

REPORT

OF THE

Committee appointed to consider
arrangements for Post-Graduate
teaching in the University
of Calcutta.



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ARRANGEMENTS FOR POST-GRADUATE TEACHING IN THE UNIVERSITY OF CALCUTTA.

We, the members of the Committee appointed by the Government of India to consider the question of Post-Graduate Studies in the Calcutta University and its constituent colleges, have the honour to submit our report.

It is desirable to commence with a precise statement of the scope of the enquiry entrusted to the Committee. This is best described in the following extract from the letter addressed by the Secretary to the Government of India to the Private Secretary to His Excellency the Rector of the University.

“The Committee should review the existing facilities in the University of Calcutta for instruction beyond the Bachelorship degrees (Chapters XXXIII and XXXVII of the Calcutta University Regulations) and should make suggestions whereby the existing expenditure and available resources for such teaching may be put to the best use. The Committee should be asked to examine the points referred to it with special reference to the quality of the teaching given, the recommendations made by the Universities Commission, the economic employment of the resources of the University and the Colleges in men and money (including the grants now given by the Imperial Government), the remuneration of the teachers and fees paid by the students, the relation of the University as a teaching body to its affiliated colleges and the maintenance of suitable relations between teachers and students in the University. The Committee should frame its recommendations merely with a view to the best expenditure of existing funds and it should understand that further grants for Post-Graduate Education cannot be expected in the near future.”

2. It is convenient, first of all, to give a short description of the arrangements made from time to time for the M.A. and M.Sc. courses.

Short description
of the arrangements
made from time to
time for higher
teaching.

There have been four distinct periods in the history of the higher teaching of Calcutta University—

- (a) In the first regulations framed in 1858 provision was made for the institution of an examination for the degree of Master of Arts. It was contemplated that the degree of Bachelor of Arts should ordinarily be taken at the end of four years from the date of Matriculation, and it was laid down specifically that the candidate should carry out the prescribed courses of study at a college affiliated to the University. The regulations, however, did not require a candidate for the M.A. degree to have studied in an affiliated institution since the date of graduation, as any graduate either of the University or any other university of India or of the United Kingdom was entitled to be admitted to the M.A. examination on payment of the prescribed fee. It was also provided that if a candidate passed the B.A. examination at the end of four years from Matriculation and the M.A. examination a month later, he was deemed to have taken honours; and the names of such candidates were to be published in order of merit in lists classified according to subjects. The names of all other successful candidates at the M.A. examination were arranged in alphabetical order without specification of class or subject. During this period, 119 candidates passed the B.A. examination; of these 19 appeared for the M.A. examination, 9 of whom were successful, but none obtained honours. 1858—1864.
- (b) The university authorities speedily realised that it was impossible for even the best prepared candidates to qualify themselves for the M.A. examination within four years of Matriculation. Arrangements were made, therefore, whereby those who had taken their B.A. degree within four years from Matriculation were deemed to have taken honours at the M.A. examination, if they took the M.A. degree within one year (instead of one 1865—1884.

month, as before) from the time of graduation. This system continued in operation for 20 years from 1865 to 1884. During this period, 2,251 passed the B.A. examination; of these 907 appeared at the M.A. examination, of whom 554 were successful and 392 took honours.

1885—1908.

(c) In 1885 a further alteration was introduced into the regulations. It was laid down that all successful candidates at the M.A. examination should be arranged in order of merit, subject by subject, whatever the time that had elapsed between Matriculation and graduation or between graduation and admission to the M.A. examination. This system continued in force for 24 years—from 1885 to 1908. During this period, 10,464 candidates took the B.A. degree and 60 took the B.Sc. degree (which was instituted in 1902 to secure proper recognition of those who studied scientific subjects). Of these 10,524 graduates, 4,180 appeared at the M.A. examination, of whom 1,804 were successful.

1908—1915.

(d) In 1909 the new regulations framed under the Indian Universities Act of 1904 came into operation. Three changes of a vital character were then made regarding the M.A. examination:—

(i) No one was to be permitted to proceed to the M.A. examination in less than two years from graduation.

