

UNIVERSITY REFORM

BY A TEACHER.

*(Read before the Students Literary & Scientific Society
Bombay, 1895, 29th June)*



Source of quote

“Our remedies oft in ourselves do lie,
“Which we ascribe to heaven: the fated sky
“Gives us free scope; only doth backward pull
“Our slow designs, when we ourselves are dull.”

SHAKSPEARE.



Surat:

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“The mass of men, simply because they are a mass of men, receive with difficulty every new idea, unless it lies in the track of their own knowledge; and this opposition, which every new idea must vanquish, becomes tenfold greater when the idea is promulgated from a source not in itself authoritative.”

LEWES' LIFE OF GOETHE.

“It is the duty of scholars and philosopher to shrink from holding and expressing what men of the world call quixotic opinions; for, if I read the history of the world rightly, the victory of reason over unreason, and the whole progress of our race, have generally been achieved by such fools as ourselves “rushing in where angels fear to tread,” till after a time the track becomes beaten, and even angels are no longer afraid.”

MAX MÜLLER.

To

W. WORDSWORTH, Esquire, B. A., C. I. E., LL. D.,

Retired Principal of Elphinstone College,

and

Vice-Chancellor of the Bombay University ;

and

The Hon'ble Mr. JUSTICE RANADE, M. A., LL. B., C. I. E.,

Judge, High Court, Bombay,

THIS PAPER IS RESPECTFULLY INSCRIBED,

In appreciation of their services to the cause of

EDUCATION IN WESTERN INDIA.

BY

THEIR GRATEFUL AND AFFECTIONATE PUPIL.

The importance of the bearing of a sound system of education on the right solution of all social and political questions on which depends the well-being of a people has not been sufficiently recognised by the leaders of native thought. The topics that absorb all the public attention are financial, political and social reforms. Hence the ignorance and apathy generally shown for educational problems. The spell of indifference was, however, broken for a time last year by the controversy between Dr. Bhandarkar and the Hon'ble Mr. Justice Ranade. In this controversy the question of University Reform was made unnecessarily to depend upon the answer to the question whether or not the university strain was responsible for the heavy death-rate among the graduates. The question of University Reform deserves public attention irrespective of the question of mental strain; and I drew public attention to this last year in the columns of the Gujarat Mitra and gave my reasons for such an opinion.

The articles having attracted the attention of persons interested in University Reform, it was suggested to me that I should draw up my recommendations in the form of a paper. And this paper is the result of that suggestion. Being desirous to correct my own views by the light of the views of other people, I submitted my original articles, with all their imperfections, to several gentlemen, both Native and European—for their opinions and suggestions. The result was encouraging beyond my expectations. I have to thank the Hon'ble Mr. R. M. Sayani, M. A., LL. B., Messrs. N. G. Chandavarker, B. A., LL. B., G. M. Tripathi, B. A., LL. B.,

M. M. Munshi, B. A., LL. B., A. S. Davur, B.A., and D. E. Wacha, of Bombay; Messrs. M. H. Desai, B. A., K. P. Trivedi, B. A., and D. B. Wells, M. A., of Ahmedabad; Messrs. K. M. Dave, B. A., LL. B., and L. P. Adalja, of Rajkot; Prof. B. A. Enti, of Bhavnagar; Prof. M. N. Dwivedi, of Baroda; and Principal Jervis, Dr. A. D. Cooper, and Khan Saheb J. E. Modi, B. A., LL. B., of Surat, for their sympathy and appreciation of the views on reform proposed by me. Revd. H. R. Scott, M. A., of Rajkot Mission, Revd. G. P. Taylor, M. A., D. D., of Ahmedabad Mission, Principal Gajjar of Kala-Bhavan, Prof. Middleton, of Baroda College, and Khan Bahadur B. E. Modi, M. A., LL. B., Judge of the Small Causes Court, Surat, have laid me under much obligation by their great interest and valuable suggestions. Finally, the ungrudging assistance of the Hon'ble Mr. Justice Ranade, M. A., LL. B., C I. E., has proved invaluable in the preparation of this paper. I cannot, however, hold any one responsible for the views expressed in this paper but myself.

I have purposely avoided going into detail of studies for the various examinations, because I hold, with Principal Gajjar, that the subject is vast and requires the co-operation of many specialists. What is omitted in this paper will be found, however, fully treated in Principal Gajjar's able Note on University Reform.

SURAT,
April, 1895.

CHAIRMAN AND GENTLEMEN,

As in social and political reforms, so in educational reforms there have been two parties, *viz.*, those who are for reforms and those who are against them. This state of things is by no means to be deprecated, as it affords the best means of exhaustively sifting the pros and cons of a question, and arriving at a tolerably safe and sound conclusion avoiding extremes. The conservative or orthodox party acts as a wholesome check upon the sometimes too exuberant zeal of an honest but go-a-head reformer. In this sense, and in no other, would the antagonism be welcome. But what surprises one is that many Indians and even those who advocate social reforms seem to set their faces against educational reforms. At any rate they think that educational reforms are not either necessary or possible. This tendency to cry down educational reforms in India is probably due to the fact that, after a long age of stagnation, the present educational activity owes its origin to western agency and western influence, and the Indians, having lost the power of initiating for themselves any line of reform, cannot look forward beyond what has been attempted by their English masters. They fondly think that the acme of perfection has been reached when they blindly copy their model. But this is a mistake.

Gentlemen, you are aware that complaints have been made year after year against the management of our University affairs. Frequent complaints have been made against the principles followed in making the appointments of examiners, against the vagaries of the examiners, against the clandestine disclosure of questions before they were actually set to the candidates in the Examination Hall, against frequent and abrupt changes in the standards of examination, and against the amount of work exacted from students to the detriment of their health, and sometimes even of their lives.

