bring to his task tact, sympathy, patience and courage. His criticisms must be of a constructive not of a fault-finding character: he aims to release energy and increase output by removing obstacles, not by speeding up. In practice it is found that this outlook does gain co-operation, and has received the support of prominent trade unions.

Some of the Institute's results can be expressed in percentages of increased output. Many equally valuable but intangible results (such as the promotion of better relations, of interest in methods of work, of an experimental attitude, of cooperative habits) cannot thus be expressed.

Up to now the Institute has carried out investigations for over a hundred firms. Since 1921 its annual income has increased

GREAT BRITAIN

from £3,780 to £17,500, its staff from 3 to 33, its membership from 110 to 1100.

The field of its inquiries has been very wide, covering nearly fifty industries connected with mining, fuel-production, textiles, engineering, food and clothing and many companies concerned with the manufacture of raw materials and finished products. On the personal service side, investigations have been carried out in retail stores, laundries, hotels and restaurants. On the transport side inquiries have been made on behalf of shipping, omnibus and railway companies.

The later trend in the Institute's development has lain beyond the horizon of its earlier studies, which were confined to questions where easily measurable results were usually obtainable. With growing recognition of the value of its stand-points and methods involving an increased demand for its services, the Institute has widened its earlier scope. Its activities now include the replanning of factories and more general problems of productive organisation, such as layout and routing, of transport and storage, of forecasting and controlling the flow of work. Departmental and sectional co-ordination, the integration of administrative and executive with technical and productive functions are now seen to be psychological problems the solution of which is vital to economic progress.

VOCATIONAL GUIDANCE AND SELECTION.

Vocational psychology in this country was originally under the control of the two bodies just described, - the Industrial-Fatigue Research Board and the National Institute of Industrial Psychology. Of late the practical side of the whole movement has been delegated mainly to the Institute, but the Board still engages in researches on fundamental problems - for example, the qualities making for liability to accident.

Vocational psychology has two branches - vocational guidance (advice given to an applicant, based on tests of his mental and physical capacities, as to the kind of work for which he is fitted), and vocational selection (the choice, by means of tests, of those among the applicants for a particular job

GREAT BRITAIN

who are best fitted for the work). The two are closely related and ideally supplement one another.

A preliminary experiment into the validity of vocational guidance methods was carried out by the Institute and the Fatigue Board in collaboration; and the Institute is now engaged on a second, more extensive experiment. The subjects of the first experiment were one hundred children (boys and girls) due to leave three elementary schools in London. The chief occupations open to these children were studied and classified; each child was systematically tested and vocational advice given on a basis of the results; and after two years as many of the children as possible were re-visited and their success or failure noted in relation to the advice previously given.

The children were tested in intelligence (linguistic and practical), specific abilities (mechanical ability, constructive ability and creative imagination) and educational attainments. For estimation of character and temperament - tests for these qualities having generally been found unsatisfactory - reliance was placed on a systematically conducted interview. (Physical condition was assessed from the results of past medical examinations.)

The result speaks strongly in favour of the methods used - although, owing to the smallness of the number tested, it cannot be regarded as conclusive. Of the children who entered occupations of the kind recommended, more than 80 per cent were satisfied with their work, their prospects and their pay. Of those who obtained employment different from the kind advised, less than 40 per cent were satisfied. Those who followed the advice given were, on an average, in receipt of higher pay than the others; they had generally obtained promotion earlier, and had experienced fewer changes of situation.

In the second experiment, six hundred children were advised, and their subsequent careers are now being compared with those of six hundred children to whom the Institute's advice was not given. The final report on this experiment will be published shortly; there is every prospect of interesting results.

GREAT BRITAIN

These experiments were made possible by generous grants from the Laura Spelman Rockefeller Memorial fund, and no charge was made to the parents of the children concerned. Individual cases are also examined at the Institute at a fee of three guineas: nearly 200 such cases were examined last year.

Vocational selection tests are of particular value in occupations or processes where the number of applicants greatly exceeds the number of vacancies. It very frequently happens that workers of equal experience differ widely, even in comparatively simple manual operations. It is found that selection tests can often give, in half an hour, as accurate a measure of a man's capacity as could be obtained by weeks of observation in the factory. The tests are used only for selecting applicants, and not for the transference or dismissal of workers already with the firm.

Selection tests may be of three kinds; "analytic" tests, where the various qualities required for success in a given occupation are analysed and tested separately; "analogous" tests, where the test requires the same general abilities as the work and bears a fundamental resemblance to it; and "sample" tests, where the test is exactly like the work (for example, a speed test for shorthand writers). "Sample" tests are unsuited for general use, as the results are affected by experience. The best results are given by combinations of analogous and analytic tests.

Selection tests are devised for particular firms, at their own expense. The Institute's investigator spends a considerable time in the factory, thoroughly studying the occupation for which tests are to be devised, and if possible learning it himself. He then makes an analysis of the main qualities, mental and physical which are required and experimentally devises tests for these qualities. Before, however, the tests are used for actual selection their validity is itself tested. They are given to a number of workers already with the firm, of whose efficiency some independent ranking is obtainable (either by means of output records, piece-rate earnings or the opinions of foremen and supervisors). Only if the ranking given by

GREAT BRITAIN

the tests is almost identical with the ranking previously obtained, are the tests considered valid.

The tests are made as simple as possible and remain the property of the firm - a welfare worker or other official being usually trained in their administration. Tests have now been devised, and are being successfully employed, in the selection of engineers, weavers, embroiderers, dressmakers, packers, wallpaper designers, chocolate and biscuit makers, leather workers, boxmakers, solderers, clerical workers, invoice machine operators, retail sales people, etc. Their use is favoured by employers - since they lead to increased output, reduced labour turnover and a more contented staff - and by workers, who are glad of the opportunity to "show what they can do" when applying for work, instead of being engaged or rejected as the result of a hastily conducted interview.

PRESENT POSITION OF WELFARE WORK.

Industrial Welfare Work in Great Britain has made no spectacular advance in the last few years but, nevertheless, in spite of continued trade depression, it has strengthened its position. It has secured a measure of official recognition in law. The compulsory provision of ambulance facilities has done much to give the whole movement prominence. The issue of "Welfare Orders" by the Home Office is a part of normal procedure and such orders have now been made in a number of trades where the nature of the work (either owing to its danger or discomfort or because of the handling of food products) makes special care necessary to secure health and cleanliness. Similar orders are also issued in connection with special permits to employ women and young persons on the two shift system. Further, in the coal mining industry, a definite allocation of one farthing per ton is made by law to the Miners' Welfare Fund, which is under the control of a specially elected representative committee who make grants towards the establishment and upkeep of local welfare schemes varying in detail from place to place but including very generally pithead baths, recreational and educational schemes. Finally the inclusion in the new Home Office Industrial Museum

GREAT BRITAIN

of a special Welfare Section emphasizes the fact that welfare work is no longer regarded as the ideal of the philanthropic employer but as the practical goal which all can attain.

An interesting feature of recent development is the variety of occupations in which welfare work is to be found. It is no longer confined almost entirely to the food trades and certain other industries employing large numbers of women and girls. Welfare work is now carried on in ship repair yards, steel works and engineering works where the employees are mostly men and boys. The Coal Mining Scheme has already been mentioned. Welfare Orders have recently been made in the herring curing trade and this experiment should be carefully watched as the conditions are perhaps unique in industry. Welfare in the textile trades, more particularly perhaps in cotton, has begun to emerge from the experimental stage and in the clothing trade is to be found in both the wholesale and retail sections. It is no longer limited to the productive side of industry but has spread to some large distributive concerns and even to the railways and great insurance offices.

The constantly recurring use of the term "Welfare Work" not only in the daily press but even in novels of contemporary life, is evidence that the idea has taken root in the popular mind, though it must be confessed that at present its content is vague and ill-defined. This however is not surprising since the work itself varies so enormously not only from trade to trade but even within the trade. The welfare work in a biscuit factory for example has very little resemblance to that in a mining village unless one looks beneath the surface and considers the principles and aims involved. It is perhaps even more difficult to trace the connection between the welfare activities in a small concern and those in a works employing thousands, where specialists are engaged in carrying on, each in his own sphere, elaborate experimental work with a view to improving working conditions and efficiency. Such variations, however, while they are admittedly a source of confusion to the superficial observer, are not a sign of weakness in the movement. On the contrary, if industrial welfare work is to

GREAT BRITAIN

fulfil its aim of healthier conditions of work, mental, moral and physical, for all engaged in carrying on the work of the community, it must prove itself adaptable to the inevitable variety in process, circumstance and personnel. Uniformity of aim must therefore issue in variety of method; anything approaching standardisation of welfare method would merely result in a loss of real effectiveness.

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To understand the industrial problems of the Irish Free State it must first be recognized that Ireland is not an industrial country. It is predominantly agricultural. Towns are comparatively small and few. The population (which is under 3,000,000) is chiefly composed of small farmers. Cattle breeding and the export of dairy produce is Ireland's main business. Through various circumstances - political and economic - Ireland has remained until recently an undeveloped land. Self-government has given a big impetus to industry and this has been revealed most clearly by the inauguration of the Shannon Electricity Scheme. Decided on in 1924 and begun in 1925, it aims at electrifying the whole country by means of utilising the Shannon water power. Standards and cables are now being set up and power will be available for agriculture as well as for industrial purposes. At a cost of £5,000,000 it is estimated that over 150,000,000 units of electricity will be available in a little over three years from the time when operations commenced. Ireland has long been handicapped by lack of cheap mechanical power. Coal has been imported from England and cheap human labour has been used to compete with power-driven machinery abroad. This had the effect of depressing labour conditions in Ireland and contributed to the labour troubles of 1913.

The European War resulted in a great demand for Irish goods in the English market. Irish labour shared in the general prosperity of the time and has largely retained better conditions and wages since. More recently the world slump in trade hit Ireland resulting in some wage-cuts, in unemployment and the shutting-down of businesses. However, there have been energetic attempts to remedy this. New industries have been encouraged and tariffs devised to protect Irish industries.

Chief among these new industries is the Beet Sugar Factory established at Carlow. In 1925 the Government made arrangements with a Belgian group to begin operations. A State subsidy is part of the scheme. In the season of 1926-27, 9,423 acres, distributed over eleven countries, were sown with beet

IRELAND

to meet the factory requirements. Eight hundred workers are employed at the factory during the seasonal "campaign" which lasts one hundred days. Continuous work - in eight hour shifts - is performed throughout this period. This year it is expected that 18,000 tons of sugar or roughly one-sixth of the total sugar requirements of the Irish Free State will be home-produced. Valuable by-products - fertilisers, feeding stuffs, etc. - are also available.

Typical of the new spirit of enterprise and energy are the measures that have been taken for the better grading and marketing of agricultural produce. Irish eggs have been greatly increased in value and this also applies to butter. The breeding of sheep and cattle is being put on a higher level by inspection and control.

Owing directly to the tariff policy three new large tobacco factories have been opened in Dublin. In the jam and sweet trades new firms have been established and existing factories have been developed as a result of the tariff. A similar impetus has occurred in connection with the manufacture of ready-made clothing, shirts and the furniture industry. In protected industries, since 1922, the increase in the number of employees amounts to 10,275 and takes no account of the expansion of other trades affected by their prosperity.

It is estimated that the Irish Free State contains about 10,000 factories and workshops. Industry, up till the present, might have been described as a side line. It is not surprising therefore that industrial thought and practice lag behind the industrialised countries. The Free State Government took over the British Factory Acts, 1901-20, and the Trade Boards Acts of 1909-18. Changes of machinery such as the setting up of new Trade Boards have been made. But these changes were departmental and involve no alteration in the framework of the Acts. These Boards cover such trades as the making of men's and women's clothing, hat-making, boot-repairing, paper-box manufacture and the tobacco trade. Employers and employees are equally represented, together with independent members. Under the Trade Boards Act of 1918, the Minister for Industry and Commerce may set up a Board in any trade

IRELAND

if he is of opinion that no adequate machinery exists for the effective regulation of wages throughout that trade. These Boards may fix for learners, rates lower than for skilled or adult workers on condition that the learners are given adequate facilities for learning their trade. The Trade Boards are therefore special machinery devised to deal with ill-paid or "sweated" trades. The shirtmaking Board, for instance, deals with home-workers as well as factory workers and special piece rates are prescribed. A large number of these out-workers live in scattered, poor districts of Donegal. In linen and cotton embroidery, rates are fixed for embroidered leaves and dots, according to size. Certain Trade Boards besides dealing with wages also declare the normal hours per week above which overtime rates must be paid. In the confectionery trade the normal week is fixed at 48 hours. In 1926 a Government Commission was set up to examine the whole question of technical education in relation to trade and industry. Evidence as to the failure of the existing system of apprenticeship was taken and recommendations have been made, in the Report just published, on the lines of the Apprenticeship Acts in operation in South Africa and other countries. Ireland has continued to take a keen interest in this question. At the International Labour Conference held in June 1927, Mr. R. C. Ferguson of the Department of Industry and Commerce, moved a resolution calling upon the International Labour Office to make an international survey and study of the means of entry into industry, of the methods of technical education and vocational guidance used in each country and issue a Report on the matter. This resolution, initiated by Ireland, was agreed to unanimously and an international survey of child labour legislation will be presented at the next session which will be held at Geneva in June of this year.

The Free State has taken an active part in the League of Nations and International Labour Office deliberations. It has ratified nine International Conventions dealing with labour conditions put forward by the International Labour Office. These are:

IRELAND

The setting up of public employment agencies under public control.

Prohibition of night work for women in industry.

Prohibition of the employment in industrial undertakings of any boy or girl under fourteen.

Prohibition of the employment of young persons in industry at night.

Prohibition of the employment of boys under fourteen at sea.

Prohibition (with exceptions) of the employment of children under fourteen in agriculture.

Granting workers in agriculture the same rights of combination as industrial workers.

Giving workers in agriculture the same rights of compensation as industrial workers.

Making provision that certain industrial diseases shall be regarded as accidents for the purpose of compensation.

The industrial inspection staff consists of twelve officers of whom two are women. They carry out inspection both as regards general factory conditions and Trade Board regulations. The administrative staff includes a Chief Inspector of Factories and a District Inspector.

So far as industrial welfare activities are concerned, these are not a conspicuous feature of Free State industry. But we are entitled to claim that what we lose in quantity we make up in quality. Certain welfare schemes, outside Ireland, have appeared to be merely the icing on the cake, giving no real indication as to the quality of the cake itself. In other words, because they do not penetrate the whole activities of the workshop they bear little relation to the actual working conditions. Visiting one of the largest firms in Dublin - a biscuit works - I was pleased to see that throughout the works every effort appeared to be made to make the employees, chiefly girls, feel that they were human beings, not merely "hands". The Welfare Department is closely linked with the general management. Girls and boys from fourteen to sixteen receive instruction in the factory school, which is recogn-

IRELAND

ised under the Education Department and gains the highest possible reports and grants. In the girl's schoolroom I saw from seventeen to twenty sturdy girls in blue overalls enjoying physical drill. The boys were being taught woodwork. Besides this the usual school subjects - including Irish - were taught. There were rows of shower baths which employees use after work. I was impressed by the "cost-price" dining room - a palace of glass set high in the building - which commands a view of the city right to the Dublin mountains. There is a library too for the girls' use and at ten o'clock in the morning they come in for their cup of cocoa and a ten minute rest. The surgery, rest-room and general health department are very well-equipped. An artificial sunlight apparatus has been installed. The group spirit seems to have penetrated the whole works. The superintendent explained that one of the first things they have to do is to conquer fear. The girls, I was told, are sometimes suspicious and untruthful at first because they are afraid. Soon they see that if they make mistakes the best thing is to own up. They come to look on the management with confidence. Anyone who knows the part played by fear in modern industry will realise how important it is to establish relations of confidence based on just dealing. Girls and boys who win prizes at the factory school are taken to the principal bookshop so that they may choose their prizes. The note of individuality is stressed. They are taken to museums, to Shakespearean drama, to the Spring Show and other places of interest. The girls dress dolls which are given to two children's hospitals in Dublin and to children in poor districts in the West of Ireland. The dolls are bought by the girls but the dressing is part of tuition. Throughout the works, chairs specially constructed for comfort are in use. Employees of over a year's standing cannot be dismissed without the sanction of the Work's Council on which the employees are represented. Much more could be said about the human relations in this works - which is the pioneer of industrial welfare in Ireland - but sufficient has been said to indicate the lines and spirit of the work. Another firm - a brewery - has the reputation of being among the most enlightened employers.

IRELAND

The directors not only concern themselves with the wellbeing of their employees at work but also have promoted a housing scheme under which hundreds of their employees get good houses at low rents. These two firms are among the largest employers in Dublin. Some of the tobacco firms which have opened up factories in Dublin have brought their welfare methods with them. Yet - with commendable exceptions - Irish employers in general do not concern themselves with the welfare of their workers. The Irish temperament does not take kindly to that rigid discipline which so often leads to a bleak, ugly "efficiency". Irish workers have not been industrialised so much as their fellows in England. This means that without special machinery human relations tend to establish themselves. Where welfare schemes have been introduced the Irish temperament appears to give them a more human note than is the case elsewhere.

The National Institute of Industrial Psychology with headquarters in London has been invited by four Irish firms to improve their methods. The details are as follows:

In a shirt factory, by methods which made the conditions of the workers happier and caused the firm no extra expense, the Institute was able to cut down, by more than half, the time previously elapsing between the receipt of orders and the dispatch of goods. The lay-out was greatly improved; a more efficient system of inspecting and tracing orders through the different processes was introduced; the canteen arrangements were made more satisfactory; the lighting was improved and protective devices installed.

In a laundry improvements were effected in methods of work and in the arrangement of the sorting room, wash house, calendery and drying, packing and dispatch rooms. Extensions of the laundry were planned, new forms of advertisement devised and the general comfort and well-being of the staff improved.

In a third factory, where the Institute has been working for more than three years, the study of labour turnover and accidents has led to important changes in policy, by the firm - changes which have produced excellent results. Better

IRELAND

systems of lighting and ventilation have been introduced, and an improved training scheme, together with an improved employment office, have been successfully established. Undue strain and spoiled work have been reduced by testing the vision of all new employees. Rest pauses and afternoon refreshment have been found to improve the mental and physical conditions of the workers and to increase the day's output.

In a fourth factory the introduction of improved benches in the soldering department increased output by ten per cent and greatly pleased the workpeople. Alterations in a "dryer" earned the congratulations of the engineers, the staff and the Managing Director, and resulted in labour being reduced by more than fifty per cent, no tins being manipulated at blistering heat, four tins being handled in the time it used to take to handle a single tin. Other changes reduced gas consumption by 30 per cent, brought about savings in labour of from 33½ to 50 per cent and lowered the temperature in the hottest shops by 30 per cent. Here, too, as in the third factory, selection tests were devised for new employees.

Many laundry workers are members of the Irish Women Workers' Union, a body which prides itself on being at least as much concerned in the improvement of working conditions as it is with hours and wages.

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ITALIE

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LA SITUATION GÉNÉRALE DE L'INDUSTRIE.

L'Italie industrielle de 1928 n'est plus dans l'état de prospérité de 1925, quand le rapporteur eut l'honneur de faire l'exposé de la situation pour le Congrès de Flessingue. Notre industrie traverse aujourd'hui une période de crise qu'on pourrait appeler une crise de révision, qui semble être en diminution, mais ne laisse pas de préoccuper les milieux gouvernementaux, les employeurs et les ouvriers. Les salaires, en effet, par suite de la revalorisation graduelle de la lire italienne, ont sensiblement augmenté leur pouvoir d'achat. Et après la stabilisation de la monnaie (décidée en Décembre 1927 à la parité d'un dollar = Lit. 19; une livre sterling = Lit. 92,46; une Lira oro = Lit. 3,66) l'épargne se trouve encouragée et s'étend.

Malheureusement, le triste phénomène du chômage apparaît dans certaines industries, surtout sous forme de réduction du nombre des journées de travail pour tout le personnel ouvrier.

On affirme, dans des milieux autorisés, que les $\frac{1}{4}$ des Maisons industrielles italiennes doivent exporter pour subsister. Or les industriels et surtout les exportateurs sont amenés à remettre à l'examen leurs principes de gestion pour proposer à leur activité de "management" de nouveaux objectifs à atteindre avec des méthodes radicalement changées.

L'arrière-plan législatif s'est, lui aussi, radicalement renouvelé. L'Etat fasciste a engendré précisément dans ces deux dernières années le nouveau Syndicalisme national. Les Syndicats en question, on le sait, ont un caractère obligatoire. Pratiquement, ils sont venus résumer dans un seul courant tous les différents mouvements d'organisation ouvrière, correspondant aux nuances politiques maintenant supprimées. Dans les "Corporazioni", qui se complaisent à se rattacher, même par leur nom, à de glorieuses traditions historiques, nous trouvons réunis, sous l'égide de l'Etat, et les employeurs et les employés. La grève et le lock-out sont devenus des délits, et les conflits du travail, qui ne parviennent pas à s'apaiser par des pourparlers directs entre représentants des industriels et des

ouvriers, sont obligatoirement déferés au tribunal de la "Magistratura del Lavoro", expression de l'Etat qui met un terme au différend.

Un autre phénomène ne peut être négligé dans l'examen général de la situation: l'émigration. Après la guerre, cette dernière s'est grandement réduite en vertu des mesures restrictives prises dans divers pays d'au delà de l'océan. De multiples énergies humaines, qui auparavant étaient amenées à s'offrir sur les marchés étrangers du travail, et pas toujours à leur avantage ni à celui de leur patrie, restent aujourd'hui en Italie et créent de nouveaux problèmes complexes pour l'équilibre démographique, question fondamentale pour l'Etat italien.

LES MESURES SOCIALES DU GOUVERNEMENT.

Dans le domaine de la législation sociale, il y a eu une copieuse floraison de 1925 à 1928. Il faut rappeler - avant tout autre acte officiel - la Charte du Travail du 21 Avril 1927 (date de l'anniversaire de la fondation de Rome et de la fête du travail en Italie): c'est une déclaration de principe par laquelle le Parti fasciste au pouvoir a voulu marquer les grandes lignes de sa politique sociale et préciser les règles de vie commune pour le monde du travail. A ce principe général se rattachent logiquement, même si elles sont de date antérieure, les diverses mesures législatives en matière sociale des cinq dernières années. Comme il est inévitable d'être superficiel, devant nécessairement condenser notre exposé, rappelons la loi de 1925 qui a créé l'Oeuvre Nationale du "Dopolavoro" (après le travail) - (Via in Lucina, Roma), dont le but est de donner aux travailleurs les moyens d'utiliser leurs loisirs d'une façon salubre, au point de vue physique, intellectuel et moral; notons la loi de 1926, en vertu de laquelle la grande majorité des exploitations industrielles et agricoles sont obligées de verser une contribution à l'Associazione Nazionale Prevenzione Infortuni (Via Marina, 5 - Milano), fondée en vue de prévenir les accidents et reconnue comme Institution Nationale ¹; le nouveau

¹ Pour faire face au dommage moral et économique des accidents du tra-

ITALIE

Règlement pour l'hygiène du travail, de 1927, le plus récent et - d'après des experts - le plus complet des Règlements semblables pour les Etats européens; la loi de 1927 qui a institué l'assurance obligatoire des ouvriers contre la tuberculose, prodrome de l'assurance générale contre les maladies.

L'Inspectorat de l'Industrie et du Travail - bien qu'obéré de tâches administratives - a continué son action silencieuse et avantageuse de défense du travail, en veillant à l'application de la législation sociale actuelle. La Caisse de la Maternité et de l'Enfance, récemment reconnue par des dispositions particulières de loi et pourvue de moyens financiers par de larges contributions, prépare ses cadres afin de poursuivre dans toutes les régions une oeuvre active de contrôle et d'éducation. Sous la menace d'une diminution possible, mais heureusement circonscrite et éloignée, de la natalité, de nombreuses institutions surgissent pour la défense de la mère et de l'enfant dans ses premières années.

LES MESURES DES INDUSTRIELS POUR L'ORGANISATION SCIENTIFIQUE DU TRAVAIL DANS LE DOMAINE TECHNIQUE.

Il faut certainement rattacher à l'initiative des industriels les premières affirmations pratiques de l'organisation du travail

vail - il s'en produit environ 500.000 par an, de graves et de légers, dans l'industrie italienne - fut fondée, dès 1894, par l'initiative des industriels, cette Association qui recueillait, en 1926, l'adhésion spontanée d'environ 6.500 établissements comptant plus de 800.000 ouvriers. Par Décret Royal du 3 Janvier 1926, l'Etat rendit obligatoire pour toutes les entreprises industrielles et agricoles l'adhésion à cette Institution: eh tout, sont confiés à sa tutelle environ 3.000.000 d'ouvriers et 10.000.000 de paysans.

Les objectifs de l'Association sont la vigilance technique sur les entreprises industrielles, par l'entremise d'un corps d'inspecteurs, l'étude de tous les problèmes relatifs aux mesures à prendre pour prévenir les accidents, aux expédients "à suggérer et - le cas échéant - à imposer", l'enseignement, dans les Universités, des règles à suivre pour prévenir les accidents, la propagande, etc.

L'organisation de l'Institution, dans sa forme nouvelle, n'est pas encore tout à fait perfectionnée: 90 ingénieurs exécutent déjà environ 60.000 inspections par an dans toutes les régions d'Italie; on a commencé aussi le travail de propagande, qui devra avoir une importance croissante; et déjà fonctionne un bureau technique pour l'étude des moyens mécaniques permettant de prévenir les accidents, une section de propagande (avec la Revue mensuelle "Securitas") etc.

ITALIE

en Italie, sous les rapports techniques. Le milieu où elle s'est formée, est la Confédération des Industriels - le centre corporatif des patrons et chefs d'industries; c'est là qu'est né le mouvement, justement dans ces dernières années: l'expression officielle du mouvement a été l'E. N. I. O. S. (Piazza Venezia, 11, - Roma), organisme exerçant son activité avant tout dans la propagande et qui groupe autour de lui de nombreuses adhésions collectives, parmi lesquelles ne manquent pas celles des Syndicats ouvriers; on reconnaît tout de même que dans l'esprit qui anime l'Institution, dans la pratique de chaque jour, c'est la mentalité, ce sont les directives des employeurs qui prévalent. Une ferveur de propagande, vaste et sans doute efficace, est due à cette Institution, si jeune encore d'années (sa fondation ne date que de 1926): une Revue, qui en 1928 est devenue mensuelle et présente, sous une forme élégante, les résultats de la contribution des techniciens étrangers et italiens de l'O. S.; divers concours, sur l'un desquels nous aurons l'occasion de revenir, comme sur l'oeuvre d'une Commission spéciale du "facteur humain"; deux collections d'ouvrages - l'une se composant de traductions des "classiques" de l'O. S. et l'autre, des premières recherches originales italiennes: voilà les systèmes principaux adoptés pour créer au sujet de l'O. S. un ensemble de documents qui ont excité un intérêt vraiment général.

Une excellente occasion pour imposer à l'attention un peu superficielle du grand public le problème de la rationalisation du travail, a été offerte à l'E. N. I. O. S. par le II^e Congrès International de l'Organisation Scientifique. Ce dernier, comme on le sait, eut lieu à Rome, en Septembre 1927 et la préparation en fut confiée à l'E. N. I. O. S. Les adhésions fort nombreuses et autorisées des techniciens et des hommes d'études, l'ensemble imposant des rapports présentés, l'adhésion chaleureuse du Gouvernement d'Italie, ainsi que celle de beaucoup de personnages étrangers et nationaux, accrurent l'importance des résultats de la manifestation, qui certainement servit à cimenter des convictions et à susciter des consentements nouveaux. Peut-être, comparés aux problèmes de la technique de la production, les problèmes du "facteur humain"

ITALIE

parurent-ils un peu sacrifiés à qui considérait la réunion à ce point de vue spécial. Mais cette disproportion possible (qui ne refléterait pas exactement l'esprit du mouvement international, tel qu'il est dans sa réalité) ne peut certainement pas être attribuée aux organisateurs du Congrès; ceux-ci recherchèrent avec le plus grand soin la collaboration des spécialistes de tous les courants de la pensée, et auraient accueilli les contributions d' "humanisation" avec le plus grand plaisir, si leur affluence eût été aussi large qu'elle était désirée et désirable.