(ii) A candidate would be eligible for admission to the examination in two years, provided that he had, since graduation, pursued a regular course of study during that time in an affiliated college or under University lecturers; if he had not done so, he could appear at the examination only at the end of not less than three years from graduation.

(iii) The course of study in each subject was thoroughly remodelled and widened in scope, better provision being made for more specialised study. This system had, in 1915, been in operation for seven years. During that period 6,026 candidates have taken the B.A. degree and 1,165 the B.Sc. degree. Of these 7,191 graduates, 2,158 appeared at the M.A. examination and 407 at the M.Sc. Examination (which was instituted in 1909), 1,171 being successful in the M.A. and 226 in the M.Sc. examination.

I increase in number of students taking the M.A. and M.Sc. examinations is in proportion to the increase in the number of graduates.

3. It is instructive to compare during each of these periods the average number of new graduates each year, the average number of candidates for the M.A. examination, and the average number of successful candidates in that examination.

Period.	Average annual number of graduates.	Average annual number of graduates appearing at the M.A. examination.	Percentage of figures in the preceding columns.	Percentage of successful candidates at the M.A. examination.
A. (1858 to 1864)	17	3	18	47
B. (1865 „ 1884)	113	45	40	60
C. (1885 „ 1908)	438	174	39	44
D. (1909 „ 1915)	1,027	366	36	54

From these figures it will be seen that, omitting the first seven years when the condition of things was more or less experimental, since 1865 for a period of half a century the proportion of graduates who have sought admission to the higher examination has remained very steady, varying only from 36 to 40 per cent; and the proportion of successful candidates at the M.A. examination has remained almost equally steady, varying only between 44 and 60 per cent. It is therefore reasonable to deduce that the number of candidates for

the M.A. and M.Sc. examinations will continue to increase *pari passu* with that of the successful graduates, and should, therefore, under present conditions, increase even more rapidly in the near future.

4. Under such a system, by which until very recently the University has been content to leave the entire teaching of all its courses to the affiliated colleges, while keeping to itself the duties of examining students and prescribing courses and curricula, there were two grave defects, in particular, which still remain to some extent in spite of such improvements as have been made in recent years:—

Defects of the system.

(a) There was a complete divorce of teaching from examination, which defect under existing conditions it has not been possible to remedy. The teachers are still expected to teach in accordance with the courses and curricula laid down by the several university Faculties and Boards of Studies of which they are not necessarily members; and the students had to submit, in many cases, to examination by those who were not their teachers. Indeed, at one time, the teachers were actually debarred by resolution of the Syndicate from setting papers on the ground that otherwise it would be a serious embarrassment to the teacher, who would have to keep secret the questions he had set as examiner, and as teacher would have to emphasise what he considered most useful or important; such a system, it was found, also demoralised the students who sedulously set themselves to secure and study the lecture notes of teachers who had been appointed examiners. In consequence, pupils and teachers alike tend to pay a slavish regard to the precise limits of a syllabus and of the particular books recommended.

(b) The higher branches of study were neglected or, more correctly, were rarely attempted. Few, if any, of the affiliated colleges were sufficiently staffed or equipped to prepare for the M.A. and M.Sc. courses in addition to their undergraduate work. It is a remarkable fact, first discovered while the Indian Universities Bill was before the Council in 1903, that no college (except one which is not now within the jurisdiction of the University), had ever been affiliated up to the M.A. standard. In practice, a college would submit candidates for the M.A. examination in a course in which there were on the staff one or more professors willing to assist the students in their spare time.