You are aware of the circumstances under which Mr. Mehta's Committee of enquiry was appointed. Professors complained of the length of the courses; and Head Masters complained of the fluctuating and uncertain test of the Matriculation Examination. For instance, while in the year 1871 all the thirteen candidates for the LL B. degree were declared to have passed the examination, two years after in 1873 only one out of six candidates was allowed to pass. While in 1892, 1054 candidates, representing a percentage of 35.48, were passed in the Matriculation examination, in 1893 only 649, showing a very much reduced percentage of 21.60, were declared to have passed. Such extreme results shake the faith of the public in the work of the university; and create a sort of most painful uncertainty and consequent demoralization. Moreover, they are unfair to the candidates as well as to their teachers. Regarding the value of the Matriculation examination results, the Rev. Mr. Taylor of Ahmedabad writes as follows :—

“At present it is quite impossible to gauge the relative attainments of candidates for that examination, since its standard varies so much in different years and at different centres. It is becoming more and more urgently felt that some kind of protection should be accorded to the examinees from the vagaries of newly appointed examiners.”

Lord Reay in his convocation speech gave the following parting advice to the senators regarding the necessity of having a fixed standard for examinations :—

“I might, perhaps, before we part, suggest that to maintain in your examinations that continuity of standards, which is so desirable, it may be deemed advisable by you to institute a Board of Studies to which all examination papers should be referred before they are issued to the candidates.”

Under all these circumstances I think you will readily agree with me that there cannot be two opinions regarding the necessity of reforms in the mode of conducting University examinations, as also in fixing the curricula.

There are, however, some gentlemen among the senators who seem to think that reforms are not possible. Among them is our learned Vice-Chancellor, Dr. Bhandarker. In his letter to the Times of India, dated 24th April last, he wrote :—

“ If Mr. Ranade thinks that the real evil lies in the University Curriculum, he ought to have faced that vital question and given us his solution of it, instead of contenting himself with a general allusion to the Pass Degree of the English Universities. He has not made any specific proposal as to how the standard should be reduced. The only definite thing that he and persons who think with him have got to say is that candidates who fail in certain subjects should be examined in the following year in those subjects only.”

Now I think Dr. Bhandarker and those who are of his opinion are perfectly right in making this demand from the advocates of reform. In accordance with this demand, gentlemen, I venture to appear before you, because I hold that reforms are necessary irrespective of the question whether the University strain is or is not responsible for the heavy mortality among the graduates. I ask your permission to lay my humble suggestions before you for your careful consideration. I am aware of the many shortcomings of all such schemes; but if they excite interest and lead to a fair and full discussion of this important public question, I shall not have troubled you in vain.

Before proceeding to consider in detail the suggestions for university reform, I shall state the principles on which they have been based.

Principles of Reform.

These principles are: (1) that culture and utility should be

The system of Boards of Studies should be adopted by our university to ensure that continuity of standards in examinations which is so desirable. Madras has 13 Boards of Studies, and Calcutta has 10, while we have none; and the consequence is that it is impossible for the syndicate to check the vagaries of examiners, and the fluctuations in the standards and the results year after year. The Boards should be empowered (1) to recommend examiners and assistant examiners in their respective branches; (2) to recommend the text books; (3) to consult specialists, who are not fellows of the University; and (4) to consider and report on all matters referred to them by the syndicate.

Calcutta seems to be very particular in laying down definite rules in all matters connected with the conduct of examinations. They are put down under two heads, *viz.*, general and special. I quote some of the most striking rules under the former head.

RULE 3. "Not less than a month before the commencement of the Arts Examinations the syndicate shall appoint examiners to look over the answer papers of the candidates and four Head Examiners to superintend the work of the Entrance Examiners."

RULE 13. "As soon as the results have been tabulated, the Registrar shall prepare a list of the candidates who have failed in one subject only and in order to guard against any possible inaccuracy their papers in that subject shall be re-examined by the original examiner, or by the Head Examiners, on the method of marking already adopted, and without any alteration of the standard."

RULE 14. "If any examiner fails to send in all his marks within the prescribed period, the amount of his remuneration shall be deducted by Rs. 16 for each day by which he exceeds that period."

RULE 18. "Not less than a month before the commencement of the Entrance and F. A. Examinations the syndicate shall appoint, from among the representatives of the Faculty of Arts, four Moderators. The Moderators, in consultation with the Registrar, shall be empowered to pass candidates who have failed in one subject only in either of the above examinations, by the addition of grace marks. If the Moderators and the Registrar are not unanimous on any point, it shall be referred to the syndicate at their next meeting."

Under the special head the following rules are worth quoting.

RULE 6. "The Head Examiner shall determine, in consultation with the Entrance Examiners, the method of marking the answer papers of the candidates."

RULE 7. "Each Head Examiner shall re-examine five per cent of the answer papers looked over by each of the Entrance Examiners in his subject, with a view to see whether they are working uniformly according to the method indicated, and shall direct, if necessary, any examiner to conform strictly to that method."

RULE 8. "In no case shall the Head Examiner increase or diminish the marks assigned to any paper by an Entrance Examiner without himself examining that paper."

RULE 9. "In case of a difference of opinion arising between a Head Examiner and an Entrance Examiner an appeal shall lie to the Moderators."

Calcutta like Madras allows the candidates to know what percentage of marks is necessary to pass in any head or subhead of an examination. Calcutta also publishes for the information of the public the scale of remuneration allowed for various examinations.

Our University would do well to adopt these rules. Had our university laid down clear and distinct rules for the conduct

of examinations there would have been no necessity of appointing Mr. Mehta's Committee.