L'E.N.I.O.S. a adhéré, dès sa fondation, à l'Institut International de l'O. S. (I. O. S.) de Genève, comme, les années précédentes, les chefs actuels de l'Institution avaient participé aux réunions de Prague, de Varsovie et de Bruxelles, du C.I.O.S. (Comité International de l'O.S.). Bien plus, celui qui fut appelé par le Congrès de Rome à présider l'I.O.S., ce fut l'Ingénieur italien Francesco Mauro, qui est également Président de l'E.N.I.O.S.

Une autre Institution italienne est d'une importance essentielle dans le domaine technique de la rationalisation: c'est l'U.N.I.M. (Foro Bonaparte, 16 - Milan), fruit des efforts de l'Association des Industriels mécaniques. Cette Institution se charge de faire les études et les enquêtes nécessaires à la création des s t a n d a r d s. Fondée en 1922, elle eut une activité très circonscrite jusqu'en 1925: ayant augmenté cette année-là, d'une façon sensible, ses ressources financières, elle put, en 1926, obtenir l'approbation définitive d'une collection de 64 feuilles, dont chacune décrit un standard. Pour 1927 - les comptes rendus officiels manquent jusqu'ici - on prévoyait de nouvelles standardisations en nombre encore supérieur. Toutes les enquêtes ont eu jusqu'à maintenant pour objet des matières intéressant l'industrie mécanique. L'U.N.I.M. a adhéré à l'Institut International pour l'Unification, dont on a jeté les bases à la réunion de New York (avril 1926).

Différentes forces coopèrent, même sans lien apparent entre elles, à la création et au développement de quelques essais d'organisation scientifique technique de la part de quelques

industriels entre les plus puissants et les plus conscients: "la leçon des faits" qui était clairement donnée par les succès obtenus dans les autres Pays - et dans les Etats-Unis en particulier - la pression de la concurrence qui a été apportée par ces succès, la complexité de la vie industrielle après la guerre, sous ses aspects financiers, démographiques et sociaux, invitaient l'industriel intelligent à réfléchir, à comparer, à juger. Et ces jugements furent évidemment défavorables aux principes traditionnels de la gestion, car nous voyons surgir çà et là, par génération spontanée, contemporaine, divers efforts correctifs, tendant spécialement - comme il est naturel dans les premières phases du mouvement - à influencer les facteurs techniques, mécaniques de la production. Qui est-ce qui entreprend cette oeuvre et soutient ces efforts? Généralement c'est l'industriel lui-même, ou quelqu'un de ses collaborateurs très proches, intimes; ce n'est presque jamais un spécialiste, un technicien de l'organisation. Le principe salulaire de la division du travail, peut-être par suite d'une habitude mentale propre à notre race, est encore mal mis en pratique en Italie. Il manque aussi à l'Italien, et quelque-fois à son industrie, une grande chose: ils sont "pauvres" et ne peuvent se payer certaines spécialisations. Tant il est vrai que, même à présent, c'est à dire lorsque plusieurs années se sont écoulées, depuis le jour où a commencé le mouvement, on peut encore, pour ainsi dire, compter sur ses doigts les "spécialistes" italiens; et peut-être faut-il recourir à ceux d'une société étrangère - la Société Bédoux - pour ne pas se trouver.... avec plusieurs doigts qui chôment.

Aux problèmes divers, des solutions diverses; pour des milieux profondément différents, des méthodes qu'il n'est pas possible de comparer entre elles; phases de développement poussées fort loin dans un endroit, embryonnaires dans l'autre. Mais si nous voulons essayer de spécifier un peu, nous devons constater qu'il n'y a que la grande industrie - et spécialement l'industrie mécanique - qui ait à son actif un groupe assez étendu d'innovations d'organisation rationnelle: les autres catégories de producteurs suivent de très loin; et l'on peut en dire autant des grandes administrations: les banques, les

ITALIE

assurances, les maisons de commerce et de transports: encore y a-t-il des exceptions - à rechercher toujours parmi les organismes les plus vastes - où l'on observe au moins en partie les lois de l'O. S. Les Institutions de l'Etat, naturellement prêtes à réagir sous les stimulants qui viennent des milieux gouvernementaux - ont commencé quelques expériences d'un vif intérêt (dans les bureaux de poste, sur une ligne de chemins de fer, etc.) et le succès de ces innovations servira beaucoup à encourager les incertains et les sceptiques. Au contraire, dans l'agriculture et dans l'économie domestiques, il semble moins probable que l'on arrive à de prochaines réalisations; dans l'un et l'autre domaine, ce qui agit certainement avec une grande puissance, ce sont les coefficients du traditionalisme.

Les milieux scolaires, ainsi que ceux qui s'intéressent à la culture, suivent avec cordialité le mouvement de l'O.S. et y collaborent. Tous les Instituts supérieurs des sciences commerciales et industrielles, toutes les écoles de perfectionnement professionnel et beaucoup d'autres Institutions, où l'on professe l'enseignement, et même celui de l'ordre universitaire, donnent des leçons et organisent des cours, des conférences sur la rationalisation du travail et du produit.

Pour conclure, on doit reconnaître que les efforts visant à l'application de l'O. S. dans le domaine technique, sont encore assez rares en Italie et - sauf un petit nombre d'exceptions - incomplets; mais on peut se consoler en constatant qu'un vif intérêt est né et se répand surtout parmi les classes cultivées et parmi les différentes catégories de patrons, pour le problème qui nous occupe. Comme indice de cette situation favorable, qui donnera bientôt de meilleurs fruits, nous pouvons citer ces paroles prononcées à la Chambre, en Mars 1928, par M. Belluzzo, Ministre de l'Economie Nationale, après un exposé de la situation de l'industrie nationale: "La nouvelle économie fasciste, dans la production, se fonde sur l'idée de rationalisation, c'est-à-dire de procédé de réorganisation, tendant à augmenter le rendement de la main d'oeuvre. Pendant tant de temps, on a parlé de droits et non de devoirs, mais passé le temps nécessaire pour déblayer le terrain de

ITALIE

cet ensemble de causes politiques et sociales qui exerçaient leurs pressions depuis des dizaines d'années, il est certain que l'on arrivera au maximum de réduction quant à l'emploi de la main d'oeuvre. C'est-à-dire que l'on appliquera un principe de rationalisation graduelle qui réduira les prix de revient, sans créer de chômage et accélèrera son propre rythme en proportion de la diminution de l'offre de la main-d'oeuvre"

ETUDES ET APPLICATIONS POUR LE "FACTEUR HUMAIN" DANS LE TRAVAIL.

Après avoir touché les différents problèmes collatéraux et mis, de quelque façon en lumière, les conditions de milieu: arrivons maintenant au point central de notre hâtif exposé: l'activité italienne se tournant vers les problèmes humains de la production.

L'activité scientifique. La cause, la condition nécessaire, le stimulant, et en même temps la limite des efforts tendant à perfectionner d'une façon durable les conditions du travail, c'est toujours l'investigation scientifique. Toute entreprise de ce genre fait inévitablement faillite, si elle veut s'emanciper des principes de la science, pour se fier au conseil illusoire de la "pratique".

Nous n'entendons certainement pas renfermer, dans un exposé en raccourci, tous les résultats que la science italienne a obtenus pour sa part en ces trois dernières années: c'est à d'autres, qui peuvent le faire avec une réelle autorité dans chacun de ces domaines, que doit revenir cette tâche géniale. Pour nous - comme simples chroniqueurs - en nous excusant, comme on dit habituellement, "pour les inévitables omissions", - nous indiquerons seulement quelques noms d'hommes d'études et de centres de recherches italiens: aux personnes diversement compétentes, qui parcourront ces notes, une indication - même aussi sommaire - suffira pour rappeler un objet d'étude, un courant de pensée, ou même seulement pour faire entrevoir une promesse, faire jaillir une espérance de nouvelles conquêtes dans les matières qui nous passionnent.

Dans nos cabinets universitaires de physiologie, avec Herlitzka à Turin, Foà à Milan, Gayda à Pavie, Ducceschi

ITALIE

à Padoue, Patrizi à Bologne, Aducco à Pise, Baglioni à Rome, Bottazzi à Naples, U. Lombroso à Palerme - l'école italienne, qui s'honore des traditions encore récentes et inoubliables de Mosso, de Maggiora, de Treves, d'Albertoni, a continué laborieusement et silencieusement ses recherches. Parmi les travaux les plus intéressants, nous rappelons celui de Mariano Patrizi, au titre et au contenu si suggestifs: "La Fatigue en flagrant délit" (préparé pour le B.I.T.), qui étudie avec d'ingénieux expédients le transport des bagages à la main et sur les épaules dans ses répercussions physiologiques sur le rythme respiratoire et cardiaque; et les récents travaux de G. Viale, appelé à occuper la chaire de physiologie à l'Université de Rosario (Amérique du Sud), travaux où l'on étudie, avec la méthode de la calorimétrie indirecte (examen des échanges respiratoires - méthode de Zuntz) la fatigue qui suit un emploi déterminé d'énergie humaine.

Un clinicien - Pende, de Gênes - a su trouver, avec l'appui moral, les moyens suffisants pour créer un "Institut biotypologique et orthogénétique" qui assujettit à des investigations morphologiques, physiologiques (donnant une importance spéciale à ce qui se rattache à l'endocrinologie) et psychotechniques, des groupes d'écoliers, de soldats, de travailleurs, pour recueillir les éléments pouvant servir de base à l'orientation professionnelle; parmi les collaborateurs qui assistent le prof. Pende, il faut rappeler le nom du Dr. Vidoni, qui dirige la section psychotechnico-pédagogique.

Les deux Cliniques du Travail - celle de Devoto à Milan et celle de Ferrannini, suivi ensuite de Castellino, à Naples (le groupe si autorisé et si connu des spécialistes des accidents et de ceux qui s'occupent de la médecine et de l'hygiène du travail en Italie) Pieraccini à Florence, Biondi à Sienne, Loriga et Ranelletti à Rome, Ajello, Nebuloni à Milan - ont préparé des études d'un caractère fragmentaire, parmi lesquelles nous rappellerons, par exemple, la recherche laborieuse et complète du Prof. Loriga sur les conditions hygiéniques des établissements de soie artificielle. Au VIIe Congrès de Médecine du travail (1927), qui a reparcouru - de Parme à Modène et à Carpi - les étapes principales de la vie

ITALIE

et de la gloire de Bernardo Ramazzini (fondateur de la médecine du travail, sujet de son ouvrage immortel "De morbis artificum", édité en 1700).

Que l'on nous permette d'ajouter - dans cet exposé succinct des recherches méritoires faites en Italie - le nom et les oeuvres d'un homme d'études, compatriote qui a mis son expérience et son dévouement au service de l'effort le plus imposant qui soit tenté dans le monde pour connaître et combattre les conditions pathologiques et insalubres du travail: Luigi Carozzi, chef de la Section d'Hygiène du Bureau International du Travail de Genève.

Dans le domaine des études de psychologie, l'Italie peut présenter quelques noms insignes: Sante de Sanctis, Agostino Gemelli, Federico Kiesow, G. C. Ferrari; elle a perdu un autre homme d'une grande valeur en Vittorio Benussi, qui s'est éteint à Padoue en 1927. Le travail des Instituts et Laboratoires universitaires - à part les cours généraux de théorie - touche divers sujets qui peuvent intéresser ceux qui s'occupent du "facteur humain". A Bologne, G. C. Ferrari et son fils Carlo Alberto (qui a même travaillé dans une fabrique pour l'"organisation humaine") font des recherches sur l'évaluation de la fatigue, et d'autres en font sur la continuité du travail, sur le rythme respiratoire dans certaines épreuves ergographiques, etc. A Milan, à l'Université Catholique, le Père Gemelli, entre autre choses, s'occupe de l'étude de quelques tests d'évaluation morale. L'oeuvre de Casimiro Doniselli, Directeur de l'Institut de Psychologie expérimentale de la Commune de Milan, mérite d'être mise particulièrement en évidence. Casimiro Doniselli a élaboré quelques tests collectifs fort intéressants pour le discernement des couleurs, pour l'attention, la mémoire, la capacité analytique et d'observation; il a inventé un appareil fohé sur le principe du stroboscope, le "phonogammoscope", qui rend visibles les passages de tonalité de la voix et qui a déjà eu des applications pour l'enseignement aux sourds-muets et pour l'évaluation immédiate de la justesse du ton chez les chanteurs. Il a aussi construit, en se basant sur les principes de Mosso, un instrument ingénieux et assez com-

ITALIE

pliqué - qu'il appelle "ergodynamographe" - avec lequel s'enregistrent les impulsions volontaires et les forces vives, non seulement des fléchisseurs du médius (comme fait l'ergographe classique) mais de tous les groupes musculaires du bras et de l'avant-bras.

A Rome, Sante De Sanctis poursuit ses études géniales sur la psychologie du rêve, des états mystiques, etc. Kiesow, à Turin, apporte une nouvelle et importante contribution à l'évaluation des perceptions tactiles et doulorifiques, des temps de réaction, etc.; son continuateur, M. Ponzio, va publier un cours de psychotechnique et il a élaboré une nouvelle méthode pratique pour évaluer chez les sujets la capacité de discerner des variations de pression, d'effort, de température.

Théorie et pratique. Les études théoriques dont nous venons de dire un mot, ont eu en Italie un développement beaucoup plus grand que les applications concrètes. A cause d'une certaine tendance, qui nous est propre, à la spéculation désintéressée, mais aussi en raison des caractères de notre industrialisme - jeune encore d'années et d'expérience - bien des conquêtes de la science sont restées sans application. De sorte que le sens critique, très étendu, de l'Italien, a beau jeu, quand il constate que certaines "découvertes", que s'attribuent de bonne foi des chercheurs étrangers, - trouvent leur origine logique ou leur base scientifique dans les recherches ignorées de quelques compatriotes, auxquels n'ont manqué ni génie, ni pénétration d'esprit, mais auxquels firent défaut les moyens matériels pour contrôler et appliquer les principes qu'ils avaient vraiment découverts. Dans le domaine de l'étude de la fatigue, pour citer un exemple, on connaît encore trop peu à l'étranger (bien qu'on les cite dans beaucoup de textes, pour en avoir entendu parler) les études originales de Mosso, de Maggiora et de Treves, admirables précurseurs, qui ont découvert beaucoup de lois physiologiques fondamentales du travail humain. L'ergographe apparaît à certains comme un appareil vieux jeu, un monument de l'histoire rétrospective, tandis que l'on pourrait peut-être encore obtenir de cet ingénieux instrument d'autres précieux et importants

ITALIE

éléments d'étude, comme a su le faire, par exemple, Mme Joteiko.

D'autre part - tout en demandant pardon de cette effusion de mauvaise humeur, due en partie à notre attachement personnel pour ces pures gloires scientifiques italiennes - il ne serait pas juste de déprécier les courageuses tentatives pratiques d'humanisation de l'Industrie, réalisées en Italie, uniquement parce qu'elles sont, qualitativement, moins considérables que les tentatives théoriques. C'est de différents milieux - publics et privés - que sont nées ces louables innovations.

L'initiative des industriels considérée comme classe. La Confédération même des Industriels qui a donné naissance à l'E.N.I.O.S., a senti le besoin d'instituer dans son sein, il y a un an, un Bureau d'Assistance Sociale (Piazza Venezia, 11 - Roma), dont la tâche est de constater, de propager et d'encourager les oeuvres créées par les industriels "au bénéfice" de leurs ouvriers. Le caractère "paternaliste" de cet organisme, dont l'activité ingénieuse d'ailleurs s'exerce sur une vaste échelle, est évident: mais à l'état actuel des choses et dans la majorité des cas, une idée plus moderne de l'esprit qui doit animer les oeuvres d'assistance serait peut-être prématurée et intempestive. Tous ceux qui ont médité sans passion sur ce sujet sont d'accord pour croire que l'ouvrier ne demande (ni agrée) à être encadré et contrôlé - même dans ses heures de récréation - par celui qui l'emploie. Mais dans la période initiale de tous les mouvements de ce genre, la phase "paternaliste" a été inévitable: avec l'éducation ouvrière, le sens de la personnalité ira, d'une façon corrélatrice, se perfectionnant chez les travailleurs, et, d'autre part, les industriels se rendront compte, par une oeuvre graduelle et habile de persuasion, de la nécessité de garantir l'autonomie des oeuvres d'assistance: ce sera l'histoire de demain. Quant à présent, on doit prendre acte, avec une sincère complaisance, de l'activité du Bureau d'Assistance Sociale, laquelle se manifeste dans une feuille bimensuelle ("L'Assistance Sociale dans l'Industrie), dans des opuscules, des enquêtes, des concours.

L'E. N. I. O. S. même a reconnu la nécessité de confier à une

ITALIE

Commission spéciale les études sur le "facteur humain"; cette Commission, présidée par le Prof. Medolaghi (Directeur de la Caisse Nationale d'assurances sociales) compte parmi ses membres des physiologistes, des économistes, des industriels. Son action publique s'est bornée jusqu'ici (avril 1928) à une réunion d'installation. Mais il est à notre connaissance que deux savants d'un mérite singulier ont préparé, précisément pour servir de base aux travaux de la Commission, d'appréciables études: M. Niceforo a élaboré un schéma des enquêtes statistiques et techniques, par lesquelles on poursuit une recherche sur les mouvements et la fatigue; M. Loriga, renfermant dans un résumé plein de bonnes idées qui a parfaitement mis à jour ses réflexions sur la fatigue dans le travail industriel, formule quelques propositions pratiques pour les investigations qui mériteraient d'être encouragées de préférence: quant à nous, Membres de l'I.R.I., qui avons entendu exposer une partie de ces idées par M. Loriga lui-même au Cours d'Eté de Baveno, il est intéressant de constater qu'il a tenu compte, dans cet exposé plus récent, de la contribution de quelques-uns des Conférenciers à cette réunion. La Commission du "facteur humain" de l'EN.I.O.S., d'accord avec le Bureau d'Assistance Sociale - dont nous venons de parler -, a organisé un Concours sur lequel nous devons nous arrêter un moment: il a été annoncé au public récemment avec l'annonce de 50.000 Lit. de prix; sujets à traiter: le premier, relatif aux oeuvres d'assistance, le second, concernant les applications au "facteur humain" des principes découverts par les études sur la fatigue, le mouvement, etc. Personnellement, nous concevons comme un tout idéal unique ces efforts, dus à diverses initiatives, qui - grâce à l'étude des formes de travail, du milieu, des hommes, ou à la vigilance hygiénique, sanitaire et sociale - tendent à la même fin: le perfectionnement de la production, en se servant des mêmes méthodes d'action: objectivité scientifique des investigations, esprit de coopération, mentalité de "service social". Et nous voyons par conséquent avec plaisir le rapprochement de ces deux sujets dans un seul concours. Il est permis d'espérer que l'on verra celui-ci mettre en lumière les efforts dont on

ITALIE

a jusqu'ici de si sommaires nouvelles, efforts d'un petit nombre d'isolés et partant plus méritoires.

Enfin, nous devons citer la constitution, qui a eu lieu à Milan dans les derniers jours d'avril, d'une Société pour les études de psycho-physiologie industrielle. La Société a été créée par le Rotary Club d'Italie, grâce à l'initiative de Mr. l'Ing. Umberto Quintavalle; elle est présidée par M. Luigi Mangiagalli - médecin et sociologue illustre, ex Maire de Milan et Ministre d'Etat. Déjà de nombreuses subventions - parmi lesquelles une considérable de 100.000 liras, d'un notaire et mécène milanais, M. Guasti - garantissent la vitalité matérielle de cette Institution, qui vient de naître sous de si favorables auspices qu'on peut facilement prévoir que sa contribution au progrès de l'idée en question sera des plus brillantes et intéressantes.

Oeuvres d'origine diverse pour le "service social" d'usine. On a déjà signalé, dans le Rapport de Flessingue, l'action de quelques Institutions ayant un caractère privé pour la création du "secrétariat social de fabrique". La première (fondé en 1921) - l'Institut Italien d'Assistance Sociale (Via Silvio Pellico, 8 - Milano) a commencé en 1927 à faire partie de l'Oeuvre Nationale "Dopolavoro" (après le travail) et a étendu d'une façon encourageante sa zone d'influence, qui comprend actuellement 15 établissements de Milan, Sesto San Giovanni, Verceil, Bisuschio, Maggiano, etc. (automobiles, électro-mécanique, lampes électriques, compteurs à gaz, carrières, etc.) auxquels sont attachées 10 secrétaires sociales qui consacrent leurs activités à au moins 15.000 ouvriers et même à leurs familles. A également progressé d'une façon remarquable l'Institut d'Assistance Sociale au travailleur", (Corso Roma, 53 - Milano), lequel exerce son activité en Lombardie et dans plusieurs grandes fabriques du centre industriel de Terni. C'est d'une façon analogue que s'est développée l'action due à la Compagnie de San Paolo (institution née d'un grand organisme catholique milanais, l'Oeuvre Cardinal Ferrari) - (Via S. Sofia, 5 - Milan), dont l'objet spécial est d'organiser des cuisines et restaurants de fabrique et d'assister

ITALIE

moralement les ouvriers: cette Compagnie a un caractère confessionnel déclaré; mais, près de quelques firmes, elle a accepté des fonctions purement techniques - spécialement pour l'alimentation ouvrière - dont elle s'acquitte d'ailleurs avec un esprit d'altruisme vraiment chrétien.

Il est un problème qui reste central, pour ces Institutions, c'est celui de la préparation professionnelle du personnel; il manque encore un ordre spécial et caractéristique d'études pour préparer les Secrétaires ou Assistantes Sociales. Une loi de 1925 a prévu l'ouverture de cours de perfectionnement d'un an, pour visiteuses sociales, réservés aux éléments féminins déjà pourvus du diplôme d'infirmière (deux ans, d'internat): mais jusqu'ici, à cause du petit nombre de candidates, ces cours ne sont pas encore régulièrement organisés. On doit donc se contenter, pour la préparation élémentaire, de cours rapides (trois mois environ) organisés par les Institutions directement intéressées à se procurer le personnel et complétés par un stage dans la fabrique. Le progrès du mouvement italien est certainement conditionné par la prompte et heureuse solution de cet aspect essentiel de l'organisation de l'assistance.

Une autre Institution, que nous avons le devoir de citer, est "La Vigile" (Via Ospedale, 20 - Torino), bien qu'elle ait un caractère plus étroitement sanitaire et de prévoyance contre les accidents, plutôt que social: c'est un corps de médecins qui - selon des systèmes économiques et standardisés - se chargent de la gestion des infirmeries et des services médicaux dans les fabriques. Elle a été récemment absorbée par la Confédération des Industriels, qui - à ce point de vue encore, se préoccupe de rendre service à ses organisés - et certainement, grâce à la plus grande autorité qui lui viendra de cette nouvelle combinaison, elle élargira encore sa sphère d'action déjà fort vaste.

Une belle campagne de propagande sociale, se reflétant sur tous les problèmes de l'hygiène et de la prévoyance, mais considérant plus particulièrement celui de l'assistance aux travailleurs, a été menée, dans ces dernières années, par l'Institut d'Hygiène, Prévoyance et Assistance Sociale

ITALIE

de Rome (Palais Sciarra); fondé et dirigé par le Prof. E. Levi, ardent défenseur de tout progrès social. Cette Institution, qui s'est greffée sur le puissant organisme dépendant de l'Etat, lequel se charge de l'assurance obligatoire contre l'invalidité et la vieillesse (Caisse Nationale d'Assurance Sociale - Rome), continue à publier sa Revue "Défense Sociale", et offre aux hommes d'études l'aimable hospitalité de sa très riche bibliothèque, contenant de nombreux et récents ouvrages du monde entier sur les sujets qui nous intéressent.

Oeuvres d'orientation professionnelle. Elles ne sont pas encore très développées en Italie, du moins pour le moment, et pourtant les chercheurs ne manquent pas, qui, recrutés surtout dans la classe des médecins, tournent constamment leur attention vers ce problème. C'est plutôt dans les milieux scolaires que nous trouvons - et c'est naturel - des exemples d'autant plus louables qu'ils sont moins fréquents: depuis le Service d'Orientation de Rome, dirigé par la Desse, Gasca Diez (près de l'école élém. Grazioli Lante), jusqu'à celui qui a été créé à Turin par le Prof. Dr. Pizzoli et par l'Ing. Fossati (Institut Industriel); de plus, il existe à Gênes, en faveur des orphelins de guerre, un service fondé par le Dr. Vidoni; à Milan, un autre est en préparation, par les soins des Drs. Doniselli et Albertini; à Modène, enfin signalons le service de l'Ecole F. Corni, etc.

Il manque jusqu'ici un lien commun entre ces Institutions locales, il manque aussi des descriptions soignées des différents métiers, et il n'y a pas même, malheureusement, une collaboration constante entre les Institutions d'orientation et l'industrie; en somme, il y a encore bien du chemin à parcourir en cette matière; mais on le parcourra, parce que, parmi les médecins et parmi les membres de l'enseignement, l'intérêt pour l'idée va se généralisant, et de toute part germent des propositions qui devront bientôt se traduire en actes.

OEUVRES POUR LA SELECTION, POUR L'ETUDE DE LA FATIGUE ET EN GENERAL POUR L'ORGANISATION HUMAINE DU TRAVAIL.
L'aviation militaire et civile est le domaine où la sélection est appliquée en Italie de la façon la plus large et

ITALIE

la plus systématique. Les recherches et les applications faites pendant la guerre par le physiologiste Herlitzka, par le biopsychologue Gemelli, et ensuite continuées par le regretté Galeotti, par Aggazzotti, par Bilancioni et - selon les directives de Patrizi - par Casarini, ont donné naissance à trois Instituts physio-psychologiques permanents (à Rome, à Turin, à Florence) lesquels se chargent d'assujettir tout le personnel de navigation aérienne à des visites d'enrôlement et ensuite de contrôle. Ces Instituts sont actuellement dirigés par des médecins militaires et une Commission technique de savants militaires et civils préside à tout leur fonctionnement. Les méthodes adoptées et tout l'outillage en partie imaginé expressément pour ces visites - dont le nombre, pendant la guerre seulement, s'éleva à plus de 26.000 - forcèrent l'admiration des divers experts étrangers, qui vinrent étudier la question en Italie; si bien que trois Etats déjà: le Japon, l'Argentine et la Roumanie, ont adopté in toto les méthodes et les appareils italiens, pour fonder des Instituts analogues de sélection dans l'aviation.

La visite à laquelle s'assujettissent les aviateurs, consiste en une rigoureuse détermination des antécédents (famille - habitudes - antécédents d'entraînement - maladies et blessures déjà contractées ou reçues - symptômes subjectifs) suivie d'une série de relevés anthropométriques, cliniques, morphologiques, endocrinologiques. On soumet par conséquent à des examens minutieux les différents appareils de l'organisme: pour l'appareil respiratoire, le pneumographe, le spiromètre Grazzi, l'épreuve du vent artificiel, etc.; pour l'appareil circulatoire, le cardiographe et le sphygmomanomètre, pour déterminer, dans des conditions différentes, les différences du rythme cardiaque, l'épreuve de résistance aux variations de pression barométrique (chambre pneumatique); pour les appareils digestif et uro-génital, des épreuves plus sommaires. Viennent ensuite les relevés sur la sensibilité générale (esthésiométrie), dolorifique, thermique (barosthésie, batiesthésie, stéréognosie); les examens, objectif et fonctionnel, du nez, de la gorge, de l'oreille surtout pour la fonction statique du vestibule, avec les épreuves thermique, galvanique, de la rotation

(Bilancioni), de l'indication, du sens de position et de verticalité (carlingue de Malan); de l'oeil, acuité, adaptation, réfraction, champ visuel et champ du regard, vision crépusculaire (Gradenigo), stéréoscopique, chromatique. On passe ensuite à l'étude des fonctions motrices volontaires, avec des dynamomètres, l'ergographe digital de Mosso, l'ergographe crural de Patrizi, avec le tapping (vitesse des mouvements), avec l'ergoesthésiographe Galeotti (sens musculaire); aux études des reflexes superficiels et profonds, du dermatographisme. Et l'on arrive à l'examen psychique de l'émotivité (plétismographe de Mosso et gant volumétrique de Patrizi, même combiné avec pneumographe, spymographe et trémographe de Lugiato) du temps de réaction simple et avec choix (dispositifs à "cloche" d'Aggazzotti), de la vitesse de perception (appareils de Gemelli et de Galeotti), de l'attention dans ses diverses formes.