5. The Universities Commission were fully aware of the defects referred to above, and in paragraph 24 of their report recorded the following opinion:—

“ We think it expedient that *undergraduate* students should be left, in the main, to the colleges, but we suggest that the universities may justify their existence as teaching bodies by making further and better provision for advanced courses of study. The University may appoint its own lecturers, and provide libraries and laboratories; it would also be proper that the University should see that residential quarters are provided for students from a distance. Colleges co-operating in such a scheme would, we assume, be willing to contribute, by means of scholarships or otherwise, to the maintenance of those students who take advantage of the university courses. In this way central schools of advanced study may in time be formed. One advantage of the plan is that it can be worked out gradually without the great initial expense which the creation of a *complete* professoriate would involve.”

Recommendations of the Universities Commission and subsequent development.

In consequence of this recommendation, the Universities Act of 1857 was amended by that of 1904, which enacted that the universities shall be, and shall be deemed to have been, incorporated for the purpose (among others) of making provision for the instruction of students with power to appoint university professors and lecturers, to hold and manage educational endowments, to erect, equip and maintain university libraries, laboratories and museums, to make regulations relating to the residence and conduct of students, and to do all acts, consistent with the Act, for the promotion of study and research. The regulations were then changed in conformity with this section of the Act to regularise the appointment and remuneration of the university staff.

6. For a time very little was done to carry out the recommendations of the Universities Commission. Lack of funds was the chief obstacle and the number of M.A. and M.Sc. candidates being comparatively small, there was little incentive for the University to undertake teaching responsibilities. In the course of time, however, it was noticed that a large number of M.A. and M.Sc. candidates came up for the examinations without adequate instruction, which was permitted under the regulations, and arrangements were made by the University authorities whereby some assistance was given to these and other students. This participation by the University in the teaching of graduates was rendered possible by the co-operation of certain college professors who undertook to deal with particular branches according to their special qualifications and the time at their disposal after the performance of their work in their colleges. We wish to record our sincerest appreciation of the efforts of these gentlemen, the majority of whom worked in an honorary capacity. A few of the colleges still continued to prepare candidates for the M.A. and M.Sc. examinations, but, owing to the largely increased number of undergraduates, found themselves less and less able to cope with the M.A. and M.Sc. work.

Financial assistance
and endowments in
1912.

7. In 1912 it was found essential to systematise the arrangements made by the University and fortunately what had become essential was also to some extent rendered possible through the generosity of the Government of India and of certain individuals. In September of that year the Government of India put the following sums at the disposal of the University—

<i>Non-recurring—</i>	Rs.
Examination halls and law hostels	3,00,000
Books and furniture for University library	1,00,000
TOTAL	<u>4,00,000</u>
<i>Recurring—</i>	
Professorship of Mental and Moral Science	12,000
" " Mathematics	12,000
Additional grant to University Law College	10,000
Two University Readers	4,000
University Lecturers	15,000
Maintenance of a laboratory in connection with Mr. Palit's benefaction	12,000
TOTAL Rs.	<u>65,000</u>

From the sale proceeds of Sanskrit publications the University instituted the Carmichael Professorship of Ancient Indian History and Culture. The University, out of its current income, also maintained three other chairs—two for English Literature and one for Comparative Philology. Sir Tarak Nath Palit also made a generous gift of money and land to the extent of 15 lakhs of rupees, to which the University has since added four lakhs from its reserve fund towards the establishment of a University College of Science for the promotion of higher teaching in different branches of Physical and Natural Sciences. A little later Sir Rash Behari Ghose made a gift of 10 lakhs of rupees for the foundation of professorships and studentships in connection with the proposed University College of Science.

Organisation of a
University staff
and its necessity.

8. With the assistance referred to in the previous paragraph and the receipts from fees, etc., the University has been enabled to make the appointments summarised in an appendix to this report. It soon became evident that competent scholars would not accept whole-time appointments as university teachers, unless assured security of office for a longer term than two years (the maximum term for which a lecturer could be appointed under Chapter XI). The University accordingly instituted certain assistant professorships under section 3 of Chapter IX of the regulations for various terms

ranging from three to ten years. The following table gives the number of students in the university classes in each subject during the current session :—