I beg to invite the special attention of the advocates of Social reforms to the rules laid down by the Calcutta University under the head—General—for the encouragement of higher education among women, and the examination of Female Candidates. These rules are :—

1. Female candidates shall be examined in a separate place under the superintendence of ladies.

1. Female candidates may be admitted to this examination without studying in an affiliated institution. No candidate, however, shall be allowed to present herself for this examination, until two years have elapsed from the time of her passing the Entrance Examination.

F. A. Examination of
Female candidates.

2. Every female candidate shall be allowed to take up the subjects prescribed by the University of Calcutta for the F. A. course, with the option of substituting German, Italian or an Indian vernacular for the 2nd language.

3. Female candidates shall also be allowed to substitute Botany for Physics and Chemistry.

1. Female candidates may be admitted to this examination without studying in any affiliated institution. But no candidate shall be allowed to present herself for this examination until two years have elapsed from the time of her passing the F. A. examination.

B. A. Examination for
Female candidates.

I venture to ask, gentlemen, whether the adoption by our University of these or similar rules would not facilitate the progress of higher education among the Hindus and Mahomedans.

The Calcutta Medical College imparts tuition to the female candidates without charging any fees; and well might our Grant Medical College follow the example of Calcutta. If there are any

professions for which women are eminently fitted, they are the professions of teaching and medicine. We want them to work side by side with men in these professions, as they are sure to do much good. We know by bitter experience that it is idle to dream of social progress without the help of educated women.

CHANGES IN EXAMINATIONS AND CURRICULA.

The School Final Examination, I presume, is intended to be a test for candidates wishing to enter the Lower Grade Public Service or Mercantile Service. In the interests of the Public Service as well as the School Final candidates, Government should be asked to abolish the Departmental test for the 2nd Grade Public Service Certificate Examination, which is much inferior to the university examination test.

As the third head of compulsory subjects, Mental Arithmetic and Book-keeping, Official or Commercial correspondence and Precis writing, are desirable additions.

For the purposes of the School Final Examination, History and Mathematics, including Algebra and Euclid among the optional subjects, are of no practical use, and should be replaced by Shorthand writing.

If these suggestions are adopted this examination will meet the requirements of Government Service, as well as of the Mercantile Community.

When there is a U S. F. Examination for boys, there is no reason why there should not be a similar examination for girls, who may be unable to follow up their studies beyond the Matriculation examination. I beg to suggest the following subjects to which others may be added, if necessary.

I. English, II. A vernacular language, III. Arithmetic,
 Thring on Drawing as a subject for training. IV. Hygiene, V. Domestic Economy, and
 VI. Drawing. Regarding the value of

Drawing as a subject for training, Mr. Thring's words are worthy of attention. He says, "There is another subject almost as much within reach as language, which is entirely neglected as a training subject for mind, though equally open to all, which demands nicety of hand and eye, great mechanical skill, and introduces the dullest at once to strange discoveries in common things, that greatest point of true Education. It is marvellous that the grand training of Drawing has never taken its place as a teaching power. The learner is met on the very threshold by the truth of truths, that he has eyes that see not, and hands which cannot do his will. He finds out that the lines go in a way he knows not, though they are known. He looks at a wall, and sees what he sees, but is utterly unable to record what he sees; all is wrong the moment he begins. The very chair he sits in is a puzzle of untold difficulty. He is brought face to face with that grand fact of the wondrous perfection of accurate power in the midst of which he has moved unknowingly, and he comes in sight of the highest truth that man can attain to, a perception of his own unconscious ignorance, utter incapacity, and clumsiness. A fresh secret leaps out of every leaf, there is not a pebble which is not turned into a world. The transformation which follows immediately the smallest child is made to Draw, and set to observe the what and the why in things, and attention turned on to the endless discoveries of ignorance which are disclosed in this way, is more rapid and complete perhaps than in any other exercise of mind."

In the Matriculation examination of the Calcutta University, Drawing is admitted as an optional subject; and success or failure in that subject does not affect the result of the examina-

tion, or the position of the candidate in the list. If a candidate passes in that subject, the fact is simply notified by the University'

SECOND LANGUAGE.

To the second language list, I would suggest the addition of German. When we have admitted French among the classical languages, there is no reason why the claims of German should not be considered. It is not only a highly cultivated language, but it has done much for the advancement of the study of Sanskrit and Zend.

I would press upon the attention of the University authorities the claims of Marathi and Gujarati to be treated as classical languages. Even for the highest examination in Arts, *viz.*, the M. A. examination, the Madras University recognizes the following languages:—

I English, II Sanskrit, III Greek, IV Latin, V Hebrew, VI Arabic, VII Persian, VIII Urdu, and IX the group of Dravidian languages. Thus Madras by her recognition of the vernacular languages, even for the highest examination, has made a future of vernacular literature possible; while we, by our condemnation of them, have sealed the fate of vernacular literature.

The advocates of Sanskrit and other classical languages will say that if the vernacular languages are admitted to the rank of classical languages, students would flock to them. To obviate such a contingency, we might assign less marks for the vernacular languages, and make the course sufficiently high so as to deter indolent students from taking up these languages simply because they might be found to entail less study. If further precaution were necessary, it might be arranged that students taking up these languages should find no place in the First Division. But perhaps we exaggerate the fears of such a contingency, because we see that in Madras, Sanskrit and

Persian and other classical languages are taken up by a large number of students as well as the vernaculars.

In the Matriculation Examination, Elementary History and Geography and Elementary Science should form one group under the Head of General Knowledge, and should not form two distinct subjects as at present. In Calcutta, there is no Science paper at all. In Madras, Elementary History and Geography and Elementary Science form one subject.