Ces divers examens sont faits chacun par des spécialistes et c'est le Directeur de l'Institut qui, sur la base des résultats obtenus, prononce le jugement de sélection. On a prévu douze catégories d'imperfections physiques et d'infirmités qui sont cause d'inadmission. Il serait intéressant de rapporter les règles très opportunes de l'évaluation "pondérale" des différentes épreuves, évaluation qui est également influencée par des observations générales sur les caractères physiopsychologiques et sur le maintien du candidat, surtout au double point de vue volonté et inhibition. Le pourcentage des réformés - au moins pendant la guerre -, s'est élevé semble-t-il, à 30-40% des candidates. Il ne nous a pas semblé inutile de mettre en lumière par quelques détails cette méthode de visite, parce qu'elle atteste une rigueur et une profondeur de principes dont nous verrions avec plaisir, dans la mesure du possible, étendre l'application aux visites de sélection des ouvriers.

Depuis quelque temps, dans les Chemins de fer, on met en évidence l'opportunité d'un examen psychotechnique complet pour les chauffeurs et les aiguilleurs: mais, en dépit de la propagande faite par un des médecins les plus autorités des Chemins de fer - le Prof. Diez - jusqu'ici les épreuves aux-

ITALIE

quelles sont soumis ces employés des chemins de fer, se bornent au domaine des sens, en particulier aux perceptions de la vue et de l'ouïe. Rien de plus.

Quant aux conducteurs des tramways, l'unique innovation qui nous soit connue est celle de l'administration des Tramways de Milan (Foro Bonaparte, 61), laquelle a installé un cabinet physio-psychotechnique, pourvu de tout le nécessaire et y a fait commencer en 1926 des visites de sélection. La méthode qui y est suivie est encore rigoureuse et prudente: d'autre part, le pourcentage des candidats refusés peut aussi être relativement élevé, étant donné qu'aux concours organisés pour les employés des tramways, il se présente toujours un nombre de candidats largement supérieur au nombre des places vacantes. Nous n'avons pas jusqu'ici de données précises sur les résultats de ces visites, surtout en ce qui concerne la détermination, même sous forme de tendance, des aptitudes préférables pour le conducteur de tramways.

Si, dans les exploitations ayant un caractère public, on a seulement commencé, jusqu'ici l'organisation humaine, et - peut-on dire - exclusivement pour ce qui se rapporte à la sélection, dans les exploitations ayant un caractère privé, malheureusement, on en est presque encore au même point.

Il n'y a pas jusqu'ici de sérieux examens physio-psychiques pour les conducteurs de véhicules automobiles: et c'est dommage, parce que c'est ici que l'opportunité logique, et scientifique de cet examen a été proclamée - probablement pour la première fois dans le monde entier - par le psychiatre Petrazzani de Reggi Emilia, cela dès 1907 (Rivista di Freniatria), et la même nécessité a été chaleureusement proposée, de façon encore plus explicite, par M. L. Patrizi, en 1909, lorsque les études psychotechniques de Münsterberg étaient encore ignorées et peut-être, même, n'avaient pas encore été commencées.

Mais c'est dans l'industrie privée que l'organisation humaine du travail doit s'affirmer par sa propre vertu et sans l'aide de considérations concomitantes d'un autre genre, telles que

ITALIE

la défense du salut public. C'est dans les industries privées - où les préoccupations du lucre et de la concurrence sont vives et immédiates - que l'organisation humaine du travail doit fournir une preuve plus directe et plus prompte de sa capacité "économique": si "it pays", comme disent les Anglo-Saxons, - si elle engendre des résultats avantageux pour la production, la preuve est favorable et réussie. Autrement, nous sommes dans le royaume de l'Utopie.

Dans l'industrie privée italienne, nous trouvons très peu d'exemples de véritable organisation humaine et encore ces exemples sont-ils incomplets. Nous mentionnerons sommairement l'histoire et les caractères de l'un d'eux, pour donner une idée - en citant des faits - de ce qui se pratique chez nous. Devant choisir, par force, l'exemple de l'organisation la plus développée et la plus complète, nous sommes contraints de parler d'une chose qui n'est pas étrangère à l'activité personnelle de l'auteur de ce rapport: et de cela, nous demandons pardon.

A la Fabbrica Italiana Magnetti Marelli (Sesto S. Giovanni - près de Milan; environ 1500 ouvriers, dont 200 femmes), il existait déjà, depuis sa fondation (1921), des oeuvres très développées d'assistance sociale. En 1924, l'Institut Italien d'Assistance Sociale y avait créé un "Secrétariat de Fabrique" s'occupant, avant tout, de "welfare work": assistance sanitaire, morale, intellectuelle: visites médicales générales et visites de spécialistes, visites à domicile, cours d'économie domestique, bibliothèque circulante, restaurant de fabrique avec cuisine intérieure, oeuvres de bienfaisance variées, excursions ouvrières, repas supplémentaires pour les prédisposés à la tuberculose, cabinet de consultations pour nourrissons, etc. Toute une floraison de belles innovations, réalisées selon les idées de la Direction, par une vaillante et laborieuse "secrétaire sociale", qui avait aussi le brevet d'"assistante sanitaire" (visiting nurse).

La nécessité d'un médecin de fabrique fut sentie dès le premier moment, et bien qu'entre autres choses la visite des victimes des accidents du travail fût confiée à ses soins, la Direction et les organisateurs du Service virent tout de suite

ITALIE

qu'on pourrait faire encore d'avantage. Mais la préparation fût longue et pénible. Il fallut environ deux ans pour arriver à outiller un cabinet psychotechnique; mais en attendant on avait mis en train l'exécution de relevés de la production (statistique du rendement) et de travaux embryonnaires d'observation sur la fatigue, surtout en ce qui concernait l'élément féminin du personnel. En 1925, on instituait deux pauses, d'un quart d'heure chacune, pour interrompre l'horaire (8-12h. et 13-17h.), et il fut possible de démontrer que ces pauses, loin de représenter une perte pour le rendement, produisaient - au contraire - une petite augmentation (4 % environ). Après une période de moindre activité, due à des changements du personnel dirigeant, on arrive - en 1927 - à une réorganisation du Service sur les bases suivantes: ce Service se détache du Secrétariat Social, qui continue à être administré d'après les mêmes principes et, bien plus, il élargit son action; il se sépare aussi du service médical des accidents, confié à un autre médecin; le service de l'organisation humaine (ou bureau physio-psychique) s'occupe dorénavant et exclusivement de la détermination des aptitudes, de l'étude de l'exécution du travail, des recherches sur la fatigue, sur les mouvements, etc. Son personnel est composé de trois personnes: un dirigeant, chargé de la partie psychologique et sociologique (part time: trois heures par jour) un médecin, chargé de la partie physiologique (part time: quatre heures par jour), et un technicien, chargé des tâches statistiques, techniques, administratives (huit heures par jour). Dans l'année 1927-28, ce Service a mené à bien de nombreuses innovations qui toutes tendent aux mêmes fins: rendre le travail, autant qu'il se peut, moins fatigant, moins malaisé, moins dangereux et plus fructueux, plus agréable pour les ouvriers; amener une augmentation de la qualité ou de la quantité de la production, pour l'industriel. Evidemment ces deux objectifs ont des points de contact; mais les considérer comme distincts entre eux et envisager toujours le problème aux deux points de vue différents, c'est, peut-être, ce qui représente le "punctum saliens". C'est ce que nous tâcherons de rendre plus clair, en examinant de plus près chacune des oeuvres en question.

ITALIE

L'entrée au travail de tous les ouvriers et employés, est subordonnée à une minutieuse visite physio-psychique, faite par ce Service: elle dure de 45' à 1h. 30, et comprend, selon la place pour laquelle on est proposé, une série d'épreuves et de tests choisis opportunément. On fait aussi des visites de contrôle pour les transferts et les renvois; on assujettit à une révision les ouvriers qui rentrent après une maladie ou une absence. En corrélation avec cette action, on a établi, comme mesure provisoire, au moyen de visites spéciales faites sur le personnel déjà habile (les "standards"), des tableaux d'aptitudes pour quelques-uns des travaux les plus caractéristiques et les plus importants. Les études et les recherches qui peu à peu se poursuivent, permettent de parfaire ces tableaux dans leurs divers détails. Et ainsi, d'autre part, on complète de plus en plus, par l'acquisition et la construction de nouveaux instruments et par l'adoption de nouveaux tests, l'outillage des preuves. Ce dernier comprend, outre différents appareils pour mesurer la respiration, la circulation, etc., de nombreux instruments pour vérifier la capacité des sens, une série de dynamomètres, un ergographe Mosso, pour les études sur la fatigue, un mesureur des temps de réaction à un stimulant acoustique, visuel ou tactile, maints dispositifs pour tests analytiques et synthético-professionnels. On fait exécuter encore quelques preuves mentales, surtout sur l'attention et sur les qualités élémentaires de l'intelligence (350 visites environ ont été faites par ce Service dans l'année 1927-28).

Une notable partie de cette activité s'applique aussi à l'étude de la fatigue, par exemple par les recherches pour améliorer la position durant le travail* et pour réduire les conditions nombreuses et diverses qui font obstacle à la marche régulière de la production (aération, éclairage - vérification avec le luxmètre -, température et humidité rationnelles, eau potable, oscillations, etc.). Pour affronter un problème très grave - les accidents du travail - qui est en même temps cause et effet de la fatigue, fût constitué le premier "Comité de Sécurité" (dont

* Dans cet ordre d'idées, on a imaginé un modèle de siège rationnel, réglable, avec appuis pour le dos et pour les pieds.

ITALIE

font partie des contre-maîtres et des ouvriers) qui a commencé à fonctionner et dont les activités sont: l'institution du "tableau de la sûreté", l'organisation de relevés statistiques réguliers, la création d'un concours contre les accidents du travail, avec caractère sportif, etc.

La partie la plus délicate et la plus importante de la tâche du Service, est toutefois représentée par les études relatives aux méthodes du travail. Elles commencent toujours par une enquête minutieuse (process chart) sur les conditions du milieu, sur le flux des matières premières et du travail, sur les qualités individuelles des ouvriers (visites physio-psychiques), sur le rendement; puis, en vérifiant patiemment et en isolant chaque "variable" qui influe sur le travail auquel on applique l'analyse des mouvements élémentaires (therbligs), on effectue les relevés photo-cinématographiques quand il le faut, le mesurage chronométrique des temps; enfin, on expérimente les modifications suggérées par ces examens, on détermine la durée et le nombre préférable des pauses de repos, le rythme et les aptitudes personnelles qui semblent répondre le mieux à la nature de la tâche, etc. Ce cycle de vérifications n'a été appliqué jusqu'ici que partiellement et dans trois cas un peu fragmentaires. Mais à présent on est en train de faire une enquête complète, qui a entrepris de considérer une section (préparation et montage des condensateurs) occupant une quarantaine de jeunes filles.

Dans l'étude des aptitudes - comme dans celle de la fatigue - et dans celle des méthodes de travail, ce qui domine toujours c'est la préoccupation, dont il a déjà été parlé, d'envisager chaque problème au double point de vue (production et homme). Et ainsi se présente une différence inévitable entre ces nouvelles tâches et celles des hiérarchies que l'on rencontre habituellement dans l'industrie, lesquelles se proposent, et cela, de leur point de vue est logique, un seul objectif: "la production", et par conséquent sont amenées parfois à ignorer ou à subordonner l'autre facteur: "l'homme". C'est dans ce contraste d'opinions et de méthodes - qu'il importe naturellement de maintenir dans les termes les plus courtois et les plus sereins - que réside l'obstacle le plus grave s'opposant aux

progrès de l'organisation humaine. Et cela suffirait à expliquer pourquoi sont encore circonscrits et exceptionnels les exemples où s'affirme, avec un caractère précis, cette tendance moderne ou - pourrait-on dire - appartenant à l'avenir. Mais il y a plus.

Organiser les aspects techniques, est chose en certain sens facile, parce qu'il s'agit, dans la plupart des cas, de réaliser - dans la pratique - les aspirations, les idées d'ordres, de promptitude et de précision que tout esprit équilibré d'organisateur professe déjà et entrevoit plus ou moins clairement devant soi. Organiser les aspects humains, est, au contraire une chose beaucoup plus malaisée, parce que l'on doit pour cela, le plus souvent, contrarier, au lieu de seconder, quelques tendances enracinées dans le cerveau des dirigeants, vaincre bien des préjugés instinctifs, dictés par le traditionalisme, même aux ouvriers qui pourtant sont plus directement favorisés par les nouvelles méthodes. Evidemment, l'industriel - qui en a les moyens - a plus vite fait de changer toutes les machines ou de modifier le flux de travail, que de faire adopter dans son exploitation certaines mesures contre la fatigue - par exemple, les sièges pour les ouvriers - ou contre les accidents comme la protection contre les éclats, au moyen des lunettes pour le travail.

Il ya une autre différence défavorable aux systèmes d'humanisation que nous pouvons noter: leurs fruits réels, qui ne manquent pas et parfois sont abondants, sont ordinairement moins apparents et semblent moins concrets que ceux qui proviennent des perfectionnements techniques. La complexité même, la variabilité et l'incoercibilité de la nature humaine - qui est l'objet de ces mesures - font que les répercussions réelles de ces dernières ce trouvent partiellement insaisissables ou ne peuvent être que mal évaluées.

Ce sont des singulières difficultés que celles que nous venons d'exposer. Mais il ne suffirait pas encore d'avoir vaincu ces résistances ces faits négatifs: il faut encore proclamer et établir comme règle de vie deux faits positifs, deux idées courageuses.

Il faut avant tout que les chefs et ceux qui sont placés sous

ITALIE

leurs ordres acceptent comme principe essentiel et règle de chacun de leurs actes l'objectivité des jugements (justitia fundamentum regni...) Il faut donc qu'ils affrontent avec un esprit serein et dépourvu de préjugés, toutes les situations que crée la vie en commun durant le travail. Il faut qu'ils fondent chacune de leurs actions sur des vérifications et des contrôles non influencés par les passions, par le personalisme, par le traditionalisme.

Et il faut enfin que toutes les parties en cause admettent en théorie et, consciencieusement et loyalement, ne perdent pas de vue, dans la pratique, l'autre grande idée féconde: la dépendance réciproque. Qu'ils collaborent dans la pensée et dans les actes, avec estime, avec cordialité et bonne volonté.

A qui saura réduire ces difficultés et appliquer avec foi ces principes, le succès ne sera par refusé. Et le prix de l' "assainissement industriel" sera immanquable et inestimable. Les résultats de cet "assainissement", quand il est enfin donné de les atteindre, ont une importance et une profondeur singulières: autre effet, celui-ci, dérivant du fait que c'est dans le domaine de l'esprit que ces résultats sont obtenus. De grands phénomènes sociaux, comme ceux de la circulation ouvrière (turn-over), de l'éducation professionnelle et civile des masses, de l'augmentation des produits, de la diminution des prix et de l'amélioration du niveau général de la vie, ressentent l'influence bienfaisante des mesures d' "assainissement". Et, chose essentielle entre toutes, naît, ou plutôt, renaît, un admirable résultat: la confiance. Elle se crée - ou plutôt, elle recommence à se créer, au delà de la parenthèse des siècles, comme jadis dans la vie commune et familière de la "bottega", de l'atelier où l'artiste-artisan réunissait ses élèves, ou de la "corporation" du moyen-âge - cette atmosphère de sincère, d'effective bienveillance du travailleur à l'égard de ceux qui lui donnent du travail et, par réciprocité, cet attachement de ces derniers pour le travailleur. C'est là probablement le besoin le plus vif de notre civilisation; bien plus, ce serait son soutien le plus solide et le plus sûr, présage d'autres progrès à venir.

ITALIE

Hans Sachs, incarnation de l'état d'artisan, qui dans l'immortel "opéra" "Les Maîtres Chanteurs", alterne ses chants avec le rythme solennel et joyeux de son marteau de cordonnier, connaissait et enseignait la joie du travail; la machine, la vapeur, l'électricité et les autres conquêtes techniques des deux derniers siècles, ont tari et presque supprimé cette joie. Puisse-t-elle - pour le bien de l'humanité - revenir et ramener le sourire et le chant sur les lèvres mêmes du plus humble des travailleurs.

JAPAN

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Speaking in a general way concerning the development in Japan of that aspect of scientific management known as human relations, we may say at the outset that although Japan is in her industrial infancy she is nevertheless rapidly entering the field of large scale industrialism, and is aware of the necessity of studying the human side of scientific management. Still in the experimental stage of this kind of scientific management, Japan lacks the precise information and statistics requisite for a comprehensive treatment of the subject. Except for some fragmentary reports and partial statistics that have been published from time to time by the government, a few municipalities or certain research institutes, Japan offers but little data on which to base a report such as I would like to offer at this Congress. In view of the limited information available my report, therefore, cannot be regarded as a complete handling of the subject with which it deals. I ask that you regard it rather in the light of a general survey, but one on which I have bestowed the utmost care and effort to make it as complete as possible under the existing circumstances.

INDUSTRIAL PSYCHOLOGY.

Fifteen years ago Japan, realizing the constantly increasing interest taken in this subject in Europe and in America, began her own study of it, and many large industrial firms have been experimenting with the application of industrial psychology as a means of ascertaining what particular job the worker is best qualified to fill. In many cases such tests are made at the time when the worker applies for employment, and some of the most progressive concerns now employ such tests for those already on the pay roll, in order to make certain that each worker is on the job for which he is best suited. Amongst the firms and organizations which are employing industrial psychology along scientific lines in some form or other, we find such trades as the following: drugs and chemical products, hosiery, silk, cotton, porcelain, tobacco, and we may also mention the railways under government control.

JAPAN

Apart from these organizations, where industrial psychology is being actually applied, there are a number of institutes which conduct research work on this subject and in addition on many other phases of the scientific management of labour. The three chief institutes directing their attention to these subjects are:

Sangyo Noritsu Kenkyujo. of Tokio (Research Institute for Industrial Efficiency).

Osaka Sangyo Noritsu Kenkyujo. of Osaka. (The Osaka Institute for Industrial Efficiency.)

Rodo Kagaku Kenkyujo, Kurashiki, Okayama. (Research Institute of Labour.)

These research bodies undertake investigations and experiments not only for their own study but also, in some cases, to assist industrial firms in determining and drafting suitable rules, regulations and methods of procedure on matters relating to the workers in their plants.

It was not until the close of the great European war that public attention was directed to this kind of scientific treatment of labour. As soon, however, as the war was over there arose an urgent need of finding employment for the very large number of workers who had been discharged during the period of depression. Faced with this situation, the government inaugurated a number of labour exchanges, for the purpose not only of giving work to the unemployed but also of giving them vocational guidance as well. This example was followed by municipalities in big industrial towns and cities, and now there are today a great many such public labour exchange offices throughout the empire. In respect to vocational guidance, taken in its strictest sense, their work cannot yet be described as complete.

Besides these governmental bodies, we have three private institutes known as the Shokugyo hoda kai (Association for Occupational Guidance) established in Tokio, Osaka and Kobe, and which are maintained from a fund contributed by a philanthropist. At these institutes are given courses and lectures designed with special reference to the different types of occupations in which workers may be engaged, and training

JAPAN

is given in whatever particular occupation the worker seems best fitted for. In addition to these general organizations there are certain special ones which aim at giving children vocational guidance. The chief are:

Toko-fu Shonen Shokugyo Sodanjo (Juvenile Labour Consulting Office), established by the Tokio Provincial Government.

Aichi-ken Jido kenkyo jo (Child Labour Investigation Office), established by the Aichi Provincial Government.

Shonen sodanjo (Juvenile Labour Consulting Offices), established by the municipalities of Kioto and Kobe.

In these organisations an attempt is being made to study children and youths physically and mentally in order to discover the most suitable occupations for them to engage in.

Recently an important negotiation has been conducted between the Home Office and the Department of Education on the subject of founding a big central organization for the vocational guidance of juvenile labour. Another plan is on foot to start an institute for vocational guidance for experts in the fields of psychology, education and medical science.

VOCATIONAL SELECTION.

The first actual experiment in this form of scientific management, as applied to workers, was made in 1915 at the Government School for Torpedo Engineering among the crews in the Navy and also among the workers of the Naval Arsenal at Yokosuka. The successful result of this undertaking led the Department of Communications to establish in the Department an institute for studying the workers' psychology, and through which, by means of examinations and vocational selection, the employees could be assigned to jobs for which they were best qualified. The fact that industrial psychology is receiving attention in both the Government Railways and Government tobacco factories is an indication that this type of industrial management in regard to labour is not overlooked in other Government undertakings. Amongst the private industries a good many of the progressive firms practise vocational selection both in hiring new workers and also for

JAPAN

those already in their employ, in order to ensure the right man being in the right place. In the cotton spinning industry, where a large number of female workers are employed, vocational selection in connection with various forms of psychological experiments, physical fatigue tests etc, are very much in evidence.

Some of the most progressive firms employ specialists for a scientific study of their workmen as an aid to vocational guidance; the aim being to augment the workers' efficiency through elimination of fatigue by motion study in reference to the particular job in hand.

EDUCATION AND TRAINING FOR ALL GROUPS IN INDUSTRY.

In response to inquiries made by the Ohara Research Institute of Social Sciences it was found that, through the enterprise of private employers, the following forms of group education are in existence.

Re Continuation School: out of 229 factories interrogated 100 or 43.67 % reported as having it.

Re Technical Education: out of 198 factories interrogated 49 or 24.75 % reported as having it.

Re Art and Technical Education for Female Labour: out of 240 factories interrogated 49 or 20.41% reported as having it.

Besides these major educational activities there are throughout the industrial cities and towns a great many short course schools, lectures and evening schools for workers in general. These are conducted by municipalities or corporate bodies, and workers whose employers make no provision for continuation schools and the like have a fairly good opportunity of learning at these schools.

INDUSTRIAL WELFARE WORK, PERSONNEL AND EMPLOYMENT MANAGEMENT.

Some industrial concerns have highly developed Personnel or Employment Management departments in some form or another, but there are very few of them, thus making it difficult to draw a general picture. The following examples, however, are fairly common: libraries, workmens' dormitories and cott-

JAPAN

ages, medical attendance and care, personnel and employment offices and, in some cases, works councils. The Government Report for 1924 listed the number of works councils as 155. Instances of facilities provided for sports, games, music and other forms of recreation are not infrequent.

CO-OPERATION WITHIN AND BETWEEN THE VARIOUS GROUPS IN INDUSTRY.

In 1925 the number of Trade Associations amounted to 646. These associations in addition to such price and production arrangements as exist between them cooperate one with another, as do the individual firms within each group, in the case of labor disputes or labour legislation.

INDUSTRIAL AND FACTORY INSPECTION.

It is difficult to state in what degree the general standard has been raised by these voluntary applications of scientific management over and above the standard maintained by reason of legislative measures protecting workers, and factory acts governing working conditions. With respect to the maintenance of such legal standards, the Government in 1926 appointed through the Bureau for Social Affairs at the Home Office and through Provincial Governments, 336 factory inspectors. Besides the Factory Acts, the following acts have been enacted with regard to industrial labour: "The Factory Workers' Minimum Wage Act", "The Labour Disputes Act", "The Health Insurance Act", and "The Mine Act".

Apart from these legal obligations to maintain a minimum standard of welfare for workers, we note with satisfaction the appearance of various organizations both official and private which aim at the promotion and encouragement of the workers' welfare. Then too the fact that certain progressive firms whose regard for their workers' wellbeing has resulted in such a spirit of concord and mutual understanding that no labour disputes have arisen, has led other firms less concerned with regard to their workers' welfare to adopt a different attitude.

GENERAL SOCIAL AND ECONOMICAL BACKGROUND.

Since 1926, Japan has been uninterruptedly suffering from bad

JAPAN

times in all trades, and unemployment all round has been a natural outcome of the situation. Prices for daily necessities did not fall sufficiently to benefit and relieve the wage-earning class. Employers on the other hand unable to reduce wage costs materially have been unable to extend their business and have been forced to discharge many workers. Consequently the great throng of workers who had been pouring into the towns from the country began to suffer all the misery of unemployment, and within the last few years serious social questions have arisen. To meet this situation, both the central and local Governments, including municipalities, have started various kinds of public relief work, such as is done in Europe, and are thus relieving the situation. Will such a situation always be met with only such temporary measures? It is a great and serious question not only for Japan but for every other industrial country as well. Thoughtful people here are seeking its fundamental solution in the international benefit of free trade, as already discussed in the World Economic Conference last year in Geneva.

OESTERREICH

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Auf 84.000 Quadratkilometern wohnen $6\frac{1}{2}$ Millionen Einwohner, von denen ungefähr 4.1 Millionen im Erwerbsleben tätig sind. Der Groszteil der Berufstätigen, nämlich ungefähr 2.5 Millionen sind unselbstständig Erwerbstätige, d.h. Arbeitnehmer. Die soziale Lage dieser 2.5 Millionen Arbeitnehmer soll mit ein paar Strichen skizziert werden. Der Durchschnittswochenlohn für die männlichen Arbeitskräfte beträgt 54.7 österr. Schilling und für die weiblichen Arbeitskräfte 29.4 österr. Schilling; für Männer und Frauen zusammen 47.8 österr. Schilling. Davon entfallen ungefähr S 3.— auf Versicherungsbeiträge. Hat ein Arbeiter 140 Tage gearbeitet, so hat er Anspruch auf 210 Tage Arbeitslosenunterstützung, die durchschnittlich S 12.60 bis S 17.50 die Woche beträgt. Vom 211. Unterstützungstage angefangen erhält er in der Regel eine etwas geringere Notstandsaulhilfe, die ihm gewöhnlich so lange gewährt wird, bis er wieder Arbeit erhält. Die landwirtschaftlichen Arbeiter und die Hausgehilfen sind in die Arbeitslosenversicherung nicht einbezogen; die Heimarbeiter jedoch insoweit, als sie ausschlieszlich für eine Unternehmung arbeiten und aus diesem Arbeitsverhältnis ihren Lebensunterhalt bestreiten. Eine Alters- und Invaliditätsversicherung besteht derzeit nur für die Angestellten. Alte arbeitslose Arbeiter und Hausgehilfen erhalten eine Altersrente. Die Leistungen der Krankenversicherung betragen durchschnittlich S 14.— bis S 20.— Krankengeld die Woche. Aertzliche Behandlung, Medikamente und Spitalhilfe werden unentgeltlich beigestellt. Das gesamte Volkseinkommen Oesterreichs wird auf 7 Milliarden Schilling jährlich geschätzt, so dasz auf den Kopf pro Woche 21 Schilling entfallen. Von den besteuerten Gesamteinkommen entfallen gar nur 15 Schilling pro Woche auf den Kopf der Bevölkerung.

Die sozialpolitische Gesetzgebung in Oesterreich ist sehr umfangreich und vielfach gegliedert. Die Arbeitsvertragsgesetzgebung umfasst Sondergesetze für gewerbliche Arbeiter, Bergarbeiter, Arbeiter beim Bau öffentlicher Eisenbahnanlagen,

Landarbeiter; für Industrie- und Handelsangestellte (Privatbeamte), Gutsangestellte, Journalisten, Schauspieler und endlich für Hausgehilfen.