Subject.	5th year class.	6th year class.	TOTAL.
English	254	153	407
Philosophy	127	90	217
History	111	77	188
Economics	74	41	115
Pure Mathematics	220	74	294
Sanskrit	14	9	23
Arabic	1	4	5
Persian	4	3	7
Pali	1	1	2
	806	452	1,258

9. In 1908, the Presidency College obtained affiliation in English, mixed mathematics, history and economics; and subsequently in physics, chemistry, botany and physiology. The Scottish Churches College also is affiliated in philosophy. No other college in Calcutta is affiliated in any subject for M. A. or M. Sc. teaching. The staffs of these two colleges are given in the appendix to this report. The numbers in each subject in these colleges are as follows :—

Presidency College.

Subject.	5th year class.	6th year class.	TOTAL.
English	42	34	76
History	18	20	38
Economics	26	27	63
Philosophy	11	15	26
Mathematics	20	34	54
Physics	18	18	36
Chemistry	7	7	14
Geology	2	2	4
Physiology	5	3	8
Botany	6	1	7
	165	161	326

Scottish Churches College.

Subject.	5th year class.	6th year class.	TOTAL.
Philosophy	18	5	23

10. From the information given above it can be seen that neither an individual college nor even a group of colleges working in co-operation could have provided for the needs of some 1,600 graduates. It is also worthy of mention that in some of the subjects, such as pure mathematics, comparative philology, Pali, Persian, and Arabic, for which provision is made by the University, no arrangements exist in any affiliated institution. We are therefore agreed that the appointment of a full-time university staff was essential. Without it, the number of private students receiving no instruction and subject to no control whatever would have reached at least a thousand, with disastrous consequences to themselves and to the cause of higher education.

11. According to the terms of our reference, we are concerned chiefly with the latter defect referred to in paragraph 4 of this report and the consequent necessity of recommending better facilities for higher studies, but we hope that our proposals will result also in a closer connection between examination, the arrangement of courses and curricula, and the work of teaching, so far at least as the higher courses are concerned. In view of the probable institution of the new Universities at Dacca and Patna we would prefer to leave as they are such arrangements as may exist outside Calcutta, and therefore have confined our attention as far as possible to the urgent needs of Calcutta and its students. We have also refrained from making proposals which would entail additional expenditure at the present time when funds are not readily available.

It is our desire therefore to make recommendations whereby the best possible instruction may be given to all students in Calcutta who are capable of deriving benefit therefrom by the utilization of the combined resources of the University and its colleges. We also hope that our proposed scheme may be capable of expansion in the future as soon as funds are forthcoming.

The control of higher teaching should be placed under the University.

12. It is highly desirable that there should be no spirit of rivalry between the University and its colleges, and that all the teachers should be imbued solely with the desire of furthering higher education. We are of the opinion, however, that such harmful rivalry and competition do exist, and result in a lack of co-operation. We have no desire to impute any blame to either the University or the affiliated colleges; both have done their best under very difficult and trying circumstances to provide such instruction as was possible. But it is plain that the lack of a central organization whereby the University and its colleges could be brought into contact with each other has rendered concerted action between them almost impossible. We have therefore considered and rejected certain suggestions which, though attractive in some ways, seem to us inadvisable for the reasons given in the course of this report. It is impossible to return to the old system by which certain colleges had each its separate organization for the higher teaching. It is again impossible to suggest arrangements whereby these colleges could institute a form of inter-collegiate lectures which would meet present requirements. Nor has the University sufficient funds to institute a separate and complete organization, nor would it be advisable for it to do so for reasons given in the next paragraph. Nor, finally, would it be feasible except in connection with certain sciences to sort out the prescribed subjects between the University and the colleges as, in addition to the difficulty of carrying out such an arrangement, it is advisable that the students and teachers of one subject should be in intimate contact with those engaged in another. We recommend, therefore, that the affiliation of colleges in Calcutta for M. A. and M. Sc. work should cease and that the organization of post-graduate instruction of all kinds be considered to be the duty of the University.

The necessity of associating the colleges with the higher teaching of the University.