When our University has appointed books for Astronomy and Chemistry, I do not see any reason why Text-books. text-books for History and Geography should not be appointed. The subject of Geography is one on which much valuable time of school boys is wasted without any adequate benefit. I would, therefore, make general Geography only so far compulsory as it serves to illustrate History. A text-book on Physical Geography should be fixed by the University. The same may be said of History, especially English History. Uncertainty in the subject of examination leads boys to have recourse to all sorts of manuals, and much precious time is thus wasted. Of the numerous schoolbooks on this subject, Professor Ransome's Short History of England stands unrivalled for its lucid treatment of the political events, and its simplicity of language.

There should be two examinations only at the interval of two years each for the B. A. degree and not three. No other university—Indian or English—exacts three examinations for the B. A. degree. The courses of the Previous and the Intermediate examinations should be thrown into one, and this single course should consist of the following subjects.

I English, II Classical Language, III Mathematics, IV Deductive Logic, V History, and VI Science (a) Physics, (b) Human Physiology, both elementary.

In the Calcutta University, the History course consists of the outlines of the History of Greece and Rome.

In the Madras University, the History course consists of the History of England from 1603, the History of Greece and the History of Rome.

In the previous Examination of our University only one History is required, *viz.*, either Greece or Rome. To give a connected knowledge of Ancient History, it would be better for us to follow the example of the Calcutta University with regard to this subject; because in our Matriculation Examination formerly four histories were required, and now only two are laid down, *viz.*, Histories of England and India. There are so many allusions and references to the Histories of Greece and Rome in English Literature, that a knowledge of one history only is not sufficient. But in order that the burden on the students may not unnecessarily increase I would suggest an elementary course, and not a full course in this subject.

Under the Science head, I have recommended two subjects, *viz.*, Physics and Physiology. In the Madras and Calcutta Universities, only one subject is required. In our own University one subject only is required; but for considerations which will be presently submitted to you, I beg to recommend both these subjects. While adding the subject of Elementary Physiology, I would suggest that the subject of Trigonometry be taken away from Mathematics, so that the burden on the students may not increase.

About the time when our University was founded, there was a hard fight in England between the old learning or the Humanities and new learning as the study of Physical Science was then called. Fortunately Physical Science had such advocates as Professors Huxley, Tyndall, Faraday, Drs. Carpenter, Hooker, Acland and Paget, and men like Herbert Spencer, Sir John

Herschell and Sir Charles Lyall, men in no way inferior to the most distinguished scholars, Mathematicians and philosophers in the grasp of their several subjects, or in logical faculty, mathematical accuracy, philosophical depth, and power of eloquence. They pleaded the cause of Physical Science nearly forty years ago and they triumphed; and England this day reaps the fruit of their devotion to Science. History repeated itself here in India. Thanks to the sagacity of Sir Richard Temple, we have a course in Science. But what I plead before you, gentlemen, is the necessity of teaching the Science of Health. The appropriateness of the subject cannot be questioned. The question of University Reform had its origin in the apprehensions created by the heavy death-rate of our graduates, and I may well ask if the ignorance of the laws of life and health is not a fruitful source of much human misery and loss of life. While pleading the cause of this science more than forty years ago, Dr. Paget said:—

“Though it might be impossible to teach more than a small part of the whole body of physiology, yet one who had learned even this part would have a better apprehension of the rest than one untaught could be. One, who had learned the general mode of study, and the labour which is spent in ascertaining physiological truths, and the great probability that what is generally accepted is at least nearly true, would, more than an untaught man, act on the advice of those who are instructed. Thus acting, he would, as a citizen, be no hinderer of improvements, no block of utter ignorance in the way of amending the sanitary condition of his fellows; with belief, if not with knowledge, he would give his help to good.”

Does the study of physiology exercise any moral and religious influence on the mind? Now this is an important question with regard to the influence of Western civilization on the reli-

gious and moral beliefs of the people of India, especially, the educated class. I shall have to refer to this question again later on; but in the meanwhile I shall answer this question in the words of Dr. Paget.

“But I have yet to speak of that through which, I believe, the general teaching of physiology would exercise the greatest influence upon the mind, namely, its being essentially a science of designs and final causes.”

..... “I would, therefore, have physiology taught to all as a study of God’s designs and purposes achieved; as a science for which our natural desire after knowledge of final causes seems to have been destined; as a science in which that desire, though it were infinite, might be satisfied; and in which, as with perfect models of beneficence and wisdom, our own faculties of design may be instructed.” He further said:—“The student of Nature’s purposes should surely be averse from leading a purposeless existence. Watching design in every thing around him, he could not fail, one would think, to reflect often on the purpose of his own existence. And doing so, if his mind were imbued with the knowledge of the mutual fitness in which all the members of his body, and all the parts of the whole organic world, subsist, and minister to each other’s good, he could not conclude that he exists for his own sake alone, or that happiness would be found separate from the offices of mutual help and universal good will. One who is conversant with things that have a purpose in the future, higher than that which they have yet fulfilled, would never think that his own highest destiny is yet achieved.”

For this and other examinations, if the principle of examining
The B. A. Degree course. by instalment is admitted, as is done
in English Universities, it should be
consistently carried out in all degree examinations. It might
be ruled that if a candidate passed in any subject in the second

class, he should be exempted from examination in the same subject in any future examination. This will lighten the burden on the student without making the University Degree too easy, and this will make the student all the better grounded in the remaining subjects. Should this course appear objectionable, I have an alternative course to submit for your consideration. This alternative appears to be a sensible one, and it is adopted by the Madras University. The B. A. Degree course should be divided into two sections, I, Language branch or the compulsory subjects, and II, Optional branch or the voluntary subjects. No candidate should be allowed to appear for an optional branch until he had passed in the Language branch; but having passed in that branch he should not be required again to present himself in that subject in order to qualify for the degree. The advantage of this rule is that, in case of failure in the optional branch, a candidate can devote his whole attention to his optional subject.

The B. A. course might be divided into a Pass Course and Honours Course, as is done in the Calcutta and English Universities.