Die landwirtschaftlichen Arbeiter werden in der sozialpolitischen Gesetzgebung ungünstiger behandelt als alle übrigen Arbeiter. So gilt für sie z.B. noch nicht der Achtstundentag, das Arbeiterurlaubsgesetz, das Betriebsrätegesetz, die Arbeitslosenversicherung und das Gesetz über die Einigungsämter und Kollektivverträge. Die Krankenversicherung für Landarbeiter ist in Durchführung begriffen.

Es gibt Betriebsräte und eine arbeitsrechtliche Sondergerichtsbarkeit; das Kollektivvertragswesen ist besonders geregelt und spielt in der Praxis eine entscheidende Rolle.

Von der ungemein vielgestaltigen Arbeiterschutzgesetzgebung ist hier vor allem die Arbeitszeitregelung von Bedeutung. Der Achtstundentag, bzw. die 48 Stundenwoche, sind gesetzlich eingeführt. Uebertretungen des Achtstundentagsgesetzes kommen vor allem in Kleinbetrieben vor, wo die Kontrolle eine schwierige ist und die Arbeitnehmer Ungesetzlichkeiten schwerer Widerstand leisten können. Allerdings ist es schon vorgekommen, dass sich die Arbeiter selbst mit ungesetzlichen Ueberstunden abgefunden haben, weil sie hiedurch eine Vermehrung des Einkommens erzielen. Die Sonntagsruhe ist gesetzlich geboten.

In der Verwendung von Frauen, Kindern und Jugendlichen zur Arbeit bestehen starke Beschränkungen, vor allem das Nachtarbeitsverbot. Die Heimarbeiter sind weitgehend geschützt. Die Regelung der Arbeitsinspektion entspricht den fortschrittlichsten Regelungen in anderen Ländern. Die Arbeitsvermittlung ist, von geringen Ausnahmen abgesehen, durchwegs eine öffentliche. Die Arbeitnehmer und Arbeitgeber haben von einander völlig unabhängige gesetzliche Interessenvertretungen (Arbeiterkammern und Handelskammern), die von der Regierung vor der Einbringung jedes das Wirtschaftsleben berührenden Gesetzes und überhaupt vor der Durchführung wichtiger Massnahmen befragt werden müssen, die die Interessen der Arbeiter und Unternehmer berühren. Die Kammern besitzen auch das Recht einer weitgehenden Initiative.

OESTERREICH

Die grozse Zahl der selbständig Erwerbztätigen (1.6 Millionen) lässt erkennen, dass die meisten Betriebe Oesterreichs eine geringe Grösze haben. Dies zeigt die folgende Zusammenstellung:

24.000 Betriebe beschäftigen	1—5	Arbeiter
7.000	„	6—20	„
2.000	„	21—50	„
800	„	51—100	„
662	„	101—500	„
95	„	501—1000	„
29	„	über 1000	„

Die Beziehungen zwischen Unternehmern und Arbeitnehmern hängen mit dieser Betriebsgrößenverteilung auf das engste zusammen. In den vielen Kleinbetrieben Oesterreichs kann noch ein persönliches Verhältnis zwischen Unternehmern und Arbeitern bestehen. Es waren weniger die soziale Einsicht und die Charakterbildung der kleinen Unternehmer als vielmehr das Selbstbewusstsein, die politische Reife, das Bildungsniveau der österreichischen Arbeiterschaft, die das persönliche Uebergewicht des Unternehmers, das lediglich aus seiner Unternehmerfunktion hervorgeht, gegenüber seinen Arbeitern beseitigte. Nicht zuletzt ist diese Aenderung der Zugehörigkeit zu einer gewerkschaftlichen oder politischen Organisation, dem grözseren Einfluss der Arbeitnehmer in der öffentlichen Verwaltung zuzuschreiben. Trotz der geringen Gesamtbevölkerungszahl steht Oesterreich bezüglich der absoluten Zahl der organisierten Arbeiter und Angestellten international nach Deutschland und England an dritter Stelle. Es kann nicht wundernehmen, dass in Kleinbetrieben, deren Arbeiterschaft gewerkschaftlich nicht organisiert ist, (was namentlich für Betriebe mit weiblichen Arbeitskräften zutrifft), die Arbeitsbeziehungen keine befriedigenden sind.

In den Mittel- und Groszbetrieben sind es die Betriebsräte, die die persönlichen Beziehungen zwischen Arbeitnehmern und Unternehmern aufrecht erhalten. Die Betriebsräte wurden durch Gesetz vom 15. Mai 1919 errichtet. In Betrieben, die bis 50 Arbeiter und Angestellte beschäftigen, besteht der Betriebsrat aus 3 Mitgliedern, in Betrieben mit mehr

OESTERREICH

als 50 Beschäftigten erhöht sich für je weitere 100 Beschäftigte die Zahl der Mitglieder um eines. Die Tätigkeitsdauer des Betriebsrates beträgt ein Jahr und es sind ihnen eine Menge von Aufgaben zugewiesen, die in das Interessengebiet der IRI fallen. Sie haben mitzusprechen bei der Lohnfestsetzung, Erlassung und Aenderung der Arbeitsordnung im Betriebe, Unfallverhütung, Arbeiterversicherung, Aufrechterhaltung der Betriebsdisziplin, Verwaltung der Wohlfahrtseinrichtungen, Kündigung und Entlassung von Angestellten, Betriebsverbesserungen etc. Ob der Betriebsrat seine gesetzlichen Aufgaben, die im Sinne des Interessengebietes der IRI liegen, so erfüllt, dasz das Verhältnis zwischen Unternehmern und Arbeitnehmern gebessert wird, hängt in jedem einzelnen Falle von der Mensch- handlungstechnik, insbesondere von der psychologischen Schlichtungstechnik des Unternehmers und des Betriebsrates ab. Im groszen und ganzen kann man sagen, dasz sich die Institution der Betriebsräte für die Besserung der Arbeitsbeziehungen in Oesterreich sehr bewährt hat und dasz insbesondere die Betriebsräte viele Streitigkeiten vermeiden konnten, die ohne eine ständige Personalvertretung unausweichlich gewesen wären. Immer häufiger werden die geeigneten Arbeitnehmer zu Betriebsräten gewählt.

Es kommt in manchen Betrieben vor, dasz kein Einvernehmen zwischen Unternehmern und Betriebsräten herrscht. Diese Störung der Beziehungen geht so weit, dasz die Betriebsräte nur mit gerichtlicher Hilfe ihr gesetzlich eingeräumtes Recht ausüben können.

Die Arbeiterschaft der Betriebe bildet im allgemeinen eine homogene Masse. Deutlich hervortretende Gruppierungen zwischen qualifizierten und Hilfsarbeitern sind selten zu beobachten. Wohl aber bilden die Angestellten (Beamten) eine selbstständige Gruppe. Das Gesetz trägt der Sonderstellung der Angestellten dadurch Rechnung, dasz es ihnen das Recht der Errichtung selbstständiger Betriebsräte zuerkennt. Das Betriebsrätegesetz bestimmt nämlich, dasz für Arbeiter und Angestellte gesonderte Betriebsräte zu wählen sind, wenn mehr als 10 Arbeiter und 10 Angestellte dauernd in demselben Be-

OESTERREICH

trieb beschäftigt sind. Der Angestelltenbetriebsrat führt die seine Gruppe betreffenden Geschäfte. Die sich vor allem dort ergebenden Gegensätzlichkeiten zwischen Arbeitern und Angestellten, wo die Angestellten als Stellvertreter des Unternehmers und als Vorgesetzte der Arbeiter auftreten, sind seit der Entstehung grosser Angestelltengewerkschaften geringer geworden. Es ist jetzt bei Benützung des Apparates der Gewerkschaften und Betriebsräte leichter möglich, Konflikte beizulegen oder überhaupt im Keime zu ersticken. Die Funktionäre der Angestellten- und Arbeitergewerkschaften und die Arbeiter- und Angestelltenbetriebsräte kommen zur Beratung gemeinsamer Angelegenheiten ungemein häufig zusammen und sind an die Herstellung eines Einvernehmens gewöhnt.

Die betrieblichen Beziehungen zwischen Männern und Frauen innerhalb der Arbeiter- und Angestelltenkategorien sind oft unbefriedigend, woran zum Groszteil der noch nicht durchgeführte Grundsatz "Für gleiche Leistung gleichen Lohn" und der Umstand Schuld trägt, dass zumindest die Arbeiter-schaft mit der Frauarbeit nur als einer bloss vorübergehenden, durch die Not diktierten ausserhäuslichen Tätigkeit rechnet. Erst wenn die gesellschaftliche Wertung der Frauarbeit eine andere sein wird, werden sich auch die betrieblichen Beziehungen in dieser Hinsicht bessern.

Die Berufsberatung hat in Oesterreich während der letzten Jahre an Ausdehnung gewonnen. In Wien und Niederösterreich, den beiden dichtbevölkertsten Ländern, bestehen 11 öffentliche Berufsberatungsämter, in den Hauptstädten von 5 weiteren Bundesländern besteht je eines, insgesamt 16. Die Berufsberatung ist noch weit vom Idealzustand entfernt. Es kann jedem Berufsanwärter nur eine sehr oberflächliche Beratung zuteil werden, die zwar in jedem Falle eine ärztliche Untersuchung mitumschlieszt, aber nur ausnahmsweise eine psychotechnische Eignungsprüfung. Erfreulicherweise mehrt sich die Zahl der Unternehmer, die ihre Lehrstellen durch die öffentlichen Berufsberatungsämter vermitteln lassen.

Acht der grössten Betriebe Oesterreichs haben psychotechnische Eignungsprüfstellen, die sie fallweise bei der Einstellung von neuen Lehrlingen und neuen Arbeitern be-

ÖSTERREICH

nützen. Die rein ärztliche Untersuchung allerdings haben schon seit jeher eine Reihe von Betrieben bei der Neueinstellung von Arbeitern vornehmen lassen. Der Regelfall bei der Einstellung ist der, dass die Einstellung im Einvernehmen mit dem Betriebsrat erfolgt, was gewöhnlich praktisch darauf hinausläuft, dass die Betriebsräte den Unternehmern Leute zur Einstellung vorschlagen. Auf diese Weise wird praktisch verhindert, dass die psychologische Betriebsatmosphäre durch Neuankömmlinge gestört wird. Auf den Abbau haben ebenfalls die Betriebsräte weitestgehenden Einfluss. In vielen Betrieben führen die Betriebsräte den Abbau im Auftrage des Unternehmers durch.

Diese Masznahme ist nicht im Gesetz verankert, sondern auf das freiwillige Einvernehmen zwischen Betriebsleitung und Betriebsrat zurückzuführen und bildet sohin eine Auswirkung der guten Bewährung der Institution der Betriebsräte.

Die Anlernung der Lehrlinge erfolgt nur in wenigen Betrieben in eigenen Lehrwerkstätten. In 5 Automobilfabriken, in 2 Elektrobetrieben gibt es eigene Lehrwerkstätten für Lehrlinge, in denen sie eine gediegene Ausbildung erhalten. Interessanterweise wird die Lehrlingsausbildung in diesen Betrieben fortgesetzt, obwohl ununterbrochen Facharbeiter durch ungelernte und angelernte Arbeiter ersetzt werden. Die meisten dieser Lehrlinge werden sofort in den praktischen Produktionsprozess eingeschaltet und erhalten daneben einen theoretischen und zum Teil auch praktischen Unterricht in Berufsschulen. Die Schulpflicht umfasst durchschnittlich 8-12 Stunden in der Woche und 250 bis 300 Schulstunden im Jahr. Meistens wird der Unterricht an zwei Tagen in der Woche erteilt. Die in der Schule verbrachte Zeit wird als Arbeitszeit eingerechnet. Mit dem Fortbildungsschulwesen ist eine sehr ausgedehnte Lehrlingsfürsorge verbunden, die u. a. in Wien auch 8 öffentliche und mehrere private, zum Teil modern eingerichtete Lehrlingshelme umfasst, in denen mindestens je 50 Lehrlinge vollständige Verpflegung und Unterkunft finden.

Für die Anlernung von ungelernten Arbeitern bestehen fast gar keine Anlernwerkstätten. Die ungelernten Arbeiter müssen sich praktisch einarbeiten. Dasselbe trifft

OESTERREICH

für fast sämtliche Angestelltenkategorien zu. Arbeitslose erhalten eine unentgeltliche Berufsnachschulung, zum Teil auch eine Berufsumschulung, um ihre Berufsqualifikationen an die Bedürfnisse des Arbeitsmarktes anzupassen. In den Betrieben selbst ist kaum irgendwo eine solche Nachschulungsarbeit, man zieht es vor, Leute zu entlassen und an ihre Stelle andere zu setzen.

In Oesterreich gibt es nur wenige Betriebspflegerinnen im gewöhnlichen Sinne des Wortes. Von den ungefähr 400 bis 500 Betrieben, die ihrer Arbeiterzahl nach in Oesterreich für die Einführung dieser Institution in Betracht kämen, haben nur einige vereinzelte Unternehmungen Fabrikpflegerinnen angestellt. Das heisst aber nicht, dass die Betriebswohlfahrtpflege in Oesterreich stark vernachlässigt ist. In den meisten Betrieben ist ein Teil der Agenden, die man einer Betriebspflegerin zuzuweisen pflegt, an einzelne Betriebsangehörige sozusagen als Nebenarbeit aufgegeben. In den meisten Betrieben gibt es eine eigene Sanitätsstube mit einer Krankenpflegerin, in groszen Betrieben sind eigene Werkärzte vorhanden, die die gesundheitliche Ueberwachung der Betriebsmitglieder in ärztlichen Sprechstunden und auf Rundgängen durch den Betrieb besorgen. Die Instandhaltung und Betriebsüberwachung der Waschräume, Aborte, Umkleideräume und Ruheräume, Bäder, wird durch ein auch anderweitig verwendetes Reinigungspersonal durchgeführt. Die Beistellung von Ruheräumen ist allerdings erst in wenigen Betrieben erfolgt, meistens in den grössten Betrieben, die Flieszarbeit oder irgend eine andere die Arbeit stark intensivierende Rationalisierungsmassnahme vorgenommen haben. Die meisten Groszbetriebe haben eigene Speiseräume, die nur dann gern von den Arbeitern besucht werden, wenn deren Verwaltung gänzlich in ihren Händen liegt, so dass sich die Arbeiter dort gleichsam wie zuhause fühlen und nicht als Gast des Unternehmers. In vielen Betrieben, in denen die Arbeiter ihre Arbeitskleider stark beschmutzen, besteht ein lebhaftes Bedürfnis nach Betriebswaschanstalten, die in Oesterreich aber noch zu den Ausnahmen zählen.

stätten für Kleinkinder innerhalb der Betriebe, bezw. des Fabrikterritoriums selbst ist in Oesterreich nur auf einige wenige Unternehmungen beschränkt geblieben; hingegen hat die öffentliche Fürsorge, namentlich in Wien, für die Unterbringung der Kleinkinder während der Arbeitszeit der Arbeitnehmerinnen in groszügiger Weise vorgesorgt.

Ganz wenige Betriebe geben eine *Werkszeitung* heraus, aber nach den bisherigen Erfahrungen dürften die *Werkzeitungen* in Oesterreich kaum ein geeignetes Mittel sein, um befriedigende Arbeitsbeziehungen herzustellen. Viel besser eignet sich für diesen Zweck die direkte Aussprache zwischen der Betriebsvertretung und dem einsichtsvollen Unternehmer.

Die übrigen Agenden einer Betriebswohlfahrtspflege im weitesten Sinne des Wortes sind alle der Behandlung durch den Betriebsrat vorbehalten, der ganz allgemein zum Anwalt der Belegschaft je nach seiner Tauglichkeit für diese Funktion geworden ist. Die Einwirkung auf Anstellung und Entlassung, die Bewilligung von Extrurlauben (Arbeiter erhalten je nach der Dauer des Dienstverhältnisses 1-2 Wochen, Angestellte 2-5 Wochen gesetzlichen Urlaub), Vorschüsse, Geldspenden, Kurse, Vortrags- und Unterhaltungsabende, Werksbibliothek: All das wird vom Betriebsrat entweder im selbständigen Wirkungskreis oder im Einvernehmen mit dem Unternehmer geregelt. Die österreichischen Arbeitnehmer lehnen es ab, sich eines Sozialbeamten oder irgend einer anderen Zwischenperson zur Erledigung dieser Angelegenheiten zu bedienen.

Forscht man danach, wer in Oesterreich Massnahmen der wissenschaftlichen Betriebsführung propagiert und durchführt, so sind es vorwiegend die Unternehmer der Groszbetriebe. Die Arbeitnehmer nehmen zwar eine positive, aber nur defensive Haltung ein. Diese Einstellung ist durchaus erklärlich, denn Oesterreich gehört nebst Grossbritannien zu den zwei Ländern Europas, in denen noch eine abnormale Arbeitslosigkeit herrscht. Es wird daher immer die Arbeitslosigkeitswirkung irgend einer wenn auch noch so gutgemeinten und erfolgreichen Rationalisierungsmassnahme gefürchtet. Ein

OESTERREICH

Gebiet aber ist anzunehmen: das sind die auf Energie- und Ermüdungsersparnis, sowie Erhöhung der Arbeitsqualitäten und der Arbeitsfreude der Arbeiter gerichteten Bemühungen der wissenschaftlichen Betriebsführung. Die Bestgestaltung des Arbeitsplatzes durch griffbereite Anordnung der Werkzeuge und Materialien und bessere Beleuchtung, Belüftung, gute Sitzgelegenheiten u. ä. Massnahmen finden die einhellige Zustimmung der Arbeiter. Die Einschaltung von Arbeitspausen zur Ermüdungsbekämpfung ist leider nur in einem einzigen Betrieb Oesterreichs, allerdings dem grössten, offiziell durchgeführt worden. In vielen anderen Betrieben müssen die Arbeiter, wenn sie sich sehr ermüdet fühlen, auf Kosten ihres Lohnes ein paar Minuten Pause im Laufe der achtstündigen Arbeitszeit gönnen. Zu einer Vorschreibung der Bewegungsbahn im Sinne des Taylorismus ist es in Oesterreich nicht gekommen, vorhandene Ansätze sind wieder verschwunden, was nicht bedauernswert ist, weil eine arbeitsphysiologische Schulung zur Vorschreibung der Bewegungsbahn notwendig ist, über die die Betriebsingenieure derzeit noch nicht verfügen. Es ist daher auch von Arbeitsunterweisungsbögen im Sinne des Taylorismus in Oesterreich nichts vorzufinden.

Die Arbeitszeit und die Lohnbemessungsmethoden sind Gegenstand des Einverständnisses zwischen Betriebsleitung und den Betriebsräten und es sind im groszen und ganzen die Festsetzung der Güte und Menge der zu leistenden Arbeit und der hierfür entfallenden Löhnung auf gütlichem Wege erfolgt. Von allen Arbeitern und Arbeiterinnen stehen rund 33 % in Stücklohn. In einigen Industrien erhöht sich dieser Prozentsatz. So z.B. beziehen 45 % der Metallarbeiter den Stücklohn. Man nimmt bei der Festsetzung der Stückzeit manchmal nicht genügend auf die Ermüdungsstunden und auf die groszen Leistungsschwankungen Rücksicht. Oft gewährt man Ermüdungszuschläge für minder leistungsfähige Arbeiter. Der Neigung zur Selbstausbeutung junger Arbeiter zwischen 22 bis 32 Jahren wird von Seiten ihrer Arbeitskollegen entgegengearbeitet. Die Arbeitsintensität ist gegenüber der Vorkriegszeit beträchtlich erhöht worden. Steigerungen bis zu 83 %, ohne dass die Arbeitsmittel oder die Arbeitsorganisation einer Veränderung

OESTERREICH

unterzogen worden waren, wurden beobachtet. Interessant ist die Feststellung, dass in Betrieben, in denen ein gutes Einvernehmen mit der Arbeiterschaft herrscht, die Arbeitsintensität eine grössere ist, was namentlich für die zwei grössten Betriebe Oesterreichs zutrifft. Eine Arbeits-Intensivierung wird vielmehr durch technische Mittel (Fließband und sonstige Fördermittel) als durch organisatorische Mittel (Prämien-systeme etc.) veranlaszt. Prämien-systeme sind bei den öster-reichischen Arbeitern unbeliebt, sie ziehen reinen Stücklohn vor, auch wenn sie nur zu demselben Stundenverdienst wie die Prämien-systeme führen.

Von anderen Massnahmen der wissenschaftlichen Betriebs-führung interessieren sich die Arbeitnehmer noch für die Un-fallverhütungspropaganda. Es gibt in Oesterreich eine eigene Zentralstelle dafür, die schon sehr günstige Erfolge erzielen konnte.

Alle technischen und organisatorischen Verbesserungen, die Ausarbeitung irgend eines Rationalisierungsplanes, die Anstel-lung betriebswissenschaftlicher Forschungen im Werke, wurden bisher in Oesterreich von den Unternehmern und den mit der Unternehmerfunktion betrauten Angestellten allein ausgeführt. Es scheint sich aber jetzt in der Arbeiterschaft eine Verände-rung ihrer Haltung vorzubereiten, sodass vermutlich in nicht ferner Zeit die Arbeitnehmer in einzelnen Betrieben mitarbeiten werden. Voraussetzung dürfte sein, dass in denselben kein Abbau stattfindet, der Unternehmer das Kapitaleinkommen für produktive Zwecke verwendet und den Arbeitnehmern ein aus-kömmliches Einkommen gesichert ist. Man spricht davon, dass paritätische Betriebsorganisationsausschüsse die Betriebsver-besserungen technischer, organisatorischer und menschen-ökonomischer Art durchführen werden. Vorderhand gibt es nur in Betrieben der öffentlichen Hand ein solches Zusammen-arbeiten.

Es wurde in letzter Zeit ein österreichisches Kuratorium für Wirtschaftlichkeit gegründet, das sozusagen die oberste Ra-tionalisierungsstelle Oesterreichs darstellt. In diesem Kurato-rium werden Unternehmer und Arbeitnehmer zusammen die Fragen der wissenschaftlichen Betriebsführung und allem was

OESTERREICH

sonst zur Rationalisierung noch gehört, bearbeiten. Es findet daher ein Zusammenarbeiten für die Gesamtwirtschaft, nicht aber für den einzelnen Betrieb mit Ausnahme der Betriebe der öffentlichen Hand statt.

In keinem der Betriebe Oesterreichs ist ein Gewinnbeteiligungssystem eingeführt, von dem die Oeffentlichkeit Kenntnis erhielt. Es ist wohl möglich, dasz eine Handvoll von Betrieben solche Systeme haben, aber die Gewinnbeteiligung wird auf die obersten Angestelltenschichten beschränkt sein, sodasz in der Oeffentlichkeit darüber nichts verlautet. Jedenfalls spielen die Gewinnbeteiligungssysteme in der Besserung der Arbeitsbeziehungen in Oesterreich gar keine Rolle.

POLOGNE

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Malgré les malheurs subis, la Pologne contemporaine a traversé dans ce dernier siècle une période de vitalité, d'effort et de fécondité vraiment remarquable. Le progrès a été si rapide et si général qu'aucun peuple, autant persécuté, si violemment déchiré, n'a jamais montré un pareil exemple.

Le dernier siècle tout entier, depuis 1807, a été marqué par cette marche ascendante. Mais c'est surtout depuis 1850, ou plutôt depuis 1870, que le mouvement de régénération économique et sociale s'est accentué. Si l'on envisage de haut le chemin parcouru, en comparant le point de départ au point d'arrivée, on est profondément frappé de la grandeur du progrès accompli. Voici ce qu'en écrivait Elisée Reclus en 1880.

"Heureusement que le peuple polonais grandit et se développe. Quoique privé de son autonomie politique, il a certainement plus de sentiments patriotiques, plus de valeur morale qu'au dernier siècle. Malgré les désastres qui ont suivi l'insurrection de 1863 et qui ont frappé surtout les classes riches, l'abolition des privilèges de la noblesse et du clergé, de même que les changements agraires et communaux, réclamés depuis longtemps par le parti démocratique polonais, ont eu les conséquences les plus heureuses.

Au point de vue matériel, les progrès sont de toute évidence. La prospérité générale, s'est accrue ou, pour mieux dire, la misère a diminué. L'industrie manufacturière de la Pologne a fait plus que doublé ses produits depuis les lois agraires de 1864."

La période de 1870 à 1914 a été pour la Pologne une période florissante au point de vue économique.

La grande industrie, se développant rapidement, a créé une couche sociale nouvelle qui a beaucoup contribué à la prospérité du pays ainsi qu'à sa transformation sociale. La classe ouvrière, jeune, fervente, à caractère occidental, entre aussi en scène, réclame ses droits, se heurte aux intérêts communs ou particuliers, secoue l'assoupissement d'un grand nombre. A la fin du XVIII^e siècle les manufactures et les fabriques

POLOGNE

- en dehors des métiers des villes - occupaient 20,000 ouvriers industriels; en 1870 l'industrie, sur les terres polonaises, en occupait 200,000 en chiffre rond; à la veille de la déclaration de la guerre de 1914 la grande industrie comptait 1.650 000 travailleurs ce qui fait environ 6 millions de personnes, nourries par l'industrie polonaise cette à dire $\frac{1}{2}$ de la population totale du pays.

Dans le vaste domaine de l'industrie la grande guerre nous a laissé des ruines, un cimetière: les armées russe, allemande, autrichienne, ont saccagé les villes, les colonies industrielles, les villages. La Pologne ressuscitée a dû rétablir son industrie ainsi que la vie économique tout entière. Actuellement la grande industrie se développe de mieux en mieux, surtout l'industrie de la houille, l'industrie sidérurgique, textile, pétrolière, celle du sel, l'industrie sucrière, la distillerie, l'industrie des allumettes, la métallurgie, l'industrie chimique, celle du papier, des cuirs, du ciment, de la céramique, du verre. Nous notons un phénomène très favorable, à savoir la création de nouvelles branches inexistantes avant la guerre. On commence à produire des locomotives, des wagons, des tracteurs, des avions et des automobiles. De même dans toutes les branches de notre industrie nationale, qui occupe actuellement 1.500.000 ouvriers; puisque chaque ouvrier nourrit trois personnes et demie de sa famille, le total de la population ouvrière entretenue par la grande industrie, est de 5.200.000 personnes; et comme la population du pays s'élève à 30.000.000, la population industrielle en constitue à peu près un sixième.

Croissant en nombre, la population ouvrière, de jour en jour, est devenue, aussi plus pauvre, plus souffrante. Aujourd'hui, elle réclame à haute voix l'amélioration de son sort. Son état économique et moral laisse beaucoup à désirer.

Tout d'abord, c'est le capital qui a exploité le travail de l'ouvrier polonais. En effet, le capitalisme polonais a énormément accru sa fortune. La pauvreté, la misère de la classe laborieuse dépasse de beaucoup celle de l'ouvrier d'Occident.

En outre, il est une autre cause qui rend plus malheureuse

POLOGNE

encore la situation de l'ouvrier: c'est la crise économique très aiguë depuis la guerre. Actuellement, l'industrie polonaise ressemble à un bâtiment monté trop rapidement, au mépris des principes fondamentaux de l'équilibre. Faute d'appuis extérieurs, le bâtiment s'écroule. C'est un danger des plus terribles pour notre classe laborieuse en ce qui touche son bien-être économique.

Le côté social de la crise ouvrière offre aussi un aspect des moins satisfaisants. Dans les Etats constitutionnels, la classe ouvrière est devenue une classe relativement élevée, instruite. En Pologne, il n'en va pas de même. L'industrie s'est développée rapidement, mais l'évolution sociale et politique du pays, opprimée par l'absolutisme russe, prussien et autrichien, ne correspondit pas, à cette évolution; par conséquent, la question ouvrière a pris des formes pathologiques. Dans les centres industriels, les masses ouvrières se sont agglomérées; mais elles n'ont trouvé ni écoles, ni associations, ni syndicats, ni aucune organisation, où elles auraient pu s'instruire, se rendre compte de leurs droits et de leurs devoirs; elles n'ont point passé par l'école de la vie publique, qui constitue la meilleure mise en garde contre les espérances irréalisables. Personne ne dispensa l'instruction à ces masses populaires. Jusqu'en 1905, ce furent les socialistes qui les instruisirent, à leur guise, en excitant leurs convoitises inassouvies.