13. While recommending that the control of higher teaching shall be vested in the University, we do not desire to suggest that the staffs of the colleges should confine their attention to undergraduate work. Indeed, we would go so far as to say that the association of the colleges not only in the actual teaching but also in the work of organizing the higher teaching of the University is an essential factor of our scheme, and that we have tried to reconcile the legitimate claims of the colleges with the concentration of higher teaching under the control of the University. In coming to this conclusion we have been influenced by many vital considerations.

(a) In paragraph 26 of their report the Universities Commission recorded the following opinion:—

Necessity of increasing the scope of the college professor.

“Our plan (*i. e.*, the appointment of a university staff) has been met with an objection which demands careful consideration. If students are drawn from their own colleges to a central school, it is said that teachers in colleges will be limited to the routine of the undergraduate classes and that their teaching will suffer in consequence. We sympathise entirely with the teachers who have placed their view of the matter before us; but we may point out that if the scheme we recommend restricts the opportunities of a college teacher in one direction, *it may also open a wider field in another.* In working a central school of science or philosophy, or literature, the University will naturally endeavour to utilise, as far as possible, the services of the best teachers in its own colleges. If a professor has to part with some of his students when they begin their advanced work, he may cherish the hope of being appointed to deliver a course of University lectures, or in some other way to take part in the work of the central school. We do not forget that the staff of a college is usually not more than equal to the work imposed upon it; but means may perhaps be found to relieve a professor of part of his ordinary college duty, if he is required to give some portion of his time to advanced work elsewhere.”

We would draw attention in particular to the words which we have italicised. It is our desire in making our recommendations that the scope of the experienced and capable college professor shall be increased and that his influence shall be brought to bear on a larger number of graduates than at present. It is a grave weakness in the present system that the scholarship and the influence of the best college professors are limited to those few M. A. or M. Sc. students who attend their own college, and still more so that the scholarship and influence of all professors of colleges which are not affiliated for this form of instruction are often lost altogether. Not only is it right that competent college professors should be associated as intimately as possible with the higher work, but the elimination of these men from such work would have a most unwholesome influence on the undergraduate teaching, for it is by doing original work himself and by co-operation with the advanced students that a teacher is encouraged to keep abreast of modern developments and maintain a high standard of scholarship. The way to influence students most powerfully is to advance in scholarship, and therefore to hand over the undergraduate work to men who have no part or lot with the higher work would be disastrous to the best interests of the University and its students.

- (b) It is equally essential that those engaged in the higher work should have an intimate connection with the lives and the work of the undergraduates. We would again express our meaning in the words of the London University report :—“It is essential that the higher work of the University should be closely associated with the undergraduate work.....No one suggests that research shall be divorced from teaching, but for various reasons proposals are made for organising the higher and more advanced work of the University separately from the undergraduate work in a way which must tend in this direction. We agree with the view expressed in the report of the Professorial Board of University College that any hard and fast line between undergraduate and postgraduate work must be artificial, must be to the disadvantage of the undergraduate, and must tend to diminish the supply of students who undertake postgraduate and research work. Even in those cases where it is necessary to provide for research departments which, because of their specialised work, are unsuited for the admission of undergraduates, they will be stronger and more effective if they are in close proximity to departments where undergraduate work is done. Teaching will, of course, predominate in the early work, and research will predominate in the advanced work ; but it is in the best interests of the University that the most distinguished of its professors should take part in the teaching of the undergraduates from the beginning of their university career. It is only by coming into contact with the junior students that a teacher can direct their minds to his own methods, and hence obtain the double advantage of selecting the best men for research and getting the best work out of them.”

Association of those engaged in the higher teaching with undergraduate work is most advisable.