The B. A. Course should consist of the following subjects:—
I, Language branch, (a) English, (b) Classical language, II, optional branch—one of the following:—

- (a) Mathematics and Natural Philosophy as in Madras;
- (b) Physical Science as in Madras;
- (c) Natural Science;
- (d) Geological Science;
- (e) History and Political Economy; and
- (f) Mental and Moral Science as in Madras.

The subject of Mental Science has been recognised long since by the Universities of Calcutta and Madras, while our University only lately recognised it, and that in a grudging spirit. It has been admitted among the voluntary subjects of

the B. Sc. course, and not among the Arts course to which it really ought to belong. The importance of the study of Mental Science to the teacher has not received that attention which it deserves in our University. Complaints were made as early as 1866 against cramming and crammers; but a deep thinker like Sir Henry Maine looked at this question from a different point of view. He said in his speech as Vice-Chancellor at Calcutta in 1866:—

“I am afraid it must be allowed that no art of equal importance to mankind has been so little investigated scientifically as the art of teaching. No art is in the hands of practitioners who are so apt to follow so blindly in the old paths. I say this with the full recollection that there has been great improvement in England lately, and that the books of teaching, most in use, have been purged of many gross errors both of statement and method. But one line of enquiry there is which has never sufficiently been followed, though one would have thought it antecedently the most promising of all,—the study of the human mind through actual observation, and the study of the expedients by which its capacity for receiving and retaining knowledge may be enlarged. The field of investigation has been almost wholly neglected, and therefore it may just be that we are on the eve of discoveries in Education, and that the processes of these teachers are only a rough anticipation of the future.”

Dr. Duncan, the learned Director of Public Instruction in his report in 1889 said with regard to the importance of the subject of psychology:—

“As to the not uncommon assertion that psychology is but an aggregate of guesses or conjectures more or less crude, and that it can never be anything else, I shall only say that this science either contains

a considerable body of well-ascertained facts and principles of the utmost value to the teacher, or it does not. If it does contain such facts and principles, it is all-important that the teacher should acquaint himself with them; if it does not, it is idle to speak about a *system* of education—whether intellectual or moral,—idle therefore to discuss whether it can be improved, there being no other foundation for a system of education than the phenomena and laws of mind.”

For the M. A. examination, I would recommend the Madras course, that is, one of the following subjects.

The M. A. Degree course,

- I. One of the Classical languages, English being one of them;
- II. Mathematics and Natural Philosophy;
- III. History and Political Economy;
- IV. Physical Science;
- V. Natural Science; and
- VI. Mental and Moral Science.

You will agree with me, gentlemen, that in the highest examination in Arts a thorough mastery should be aimed at and that in the short space of one or two years two languages cannot be studied so well as one.

The subject of History and Philosophy is a large one and therefore it is split up into two, *viz.*, History, and Mental and Moral Science. Each subject by itself is sufficiently large and would require the undivided attention of the candidate.

While dwelling on the importance of the study of Physiology I referred to the influence of Western Civilization on the religious and moral beliefs of the people of India, especially of the educated class. Mr. Cotton, a sincere wellwisher of the natives, in his *New India*, speaking of the moral crisis, says with regard to the religious tendency of the educated natives:—

“Our state colleges are content with chaos; their results are subversive only; the old belief is thrown off, the consequent disturbance issues in no real substitute, and the mental and moral state suffers from the Negation.”

As the subject is a delicate one, I shall content myself with simply drawing your attention to it. I shall only add that the Calcutta University has included a course in Natural Theology in the Mental and Moral Science group for the B. A. and M. A. examinations. The books prescribed for the latter examination are:—I, Caird's Introduction to the Philosophy of Religion, II, Martineau's Study of Religion, and III, Max Müller's Hibbert Lectures on the Origin and Growth of Religion as illustrated by the Religions of India.

Gentlemen, you will allow me to say that the work of the teacher is so important that it should be recognised by the University as a distinct and learned profession. Our University should institute an examination for the degree of Licentiate of Teaching (L. T.) as is done at Madras. Madras grants this degree to graduates intending to follow the profession of teaching. The university requires each candidate for the L. T. degree to forward “a certificate of having attended a full course of two terms at a Normal Institution authorized in that behalf by the Governor of Fort St. George in Council, or of having attended a full term at such Normal institution and having thereafter practised his profession for a period of at least six months. By special order of the Senate exemption from the production of such certificate may be granted in the case of persons who have, for a period of ordinarily not less than two-and-a-half years, been continuously on the regular teaching staff of a high school or college.”

The examination is both theoretical and practical. The theoretical portion of the examination includes I, Principles of

Education, II, History of Education in Europe from the rise of Universities to the present time, and III, Methods of Teaching and School management.

The Madras Educational Department has got a separate college for the special training of teachers. In these days of economy we cannot expect Government to establish such a college. Under these circumstances our University should hold an examination in the theory of education and grant the degree of L. T. to those who pass the test, provided the candidate produces a certificate from the Head of a college or a First Grade High School recognised by the University for the purposes of the examination that the candidate has continuously worked as teacher for full two years and is able to teach up to the seventh standard. To induce graduates to proceed for this examination, the Educational Department might reserve higher appointments for the successful candidates, such as Deputy Inspectorships, Head-masterships, and other appointments over one hundred Rupees.