Même la loi de l'offre et de la demande ne pouvait jouer, de par l'omnipotence de l'administration bureaucratique locale russe et allemande. L'ouvrier isolé, ne pouvant s'associer, vivait dans un monde fermé, n'adoucissant son sort que par un rêve de justice future.

En 1905, on a permis aux ouvriers de s'unir un peu, de faire connaître leur profonde misère. La grande guerre et l'inflation d'après guerre ont énormément aggravé la lamentable situation de l'ouvrier polonais. Nous nous rendons compte qu'il faut non pas rétablir l'ordre, mais le créer. La tragédie consiste en ceci que la société doit payer maintenant la grande dette des cinquante dernières années; elle a notamment à faire toute l'éducation de la classe ouvrière, pour que l'ouvrier devienne bon travailleur et bon citoyen.

POLOGNE

Les événements historiques, issus de la grande guerre, ont définitivement montré toute la mauvaise situation de l'ouvrier polonais. Un chômage inouï, une effrayante émigration de grandes manifestations ouvrières, les grèves et les excès commis dans les villes, la terreur en parole et en action: tel est le sinistre tableau offert par les efforts des ouvriers pour l'amélioration de leur sort.

L'anarchie des sentiments et celle de l'esprit, le désordre dans l'action, la misère économique de la classe laborieuse, sont les différents aspects de la plaie sociale qui s'est manifesté, dans toute sa nudité, durant la période allant du mouvement ouvrier de 1918 à 1926.

A l'heure actuelle, depuis le mois de mai 1926 une réaction se produit peu à peu. Nous constatons un apaisement général dans tous les milieux ouvriers. La politique sociale du Gouvernement polonais (le Ministère du travail existe depuis le mois de novembre 1918) a fait beaucoup pour la classe laborieuse. Chacun s'est mis à la tâche pour chercher à guérir tant de maux innombrables. Mais, il y faudra des efforts héroïques de la part tant de l'ouvrier lui-même que de la société dans son ensemble.

A l'heure actuelle, le prolétariat menace sérieusement la société polonaise. Les sentiments de révolte ont germé dans la classe ouvrière. La misère, aussi grande à la campagne, qu'à la ville, devient plus choquante dans les milieux industriels. Jadis, les plaintes étaient individuelles; aujourd'hui, on s'en prend à l'ordre social en bloc; les plaintes ouvrières prennent un caractère collectif, âpre, agressif. En présence de la misère, on crie à l'injustice et l'on réclame des mesures pour y porter remède. L'initiative privée ne reste pas inactive. Elle crée, pour répondre à ce besoin social, de nouvelles institutions dans les centres peuplés, institutions visant le facteur humain dans la production, à savoir le relèvement matériel, intellectuel et moral de la classe ouvrière. Outre les associations et les institutions que la classe laborieuse a fondées elle-même, nous trouvons encore d'autres institutions créées pour elle, mais non par elle; nous laisserons aussi de côté les oeuvres, fondées

POLOGNE

en vertu de la loi ou bien directement par l'Etat c'est à dire par le Ministère du Travail et de la Prévoyance Sociale.

A cette oeuvre de l'initiative privée ont présidé deux motifs: l'humanitarisme du patron; la préoccupation de la société quant à l'avenir de la classe ouvrière et quant aux bons rapports entre les divers agents de la production nationale.

Le premier motif a fait naître les institutions patronales, destinées au bien-être de la famille ouvrière. Le second a engendré des institutions sociales particulièrement favorables à la classe laborieuse.

En Pologne, les institutions patronales sont un des moyens à la fois de thérapeutique et d'éducation imaginés pour attacher l'ouvrier à l'usine et pour lutter contre les maux endurés par la famille ouvrière.

Chaque jour, de nouvelles institutions viennent enrichir la liste des créations imaginées par l'initiative patronale: écoles et crèches, maisons et bains, participation aux bénéfices etc.; ce sont là autant d'institutions gratuites dont le patron fait bénéficier ses ouvriers. Dans les principales industries, on a créé divers organismes ayant pour but de permettre aux ouvriers d'élever leurs enfants, d'assurer les travailleurs contre la misère ou bien de les accoutumer à l'épargne.

L'enseignement primaire et professionnel pour les enfants d'ouvriers doit être mentionné en premier lieu. En effet, si nous considérons que la grande majorité de la classe ouvrière se compose de familles dont chacune compte de 3 à 5 enfants, nous comprendrons la nécessité évidente de créer des écoles dans les usines. Le Gouvernement de la Pologne ressuscitée a fait beaucoup pour l'instruction publique en instituant l'enseignement primaire obligatoire. Cependant les besoins sont trop grands pour qu'il ait été possible d'y parer suffisamment dans un laps de temps si court. Les ouvriers sont pénétrés de la nécessité de l'instruction et ils réclament, d'une façon incessante, l'augmentation du nombre des écoles. Subissant l'influence ouvrière et consultant aussi leur propre intérêt, les grands industriels ont fondé des écoles. Ordinairement le terrain et les bâtiments sont fournis par le patron, tandis que les ouvriers subviennent à l'entretien de l'école ou de la crèche;

POLOGNE

il existe également, dans plusieurs fabriques, des écoles industrielles et des écoles maternelles tout à fait gratuites.

Sous ce rapport et à titre d'exemple, nous mentionnons les entreprises industrielles, de Zyrardow, près de Varsovie, où les enfants des ouvriers ont des écoles primaires, professionnelles et des écoles maternelles. M. Dittrich, industriel bien connu, un "bon patron" comme l'appelaient les ouvriers, a créé de vastes jardins et des bâtiments scolaires rationnels. Les enfants y trouvent un abri, l'enseignement, un repas et des jeux divers. Zyrardow possède presque tous les types existants d'institutions patronales.

Un autre centre industriel, où les institutions patronales, surtout les écoles, sont le mieux organisées, c'est Zawiercie. Le directeur général des entreprises de Zawiercie, M. Szymanski, animé d'un esprit humanitaire, a fondé plusieurs institutions pour le bien-être ouvrier, parmi lesquelles les écoles tiennent la première place.

Après les écoles viennent les maisons ouvrières. La plupart des usines polonaises, situées en dehors des villes, donnent à leurs ouvriers des maisons à titre gratuit ou à bon marché. Mais seuls peuvent en profiter les ouvriers à poste fixe. Les journaliers logent dans des mansardes sombres, étroites et mal chauffées.

De grandes entreprises, comme celles de M. Scheibler de Lodz ou les usines de Zyrardow, bâtissent des maisons ouvrières spéciales. Certaines d'entre elles demandent à leurs ouvriers un loyer peu élevé. D'une manière générale, on ne loue ou l'on ne donne de maisons qu'à des familles travaillant à l'usine depuis un temps plus ou moins long. Dans la région minière, se trouve un certain nombre de maisons ouvrières spécialement destinées aux familles de mineurs; à peu près chaque mine et chaque société d'exploitation a bâti des maisons pour ses ouvriers. Cependant les quatre cinquièmes de la population ouvrière habitent dans les conditions les plus insupportables.

Certains établissements industriels prennent soin de la propreté personnelle et de l'hygiène de l'ouvrier, en fondant des bains communs pour les travailleurs. On sait que le travail

POLOGNE

à l'usine laisse beaucoup de poussière, de microbes sur le vêtement de l'ouvrier qui les apporte, par conséquent, dans sa famille. Pour écarter ce danger, c'est à dire en vue de la santé et de la propreté de l'ouvrier, des usines ont établi des bains, des douches, des lavabos, etc.

Les premiers bains modèles furent créés à l'usine de M. Kindler à Pabianice. Chaque soir et par roulement, 60 ouvriers usent de ces bains. D'autres bains ouvriers bien installés, se trouvent dans les fabriques de Zyrardow, de Zawiercie et ailleurs. Il y a en outre des bains modèles pour les enfants ouvriers dans deux des localités mentionnées.

Sous forme d'institution patronale nous remontrons ensuite les retraites ouvrières, la participation aux bénéfiques, les colonies de vacances, etc. Il est incontestable que l'initiative patronale, dans bien des cas, a été d'un salubre exemple; on lui doit beaucoup d'institutions dont a profité l'ouvrier polonais. Cependant, il y a une ombre à ce tableau. Aux institutions patronales l'ouvrier oppose des institutions ouvrières, ce qui fait que le patron se demande si ses intentions ne seront pas méconnues et si, en s'imposant des sacrifices en faveur des ouvriers, il ne se mettra pas en état d'infériorité vis-à-vis de concurrents qui, moins soucieux de leurs devoirs moraux, consacreront toutes leurs ressources au fonctionnement de leur industrie et arriveront ainsi à produire à meilleur compte, les charges étant moins lourdes.

Il est donc probable, que l'action patronale prendra des formes nouvelles. L'action du patron sera de moins en moins paternelle et se portera principalement sur tout ce qui concerne la vie professionnelle de l'ouvrier, ce qu'on appelle, dans la vie anglaise, "industrial betterment", côté bien négligé dans notre vie de fabrique.

L'initiative privée, en dehors de la fabrique, fonde aussi des institutions ayant pour but le relèvement matériel, intellectuel et moral de l'ouvrier. Dans ce domaine, nous trouvons tout d'abord les jardins ouvriers. L'institutions des jardins ouvriers procure au travailleur plusieurs avantages: elle fournit à sa famille des produits potagers ainsi qu'une récréation saine et

POLOGNE

utile. De même, à l'heure présente, alors que toutes les institutions humanitaires luttent contre la tuberculose, les hygiénistes pensent que les jardins ouvriers sont un des meilleurs moyens de la combattre. Les jardins ouvriers doivent aussi être considérés comme un remède contre l'alcoolisme, ennemi quotidien de l'ouvrier polonais.

L'oeuvre des jardins ouvriers, qui se manifeste dans toutes les villes principaux de la Pologne, (Varsovie, Lwow, Posnan, Katowice, Lodz, Czenstochowa, etc.) accuse un caractère spécial: elle consiste en ce que des propriétaires de terrains sans emploi, industriels, municipalités permettent d'utiliser ces terrains au profit des familles ouvrières pauvres. Les conséquences morales l'emportent d'ailleurs sur les profits matériels. En effet, les jardins contribuent beaucoup à développer, chez l'ouvrier l'esprit de propriété. Ils sauvegardent les moeurs, attachent l'ouvrier au sol, le ramènent à la nature-mère, qui l'ennoblit. L'homme, comme Antée, puise dans la terre la force, la santé physique et morale.

Les ouvriers honnêtes rêvent toujours d'avoir une maison leur appartenant, entourée d'un petit jardin, afin de pouvoir élever convenablement leurs enfants et d'avoir un abri dans leur vieillesse. A ce sujet, l'initiative privée n'a que très peu aidé l'ouvrier. Nous avons quelques institutions de maisons ouvrières à bon marché, parmi lesquelles il faut citer les maisons ouvrières, créées à Varsovie par M. M. Wawelberg et Rotwand. Actuellement ce genre de fondations ne cesse de se développer dans tous les grands centres du pays (Lodz, Katowice, Varsovie, Cracovie).

Au point de vue intellectuel, citons les institutions suivantes, dont profite la classe ouvrière: bibliothèques, salles de lecture, cours du soir, universités populaires. L'initiative privée entreprend également de propager l'instruction professionnelle en créant des écoles spéciales dans les milieux ouvriers.

Au point de vue moral l'initiative privée a fondé quelques institutions intéressantes. Dans des cadres modestes, la société polonaise, sous ce rapport, a compris son devoir. Tout d'abord, au point de vue moral, on a secouru l'enfant ouvrier et ensuite le travailleur adulte. Des associations et des par-

POLOGNE

ticuliers ont fondé pour les enfants des crèches, des écoles maternelles, des colonies de vacances, outre des salles d'occupations, des jeux en plein air, différents sports, etc.

Pour les ouvriers adultes on a créé des institutions les préservant contre les vices; et d'autre part, des associations réalisant la maxime de "l'utile dulci", donnent au travailleur des récréations agréables qui adoucissent ses moeurs personnelles et développent chez lui les sentiments nobles. Voici une série de ces institutions: sociétés anti alcooliques, excursions collectives, jeux en commun, choeurs et orchestres, théâtres ouvriers et clubs de travailleurs. La série des institutions sociales, destinées aux couches prolétariennes et que nous venons d'examiner rapidement est, dans l'ensemble, de date récente. Ces institutions nous montrent clairement l'énergie, qui a été déployée pendant ces dernières années pour combattre l'esprit de haine dans les classes laborieuses. Les oeuvres ainsi fondées sont appelées à exercer prochainement une bienfaisante influence tant sur les rapports individuels dans l'industrie que sur l'industrie nationale elle même.

En outre, elles élèvent le niveau intellectuel et moral de la classe ouvrière. Or, dans son intérêt bien compris, la société doit stimuler la fondation des oeuvres humanitaires.

ROUMANIE

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Les questions sociales ont acquis après la guerre une importance capitale dans tous les pays. Notre pays a aussi ressenti l'influence de ce mouvement, qui s'est manifesté dans la législation des dernières années et dans un certain nombre de réalisations dues à l'initiative privée.

Nous commencerons d'abord par la législation. En ce qui concerne la réglementation des rapports entre les patrons et les salariés, l'organisation, le perfectionnement et la protection du travail, on a appliqué en Roumanie les lois suivantes:

La loi pour la réglementation des conflits collectifs du travail de 1921, tendant à résoudre paisiblement ces conflits par l'intervention des Inspecteurs du travail, ou, si les parties ne se concilient pas, par arbitrage.

La loi des Syndicats professionnels de 1921, dont nous avons parlé plus haut, l'activité de ces syndicats étant soumise au contrôle du Ministère du Travail, par l'organe de ses Inspecteurs.

La loi pour l'organisation du placement, appliquée par des offices de placement de district, qui font gratuitement l'office d'intermédiaire entre les demandes et les offres de travail.

La loi des migrations, qui tend à n'admettre que le nombre d'ouvriers spécialistes étrangers strictement nécessaire, en réduisant ce nombre quand les ouvriers nationaux sont en danger de chômer, ainsi qu'à établir l'émigration des ouvriers nécessaire à l'économie nationale.

La loi des foyers pour les apprentis, ayant pour but de faciliter l'apprentissage, en donnant aux apprentis la possibilité d'avoir des logements hygiéniques et d'être bien nourris.

La loi des foyers pour les apprentis, ayant pour but de des métiers et l'obtention des certificats de capacité.

La législation sur les organisations professionnelles a commencé en 1921, date à laquelle on a voté la loi des Syndicats professionnels. Même avant cette date, l'article 27 de la Constitution de l'Ancien Royaume garantissait le droit d'as-

ROUMANIE

sociation. Les Provinces réunies étaient soumises à des lois spéciales. Les principes de la loi des Syndicats professionnels sont les suivants: on reconnaît le droit à toutes les personnes physiques ou morales de constituer des Syndicats professionnels, sans aucune autorisation préalable. La loi prévoit deux catégories d'organisations: des Syndicats et des Unions ou des Fédérations. Les Syndicats peuvent acquérir la personnalité juridique avec peu de formalités. Les Unions ou les Fédérations ne peuvent être constituées que par des Syndicats professionnels reconnus comme personnalités juridiques.

Cette loi fut modifiée en 1924 par la loi des personnes juridiques. Les modifications consistent en l'introduction d'un contrôle des Associations professionnelles. L'Etat exerce le droit de créer, contrôler et supprimer les personnes juridiques. Les Syndicats ne peuvent obtenir la personnalité juridique que par la décision du Tribunal, avec le consentement du Ministère à la compétence duquel l'Association est soumise. Les Unions et les Fédérations obtiennent la personnalité juridique par la cour d'appel, avec l'avis de la Commission supérieure des personnes juridiques siégeant auprès du Ministère de la Justice. Par les modifications introduites en 1927, la loi a été encore améliorée.

Les effets de l'application de la loi des personnes juridiques ressortent de la situation suivante, établie à la fin de l'année 1925. Nous avons dans le pays entier 6 Unions patronales, auxquelles se sont affiliées 35 organisations professionnelles de patrons; 21 Unions de salariés, auxquelles se sont affiliées 154 Syndicats professionnels de salariés, une Union mixte de patrons et de salariés, avec trois organisations affiliées et 5 Unions de professionnels libres. Nous trouvons encore 152 organisations patronales indépendantes, 76 organisations de salariés, 17 de patrons et de salariés et 22 de professionnels libres. Le nombre total des adhérents au commencement de l'année 1926 était de 23,417 patrons, 51,352 salariés, 17,398 patrons et salariés et 8,330 professionnels libres.

Le nombre des membres des organisations composées de pa-

ROUMANIE

trons et de salariés est assez élevé (17,398). L'esprit de collaboration pour le développement des branches d'activité communes et pour la défense des intérêts professionnels, est devenu réalité. Les relations entre patrons et ouvriers ont été satisfaisantes. Les conflits, en nombre relativement restreint, ont été solutionnés paisiblement, par conciliation et très rarement par arbitrage.

En ce qui concerne la formation professionnelle, dans l'Ancien Royaume, l'enseignement théorique des métiers était fort réduit. A l'exception des écoles de métiers et d'une ou deux écoles pratiques, les métiers ne s'apprenaient que directement dans les ateliers, sans aucune méthode.

Après une pratique de 3 à 5 ans comme apprenti et de 1 à 2 ans comme praticien, on pouvait devenir ouvrier.

Les ouvriers qui avaient pratiqué au moins deux ans et qui avaient des aptitudes pour diriger, pouvaient devenir contre-maîtres, et s'ils avaient les possibilités matérielles, pouvaient ouvrir des ateliers propres et devenir ainsi des patrons.

Après la guerre, l'enseignement pratique des métiers fut rattaché à l'enseignement théorique, par la fondation des écoles d'apprentis, créées exclusivement pour les apprentis des ateliers.

Actuellement fonctionnent dans le seul Ancien Royaume environ 150 écoles d'apprentis.

Dans les territoires annexés, excepté la Bessarabie, l'enseignement pratique était lié, avant la guerre, à l'enseignement théorique. Les écoles d'apprentis étant fondées par des lois spéciales, l'enseignement pratique était fait et se fait encore maintenant dans les ateliers, en observant les mêmes rangs: apprenti, ouvrier et contre-maître.

En Bessarabie, l'enseignement professionnel n'était réglementé sous aucune forme.

Après la réunion avec la Roumanie, par l'unification législative sur toute l'étendue du Royaume, la situation est devenue la même.

Pour la formation du personnel supérieur, il existe deux Ecoles Polytechniques formant des ingénieurs diplômés. Il y

ROUMANIE

a encore des Instituts techniques auprès des Universités de Bucarest, Cluj et Lassy, ainsi qu'une Académie de Hautes Etudes Commerciales. En échange l'instruction du personnel inférieur et celle de la maîtrise ont été négligées, mais nous espérons que la réforme générale de l'enseignement, maintenant projetée, comblera cette lacune.

En général, nous devons remarquer que l'enseignement théorique et la carrière de fonctionnaire d'état jouit auprès des masses d'un prestige bien plus élevé que des métiers, et un grand nombre des élèves des Ecoles Professionnelles préfèrent abandonner la spécialité qu'ils ont apprise et entrer comme fonctionnaires dans un ministère quelconque. Une oeuvre de propagande pour la réhabilitation des professions manuelles est nécessaire.

Le Service Social, dont le but est l'amélioration des conditions de vie des ouvriers, commence à intéresser nos milieux industriels et économiques.

Notre industrie peut être divisée en Industrie d'Etat, grande Industrie et petite Industrie.

Le Service Social se trouve plus souvent dans l'Industrie de l'Etat, où il est aussi mieux organisé. L'hygiène des ateliers et la tenue des ouvriers sont surveillés et, auprès de certaines institutions, fonctionnent des cantines assez bien organisées, des salles de récréation, des bains. Dans les ateliers où travaillent beaucoup de femmes, il existe des pouponnières. La manufacture de tabac "Belvédère", par exemple, au service de laquelle il y a beaucoup de femmes, possède une pouponnière correspondant aux exigences les plus modernes d'hygiène et de confort. Enfin, presque tous les établissements ont un service médical avec une infirmerie bien organisée, pour veiller à la santé des ouvriers.

En ce qui concerne la grande Industrie, celle-ci étant de date très récente, la nécessité et l'utilité du Service Social n'a pas eu le temps, de s'imposer à l'attention de tous ses dirigeants. Nous avons tout de même quelques industries dans lesquelles des progrès remarquables ont été réalisés. Un exemple nous est donné par la Société "Tesatoria Romana"

ROUMANIE

de Pitesti, disposant d'un Service Social qu'on peut comparer aux Services analogues les mieux organisés de l'Occident. A Bucarest, les Tissages "Bumbacul" possèdent une cantine et un foyer qui pourraient servir de modèles. De même les Tissages Draghiceanu. Auprès des Ateliers de Tramways de Bucarest fonctionne un service médical très bien organisé, et il y a en outre des bains, des douches, une salle de conférences.

Des résultats remarquables ont été réalisés dans la région pétrolière et dans les exploitations de charbon, où il existe auprès de chaque exploitation des quartiers ouvriers, cantines, salles de spectacles etc. Les ouvriers spécialistes ont des logements hygiéniques et confortables.

Dans la petite industrie il ne peut être question de Service Social, le nombre des ouvriers d'une entreprise étant fort restreint.

L'organisation scientifique du travail a commencé à préoccuper nos cercles officiels, ainsi que les milieux industriels et ouvriers.

Le 3 Février 1927 a été créé a Bucarest un Institut Roumain d'organisation scientifique du travail, auquel participent l'Etat, les Institutions privées, les techniciens et les ouvriers. Cet Institut a commencé son activité par des conférences, des publications et par la propagande directe; il lutte pour l'introduction de l'organisation scientifique dans les services publics et dans l'industrie privée et pour l'établissement de rapports améliorés entre le travail et le capital.

L'orientation professionnelle des éléments de l'industrie est entrée dans les préoccupations de l'état.

En conséquence, le Conseil des Ministres a décidé en 1927 que tout établissement d'orientation et de sélection professionnelles fonctionnera avec l'autorisation et sous le contrôle du Ministère du Travail.

Une Commission d'Orientation Professionnelle a été créée auprès du Ministère du Travail, pour l'étude de toutes les questions concernant l'orientation professionnelle et les auto-

ROUMANIE

risations de fonctionnement des offices et des instituts d'enseignement professionnel.

Jusqu'à présent, cette commission a décidé d'établir une classification systématique des professions manuelles et d'entreprendre une enquête dans les différentes entreprises sur les aptitudes professionnelles.

Pour les travaux préliminaires tendant à la préparation des éléments destinés à diriger les offices d'orientation professionnelle, on a créé trois laboratoires de psychotechnique auprès des Facultés de philosophie et de lettres de Bucarest, Iassy et Cluj.

Les idées précèdent toujours les faits et dans notre pays, où la grande industrie est de création récente et où il n'existe pas de classes patronale et ouvrière ayant une tradition et un passé, une grande part des intentions du législateur et de ceux qui voient clair, ne saurait être appliqué intégralement du premier coup.

En tout cas, ce qui nous intéresse principalement ce ne sont pas les réalisations considérées d'une façon absolue, mais plutôt la tendance manifestée, et nous pouvons soutenir, de ce point de vue, que les nouvelles idées de coopération sociale ont passé de la phase utopique dans le domaine des réalisations courantes.

SCHWEIZ

ZUSAMMENGESTELLT VON FRAU DR. E. ZÜBLIN-SPILLER,
Direktion „Schweizer Verband Volksdienst“, Zürich

Das vom Sekretariat der I. R. I. aufgestellte Memorandum zur Ausarbeitung eines Berichtes über die industriellen Verhältnisse in der Schweiz ist verschiedenen kompetenten Persönlichkeiten vorgelegt worden, deren Antwort nachstehend angeführt ist.

ZUSAMMENARBEIT INNERT UND ZWISCHEN DEN VERSCHIEDENEN GRUPPEN DER INDUSTRIE.

Dr. F. Bernet berichtet:

Nach dem Vortrag, den der amerikanische Industrielle Henry S. Dennison am 19. Februar 1927 in der Eidg. Techn. Hochschule in Zürich gehalten hatte, bildete sich auf Anregung einiger Vorstandsmitglieder des Zentralverbandes schweiz. Arbeitgeber-Organisationen in Zürich eine erste Gruppe von sieben industriellen, nicht unter sich konkurrierenden Firmen, um versuchsweise mit einem Austausch von Erfahrungen auf dem Gebiete der Einkaufs- und Lager-Organisation zu beginnen. Die gegenseitigen Besuche und Besprechungen, die seither regelmässig stattfanden, stehen vor dem Abschluss. Es ist geplant, diese Gemeinschaftsarbeit, die wertvolle Resultate ergeben hat, im kommenden Jahre auf eine breitere Basis zu stellen.

Das "Psychotechnische Institut" in Zürich schreibt:

Für die Personaleinstellung hat die Verwendung psychotechnischer Methoden im vergangenen Jahre in der Schweiz weitere Fortschritte gemacht und die psychotechnischen Institute verzeichnen eine starke Zunahme ihrer Tätigkeit.

Es gibt Unternehmen, die eigne hiezu geeignete Leute zu Betriebspsychotechnikern ausbilden lassen und solche, die sich einfach an die psychotechnischen Institute wenden, um ihre Leute dort auf ihre Befähigung untersuchen zu lassen. Das in der Schweiz am weitesten vorgeschrittene psychotechnische Institut in Zürich hat bereits eine Anzahl von Psychotechnikern für Betriebe ausgebildet, so für die eidgenössische Postverwaltung, für verschiedene Maschinenfabriken, für eine Armaturen-

fabrik, eine Fabrik der Textilbranche und andere. Dieser Weg hat sich als fruchtbar erwiesen. Eine Reihe von Betrieben lässt heute grundsätzlich alle Neueintretenden und die zu Befördernden auf ihre Fähigkeiten und Charakterzüge untersuchen. Viele kleinere Unternehmen und vor allem solche, die im engeren Einzugsgebiet des Psychotechnischen Institutes liegen, bedienen sich des einfacheren Modus, ihre Leute direkt vom Institut untersuchen zu lassen. Die Zahl derselben wächst stetig und erstreckt sich auf fast alle Branchen angelernter, körperlicher und geistiger Arbeit, von den niederen Funktionen bis zu den führenden Stellungen. Einige Unternehmen sind weiter dazu übergegangen, auch die Berufsausbildung ihrer Leute psychotechnisch zu vervollkommen.

Ein prägnantes Beispiel dieser Art stellen die Lehrwerkstätten einer ostschweizerischen Maschinenfabrik dar, in welcher die Lehrlinge der Metall- und Holzbranchen nach einem nicht nur technisch, sondern auch pädagogisch und psychologisch sorgfältig aufgestellten Lehrplan rationell ausgebildet werden. Die Erfolge übertreffen alle Erwartungen, die von Seiten der Betriebsleitung gehegt wurden. Die Ausbildungszeit konzentriert und reduziert sich auf einen Bruchteil der bisherigen, die Leistungen gewinnen qualitativ und quantitativ. Vor allem aber wird auf diesem Wege die Arbeitsfreude gesteigert und wieder gesunder Arbeitsstolz gepflanzt.

Ein anderes lehrreiches Beispiel liefert ein psychotechnisch organisierter Lehrkurs für Maurerlehrlinge, der vor einem Jahr in Bern abgehalten wurde. In 5 Wochen wurde den Lehrlingen das Pensum ihres ersten Lehrjahres zweckmässig beigebracht. Der Erfolg überraschte ebenfalls ausserordentlich. Weitere Kurse sind im Gang. Das in Fachkreisen erwachte Interesse drängt ersichtlich zu einer durchgreifenden Vervollkommnung aller Lehrverhältnisse.