We agree with this opinion and would like to see all those engaged in M. A. and M. Sc. work taking also some part in the undergraduate instruction, at least in its higher stages. Unfortunately, the conditions that prevail here are somewhat different from those obtaining in London and render the realization of such an ideal impracticable at present. As we have stated above, it is extremely difficult for an affiliated college, however well-staffed and equipped, to undertake the M. A. or M. Sc. instruction, even in a few subjects, in addition to the undergraduate courses; and it is almost as difficult for a group of colleges acting together to provide the necessary facilities. We therefore feel that the appoint-

ment of a whole-time and salaried university staff is necessary. We should be glad if arrangements could be made whereby members of that staff were brought into contact with the more advanced undergraduates of the colleges, but refrain from making any recommendation, as the discussion of undergraduate instruction is beyond our terms of reference. It is all the more essential, therefore, that under the present constitution, the whole-time university staff should be associated intimately in their work with a certain number of college professors also engaged in undergraduate teaching. It has been brought to our notice that in the past certain college professors have been appointed permanently to the university staff. There is no objection to such a practice, if not carried to excess. We would only point out that the presence of such professors on the university staff will not prevent the divorce of post-graduate from undergraduate work, for it is not past experience of undergraduate work but present contact with junior students that can effect that intimate and desirable connection between the various grades of teaching. In making provision for the higher studies, therefore, the University would be well advised not to deplete to any serious extent the ranks of the college staffs, but rather to associate them from time to time with the instruction of the M.A. and the M. Sc. students, by inviting them to deliver courses of lectures or take such a part in the higher work as may appear advisable to the Council proposed below.

Association of the general public with the higher work of the University.

(c) We would also suggest that the University should not be restricted in the matter of appointments to the members of its own staff or to those of the colleges, but should if advisable appoint from time to time as lecturers men who are recognised authorities in a subject which is included in the university courses. Such action should result not only in widening the horizon of the students, but also in interesting members of the general public in the affairs of the university by giving them an actual share in its responsibilities.

Variety of treatment essential.

(d) We also attach considerable importance to the necessity of providing a variety of treatment in the instruction offered to graduates, and of affording opportunities of specialisation on the part of the teachers; and this is all the more necessary owing to the very great latitude allowed to students in the choice of subjects. Students engaged in the higher courses should draw inspiration and knowledge from a number of teachers and thus learn to study their subject from many points of view. It is also impossible for one or two teachers, however learned and experienced, to traverse the whole field of their subject. We have therefore recommended a system by which a student will be brought into contact with a number of teachers, each with his own point of view and his own special subject, and a teacher will not be expected, as now, to diffuse his energy but, so far as the higher teaching is concerned, will confine his attention to making himself master of some portion of his work.

Necessity of intercourse between students and between students and teachers.

(e) It is one of the defects of an affiliating university that the teachers and students are confined too much to the limits of their own particular college and have far too little intercourse with those working elsewhere. We realise only too well that all students of a university should be able to work "in intimate and constant association with their fellow students not only of the same but of different faculties, and also in close contact with their teachers." It is therefore essential that at some stage of their academic career, teachers and students of all the colleges of Calcutta, engaged in many and widely differing courses of study, should be brought into association one with another and be encouraged to take their place in the common life of a university. Every

possible effort should be made to foster the idea that Calcutta University as a teaching university is made up of the sum of its colleges and of its own teaching staff. All the teachers, whether university professors engaged principally in the work of research or college lecturers whose work is mainly with the junior undergraduates are alike doing the work of the university. We trust that our proposals, however limited in scope, may result in a stronger union between the scattered fragments which to-day compose the university and in a closer sympathy between those working to different standards and in different institutions.

14. For these reasons, therefore, we recommend that the teachers for this work should be recruited in the following ways :—

Recommendations for the provision of staff for the higher teaching.

- (a) Teachers appointed and paid by the University.
- (b) Teachers whose services have, on the application of the University been lent by the local or Imperial Government or by a private institution, and who, during the time they continue to work under the University, will be university officers precisely in the same way as those under (a). It should also be possible for the University to make arrangements whereby these officers will be able to deliver lectures to B. A. honours students of the colleges with whom they were previously connected, provided that this were possible without detriment to their University work.
- (c) Professors of colleges, whose high attainments specially qualify them for post-graduate instruction and who are willing for a remuneration decided on by the University to undertake to deliver a course of lectures on special subjects in the University.
- (d) Persons engaged in other than educational work, who are prepared for a remuneration decided on by the University to deal with special subjects in which they are authorities.