The Madras University took this important step under the guiding influence of Mr. Grigg and Dr. Duncan, the Directors of Public Instruction. They have done a great service to India by raising the work of the teacher to the dignified position of a learned profession. Mr. Grigg, the then Director of Public Instruction said in his report for 1882-83 :—

“The absence of instruction in the science of education and in the history of education has had a prejudicial effect on the standard of teaching in Government and private schools, and it has led to the profession of teacher being looked upon rather as a means of securing admittance to more congenial occupations than as a distinct and honourable profession. To remedy these admitted

Mr. Grigg on the training of teachers.

defects, I proposed early in this year to institute a triple course of weekly lectures in the Madras Normal School the first in Psychology in relation to education, *viz.*, the scientific basis of education, the second in the general history of education in Europe, more especially since the revival of learning, and the third with the object of developing the present course of study in Method and School management. These proposals, which were more or less in accordance with the schemes adopted by the universities of Cambridge and London, were sanctioned by Government, and Dr. D. Duncan, M. A., Professor of Psychology and Logic in the Presidency College, was requested to deliver the psychological course, and the Rev. A. Alexander of the Madras Christian College the course in history, both these gentlemen having paid particular attention to these subjects. The acting Principal, Mr. G. Duncan, has undertaken to deliver the last course."

Five years after this the Madras University held the first examination for the degree of L. T. When the Government of India called for reports from local governments on the subject of Discipline and Moral Training in schools and colleges, and invited suggestions for their improvement, some of our educational officers reported against the idea of special training for teachers. But in Madras it was different. Dr. Duncan, the then Principal of the Presidency College and the present Director of Public Instruction, reported in 1889 not only in favour of it, but strongly insisted upon special training for teachers. He said:—

"I should like to see more generally recognised among teachers the necessity for some scientific knowledge of the structure and functions of the mind of the young. We do not allow the men to practise the medical profession without proof that they know something

Dr. Duncan on the training
for teachers.

of the structure and functions of the body. Yet we do not hesitate to entrust the delicate organisation of a child's mind to the bungling experiments of teachers. A certain amount of knowledge of the workings of the mind is doubtless picked up by every body in the course of experience, just as every body acquires some acquaintance with the structure and functions of the body. But we do not regard this latter amount of knowledge as a sufficient equipment for the medical man. In no profession, except in that of teaching, do we dispense with special instruction regarding the structure and functions of the things with which the profession deals."

Rao Bahadur Gopalji Surbhai Desai, Assistant Educational Inspector for Kathiawar, in his evidence before the Education Commission said :—

"At the same time it would be better were intending teachers practically instructed in the art of teaching in a class to be founded in the college under a special Professor." He further said that there was no doubt that beneficial results would be obtained by introducing into the Department more men of practical training. Rao Bahadur Ambalal Sakerlal Desai, Chief Judge at Baroda, in his evidence before the Education Commission expressed himself in favour of special training for teachers.

R. B. Gopalji Surbhai Desai on the training for teachers.

Sir R. West on the state of secondary education.

Sir Raymond West in his evidence before the Civil Service Commission gave his opinion against the holding of the Civil Service Examination in this country on the ground that secondary education in this country was in a *chaotic* state.

I beg to quote the recommendation of the Education Commission on this subject from the Brief Summary of the Report published by the Times of India.

“ While many have maintained that a University education is a sufficient training for a teacher, the *preponderating* opinion in the Commission was that some special training in the principles and practice of teaching is requisite, and the Commission recommend the institution of a public examination on this subject. This would allow a certificate of qualification for the office of teacher to be secured without insisting on any one going through a fixed course of attendance at a normal school. Teachers in secondary schools should be certified in some way. The making of teaching an honourable position should be aimed at, and teachers whether in Government or aided schools should have the same prospects.”

This recommendation was made thirteen years ago. I venture to ask if this recommendation of the Education Commission has received any serious attention either from the public or the University. Our University has complained from time to time of raw boys in the Entrance and Higher Examinations. Now what does that signify? It means that teachers in our schools and colleges are not doing their work properly. The teachers are supplied by the University, and if the University never thought of making teaching a special and honoured profession, the fault lies with it, and not with the students or the teachers. Consequently there is an amount of waste of mental energy in our educational institutions, which those who have paid no special attention to this subject can never realize. The result of this defective system is that our boys fail in examinations or they fail in health or what is worse still they fail in both.

Now those, who are pleased to remind us that our University was founded on the plan of London University, will bear in mind that London has considerably modified its system in

accordance with changed circumstances. We on the other hand are in a state of stagnation. In 1873 London took the important step of founding a Professorship of Education, and Mr. Joseph Payne was the first Professor of Education. Cambridge followed the example of London. "By Grace of the Senate, February 20th, 1879, the Teacher's Training Syndicate was appointed to organise courses of lectures on the Theory, History and Practice of Education, and to organise and superintend Examinations in the same subjects, and to award certificates of proficiency on the results of the Examination." Madras has been the first in India to follow the example of London and Cambridge. One of the resolutions of the Convocation of London University passed in 1893 was:—

"That it is desirable that this University should recognize, by the institution of a high degree, that considerable and important branch of knowledge that has received so much development during recent years in connection with the scientific study of education and it be referred to the annual Committee to consider a scheme for such degree and report to the next meeting of Convocation."

Gentlemen, in pleading the cause of Science and Art Education I must say I hold no brief from my professional brethren. Perhaps, if they were called upon to vote to-day, many of them would vote against my proposal. But I speak from personal experience and conviction. I am not ashamed to confess before you that during the course of 18 years I have on more than one occasion felt inconvenience arising from the want of knowledge of the Principles of Education in dealing with various classes of students—the quick, the plodding and the dull. I cannot say

if others have felt the same inconvenience. I plead the cause of your children and that of the future generations.

It would be better if our Alma Mater were to hold a higher examination in Law, such as the examination for the Master of Laws (M. L.) of the Madras University or Doctor of Laws (D. L.) of the Calcutta University.

The Law Course.

The faculty of Medicine is so important that I would like our conservative University to follow the example of the more progressive University of Madras. Our University should hold examinations for the M. B. degree and Licentiate of Sanitary Science on the plan of the Madras University, which is a sensible one.

The Medical Course.