Bis Ende des Jahres 1927 ist das Psychotechnische Institut Zürich zur Mitarbeit für die Personalauslese und Ausbildung zugezogen worden von 7 Unternehmen der Metallbranche, 2 der Holzbearbeitungsindustrie, 4 Betrieben der Textilbranche, 6 Verkehrsunternehmen, 5 Verwaltungen, Banken und Ver-

SCHWEIZ

sicherungsgesellschaften. Daneben bestehen sehr viele Beziehungen zu Unternehmen, die ihre Kandidaten von Fall zu Fall regelmässig durch das Psychotechnische Institut untersuchen lassen, weiter zu den Berufsberatungsstellen und den Schulen.

Ein äusseres Zeichen für den Aufschwung der Psychotechnik in der Schweiz ist die Gründung einer Schweizerischen Stiftung für Psychotechnik, die es sich zur Aufgabe macht, alle auf diesem Gebiete ernsthaft wirkenden Kräfte zu vereinigen und zu fördern.

Die Arbeitspsychologie, soweit sie direkt auf das Psychische eingeht, wird in der Schweiz von der Psychotechnik in ungetrenntem Zusammenhang mit der oben skizzierten Tätigkeit behandelt. Die objektive, nur auf das Verhältnis von äusseren Einwirkungen und objektiven Arbeitsleistungen abstellende Seite stellt ein Grenzgebiet dar, in welchem ausserdem verschiedene Betriebe eine beachtenswerte Tätigkeit entwickeln, so betreffend der Verhältnisse von Licht- und Arbeitsleistung die Firmen B.A.G. Turgi und Osram A.-G. Zürich.

Allgemein menschliche Gesichtspunkte verfolgt das in der Schweiz hochentwickelte industrielle Fürsorgewesen.

WISSENSCHAFTLICHE BETRIEBSFUEHRUNG.

Dr. Bernet berichtet:

Die praktische Rationalisierung in den einzelnen Betrieben hat im Jahre 1927 stetige Fortschritte gemacht. Typisch für unser Land ist das schrittweise, wohlüberlegte Vorgehen, das bei den geplanten Massnahmen auch die Rückwirkungen auf die Arbeiterschaft voll berücksichtigt.

Die mehr der Propaganda und Aufklärung dienende "Kommission für Rationelles Wirtschaften" der Gesellschaft der Schweizerfreunde der Vereinigten Staaten von Amerika hat zahlreiche einzelne Vorträge und einige Vortragszyklen veranstaltet. Berufene in- und ausländische Fachleute sprachen über Probleme der Rationalisierung. Als Höhepunkt der Tätigkeit darf der gemeinsam mit anderen Stellen durchgeführte Internationale Orientierungskurs über Arbeitsrationalisierung (Zürich, 6.-9. Juli) bezeichnet werden.

SCHWEIZ

Die Rationalisierung wurde von der Kommission ferner gefördert durch die Schaffung einer Betriebswissenschaftlichen Bücherstube, wo die einschlägige Literatur aufliegt, und durch die Herausgabe der "Schweizer Schriften für rationelles Wirtschaften", in denen wichtige Probleme eine gründliche, aber allgemeinverständliche Darstellung erfahren.

Der "Schweizer Verband Volksdienst" meldet:

Nach unserer Auffassung hat sich in den letzten 10 Jahren die Betriebswohlfahrtspflege merklich dahin geändert, dass der patriarchalische Charakter immer mehr verschwindet. Der Mangel an Arbeitskräften, besonders in der Textil- und Chemischen Industrie (Kunstseide) bedingt den Zuzug aus einem immer weiteren Umkreis. Die Bereitstellung von Kantinen und Mädchenheimen ist dadurch zu einer Betriebsnotwendigkeit geworden, die durchaus im Rahmen der Produktion betrachtet wird. Immer mehr Fabriken ziehen es vor, ihre Wohlfahrtseinrichtungen einer neutralen Organisation (S. V.) zur Leitung zu übergeben, die ihrerseits die Verbannung des Alkohols strikte durchführt.

Die in der Schweiz mehr und mehr einsetzende Schichtarbeit bedingt auch eine Anpassung für die Verpflegungsmöglichkeit, die wiederum eine Ausgestaltung der Kantinen erfordert. Immer wieder wird der Volksdienst als Auskunftsstelle für die Fabrik-Wohlfahrtspflege in Anspruch genommen. Auf diese Weise wird es möglich, die Kantinen nach einem gewissen Schema einzurichten und dieselben durch Abhaltung von Vorträgen, durch Bibliotheken, Handarbeitskurse auch zu einem Zentrum geistiger Bildungsarbeit für die Arbeiterschaft zu gestalten.

DIE BERUFSBERATUNG IN DER SCHWEIZ.

Frl. M. L. Wild, Berufsberaterin, Bern, schreibt:

Die Berufsberatung ist in der Schweiz noch eine junge Bewegung, hat aber seit der Zeit ihrer ersten Anfänge rasche Fortschritte gemacht und sich besonders in den grösseren Städten sehr gut eingebürgert. Sie ging hervor aus den verschiedenen Lehrlingsämtern und Lehrlingspatronaten, welche den objektivsten Einblick in die Lehrverhältnisse besaßen und

SCHWEIZ

die darin auftauchenden Misstände zuerst zu beobachten die Gelegenheit hatten. Durch den Zusammenschluss dieser Lehrlingsämter, das heisst, ihrer Vertreter, zu einem schweizerischen Verein wurde im Jahre 1902 der Grund gelegt zu einer intensiven Arbeit auf dem Gebiete der Verbesserung des Lehrlingswesens und zu einem einheitlichen Zusammengehen der ganzen Schweiz, so weit dies lokale Verschiedenheiten erlaubten.

Die Organisation der Berufsberatung in den verschiedenen Kantonen ist sehr verschieden. In einigen ist sie städtisch organisiert, die Mehrzahl der Stellen jedoch ging aus privater Initiative hervor und wird auch noch mehr oder weniger auf privater Grundlage durchgeführt, sei es, dass eine Vereinigung die Inhaber des Amtes stützt und für die Beschaffung der Geldmittel sorgt, sei es, dass der Staat, (Gemeinde, Kanton) mehr oder weniger grosse Beiträge an die Kosten leistet oder, wie in kleineren Ortschaften, Privatpersonen von sich aus lokale Berufsberatung treiben und die wenigen Unkosten aus eigener Tasche bezahlen.

Die unter dem Namen "Schweizerischer Verband für Berufsberatung und Lehrlingsfürsorge" gegründete Vereinigung schliesst Verbandsorganisationen und Einzelmitglieder in sich und befasst sich mit den folgenden Tätigkeitsgebieten:

Propaganda für die Berufsberatung.

Ausbildung und Fortbildung der Arbeitskräfte auf dem Gebiete der Berufsberatung.

Massnahmen für die finanziellen und anderen Erleichterungen auf dem Gebiete der Berufsberatung und der Berufswahl.

Förderung der Lehrstellenvermittlung.

Förderung der Berufsbilder und des Lehrlingswesens.

Lehrlings- und Jugendlichen-Fürsorge.

Lehrentlassenenfürsorge- und Zusammenarbeit mit den Arbeitsämtern.

Zusammenarbeit mit verwandten Institutionen des In- und Auslandes.

Eine der Hauptbestrebungen der schweizerischen Berufsberatung ist die Arbeit in die Tiefe, das heisst die Erfassung

des Intellekts und vor allem der Charakteranlagen des zu Beratern, welche letztere nur zu oft im Leben ausschlaggebend sind für den Erfolg oder Nichterfolg.

Ein psychotechnisches Institut besteht in Zürich, das sich steigender Inanspruchnahme erfreut. Auch haben eine Reihe von Grossfirmen in der Schweiz eigene psychotechnische Aemter errichtet. Ein besonders schwieriges Gebiet der Berufsberatung ist die Versorgung von Anormalen in Berufe, in welchen sie ihre Kräfte entfalten und zu brauchbaren Menschen herangezogen werden können.

Im Vergleich zum Ausland hat die Schweiz vielleicht einen geringeren Prozentsatz von ungelernten Arbeitern zu verzeichnen, dagegen besteht die grosse Schwierigkeit, die ausgelernten jungen Leute in sichere Stellungen zu versorgen. Seitdem die Auswanderung auch der gelernten Arbeiter in die Grossstaaten, speziell nach Amerika, mit so grossen Schwierigkeiten verbunden ist, herrscht in beinahe allen Berufen Ueberproduktion.

Die Berufsberatung für Mädchen ist fast ausnahmslos in die Hände von Frauen gelegt. Die im Jahre 1922 gegründete Schweizerische Zentralstelle für Frauenberufe geht den in der Praxis stehenden Berufsberaterinnen an die Hand und zeigt durch das Wachsen ihrer Aufgaben, dass sie einem Erfordernis entsprach. Die weibliche Berufsberatung leidet speziell unter der sehr kleinen Auswahl von Berufen, welche den jungen Mädchen aus einfachen Verhältnissen zur Verfügung stehen. Auch sind eine ganze Anzahl von Berufen, für welche sich die Frauen gut eignen würden, dem weiblichen Geschlecht verschlossen (Konditor, Goldschmied, Kürschner, Graveur, Modellzeichner, Innenarchitektur, Dekorateur u.s.w., u.s.w.).

Die Ausbildung zum Berufsberater ist keine geregelte. Die beste Vorbedingung dazu ist die praktische Kenntnis einer möglichst grossen Zahl von Berufen und ihrer Ausbildungsmöglichkeiten, verbunden mit sozialem Interesse und der Gabe der Menschenkenntnis. Durch periodische Einführungskurse und Berufsberaterkonferenzen erstrebt der Verband die Aus- und Weiterbildung der auf dem Gebiete der Berufsberatung Tätigen, Besprechung gemeinsamer Probleme und deren Re-

SCHWEIZ

gelung und Lösung. Es wird noch viel Arbeit zu tun geben, doch ist die Bewegung auf guten Wegen.

WANDLUNGEN DER WIRTSCHAFTLICHEN UND SOZIALEN VERHÄLTNISSE IN DER SCHWEIZ.

Privatdoz. Dr. Jakob Lorenz, Fribourg, schreibt:

Im Laufe des Jahres 1927 hat in der Schweiz das wirtschaftliche Leben einen bedeutenden Aufschwung genommen. Die Exportindustrie war im allgemeinen gut beschäftigt und der Export ist wieder ungefähr auf der Höhe von 1913 angelangt. Die Arbeitslosigkeit ist, abgesehen von lokalen Erscheinungen im Gebiete des Kantons Baselstadt und -Land und der ostschweizerischen Industriegegend zurückgegangen und teilweise wird über Mangel an gelernten Arbeitskräften geklagt, während ungelernete Arbeitskräfte noch überschüssig sind. Die Lohnverhältnisse erlitten eine doppelte Verbesserung; einmal sind die Lohnsätze im langsamen Steigen begriffen, sodann ist die Teuerung etwas zurückgegangen, sodass automatisch eine Verbesserung des Lebensstandard eingetreten ist. Dem besseren Stande der Wirtschaft entsprechend, haben sich die sozialen Verhältnisse in so weit etwas gebessert, als es der Industrie möglich ist, wieder eher an Sozialinvestitionen zu denken. Allerdings muss bemerkt werden, dass im Laufe der letzten zehn Jahre, wenn man die gesamte industrielle Fürsorgetätigkeit ins Auge fasst, wohl mindestens eine halbe Milliarde für diese Zwecke aufgewendet worden ist, wovon etwa 400 Millionen allein nur auf die Pensionskassen der Industrie und grössere Handelsunternehmungen entfallen. Mit einem gewissen Stillstand muss daher einstweilen noch gerechnet werden, um so mehr, als die Rationalisierungsbestrebungen nicht unbeträchtliche Mittel erfordern, die sich allerdings in Kürze wieder einbringen lassen. Die staatliche Sozialpolitik beschränkte sich im letzten Jahre im wesentlichen auf den Ausbau der Arbeitslosenversicherung, die in kurzer Zeit sehr grosse Fortschritte gemacht hat. In der ersten Zeit haben namentlich die gewerkschaftlichen Arbeitslosenkassen von der Bundessubvention den meisten Gewinn davon getragen; doch scheinen die Fortschritte öffentlicher und neutraler Kassen neuerdings namhafter zu sein. Der obliga-

torischen Unfallversicherung sind, einschliesslich der Fabriken rund 37.000 Betriebe mit einem Personal von 606.000 Personen unterstellt. In den Fabriken sind rund 355.000 Personen beschäftigt, von denen 135.000 auf das weibliche Geschlecht entfallen.

EXPERIMENTE MIT NEUEN INDUSTRIELLEN BETRIEBSSYSTEMEN sind in den letzten Jahren so gut wie keine unternommen worden. Die Zeit war nicht dazu angetan, für solche Experimente den geeigneten Boden zu schaffen. Schon die Betriebe, die an die Konsumgenossenschaften sich anlehnen und für diese produzieren, haben in den letzten Jahren grosse Schwierigkeiten zu überwinden gehabt; ja die Konsumgenossenschaften selbst sind in ihrer Funktion als Preisregulatoren durch hohe Personalaufwendungen sehr eingeengt worden. Die Gewinnbeteiligung ist eher im Rückgang als in der Weiterbildung begriffen. Die Gewerkschaften haben ihren Tiefstand überwunden und scheinen trotz der Schwierigkeiten, die durch die - übrigens abflauende - kommunistische Bewegung geschaffen worden sind, zu erstarken. Führend sind die gemässigten Verbände des öffentlichen Personals und der Metallarbeiter. Als interessante Neubildung ist die Bank der Genossenschaften und Gewerkschaften zu nennen, welche durch den schweiz. Gewerkschaftsbund und den Verband Schweiz. Konsumvereine ins Leben gerufen worden ist. Indes handelt es sich nicht um eine ausgesprochene Arbeiterbank, sondern mehr um eine Ausgestaltung der bisherigen Bankabteilung des Verbandes Schweiz. Konsumvereine (einer Organisation mit dem Charakter einer Grosseinkaufsgesellschaft und einem Umsatz von 138 Mill Frs.) unter Beizug der Gewerkschaften. Die Bank der christlichsozialen Arbeiterorganisationen, die ihr 25. Geschäftsjahr hinter sich hat, zeigt gute Fortschritte. Die grösste Genossenschaftsbank der Schweiz, die Schweiz. Volksbank, hat durch eine Umorganisation sich ihres rein genossenschaftlichen Charakters teilweise begeben müssen, um als Grossbank an allen Geschäften partizipieren zu können. Der Genossenschaftsgedanke ist in seiner Verwirklichung stets gefährdet, wenn die genossenschaftlichen Betriebe einen sehr grossen Umfang annehmen.

SWEDEN

BY FRÖKEN S. FREDHOLM

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COOPERATION WITHIN AND BETWEEN THE VARIOUS GROUPS IN INDUSTRY.

The chief groups in industry are, in Sweden, strictly consolidated and very highly organized within themselves.

The workers are very well organized in all factories of any size. With a few exceptions the Unions belong to the Workers General Federation (Landsorganisationen), a central body, formed in 1898 in order to give economic assistance to its members in certain cases of conflict but also - among other things - to promote the educational activities among the workers.

The corresponding body on the side of the employers is the General Federation of Swedish Employers (Svenska Arbetsgivareföreningen) formed in 1902 and since 1917 including the chief trades. It aims at promoting the cooperation of employers, at taking care of their common interests, and also endeavours to render economic assistance in times of conflict.

When the collective agreement of a certain trade is to be renewed or revised, the chosen representatives of the employers and employees respectively meet at the round table. Since 1906 we have had a law applicable to voluntary arbitration in trade disputes, and in cases of conflict the parties are assisted by the state arbitrator of the district. On special occasions a commission of arbitration is often ordered by the Government.

Even if the latest years have been far from free from deplorable conflicts, which by a little more understanding and goodwill on the part of either or both parties ought to have been avoided, the general atmosphere in the industrial world has grown less embittered - a fact which is easily traceable in the responsible press.

An attempt to bring employers and employees together to discuss social and economic problems from an ethical point of view are the yearly week-end conferences at one of our people's high-schools in Sigtuna. These gatherings started

SWEDEN

as discussions between scientific people, social workers and employers and employees, and these two types of conferences still remain. During the past few years, however, there have also been gatherings in which representatives of all the categories above mentioned have taken part. Such a week-end conference was held in March of this year with "Unemployment" as the topic of discussion. These gatherings are arranged by a special committee and are of a very intimate nature.

A group in industry which is often overlooked, but which certainly is an important one in factory life, is the body of foremen and forewomen. Since 1924 there has been in existence a central federation of foremen and overseers of all grades, Svenska Arbetsledareförbundet, consisting of a great many local bodies. This association has, however, nothing to do with wages and conditions of work, as the foremen are appointed by individual agreement.

A question of great interest to foremen and employers alike is the training of overseers. The iron and mining trades have had since 1923 a special training school for this purpose, where a certain amount of instruction in scientific methods and industrial psychology is included in the curriculum.

In 1926 the Welfare Workers Association invited forewomen to a short summer-school (5 days) with problems of Management, Industrial Health and Industrial Psychology as chief topics. The experiment met with success and was repeated in 1927. This time some foremen were also invited. The numbers taking part were doubled since the previous year and amounted to 60, the active interest of the students being very great. Not the least in importance was the contact established between the forepeople and the welfare workers taking part. A summer-school on similar lines is planned for this summer.

EDUCATION AND TRAINING.

As to general education there are two institutions in particular which have proved of special importance to the men and women in industry. These are the Workers' Educational

SWEDEN

Association (Arbetarnas Bildningsförbund, A. B. F.) and the People's High-Schools (Folkhögskolorna).

The A. B. F. was founded in 1912 as a result of cooperation between the principal and professional organisations of the workers. It has a local body in nearly every industrial centre and works chiefly by means of lectures, study-circles and a small system of libraries. It is still supported economically by the workers themselves but enjoys a considerable allowance from the state.

The People's High School is an old Scandinavian institution. The students were originally young men and women from farms. Several schools however are now specially intended for industrial workers, who also more and more begin to take part in the ordinary courses for farmers or are invited to short specially arranged summer-schools (1-3 weeks). This kind of education tends to be more and more appreciated. The principal subject at the High School Conference last year was how to make it economically possible for the young people in industry to attend such a school and how to arrange the courses in order to make them most valuable to this special kind of student.

INDUSTRIAL WELFARE WORK.

The depression of trade, not yet totally overcome, has necessitated strict economy, and brought with it a marked reluctance to making new experiments. The very detailed clauses in most collective agreements often produce a certain unwillingness on the part of employers to do more than is absolutely requested.

New welfare-posts, therefore, have in these last years been exceptionally few. Yet it seems as if that kind of work shows a tendency to deal more than before with working conditions and factory life itself.

The welfare workers themselves, who have deeply felt the need of consolidation, and of the recognition of welfare work as a real part of the business, in order to promote such an aim, have met for yearly conferences, and thus established valuable cooperation between themselves and with the factory inspection.

SWEDEN

SCIENTIFIC MANAGEMENT.

The leading institution here is the scientific academy of engineers, which states that several industries in these last years have reorganized themselves on the principle of scientific management. The inauguration of labour-saving machines is a burning question and the interest generally taken in this matter is considerable. The first issue of a new magazine, Business Economy, solely devoted to questions of this kind, has just been published.

INDUSTRIAL PSYCHOLOGY.

Activities in this connection have been confined to articles of information in periodicals and reference-books. Psychological testing of aspirants to the Post-Office is now being tried, but the result is not yet known.

VOCATIONAL GUIDANCE.

This question is not a new one. Since 1923 there has existed in Stockholm a juvenile labour exchange in connection with the general labour exchange.

Special measures have also been taken by the preliminary schools in bigger towns. The statutes of the new continuation school explicitly state its duty to give vocational guidance to young people.

The question is, however, still in an experimental stage.

ADDENDUM

SERVANTS OF INDIA SOCIETY
BRANCH LIBRARY
BOMBAY

CECHOSLOVAKEI

VON V. VERUNAC, DOC. DR.,

Prag

WIRTSCHAFTLICHE UND SOZIALE STRUKTUR DER CECHO-SLOVAKISCHEN REPUBLIK

Die Einwohnerzahl nach der Volkszählung vom Jahre 1921 beträgt 13.372.406 Seelen neben 238.493 Ausländern.

Es ist hier nicht notwendig, die Tatsache auseinander zu setzen und zu begründen, dass die Gruppierung der Bevölkerung nach Berufen Einfluss auf die Richtung der wirtschaftlichen und sozialen Politik (Lépe: Wirtschafts- und Sozialpolitik) hat.

Aus den Angaben, die uns zur Disposition stehen, werden wir eine sehr gedrängte Charakteristik durchführen, welche zur Beantwortung der Frage notwendig ist, die durch das Thema dieses Referates gestellt wird.

Die Gruppierung der Bevölkerung der csl. Republik ergibt folgendes Bild:

Berufs-k-lasse	In der C. S. R. insgesamt (absolut)
Landwirtschaft, Forstwirtschaft, Fischerei	5.384.115
Industrie und Gewerbe	4.601.020
Handel und Geldwesen	787.178
Transportwesen	664.311
Staats- und öffentlicher Dienst	
Freie Berufe	590.698
Militär	159.851
Selbständige Dienstausbübung und Lohnarbeit	173.420
Andere Berufe und ohne Beruf	1.250.756
	13.611.349

Sodann detailliert:

	Hat die Industrie im Beruf tätig:					Familien- mitglieder	
	Selb- ständige	Pächter	Beamte	Arbeiter	Lehrlinge	Tag- als Hilfs- löhner	kräfte
Männer	279.830	1.126	66.071	1.170.129	190.439	28.987	11.480
Frauen	49.207	132	17.704	349.461	34.542	8.331	5.033
Zusammen	329.037	1.258	83.775	1.519.590	224.981	37.318	16.513

269

CECHOSLOVAKEI

Angehörige ohne eigenen Beruf:	Hausdienerschaft:
681.608	687
1.659.329	46.924
2.340.937	47.611

Aus dieser Uebersicht ist einerseits eine gewisse Aehnlichkeit in Bezug auf das Verhältniss der Landwirtschaft zur Industrie (im Berufe der Bevölkerung) der Cechoslovakischen Republik mit den Vereinigten Staaten von Nordamerika, den Niederlanden und Frankreich,

andererseits wieder eine merkwürdige Aehnlichkeit, was den wirtschaftlichen und sozialen Gesamtcharakter anbelangt, der Cechoslovakischen Republik mit Deutschland, Belgien, der Schweiz und den Niederlanden ersichtlich.

Diese Aehnlichkeit und Analogie erleichtert uns vielfach das Studium der Richtlinien der Wirtschafts- und Sozialpolitik.

Allerdings können wir uns nicht in allen Problemen auf die Analogie oder Aehnlichkeit der fremden Verhältnisse berufen, nichtsdestoweniger gewährt uns hauptsächlich die Tradition der entwickelten Industrieländer, das System der Absatzgebiete und die mit demselben zusammenhängende innere soziale und wirtschaftliche Struktur einen leichtern Einblick in die Wirkung des in bestimmten Richtungen entwickelten praktischen, wirtschaftlichen Bestrebens.

Aus den Tabellen ist zu ersehen, dass die grösste Zahl der Bevölkerung der C. S. R. ihren Unterhalt in der Landwirtschaft und in der Industrie findet.

Durch Landwirtschaft (incl. Forstwirtschaft) ernähren sich $\frac{2}{3}$ der Bevölkerung, in der Industrie findet mehr als $\frac{1}{3}$ derselben ihren Unterhalt.

Vergleichen wir die Zahl der in diesen zwei Wirtschaftszweigen Tätigen in Prozenten, so sehen wir, dass da ein annähernd inneres Gleichgewicht zwischen diesen beiden Berufszweigen besteht.

Was die Gruppierung der Kategorien der einzelnen Berufe anbelangt, so entfällt in der C. S. R. (analog wie etwa in Deutschland) ca. die Hälfte der Arbeiter auf die Gesamtzahl der berufstätigen Bevölkerung, d.h. etwa $\frac{1}{4}$ der Bevölkerung sind Arbeiter, Lehrlinge und Tagelöhner.

CECHOSLOVAKEI

Selbständige Unternehmer und Pächter wurden im Jahre 1921 1.361.295 gezählt, das ist etwa ein Fünftel (20 %) aller im Berufe tätigen Personen.

Unter 1000 in der Industrie tätigen Personen zählt man:
806 Arbeiter (incl. Lehrlinge und Tagelöhner)
148 Selbständige.

Aus den statistischen Angaben ist weiter ersichtlich, dass die Zahl der Berufstätigen in der Landwirtschaft und Fortwirtschaft in der letzten Zeit nicht steigt, sondern in der Regel sinkt (bei uns, in Amerika und anderswo)*; dafür die Zahl der in der Industrie, im Handel und im Transportwesen Berufstätigen (nicht nur bei uns, sondern auch in Deutschland und anderswo) wächst.

Die Entwicklung (soweit es sich um die Gruppierung der Berufe der Bevölkerung handelt), bewegt sich in der Richtung der Industrialisierung. Es ist dies eine merkbare Abkehr von der ursprünglichen Form der Landwirtschaft zur Industrialisierung (in diese auch die sog. landwirtschaftliche Industrie mitgezählt.)

Die Entwicklung bewegt sich weiter in der Richtung der Intensivgestaltung des Handels und des Transportwesens. Dieses Faktum diktiert im Wesen auch die unvermeidliche Regelung in der Organisation und die Ausgestaltung der Kommunikationen, Regelung der Transporttarife.

In Bezug auf die soziale Seite muss betont werden:

1. Erhöhung der Zahl der Selbständigen cechischer Nationalität.
2. Erhöhung der Zahl der Beschäftigten in verantwortlichen selbständigen Stellungen in der Industrie, im Handel, im Transport- und im Geldwesen.

Bewegt sich die Entwicklung in der Richtung der Industrialisierung, ist mit Recht dafür zu halten, dass sie auch in der Richtung der Oekonomisierung (durch Bildung grösserer wirtschaftlicher Einheiten und Komplexe, Konzentration und Kooperation) fortschreiten wird.

*) Die Tabelle Dr. Bohács "Politika", Prag, II. I. 78 S. zeigt, dass bei uns die Zahl der in der Landwirtschaft Berufstätigen in den Jahren 1911-1921 um 9,4 % gesunken ist.

CECHOSLOVAKEI

Damit vergrössert sich allerdings die Notwendigkeit der Intensivgestaltung des technischen Fortschritts und die Intensivierung der Erzeugung.

Beträchtlichere Verschiebungen in der Gruppierung der Bevölkerung lassen sich jedoch für die Zukunft nicht erwarten.

WIRTSCHAFTLICHE UND SOZIALE ORGANISATION.

Die Arbeitgeber sind, analog wie in anderen Ländern, in Interessensinstitutionen organisiert. Die stärkste Organisation besitzen die industriellen Arbeitgeber, von welchen die eine cechisch, die andere deutsch ist; beide bilden dann einen gemeinsamen Ausschuss. Sämtliche Arbeitgeber (die landwirtschaftlichen, industriellen, gewerblichen, Banken und teilweise auch der Handel) schufen dann die sog. Konföderation der cechoslovakischen Arbeitgeberorganisationen, welche heute, verhältnismässig einheitlich, das cechoslovakische Arbeitgeberlager repräsentiert.

Die Arbeitnehmer haben eine grosse Reihe von Interessen-(Fach-) Organisationen. Die statistischen Angaben des Statistischen Staatsamtes führen im ganzen 9 Fachgebilde mit cechischer Verhandlungssprache und 5 Hauptgebilde mit deutscher Sprache an.

Diese Zentralen besitzen über 1½ Millionen organisierter Mitglieder, von welchen etwas weniger als ein Drittel auf Arbeiter-Fachorganisationen, etwa ein Drittel auf Beamtenorganisationen und etwas mehr als ein Drittel auf gemischte (Arbeiter- und Beamten) Organisationen entfallen.

DAS PRINZIP DER ZUSAMMENARBEIT.