In the faculty of Engineering there should be three examinations, *viz.*, L. C. E., B. C. E., and M. C. E.

The Engineering Course.

The Madras course of Bachelor of Civil Engineering in its twofold division—Mechanical and Civil Engineering is worthy of our adoption.

Calcutta and Madras Universities have no separate Degree for Science, the studies of this subject being included in the Arts course. Our Science Degree is of recent date and we owe it to the zeal of Sir Richard Temple for Science. He said :—

“Gentlemen, the exclusive devotion to Mental and Moral Philosophy as contradistinguished from Physical Science, and without sufficient subjection to the discipline of severe studies, such as Logic, Mathematics and Science, is apt to develop the very faults to which your mental constitution is prone. The imaginative faculties rise and spread so as to overshadow the reason; idealistic power flourishes so exclusively as to draw the vigour away from the realistic faculties.” Such was the object aimed at in the institution of a separate degree for Science.

But Professor Middleton of Baroda thinks that this object has not been attained. He has been pleased to favour me with his remarks on the course for the B. Sc. Degree examination, and I beg to quote them as they are worthy of your consideration.

“The syllabus prescribed for the B. Sc. examination is too lengthy for a three years course and as a consequence the pass standard is too low. Better results would be obtained by limiting the subjects students are expected to know, and by demanding a more thorough knowledge of the work professed. The object of founding a Science Degree in Bombay was to encourage the training of what Sir Richard Temple, in the portion of his address you quote, calls the ‘realistic faculties.’ A Science training was to combat the exclusively idealistic tendencies of the Oriental mind. I fear that Science has not been very successful and that in most cases the Oriental mind has found it easier to tackle the new subject in the old way, *viz.*, to “*learn*” science and to pass examinations with the help of the text-book and the memory, rather than to strike out a new path and ‘*study*’ science in the laboratory and the field. The majority of those who now take the B. Sc. of Bombay would in my opinion be more fittingly rewarded with an arts diploma, inasmuch as the passing of their examinations implies a certain amount of talent, a good memory and a sufficient knowledge of the English Language, but does not prove that they have studied science in a scientific way.”

Regarding the Agriculture course he says:—“The same sort of criticism might be made on most of those who appear for the Diploma in Agriculture Examination. Their knowledge is ‘literary’ not scientific. I do not think that students who have spent three years in studying the science of Agriculture

Professor Middleton on the
Science course.

Professor Middleton on the
course for Diploma in
Agriculture.

can be versed in the technicalities of the Art, but they ought to have a sufficient acquaintance with the condition under which practical farming is carried out in this country to understand the bearings of science on Indian Agriculture, and this knowledge very few of them possess.

“The Diploma in Agriculture I do not consider satisfactory ; it does not confer any of the privileges of a degree and therefore will not attract the best class of students, and at the same time the standard of knowledge and the cost of the education is much higher than can be expected of those who wish to adopt agriculture as a means of livelihood. Instead of the Diploma I should like to see the Agricultural course or part of it merged into a science degree, a degree in which the special requirements of the Revenue officers of Government would be taken into account. Unless the India Government finds it to its advantage to encourage the study of agriculture among those who are to be its servants, scientific agricultural education can never gain a footing in this country.”

Gentlemen, there are two principles in nature—the conservative and the liberal ; both are essential, the one for the stability the other for the progress of the world. I respect that conservatism, which springs from an honest conviction and impartial judgment from a full knowledge of the circumstances of the case ; but I have no sympathy and little respect for that spurious conservatism which refuses to see beyond the present, and which arises from blind prejudices and indolent habits of mind. I shall not anticipate your judgment in a matter which concerns not only the honour of the University, but its collective wisdom and the welfare and progress of the future generations.

Regarding reforms in Education Professor Hale's words are
 so sensible and so moderate that I
 cannot help quoting them.

“Surely the wise course now is not to set our faces against the incoming studies, but to do our best to regulate and order their admission. Let us give these strangers a judicious welcome. Let us frankly and generously examine what recommendations they have to advance for themselves. Let us banish utterly and for ever from our minds the notion of finality in education. Let us recognize that all our efforts are but tentative, and that we are yet an immeasurable distance, not only from absolute perfection, but from that degree of perfection which is attainable. May it not be indeed that we are at present in an extremely rudimentary stage of advancement in this momentous respect?—that the question of education is yet in its veriest infancy? Perhaps we are yet at the foot of the mountain, and have not really commenced the ascent. Not odder, it may be, in our eyes is the educational system of the Middle Ages than our present system will be according to the decisions of posterity. These possibilities should surely make us, not reckless revolutionists, but thoughtful, considerate reformers. The changes that are now making will in their turn perhaps be modified or superseded. There is no such thing as an educational canon which closes and is complete.”

Sir Raymond West has contrasted the conditions of conservative and progressive Universities in the following words:—

“In Bologna and Padua, as in Salerno, the refusal to accept the new learning left the Universities at last high and dry, while the stream of progress was passing by them. On the other hand the University of Paris developed into a splendid faculty by its readiness to accept light and truth, and thus became the centre and soul of the Universities all over Europe—the great mother of Universities—an institution in which the light of Science and Literature has never paled through any length of time down to our own day.”

The fact that I have made frequent and long quotations is in itself a frank confession that I claim no originality in placing these thoughts on reform before you. I have merely done the work of an honest labourer, though the labour has been a labour of love to me. The most important part of the work, and that which requires most intelligence remains for you to do, *viz.*, to sift, to compare and pass judgment. If after a careful consideration of the facts submitted to you, you are convinced that the need of reform has been fully established, I hope you will not rest satisfied with the present state of things, but work in perfect harmony, sinking personal differences and prejudices, for public weal, and earn the blessings of the unborn generations—the hope and strength of India.

APPENDIX.

EDUCATION AND THE PEOPLE.

I*

There are people, who think that Higher Education should not spread among the people; they wish to see Higher Education made dear and difficult and restricted to a limited number. They suppose that Higher Education, if restricted, will attract students, who love learning for its own sake and not for the prizes it offers. Now let us examine this statement, which is put forth so confidently, in season and out of season, by the light of past experience.

We ask how many sons of richmen have taken degrees and devoted themselves to learning for its own sake during the 36 years' existence of our Alma Mater. Dr. Bhau Daji and Professor Kero Lakshman were not richmen's sons. We venture to say that neither our learned Vice-Chancellor, who has shown such intellectual activity in his own line, nor the the Hon'ble Mr. Justice Ranade will claim to be sons of richmen. Neither our youngest M. D., Dr. Bahadurji, the Hon'ble Mr. P. M. Mehta nor the Hon'ble Mr. Dadabhai Naoroji, M. P. will claim to be richmen's sons. What is the past history of our best men and what moral does it point to? Hitherto sons of poor or middling parents either fired by ambition or pressed by necessity, have toiled and toiled hard without taking thought of health or life. We can safely say that this applies to the generality of our students, excepting cases here and there.

* This and the following article have been repinted from the Gujarat Mitra in which they originally appeared last year.

Now suppose our University followed the advice of those who are for making Higher Education dear and difficult and restricted to a smaller number; suppose, also our University produced a few eminent men. There would be thus two extremes in a community—a few illustrious men on the one hand, and the mass of the people plunged in darkness on the other. Is such a condition desirable in a people? At the time of the French Revolution eminent men were not wanting; but the masses of people were neglected, uneducated, and oppressed. The reign of terror was not the result of the light of education and refinement of feeling among the people, but the reverse. America has not yet produced a Shakespeare, a Milton, a Darwin or a Newton, but there is a general diffusion of knowledge and education among the people, and consequently the Americans, on the whole, are far better off than any older European Nation. Does England think of restricting Higher Education to the rich or very earnest students only? What is the history of the University Extension Scheme? During the year 1889-90 the

University Extension
Scheme.

average attendance at the lectures at
the four centres was 42,312 and the

number of certificates awarded was 3,927. How can those who advise us to restrict Higher Education among us be blind to the progress of it in their own country and in other civilized countries. To us the lesson of history is plain. The greater the number of intelligent people in a country and the higher the level of average intelligence, the higher will the people stand in the scale of civilization and the more successfully will they compete with other nations. Our customs, our manners our social institutions, our educational and political institutions, our trade, our commerce, our arts, our literature and our religion, all depend on the average intelligence of the people. Whether in peace or in war, a more educated people must win in the

battle of life. This is well illustrated by the remarks of Quick on Pestalozzi in his "Essays on the Educational Reformers."

"We have seen that the First Emperor Napoleon "could not be bothered about questions of A, B, C." His was the pride that goes before a fall. On the other hand the Prussian Government, which he brought to the dust in the battle of Jena (1806), had the wisdom to perceive that children will become men, and that the nature of the instruction they receive will in a great measure determine what kind of men they turn out. How was Prussia again to raise its head? Its rulers decided that it was by the education of the people. "We have lost in territory," said the king; "our power and our credit abroad have fallen; but we must and will go to work to gain in power and in credit at home. It is for this reason that I desire above everything that the greatest attention be paid to the education of the people." * * * * *

The king of Prussia on the importance of the education of the people.

"So in the day of humiliation Prussia seriously went to work at the education of the people, and this she did on the lines pointed out by Pestalozzi. To him they were directed by their philosopher Fichte, who in his *Addresses to the German Nation* (delivered at Berlin 1807-8) declared that education was the only means of raising a nation and that all sound reform of public instruction must be based on the principle of Pestalozzi."

Fortunately while the rulers wisely decided to educate the people, there arose among the German Nation an enlightened and far-sighted patriot, named, Friedrich Ludwig Jahn, the father of Modern Physical Education. The battle of Jena had decided the fate of Prussia and Germany, and the Fatherland lay bleeding at the feet of Napoleon.

"But Jahn, like his friend Moritz Arndt, and thousands more among his countrymen, would not yield to despair. He laboured

as a teacher in influential colleges, and was indefatigable as an author. In 1810 he published his work on "German Nationality" (Deutsches Volksthum); and it was in the same year that he first put in practice the plan of drilling large companies of boys in gymnastic exercises. In 1811 he opened in Berlin, on the "Hasenhaide," the gymnasium which afterwards became so celebrated, and so important in its results; being indeed, the Alma Mater of all the gymnasia subsequently established in Germany, which again in their turn gave rise to numerous others elsewhere. Jahn was, moreover, the originator of the well known meetings or gatherings of the different societies, at variously chosen places, for the purpose of competition in their art; and the German youths, by their marches to join these gatherings, as well as by their training in the gymnasia, were soon fitted to meet the earnest conflict of real war which was before long to call forth their energies."

Two generations after the battle of Jena, Germany was again called upon to vindicate her honour and defend herself against the aggressive attack of France. The result of the conflict of 1870 is a matter of history. There is no doubt that this result was partly owing to the wisdom of her rulers; and partly to the far sighted patriotism of Jahn. This conclusion is supported by the following facts.

"The number of their societies (gymnastic) amounted, on the 1st August, 1869, to 1360, comprising 1,10,353 members. Of these societies 1051, with their 81,737 members, attest their activity during the war. Of these members 14,909 were summoned to join their regiments; and, of these latter, 11,591 were on duty in the enemy's country, 1243 were wounded, 617 were killed or died of their wounds, 191 succumbed to disease or fatigue, 580 were decorated with the iron cross, 1119 attended upon their sick and wounded comrades, in the enemy's country. Of the total

Gymnastic Societies and
the Franco-German war.