Im Lager der Arbeitgeber (Unternehmer) ist das Prinzip der Mitarbeit einerseits auf dem reinen Interessengebiet (siehe das Kapitel über wirtschaftliche und soziale Organisation) andererseits auf wirtschaftspolitischen Gebiete, d. i. der horizontalen und vertikalen Konzentration, durch Kartelle, Konzerne, zur Geltung gebracht. Dieser Vorgang ist in der letzten Zeit je weiter desto intensiver.

Im Lager der Arbeitnehmer ist der Interessenzweck durch Schaffung von Fachorganisationen ausgedrückt und zwar so-

CECHOSLOVAKEI

wohl Arbeiter- als auch Beamtenorganisationen und dies in der Regel abgesondert. (Sieh das vorhergehende Kapitel.)

Im Lager der Arbeiter hat sich die Zusammenarbeit auch auf wirtschaftspolitischem Gebiete in Form der Genossenschaften geltend gemacht.

Einen Hauptrepräsentanten der Arbeitergenossenschaft-Bewegung bildet der "Zentralverband der czechoslovakischen Genossenschaften in Prag".

Durch etliche seiner Beschlüsse hat er sich auf den Neutralitätsstandpunkt gegenüber der politischen und religiösen Ueberzeugung seiner Mitglieder-Genossenschafter gestellt. Er organisiert neben Konsumgenossenschaften auch Produktions- und Wohnungsgenossenschaften, Oekonomie-Pachtgenossenschaften, Finanzgenossenschaften, Volkshäuser und andere genossenschaftliche Gebilde.

Der Statistik für das Jahr 1926 zufolge wiesen die in diesem Verbands vereinigten Genossenschaften folgende ziffermäßige Resultate auf:

Zahl der Genossenschaften	1.237
Zahl der Mitglieder	465.548
Beschäftigte Personen (nebst Genossensch.-Zentrale)..	10.486
Losung in den Genossenschaften	1.129.165.647.— Kc.
Auf die Mitgliedergeschäftsanteile eingezahlt	78.938.714.— "
Reservetonds und andere Fonds	45.142.287.— "
Von den Mitgliedern an Ersparnissen erzielt.....	183.561.716.— "
Inventar und Einrichtung in den Bilanzen der Genossenschaften ausgewiesen	4.302.544.— "
Realitäten, ausgewiesen in den Bilanzen der Genossenschaften	550.840.604.— "

Zahl der in der C. S. R. sich befindenden aktiven Genossenschaften am 31. Dezember 1926 nach dem Charakter ihrer Tätigkeit:

Raiffeisenkassen	4.027
Bürgerliche Vorschusskassen	1.314
Gerwerbliche Vorschusskassen	740
Landwirtschaftliche Genossenschaften (Einkaufs-, Verkaufs-, Produktions- und andere Genossenschaften)	4.318
Genossenschaften der Gewerbe- und Handeltreibenden	808
Produktions- und Arbeitsgenossenschaften der Arbeiter und Arbeitergenossenschaften der Heimarbeiter.....	654
Konsumgenossenschaften	1.110

CECHOSLOVAKEI

Bau- und Wohnungsgenossenschaften und Genossenschaften von Volkshäusern	1.428
Allgemeine Wohlfahrtsgenossenschaften (Genossenschaften zum Bau von Turnhallen, Rekonvaleszentenheimen u. ä.)	65
Verschiedene andere Genossenschaftsgebilde	13
Zusammen.....	14.854

Die Zahl der Mitglieder der Genossenschaften lässt sich auf Grund mancher statistischer Berichte der Genossenschaftsverbände nach den genossenschaftlichen Standesgruppen folgendermassen einteilen:

Arbeitergenossenschaftswesen (Konsumgenossenschaften, Produktions-, Kredit-, Wohnungsgenossenschaften, Volkshäuser u. ä.)	Mitglieder	960.000
Landwirtschaftliches Genossenschaftswesen (Kredit-, Einkaufs-, Verkaufs-, Produktions- und andere Genossenschaften	„	650.000
Gewerbliches und Bürgerliches Genossenschaftswesen (Kredit-, Verkaufs-, Einkaufs- u. a. Genossenschaften)	„	90.000
Zusammen.....	Mitglieder	1.700.000

Multiplizieren wir die Zahl von 1.700.000 Mitgliedern in den Genossenschaften mit der schätzungsweisen Zahl von 4 Familienangehörigen, erhalten wir 6.800.000 Einwohner, welche am Genossenschaftswesen in der Cechoslovakei interessiert sind. Manche Genossenschafter sind Mitglieder auch von mehreren Genossenschaften, demgegenüber sind die schätzungsweisen Ziffern betreffs der Mitgliederzahl in den Genossenschaften sehr niedrig gegriffen. Dieses Faktum beweist, dass ca. 50 % der Einwohnerschaft unseres Staates am Genossenschaftswesen interessiert ist, und das ist für die Freunde der Genossenschaftsbewegung eine sehr erfreuliche Sache.

Zusammenarbeit des Lagers der Arbeitgeber mit dem der Arbeitnehmer. In der C. S. R. wurde auf diese Zusammenarbeit zu Beginn der staatlichen Selbständigkeit sehr viel aufgebaut. Er waren dies einerseits die sog. Paritätskommissionen, welche Lohnfragen und Fragen der Kollektivverträge, insofern sie strittig wurden, lösten. Auf paritätischer Grundlage wurde auch der sog. Beirat für wirtschaftliche Fragen (eine Art Wirtschafts-

parlament) geschaffen, welcher Gutachten über Gesetzentwürfe wirtschaftlichen und sozialen Charakters abgibt. Auch einzelne soziale Institutionen (wie die Zentral-Sozial-Versicherungsanstalt) sind im Prinzip der Parität geleitet. Diese Zusammenarbeit hat auf die wirtschaftliche Entwicklung einen sehr günstigen Einfluss, sie verhindert Kämpfe und Vergeudung der Kräfte.

Zusammenarbeit der Fachorganisationen mit den fachwissenschaftlichen Institutionen.

Auch diese Zusammenarbeit hat sich in der C.S.R. sehr geltend gemacht. Es wurde die sog. Gemeinbürgerschaft der Fachtechnischen- und wirtschaftlichen Organisationen in Prag geschaffen, an welche die grossen Fachorganisationen der Arbeitnehmer und zugleich Fachkräfte beteiligt sind, welche sich mit der Lösung wirtschaftlicher und sozialer Fragen befassen. Es wird hauptsächlich nach dem Prinzip des Laboratismus (Technisch-ethischer wirtschaftlicher Progressivismus) gearbeitet, welcher von dem Prinzip der wissenschaftlichen Organisation, der Unterstützung des technischen Fortschritts und der ethischen Auffassung der Arbeit * ausgeht. Eine analoge Zusammenarbeit ist in der Schaffung der sog. Fortschrittlichen wirtschaftlichen Gemeinbürgerschaft verwirklicht, in welcher sich die Bestrebungen nach Zusammenarbeit der Arbeitnehmer und der fortschrittlichen Arbeitgeber unter Beteiligung von Fachleuten und wissenschaftlichen Institutionen konzentrieren.

Zusammenarbeit einzelner Komponenten im Unternehmen. Je mehr die Kraft der Fach- und politischen Organisationen der Arbeiter wuchs, desto mehr machte sich das Bestreben nach Schaffung einer bestimmten Repräsentation der Arbeitnehmer geltend.

Schon vor dem Weltkriege existierten in den grossen Unternehmungen sog. "Vertrauensmänner-Ausschüsse", die aus den Reihen der Angestellten zum Zwecke der Vertretung ihrer Interessen gegenüber der Verwaltung des Unternehmens gewählt wurden.

Nach dem Weltkriege machte sich diese Forderung in Form

* Sieh: Bulletin du Comité Intern. d'Organisation Scientifique, Jahrg. II. 1927.

CECHOSLOVAKEI

von Vereinbarungen (Kollektivverträgen) geltend, bis es zur Annahme eines Gesetzes, betreffend die Betriebsausschüsse im Bergbau und dann darauf im Jahre 1921 zu dem Gesetze über die Betriebsausschüsse im allgemeinen kam. Das ersterwähnte Gesetz geht einigermaßen weiter, da es dem Bergmann auch eine bestimmte Beteiligung an der Verwaltung und - in elementarer Form - Anteil am Gewinn zuspricht.

Die bisherigen Erfahrungen mit diesem Gesetze sind ganz günstig. Es war eigentlich nur eine Petrifikation des früheren Standes. Die Betriebsausschüsse sind ein gutes Bindeglied zwischen dem Arbeitnehmer und der Verwaltung des Unternehmens. Sie können eine geeignete Basis für die engste Zusammenarbeit werden. Die amtlichen Berichte der Gewerbeinspektoren führen an, dass heute die Arbeiterschaft im Ganzen in vielen Fällen das Gesetz nicht einmal ausnutzt, da es kein hinreichendes Interesse für dasselbe habe. Die Betriebsausschüsse sind auch eine wichtige Komponente bei der Durchführung der Fürsorge um die Sicherheit und die Gesundheit der Arbeiterschaft und vermögen auf diesem Gebiete eine ausgiebige Unterstützung der amtlichen Aufsichtsorgane zu bilden, denn sie können auf Grund der genauen Kenntnis der örtlichen Verhältnisse und der direkten Wahrnehmung der Gefahr in verschiedenen Stadien der Erzeugung auf diese (die Gefahr) aufmerksam machen, welche selbst bei sorgfältigster amtlicher Visitation des Betriebes übersehen werden kann. Es wäre wohl nur zu wünschen, dass die Mitarbeit der Betriebsausschüsse in dieser Richtung noch zielbewusster würde, und dass die Betriebsausschüsse bei den Amtshandlungen sich, wie dies mancherorts zu geschehen pflegt, nicht auf eine bloss passive Teilnahme beschränken.

In zahlreichen Unternehmungen wurden auf die Stellen des Betriebsausschusses nur Vertrauensmänner durch Wahl berufen.

INDUSTRIAL WELFARE WORK *

Allgemeiner Stand der Betriebsstätten in Bezug auf Gewerbe-Hygiene und Sicherheit. Fast sämtliche Gewerbeinspektoren führen viele grössere Unternehmungen an, welche bedeutende Rekonstruktionen durchgeführt haben, damit die Arbeiterschaft unter möglichst günstigen Bedingungen arbeite, trotzdem im abgelaufenen Jahre eine bedeutende Beschäftigungslosigkeit in manchen Industriezweigen scheinbar unproduktiven Investitionen hinderlich im Wege stand. Zu Gunsten der Sicherheit bei der Arbeit wurden die Transmissionsvorrichtungen durch Elektromotoren ersetzt; besondere Sorgfalt wurde der Beseitigung des Staubes aus den Werkstätten gewidmet u. z. entweder durch Mechanisierung bestimmter Arbeitsprozesse und ihre Isolierung von den Arbeitsstätten, oder durch Absaugevorrichtungen.

Lüftung, Absaugung des Staubes, der Gase und Dämpfe. Der Arbeitsatmosphäre ist auch sonst eine erhöhte Sorgfalt gewidmet, man sorgt für einen automatischen Austausch der Luft in den Betriebsstätten, ferner für Anfeuchtungseinrichtungen, durch welche die Hitze zur Sommerzeit bedeutend gemässigt wird. Gleiche Vorrichtungen werden auch dort verwendet, wo die Erzeugung selbst die Ursache unerwünschter Erwärmung der Werkstätte ist. Insofern es sich um Verunreinigung der Luft durch Ausdünstungen und Gase handelt, die mit der Erzeugung zusammenhängt, wurde viel für die Absaugung und Verringerung der Belästigung der Arbeiter durch giftige Gase geleistet. Speziell wurde auch für die Beseitigung von Nebel in den Betriebsstätten durch Zufuhr von heisser Luft und Absaugung der gesättigten Luft gesorgt.

Beheizung der Arbeitsstätten. Die Gewerbeinspektion hat auf eine ordentliche Ausheizung der Arbeitsstätten besonders gedrungen. Speziell vorteilhaft hat sich die mittels elektrischer Ventilatoren über kleine Dampfheizkörper getriebene Luft bewährt.

Schutzvorrichtungen. Die Rationalisierungsbestrebungen führen auch zur Würdigung einer der wichtigsten

* Als Quelle wurden hier einerseits die amtlichen Berichte der Gewerbeinspektoren, andererseits direkt gewonnene Erfahrungen, eventuelle Korrespondenzen aus den Unternehmungen, benützt.

CECHOSLOVAKIEI

Betriebskomponenten, das ist, der menschlichen Arbeit. Es ist erfreulich, dass die Mehrzahl der Berichterstatter ein erhöhtes Verständniss für die Schutzvorrichtungen festgestellt haben. Bis auf einige Ausnahmen wächst auch in den breiten Schichten der Arbeitenden der Sinn für die Fürsorge und die eigene Sicherheit. Hier hat auch viel die Tages- und Fachpresse und dann die verschiedenen auf die Unfallverhütung gerichteten Aktionen gewirkt. Einige Korporationen und private Unternehmungen haben eine Reihe von Abbildungen, Plakaten, Vademeka, illustrierte Belehrungen auf Lohnkouverts etc. herausgegeben, bezw. veranstaltet, welche ihre Mission voll erfüllt haben. In dieser Beziehung wurde auch viel gefährliche Arbeit, gefährlich durch die Möglichkeit eines Unfalls oder einer Erkrankung durch Mechanisierung des Arbeitsprozesses ersetzt, oder die Arbeiter wurden für diese Kategorie Arbeit durch spezielle Schutzvorrichtungen ausgerüstet. (Automatisierung der Operation mit ätzenden Flüssigkeiten, Verwendung von Gasmasken, Lichtsignalen u.s.w.)

Neue Arbeits- und Erzeugungsmethoden. Fast $\frac{2}{3}$ der Gewerbeinspektoren referieren über Rationalisierungsbestrebungen und Verwendung von neuzeitlichen Errungenschaften der Technik. Durch geeignete Einrichtungen strebt man eine ökonomischere Ausnutzung der teuren Brennstoffe an. So wird in den Gasanstalten die Abfallwärme zur Deckung des Bedarfes von Wärme in den Trocknereien verwendet. Ebenso wird dem Kohlenstaub und Kohlengrus sowie dem Koksstaub und ihrer besten Verwertung besondere Aufmerksamkeit gewidmet. Der Auspuff-Dampf wird zur Erwärmung der Köcher benutzt. Auf die ökonomische Ausnutzung der Wärme zielen auch die Rekonstruktionen zum Zwecke der mechanischen Beförderung der Erzeugnisse durch die Oefen beim Ausbrennen ab. Wie bereits bemerkt, kam es zum Zwecke des Ersatzes der bisherigen Handarbeit bei gefährlichen Verrichtungen (in der chemischen Produktion und bei schweren Lasten) in vielen Fällen zu einer prinzipiellen Reorganisation und eventuell zu einer vollständigen Mechanisierung der betreffenden Produktion (z.B. in Sägen, Kalköfen,

Ziegeleien), ebenso wurde eine Reihe von automatischen Schutzvorrichtungen gegen Entstehung gefährlicher Brände, das Ueberlaufen, Ueberhitzen, Verbrennen, und so weiter eingeführt.

Bäder, Garderoben und Speisesäle. Soweit die Berichte die Sache behandeln, verzeichnen alle ein wachsendes Verständnis der Unternehmer für obligatorische Einrichtung von Bädern und Waschgelegenheiten. Einige Inspektorate stellten eine ausserordentliche Sorgfalt der Unternehmungen für die Gesundheit ihrer Arbeiter fest, die aus den mustergültig eingerichteten Bädern und Waschgelegenheiten ersichtlich ist. Eine Fabrik zur Erzeugung von Kammgarnen errichtete Luxusbäder und bezahlte den Arbeitern für die im Bade zugebrachte Zeit einen Lohn für 20 Minuten. In vielen Fällen ist auch eine gleiche Sorgfalt den Speisezimmern und Garderoben gewidmet. So kann man auch Unternehmungen mit Speisezimmern mit bester Einrichtung vorfinden, in welchen sogar ein Piano, Blumen, Plakate aus den Gebieten der Industrie, der Hygiene, Zeitungen und ähnliches vorhanden ist. In einem andern Falle gibt es ein so geräumiges Speisezimmer, dass es die Leute auch als Turnhalle benützen können. Der Bericht erwähnt auch die geeigneten Einrichtungen für das Ausruhen der Arbeiter, welche die Mittagspause ausserhalb ihres Heims verbringen.

Bemerkenswerte Unfälle. Unter den normalen Unfallerscheinungen verdienen alljährlich einige Fälle besondere Aufmerksamkeit. Der Bericht erwähnt einen Unfall durch Inbrandgeraten von mit entzündbarem Staub verunreinigten Kleidern eines Fassbinders in einer chemischen Fabrik; einen Unfall bei der Explosion eines Löschapparates, einen Unfall durch eine labil befestigte Schutzwand u. a.

Gesundheitsstand der Arbeiter, Berufskrankheiten. Ueber den allgemeinen Gesundheitsstand der Arbeiter muss gesagt werden, dass in der letzten Zeit bedeutende Aenderungen eingetreten sind. Die Lebensbedingungen der Arbeiterschaft gestalteten sich im ganzen durch den Einfluss der Verschlechterung der Arbeitsgelegenheit, unzureichenden Verdienst, die Teuerung der notwendigsten Lebensmittel und auch

CECHOSLOVAKEI

durch die Wohnungskrise ungünstiger. Die meisten Erkrankungen sind durch das Einatmen schädlicher Ausdünstungen oder von Staub herbeigeführt. Gegenüber dem Vorjahre kann von einer bedeutenden Verringerung der Bleivergiftungen gesprochen werden, weil diese bloss bei 2 % der Arbeiter gegenüber 5 % im Vorjahre aufgetreten sind. An den Webstühlen in einer Fabrik zur Erzeugung von Kunstseide litten die Arbeiter durch die Schwefel-Kohlenstoff-dämpfe derart, dass sie eine Verkürzung der Arbeitszeit auf 4 Tage in der Woche bei vollem Lohne erhalten mussten. Eine spezielle Sorgfalt wurde dem in Glashütten auftretenden "Grauen Staar" gewidmet und sind dermalen Studienarbeiten im Gange, welche die Ursachen und den Schutz in Bezug auf die Krankheit zum Zwecke haben. Die bisherigen Berichte liefern bereits eine bestimmte Direktive. Man empfiehlt, dass die Kinder von Glasarbeitern nicht zur Ausübung des väterlichen Handwerkes herangezogen werden, denn Leute mit erblicher Inklination zur Erkrankung der Augen werden häufiger betroffen. Die Gewohnheit, das linke Auge zu schliessen, hat gewöhnlich die Erkrankung des rechten Auges zur Folge. Die Erzeugung von Holglas erweist sich von diesem Standpunkte aus gefährlicher als diejenige von Press- und gezogenem Glas.

SCIENTIFIC MANAGEMENT.

Die Cechoslovakie ist sehr rasch nach dem Weltkriege zum Bewusstsein der Bedeutung der Bewegung wissenschaftlicher Organisation gelangt und hat dieser Aufgabe grosse Aufmerksamkeit zugewendet. Als Beweis hiefür genügt gewiss, dass durch ein besonderes Gesetz vom Jahre 1919 zu diesem Zwecke eine spezielle Institution unter dem Namen "Masaryk Akademie der Arbeit" gegründet wurde, dass im Jahre 1924 eines der Institute dieser Institution (Institut für technische Industriewirtschaft) den ersten internationalen Kongress für wissenschaftliche Arbeitsleitung in Prag veranstaltete und dass aus diesem Kongresse unter Mitwirkung der Masaryk Akademie der Arbeit und des "Amerikanischen Engineering Council" das internationale Comité für wissenschaftliche Organisation hervorging, und dass aus diesem Milieu heraus auch die

CECHOSLOVAKEI

Genfer internationale Institution für wissenschaftliche Organisation der Arbeit hervorgegangen ist.*

Ueber die Gesamtentwicklung des Managements in der csl. Republik informiert übersichtlich das Bulletin du Comité d'Organisation Scientifique, Jg. 1928.

In der Masaryk-Akademie der Arbeit bildeten sich spezielle Kommissionen heraus, wie: Zur Feststellung der Verluste in der Textilindustrie, zur Feststellung der Verluste in der Holzindustrie; überall wird hier die Frage sowohl am Material als auch an der menschlichen Energie studiert, und die Arbeitsbedingungen erforscht.

Ferner fungiert in der Masaryk-Akademie der Arbeit das psychotechnische Institut, einerseits eine praktische (durch Prüfung für die Berufswahl) andererseits auch eine wissenschaftliche Richtung verfolgend. Psychotechnische Institute errichteten sich auch die elektrischen Unternehmungen der Hauptstadt Prag, das Ministerium für Nationalverteidigung (Behufs Prüfung der Chauffeurs, Piloten u. s. w.), ferner die grossen Unternehmungen, wie die Firma T. & A. Bata, Schuhfabrik in Zlin, über welche noch an anderer Stelle gesprochen wird, die Eisenwerke in Wittkowitz und einige Unternehmungen des Textil-Industrie-Gebietes.

An der Masaryk-Akademie der Arbeit wurde auch eine Kommission für Unfallverhütung gegründet, welche im Einvernehmen mit der Unfallversicherung und den Interessenorganisationen die Probleme der Unfallverhütung in der Industrie studieren wird. Die erste Etappe - Propaganda, Bedeutung der Verluste, Belehrung - wurde vielverheissend inaugurirt. (Plakatierung, Vorträge, Flugblätter u. s. w.)

Für die Berufswahl existiert ein ganzes Netz von Beratungsstellen mit einer Zentrale in Prag.

Folgendes ist ein konkretes bemerkenswertes Beispiel einer landwirtschaftlichen Unternehmung:

"Prinzipien" für die Beteiligung am Gewinn der Angestellten der Teinitzer landwirtschaftlich-industriellen Unternehmungen des Herrn J. K. in Teinitz.

* Proceedings. First International Management Congress Prague 1924.
P. Devinat: L'organisation scientifique en Europe, Genève 1926.

CECHOSLOVAKEI

Eine Beteiligung am Gewinn der Teinitzer landwirtschaftlich-industriellen Unternehmungen geniessen die Angestellten dieser Unternehmungen mit Beginn des 1. Jänner 1928 für die Dauer von drei Kalenderjahren, d. h. bis 31. Dezember 1930. Nach Ablauf dieser Probefrist wird der Eigentümer der Teinitzer landwirtschaftlichen Unternehmungen Herr J. K. nach Massgabe der erzielten Resultate dieser Aktion entscheiden, ob die Beteiligung auf weitere 10 Jahre verlängert, abgeändert oder aufgehoben werden soll. Im Verlaufe der dreijährigen Probedauer haben die beteiligten Angestellten das Recht, darüber zu entscheiden, ob die beantragte Beteiligung nach den weiter unten festgesetzten Prinzipien für die ganze Dauer von drei Jahren durchgeführt oder aufgehoben werden soll, in welchem Falle das normale Verhältniss in Geltung tritt. Der Eigentümer der Teinitzer landwirtschaftlich-industriellen Unternehmungen ist demgegenüber gebunden, die beantragte Beteiligung zu den unten angegebenen Bedingungen im Verlaufe einer dreijährigen Dauer einzuhalten.

Die Angestellten, welche am Gewinne der Teinitzer landwirtschaftlichen Unternehmungen im Sinne dieser Statuten beteiligt sind, sind: Beamte, Angestellte, Deputatarbeiter, ständige Tagelöhner, die in der Landwirtschaft mindestens 150 Tage im Jahre bei den landwirtschaftlich-industriellen Unternehmungen arbeiten, Waldarbeiter, welche mindestens 100 Tage im Jahre in den Teinitzer landwirtschaftlich-industriellen Unternehmungen beschäftigt sind. Von der Beteiligung sind einstweilen sämtliche Angestellte der Ziegelei in Vacov und des Kalkofens in Loreta, betreffs welcher auch weiterhin das System der Entlohnung in Geltung bleibt, ausgenommen. Diese Vorkehrung ist einstweilen mit Rücksicht auf die Unrentabilität dieser Unternehmungen notwendig, welcher Umstand den Anteil der übrigen Beschäftigten ungerechter Weise herabdrücken würde.

Die Unternehmungen, deren Erträgnisse der Beteiligung der Angestellten am Gewinne unterworfen sind, sind: Die Feldwirtschaft der Höfe Teinitz, Lomec, die Waldwirtschaft, die Molkerei, die Fischerei, der Obstbau, die Geflügelzucht, die Bienenzucht, der Gemüsebau, die Verkaufsstellen in Klattau,

Pilsen und Prag. Von der Beteiligung am Gewinn ist das Ertragnis des Hauses "Chicago" in Prag, Národní třída 30 neu, und ebenso die Ertragnisse der Unternehmungen, welche Herr J. K. eventuell ausserhalb des Rahmens der Teinitzer landwirtschaftlich-industriellen Unternehmungen gründen wird ausgeschlossen. Von der Beteiligung sind ferner die Ziegelei und der Kalkofen, aus den im zweiten Abschnitt angeführten Gründen, ausgeschlossen.

Die Grundlage für die Berechnung der Anteile der Angestellten am Gewinne ist der Reingewinn der der Beteiligung unterworfenen Unternehmungen (siehe Abschnitt 3), der gemäss den ordentlich geführten Büchern der Buchhaltung der Teinitzer landwirtschaftlich-industriellen Unternehmungen unter den nach dem Handelsgesetz für ordentlich geführte Bücher geltenden Prinzipien festgestellt wird. Von den buchgemäss festgestellten Gewinnen der der Beteiligung unterworfenen Unternehmungen, werden insbesondere die nach dem Gesetze über die direkten Steuern und dem Gesetze über die Stabilisierungsbilanzen zulässigen Abschreibungen und Abzugsposten abgerechnet, ferner werden die Zinsen und Amortisationen von der auf den Teinitzer landwirtschaftlich-industriellen Unternehmungen lastenden Hypothek in der Höhe von Kc. 1.600.000 in Abzug gebracht, da dieses Geld durchwegs zu Investitionen und zum Betrieb verwendet würde, ferner alle Steuern und Abgaben, inclusive der mit Fälligkeit 1927 vorgeschriebenen Einkommensteuer. Vom 1. Jänner 1928 wird der Eigentümer, Herr J. K., die Einkommensteuer aus seinem Gewinnanteile decken. Die übrigen Steuern und Abgaben werden jedoch auch weiterhin für die Berechnung der Beteiligung am Gewinn eine Abzugspost bilden. Der Reingewinn der gemäss Pkt. 3 Unternehmungen, eventuell die Verluste, welche diese Unternehmungen ausweisen, wird summiert und die oben angeführten Abzüge in Abrechnung gebracht. Der Rest bildet dann die Grundlage zur Aufteilung des Reingewinns. Dieser zur Verteilung bestimmte Rest wird weiter unten als "Reingewinn" bezeichnet.

Der Reingewinn wird in der Weise verteilt, dass dem Eigentümer der Teinitzer landwirtschaftlich-industriellen Unterneh-

CECHOSLOVAKEI

mungen, Herrn J. K., 60 % zukommen und an die Angestellten 40 % verteilt werden. Im Falle der Eigentümer der Teinitzer landwirtsch.-industriellen Unternehmungen, welcher bisher ein Zimmer im Beamtenhause benutzte, für seinen Bedarf ein Wohnhaus im Umkreise der Teinitzer landwirtsch.-industr. Unternehmungen erbaut, gebührt ihm der Ersatz der faktischen Auslagen zur Errichtung von 7 Wohnräumen samt Zubehör, weiter alljährlich das Gehalt des Direktors und das Reisegeld für die im Interesse der Teinitzer landw.-industriellen Unternehmen unternommenen Reisen.

Ferner hat der Eigentümer der Teinitzer landw.-industriellen Unternehmungen das Recht, im Laufe des Jahres die individuellen Verdienste der Angestellten zu belohnen, welche Belohnungen für die Berechnung des Reingewinns ein Abzugsposten sind.

Von den 40 % des Reingewinns, welche nach dem oben Angeführten den Angestellten gebühren, werden dem Reservefonds der Angestellten 10 % u.z. solange zugewiesen, als dieser Fonds nicht die Höhe von 300.000.— Kc. erreicht hat. Dieser Reservefonds dient dazu, in ungünstigen Jahren dennoch eine bestimmte Quote als Ersatz für eventuell entgangenen Gewinn, als Folge eines schlechten wirtschaftlichen Resultates irgend eines Jahres ausbezahlen zu können. Dieser Fonds wird von einem Vertreter der Beamtenschaft, einem Vertreter der Arbeiterschaft und dem Eigentümer verwaltet, welcher letzterem jedoch nur eine beratende, aber keineswegs entscheidende Stimme zusteht. Ferner werden aus dem Fonds gewisse ausserordentlich Unterstützungen der Angestellten, betreffs welcher der Ausschuss beschliessen wird, gedeckt.

Der Reservefonds bleibt Eigentum der Angestellten. Bei Verlassen der Anstellung in den Teinitzer landwirtsch.-industr. Unternehmungen erhält der Angestellte den Teil des Reservefonds, welchem er selbst im Verhältnisse zu seinem Gehalte oder Lohne eingezahlt hat, samt 4 % vom Tage der Einlage bis zum Tage des Verlassens der Anstellung zurück.

Die Angestelltenquote vom Reingewinn wird im Verhältniss zu den ausgezahlten Löhnen oder Gehalten in der Weise ausbezahlt, dass jeder Angestellte eine Anweisung an die Kassa

CECHOSLOVAKEI

der Teinitzer landwirtsch.-industriellen Unternehmungen, lautend auf den 1. Jänner, 1. April, 1. Juli und 1. Oktober des auf das Bilanzjahr folgenden, resp. des für die Berechnung als Grundlage angenommenen Jahres erhält. Jede Anweisung lautet auf $\frac{1}{4}$ des, nach dem oben Angeführten, zur Auszahlung bestimmten Anteils und ist zu den angegebenen Quartalen fällig, wobei dem Eigentümer der Anweisung 5 % Zinsen von den nach dem 1. Jänner behobenen Raten ab 1. Jänner des betreffenden Jahres ersetzt werden. Die Angestellten haben das Recht, sich einen behördlich autorisierten Buchsachverständigen zu wählen, und bei Abschluss der Bilanz sich durch seine Vermittlung von ihrer Richtigkeit zu überzeugen.

Im Falle die Bilanz des Kalenderjahres zum 1. Jänner des kommenden Jahres nicht abgeschlossen wurde, wird der Eigentümer, resp. sein Vertreter den wahrscheinlichen Reingewinn abschätzen und darnach werden Vorschüsse zur Verteilung bestimmt, bei Abschluss der Bilanz jedoch eventuelle Rückstände oder Ueberzahlungen verrechnet werden.

Einen Bestandteil dieser Prinzipien bildet die Richtschnur, dass jeder Arbeiter berechtigt ist, Anträge zur Verbesserung der Wirtschaft zu stellen. Jeder solche Antrag wird vom Eigentümer geprüft und im Falle der Annahme des Auftrags erhält der Antragsteller eine Prämie.

Die alljährlich auf Grund eines Kollektivvertrages vereinbarten Löhne bleiben in Geltung und werden die Grundlage des Minimallohnes bilden. Die bisherigen freiwilligen Zuschüsse zu diesen Minimallohnen, allerdings nebst der Beteiligung am Gewinn, bleiben in Geltung, insolange die wirtschaftliche Situation dies gestattet. Zu diesem freiwilligen Beitrage kommt immer, nach der Höhe des Gehaltes, die aus der Beteiligung am Gewinn hervorgehende Erhöhung hinzu.

N.B. Da die Möglichkeit besteht, dass durch die spätere Entwicklung einzelne Produktionsabteilungen buchhalterisch selbständig werden, und diese individuell, je nach dem Resultate am Reingewinn partizipieren werden, behält sich der Eigentümer J. K. vor, im Falle dieser Einrichtung den Plan in diesem Sinne zu ändern, allerdings im Einvernehmen mit den Angestellten.

CECHOSLOVAKEI

Die Firma T. & A. Bata praktiziert die Beteiligung am Gewinn in einer besonderen Weise und es wird über dieselbe speziell gesprochen werden.

LEISTUNGSFAEHIGKEIT DER ARBEITER.

Die Leistungsfähigkeit der Arbeiter hat im ganzen allerdings bereits das Vorkriegsmass erreicht. Da und dort kann man sogar noch von einer kleinen Besserung sprechen, welche sich dadurch erklärt, dass sich der Arbeiter seine Beschäftigung durch gute Leistungen zu erhalten getrachtet hat, um nicht in Gefahr zu laufen, bei dem bestehenden Ueberfluss an Arbeitskräften durch einen tüchtigeren Arbeiter ersetzt zu werden. Der Wettstreit um den Absatz, insbesondere in der ausländischen Konkurrenz, nötigt die einzelnen Unternehmungen zu ständiger Vervollkommnung der maschinellen Einrichtungen, zu systematischem Studium und zur Einführung neuer Arbeitsmethoden, was einen entscheidenden Einfluss nicht nur auf die Qualität und das Aeussere des Erzeugnisses, sondern auch auf eine Erhöhung der Leistungsfähigkeit der Arbeiter ausübt. So z.B. erzeugt eine Schuhfabrik heute in 8 Stunden so viel als sie früher in 11 Stunden zu erzeugen vermochte. Gute Anregungen der Arbeiter werden durch Prämien belohnt. Eine Möbelfabrik hat auf dem gleichen Wege ihre Leistungsfähigkeit um 10—15 % gegenüber der Friedensleistung erhöht. Auf die Erhöhung der Leistungsfähigkeit hat auch die Länge der Arbeitszeit Einfluss. Als Beweis hiefür wird das Beispiel einer Fabrik angeführt, welche durch Einführung von zwei Schichten nach 40 wöchentlichen Stunden bloss um 5—10 % kleinere Löhne ausbezahlte, obwohl die Arbeitszeit um 17 % verkürzt wurde. Eine Steigerung der Leistungsfähigkeit hängt im allgemeinen mit der Accorarbeit zusammen. Die Verdienste der Accorarbeit überstiegen überall den durch Kollektivvertrag garantierten Grundlohn. Es wurde auch die Bedienung zweier Maschinen eingeführt, wodurch die Leistungsfähigkeit, respektive der Lohn, bis um 30 % erhöht wurde.

FRANCE

PAR M^{LE} E. ROUX,

Surintendante Sté Lorraine-Diétrich (Motor d'avions) Argenteuil, France

Dans l'ordre des réalisations nous n'avons que peu de choses à signaler durant ces derniers temps, mais il se précise dans notre pays un mouvement très intéressant en faveur de l'organisation scientifique du travail, de la rationalisation, de la psychologie appliquée et du développement du service social en général. Mouvement venant des deux extrémités du monde du travail.

Mouvement ouvrier. M. Jouhaux, Secrétaire-Général de la C. G. T. dans "Le Peuple" (juillet 1927) indique la rationalisation comme l'un des problèmes économiques les plus importants de l'heure actuelle.

"La rationalisation doit avoir pour conséquences immédiates l'augmentation des salaires, améliorant les conditions d'existence des ouvriers en relevant leur puissance d'achat."

Dans le patronat, le mouvement est non moins marqué, le Redressement français * fait une véritable campagne dans les milieux industriels.

De grosses usines de métallurgie ont modifié leur fabrication et ont introduit le travail à la chaîne, des laboratoires de psychotechnique, permettant, avec un personnel mieux adapté, un rendement supérieur, une diminution du prix de revient, un accroissement des salaires.

Seules les conditions économiques n'ont pas permis, la généralisation de ces méthodes dans l'industrie moyenne.

EDUCATION ET FORMATION PROFESSIONNELLE THEORIQUE ET PRATIQUE, ORIENTATION PROFESSIONNELLE - ENSEIGNEMENT TECHNIQUE.

A l'heure actuelle, le Gouvernement, les industriels, les Syndicats, surtout patronaux, en un mot tous ceux à qui incombent les responsabilités du personnel, sentent la nécessité d'orienter, éduquer, former le personnel. Ils s'intéressent à toutes les branches, depuis l'ouvrier jusqu'à la direction.

* Cf. J. Zamanski: Les rapports organisés entre le capital et le travail.
E. Mercier: Les conséquences sociales de la rationalisation en France.

FRANCE

Dans la taxe d'apprentissage (loi du 9/7/1925, décret du 9/1/1926), payable par tous les patrons, les subventions sont ainsi réparties (dans la métallurgie)

60 % de la taxe pour subventionner les établissements formant des ouvriers qualifiés,

20 % pour les écoles de cadres,

10 % " " " d'ingénieurs (dirigeant),

10 % enseignement ménager.

Bien des industriels dépassent le chiffre fixé par la taxe et organisent chez eux une instruction et une éducation professionnelle complète, nous nous bornerons à citer l'exemple de la Cie de Chemin de Fer du P. O. d'après une conférence de M. Lacoïn, Ingénieur en Chef à la Cie d'Orléans.

L'apprentissage est ainsi organisé:

A p p r e n t i s s a g e - recrutement des apprentis, instruction pratique, cours de formation générale, cours de formation professionnelle, formation des instructeurs;

F o r m a t i o n des cadres à partir des apprentis, cours supérieurs et stages leur permettant d'accéder aux grades supérieurs de l'administration;

C o u r s de perfectionnement des agents autres que les apprentis, cours du soir, s'adressant soit au service actif, soit au service administratif.

La formation morale n'est pas négligée.

Une bibliothèque, un journal "d'apprenti P. O." dont les articles sont souvent signés par les apprentis eux-mêmes, des sociétés sportives, une association amicale des anciens apprentis, des conférences répétées.

Nous citerons également les oeuvres de pré-apprentissage; apprentissage et oeuvres annexes des usines de la Cie des Forges de Montluçon.

L'enseignement y est très divers:

A coté des travaux manuels d'atelier (menuiserie, ajustage etc.) des travaux manuels (jardinage, peinture ,travaux divers) de l'éducation physique, une formation intellectuelle et une formation morale, tel est le Programme de l'école de pré-apprentissage.

Puis l'apprentissage se poursuit à l'atelier.

FRANCE

Des bourses d'enseignement supérieur sont données aux élèves méritants.

La Chambre du Commerce de Paris a organisé des ateliers écoles dans toutes les branches de l'activité formant des ouvriers et des employés des deux sexes. L'enseignement est général et professionnel et permet aux enfants travailleurs et intelligents d'accéder aux emplois supérieurs.

Plusieurs Chambres de Commerce en province ont également créé des écoles d'apprentissage, plus spécialisées dans les professions locales.

DEVELOPPEMENT DU SERVICE SOCIAL EN GENERAL.

Les oeuvres sociales en général peuvent se répartir en quatre groupes suivant qu'elles se rapportent: au problème de la natalité; à l'organisation des loisirs; à la Prévoyance, ou qu'elles répondent aux besoins créés par la difficulté du recrutement de la main-d'oeuvre.

Les cités-jardins, les Sociétés de prêts immobiliers, les restaurants ouvriers se sont multipliés.

Se sont multipliés également les Sociétés sportives et les cours d'adultes, les Sociétés Coopératives de consommation, et, en vue de l'application de la loi sur les assurances sociales: les Mutuelles-Maladies.

Mais c'est sur le problème de la natalité que convergent les efforts du service social dans l'industrie.

Le repos des femmes en couches est porté de 8 semaines à 12.

Les crèches d'usines (décret du 2/6/1926) sont remplacées par des primes d'allaitement.

Les caisses de compensation se répandent de plus en plus et s'adjoignent un service d'infirmières-visiteuses.

Tous les services publics, ou sous le contrôle de l'Etat, versent des allocations familiales.

Même presque tous les départements exigent que leurs concessionnaires de travaux publics soient affiliés à une caisse de compensation.

D'une manière générale, les organisations ouvrières désapprouvent ce principe du genre de service social, mais individuellement les ouvriers semblent l'apprécier beaucoup.

FRANCE

ORGANISATION SCIENTIFIQUE DU TRAVAIL.

PARTICIPATIONS AUX BÉNÉFICES { CO-GESTION.
 { ACTIONS DE TRAVAIL

Plusieurs établissements dans le but d'augmenter les salaires, et d'accroître simultanément le rendement, ont transformé leur méthode de travail et ont obtenu des résultats intéressants.

Nous citerons en passant une Cie d'Assurance qui a effectué des réformes intéressantes (Cf M. Burlot) par une organisation rationnelle:

En augmentant le rendement du personnel par l'institution de primes au rendement, de gratifications pour la qualité du travail et pour les initiatives du personnel;

Par l'introduction du machinisme. Les économies obtenues par la diminution de personnel ont servi:

$\frac{1}{3}$ pour l'amortissement des machines,

$\frac{1}{3}$ réparti entre le personnel,

$\frac{1}{3}$ bénéfiques de la Compagnie.

Une autre grosse administration fait participer le personnel aux bénéfices et aux pertes.

Les ouvriers, employés et la Direction sont intéressés suivant la même formule, mais il est établi un coefficient de responsabilité suivant le poste occupé.

Une grande imprimerie de la région du Sud-Ouest a pu, grâce à une organisation remarquable, améliorer sensiblement la situation de son personnel, diminution du prix de revient entraînant une hausse des salaires sous forme de participation.

"La prime est le stimulant brutal surexcitant l'exécutant et le poussant généralement à obtenir, coûte que coûte, les résultats auxquels on le convie pour en tirer un appoint important du salaire.

"Il ne se soucie pas des conséquences de ses actes sur les moyens employés, et souvent sur la qualité du travail.

"La participation est le résultat d'efforts communs du patronat et du salariat vers un meilleur état de la production, vers une meilleure et plus sûre utilisation des moyens par la réalisation d'économies de temps, de mouvements, de matières, par leur

modification progressive ou leur transformation, avec partage dans des conditions proportionnelles aux efforts et à la qualité des efforts accomplis de part et d'autre, des avantages recueillis par l'action commune." *

Citons encore l'institution d'actions de travail créée par une société anonyme d'Alimentation de la Région Parisienne dans le but d'intéresser son personnel à la bonne marche de l'usine. Le nombre d'actions varie avec l'importance du poste occupé et l'ancienneté à l'usine. Pour déterminer le nombre d'actions à attribuer à chaque poste, une délibération a eu lieu entre l'administrateur-délégué et les membres du personnel représentant les différentes branches du travail à l'usine.

Enfin, une grande Biscuiterie du Sud-Est a publié en 1927 les résultats du fonctionnement depuis 1919 d'un conseil paritaire de conciliation, ce conseil ayant traité toutes les questions concernant le service du personnel: Durée du travail, apprentis, salaires, etc.

Si les "délégués ouvriers" institués par décret dans les usines de guerre en 1917, ont disparu, on constate que grâce à l'introduction du système de la participation aux bénéfices et au nombre toujours croissant des contrats collectifs de travail, la main-d'oeuvre, peu à peu, prend une part active à la gestion des entreprises, mais il semble bien que la question ne soit pas encore mûre pour une solution législative.

PSYCHOLOGIE APPLIQUEE A L'INDUSTRIE. PSYCHOTECHNIQUE (SELECTION ET ORIENTATION).

Bien que la France puisse s'énerguer d'être la patrie des promoteurs de la psychologie appliquée: les docteurs Binet et Simon, qui ont élaboré les premiers tests mentaux et le physiologiste Marey qui, le premier, se donna à l'étude des mouvements, il faut reconnaître que la méthode scientifique de sélection et d'orientation professionnelle n'est qu'à peine sortie du laboratoire.

Deux établissements publics: la "Société des Transports en Commun" à Paris qui emploie plus de 30.000 agents et la "Station de Radiotélégraphie" à Toulon, ont un laboratoire de psychotechnique en pleine activité.

* M. A. Barennes - Imprimerie D. C. G. Bordeaux.

FRANCE

La première a publié des résultats très intéressants sur la réduction des nombres des accidents et l'économie réalisée.

Cette année même, deux grandes firmes d'automobiles à Paris ont également confié à M. Lahy, professeur à la Sorbonne, l'organisation de laboratoires pour la sélection de leurs ouvriers.

Enfin, plusieurs offices d'orientation professionnelle annexés à des offices publics de placement - Nantes, Toulouse, Marseille - font subir quelques tests à leurs jeunes candidats.

Mais l'emploi de la méthode des tests n'est pas généralisé, les industriels français à court de main-d'oeuvre emploient au mieux les candidats qui se présentent à l'embauchage.

LEGISLATION.

Notons la ratification de plusieurs conventions passées à Washington et à Genève sur:

le travail de nuit des femmes et des enfants,
l'emploi de la céruse,

la semaine de 48 heures (cette dernière n'étant que conventionnelle, c'est-à-dire qu'elle n'aura plein effet qu'après ratification de la Grande Bretagne et de l'Allemagne;

la réglementation des travailleurs étrangers en très grand nombre sur le territoire, faisant concurrence aux travailleurs indigènes et dont la situation fut très critique lors de la sérieuse crise de chômage en 1926-1927;

l'emploi obligatoire des mutilés de guerre dans une proportion de 10 %;

L'institution d'allocations temporaires aux anciens accidentés du travail en raison de la baisse du franc et, par conséquent, de l'accroissement du coût de la vie;

La détermination de la taxe d'apprentissage par décret du 9/1/1926.

En préparation, une modification de la loi sur les accidents du travail, augmentant les indemnités et accordant des allocations pour charges de famille,

une extension du bénéfice de la loi sur les accidents du travail aux maladies professionnelles autres que le saturnisme et l'hydrargirisme seuls visés quant à présent,

FRANCE

enfin, le projet de loi sur les Assurances Sociales, très attendues de la Classe ouvrière et qui doivent couvrir: la maladie, l'invalidité, la maternité, la vieillesse.

INSPECTION DU TRAVAIL.

L'inspection du travail encourage toutes les initiatives privées, désireuses de contribuer au mieux-être du travailleur et en vue de sa sécurité.

Au courant du mouvement moderne en faveur de l'organisation scientifique et du développement des oeuvres sociales de toutes sortes, elle prête le concours de son expérience, et sert d'agent de liaison entre les différentes branches de la vie industrielle, patronat, salariat et l'Etat.

En résumé, nous croyons pouvoir dire qu'en France des deux côtés du monde du travail, un besoin de collaboration étroite se fait sentir et que l'industrie s'achemine vers un terrain d'entente compatible à la fois avec les progrès scientifiques modernes et la nature humaine.

INDIA

BY JAI MANGAL SINHA,
Model Industries, Dayalbagh, Agra

India, which is preeminently an agricultural country, is one of the largest countries of the world. While it is true that only 10.5 per cent of the total population of the country are engaged in industry, one has to bear in mind that this small percentage constitutes over thirty millions of humanity. As industrial country it has a place on the council of the International Labour Office at Geneva.

It is not possible in the very short space available to sketch the industrial conditions of India as it needs to be done; and it must be borne in mind that the industrial situation cannot be considered apart from the political, social and religious conditions of the country and the intellectual development of its people. It is essentially an agricultural country, with immense latent industrial resources. Man-power is still cheaper than machine-power. The industrial development is still only in its early stages, but power-driven factories are coming into existence, and the evils of industrialization, some of which are unknown in the West, have already begun to show themselves.

We in the East have, however, the experience of the West before us, and hope to learn from it.

Some of the employers of labour have a patriotic outlook and are awakening to the importance of modern industrial developments, and schemes for the welfare of the employees have been instituted in various places.

Broadly speaking, there are three types of industrial organisation in the country;

Capital urban industry in which the wage-earner is completely divorced from the raw materials and the instruments of production. In these industries most of the problems arising in the West between employers and employed are arising in India.

The capitalist rural industry, in which the worker is domiciled on the plantations and there is a closer contact between the employer and employed. On account of such industries being situated in more or less isolated parts of

the country workers' hardships receive little publicity or attention.

Cottage industries. These are generally akin to the domestic system which prevailed in Britain before the modern era of steam and mechanical invention.

The largest employer is the Government itself, which manages a number of services entailing complex organisation, Railways, posts, telegraphs, good printing presses employ a vast number of workers. On the railways alone there are 1,500,000 employees. The conditions of the mass of Government employees are practically the same as those of the wage-earning proletariat in capitalist industries.

More Indian capital is invested in the cotton industry than in others, the average wage per male worker being 1/11 per day of eleven hours. For women workers it is 1/½ a day. In the Jute industry almost half of the capital invested is Indian, but the management is entirely in the hands of foreigners. The wages paid are very meagre, the combined average weekly wages of three workers for factory work being 14/5. In mining, (which is centred chiefly in Bihar, Bengal and Central Provinces) the conditions of the mines and the mine workers are very unsatisfactory. The housing conditions there as a rule are particularly disgraceful. The wage earned by a man is from 10d to 2/- a day for underground work. More than 60,000 women earning from about 8d to 10½d per day have in recent years been introduced to underground work in mines.

It has been said that the conditions in India are peculiar to that country. From the human point of view they are not different from those prevailing in other countries. But the working and living conditions of the workers and peasants are such as to menace civilization. The cotton mills of Lancashire work 32 hours per week, those of India 60. In every industry in India we find the workers working about twice as long as their fellow workers in similar industries in Europe and the U. S. A. In wages the difference is more amazing. For the wage paid to every single working woman in Lancashire it is possible to employ from six to twelve Indian

INDIA

women in the cotton mills there. The British miner gets for one working shift as much as ten Indian miners. Indian wages are abysmally below European and American standard. Speaking generally, the vast majority of workers receive not more than about a shilling per day. This will not be understating the position if one bears in mind that in the wages paid there is a veritable maze of exactions, deductions and forfeitures. This system of fines, which amount to from 8 % to 10 % of the wages, is by no means peculiar to the textile mills, yet it is in these places that the system is rooted. Wages are paid generally on the 15th of the month for the work done during the previous month, giving rise to perpetual indebtedness as the lot of the industrial worker.

The housing conditions are scandalous. There are three classes of huts in which the workers live, and a fourth is probably the broad highway and the open canopy of heaven. 1) Mud hut, a single room, shared both by the worker, family and his cattle. 2) Open bamboo fretwork type of hut, with a thatched roof. 3) The chawl, or one-roomed tenements. About 90 % of the workers in Bombay live in such tenements.

On account of low wages and high cost of living the workers run into debts and have to pay interest to the money-lenders ranging from 75 % to 300 % on the principal. An estimate of the state of affairs can be made from the following figures. A man earning below £2-5-0 per month - and the percentage of such men is very large indeed - runs into a debt of about 4/- every month. A man earning from £2-5-0 to £3-0-0 a month can just manage to save 10d.

It may be said with truth that millions and millions of men, women and children get only half, and often less than half the amount of food needed to appease the pangs of hunger. The Government of Bombay recently appointed a Committee to enquire into the conditions of industry, and their findings are that a worker consumes the maximum of cereals allowed by the Famine Code, but less than the diet prescribed in the Bombay Jail Manual. Cereals form the staple food of the

INDIA

Indian worker, and they cannot afford to buy fresh fruit, meat, etc.

Taking a broad view of the conditions of industrial life, it can be said that they are very pitiable. The standard of existence is very low. The congestion and insanitation in the larger cities are almost beyond belief. Great illiteracy prevails amongst the masses. The infant mortality is very high (in Bombay the figures available are 400—500 per thousand children below the age of one year) owing to the low standard of living and poverty compelling suckling mothers to work in order to earn a living.

That such a state of affairs should exist in the world of today should be a matter of deep concern to all. For the very conquest over the forces of nature that modern science has given us has resulted in bringing different parts of the world closer to each other, annihilation of distances has brought not only people but also their affairs closer to each other. An evil in one part has a direct and a quicker reciprocation on the state of affairs in altogether another part of the world. It is no longer a mere ethical theory but a cold economic fact in the world of today that an injury to one is the concern of all. India has long been regarded as especially suited for economic exploitation by costly militarism and police, and it is upon those who have instituted and maintained the system, and richly benefitted from its working, that the responsibility for such a condition must be placed.

The organized Labour Movement is of recent origin. Trade Unions, with the exception of two (the Press Employees Association and the Postmen's Union) began to be established ten years ago, and there are now 175 Trade Unions and 10 Federations, with a membership of about 200,000, out of a total of a little under two millions coming under the Factories Act. The Trade Unions have adopted a structure based more on industry than on craft, with the exception of a very few. Of the 175 Unions, 75 are organisations of Government and semi-Government servants, and of the 10 Federations, one, the All-India Trades Union Congress, has co-ordinated all kinds

INDIA

of trades in all provinces of the country; while the others co-ordinate the individual Trade Union in their respective trades. This All-India Trades Union Congress is the chief working-class organisation.

The number of strikes is steadily increasing. For British India, in the first half of 1927, there were 74 conflicts causing a loss of 977,244 working days. Of these, 32 strikes were in the Textile industry.

The activities of the Unions in general have so far been confined to attempting to secure the redress of the grievances of their members by making representations to their employers. No Trade Union has yet made a beginning to pay either sickness or unemployment benefits. The organisation of workers is rather difficult on account of their lack of education (below 7 % of the entire population are literate), inability to pay contribution and also their periodic employment (due to the majority of workers having to look after their lands etc.). But such organisation as does exist has been suppressed by the authorities, and is rarely officially recognised. The Trade Union Act was passed in 1927, and the Unions are now registering under that Act.

The legal limitations to the exploitation of the workers are very meagre. The maximum working week is 60 hours and the day 11. The minimum age for children is 12 years (they cannot be employed for more than six hours a day). The working hours underground are 54 a week, but with no limitation of the working day. Children under 13 are not permitted underground. The Workmen's Compensation Act permits very inadequate rates, and there are no provisions to prevent the imposition of fines nor for unemployment, sickness or maternity benefits; neither is there any prohibited period for the employment of women before or after childbirth. The organised workers' demand, however, is for weekly payment of wages, the Truck Act, machinery for fixing a minimum wage, and hours of work at 44 a week and 8 a day. This demand is still a cry in the wilderness. The children in the factories are being exploited by their parents, and also by the employers, both for their respective economic reasons. It is hard

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INDIA

to get them to realise that the children in the market are competitors and keep the wages down.

Welfare work in India as carried on by philanthropic bodies and progressive employers takes the form of providing more space, better lighting, ventilation, better water supply and conveniences; Co-operative Credit Societies, shops, baths, crèches, schools for children and medical help. Some employers provide housing accommodation, open-air and indoor games, cinemas, etc.

It is not possible to give an exhaustive description of the various welfare schemes at present conducted in the different factories. It will however be sufficient to say that the movement has been started, and though it has not attained the proportions which it has in the West, it is certain that it has come to stay, and the employers are beginning to realise its importance.

I might mention here that the second All-India Welfare Workers Conference fixed for 1926 has not yet been held.

Other points of interest to this Association, namely scientific management, application of industrial psychology, vocational guidance, profit-sharing and co-partnership schemes, are, to the best of my knowledge, not at present known in India.

It will be clear that immediate efforts are required to be made to raise the minimum conditions allowed by law in regard to workers, child and women labour. Minimum wages standards should be enforced and prompt payment of wages made compulsory. Factory inspection should be strengthened and legislation to protect the worker in time of unemployment, sickness, old age and maternity is urgently needed, and also provision for better housing, with rents within the reach of the average worker.

Our efforts at present are to lift the Indian worker into a new stage of constantly improving wages, giving them hope for the immediate future and enabling them here and now to have what is the first essential to all workers in the world, namely a firm grip on the means of life by the necessary increase of purchasing power at present-kept out of their reach.

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INDIA

Active co-operation between the workers and employers of labour in India and in the East generally on the one hand, and the workers and employers of the West, who enjoy a higher standard of life, on the other, to bring about a steady increase in the standard of living of the Indian worker, is an imperative necessity in the world today, not only from our point of view but also from the point of view of the people of the West who are interested in preserving the standard of living enjoyed by their working people today.