15. We attach very great importance to the necessity of constituting a suitable organising body for the carrying out of this work, in which all connected with the higher teaching, whether as temporary or permanent officers, will take a part. Without such an organization, the scheme which we propose cannot even be initiated, much less carried out. It is not only necessary to provide the means by which the best teaching capacity available in Calcutta will be recruited, but also to ensure a proper control over the teaching arrangements. Teachers will have to be appointed in accordance with the requirements of each session and the scale of remuneration for temporary officers will have to be decided. Time-tables will need careful consideration, and we would also suggest that syllabuses for each course of lectures should be drawn up by the lecturer before the course begins. Arrangements for the proper attendance of lecturers and students will also be imperative. There will further be a mass of administrative detail which, if it is not in proper hands and under satisfactory control, will render the best of teaching ineffective. The existing Governing Body for post-graduate studies has been constituted solely for the organization of the University classes and has no connection with the work of colleges; moreover, it has not been possible as yet to associate more than a very small number of the teachers with that body. The administrative work has devolved mainly upon the Vice-Chancellor and the Registrar, whose time and energy are already fully occupied with departments of the University's work other than post-graduate teaching.

The organization of the higher teaching.

16. We therefore recommend that a Council of Post-graduate Teaching in Arts be constituted, which will include every teacher appointed by the University to carry on post-graduate instruction, i. e., all those mentioned in classes (a), (b), (c), (d) above, will have, *ex-officio*, a seat on the Council. The Council will contain also a limited number of additional members not exceeding six to be appointed annually by the Senate; these should be men competent to take a useful part in discussions relating to post-graduate studies. The Council will elect its own president from year to year. For the first year, we recommend that the Council consist of all those who at the time of the formation of the Council are engaged either under the University or in

A Council of Post-graduate Teaching in Arts.

an affiliated Calcutta college in post-graduate work, with the additional members elected by the Senate. The Council will draw up its own procedure for the conduct of its business.

The Executive
Committee.

17. We also recommend that an Executive Committee of the Council be constituted which will consist of two representatives of each of the following branches of study, English, history, economics, philosophy, pure mathematics, Sanskritic languages and Semitic languages. The teaching staff of each branch will elect their representatives, and the Senate will appoint annually three members to the Executive Committee from their nominees on the Council. The President of the Council shall be the president of the Executive Committee. There shall be a secretary to the Council and to the Committee who should receive a remuneration decided upon by the Council and approved by the Senate.

The association of
the teachers with
the arrangement of
the courses and the
conduct of
examinations,
Boards of Studies
and Examinations.

18. We feel the necessity of associating all those engaged in the higher teaching with the general organization of the University. This is impossible under present conditions. The Senate is by statute limited to a hundred members, and must be constituted into the five faculties of Arts, Science, Law, Medicine and Engineering. Every important college affiliated to the University also expects naturally to be represented on the Senate. The consequence is that only a small proportion of those engaged in the higher teaching can find a seat on the Senate, a result which causes a not unnatural disappointment to those who are inevitably excluded. Our proposal that all who are taking part in the higher teaching shall be members of the Council of Post-graduate Teaching in Arts should remedy this defect to some extent. We feel, however, that it is necessary to go further in the matter. The present Boards of Studies consist very largely either of those who are teachers only of undergraduates or of men who are taking no active part of any kind in teaching. The arrangement of the post-graduate courses and curricula and the publication of prescribed or recommended books can only be done satisfactorily by those who are actually teaching and have the necessary knowledge and experience of the work concerned. It is also desirable that those with whom the responsibility lies should have abundant opportunity of discussing among themselves and of making the best arrangements for the development of the study in which they are interested. We recommend, therefore, the creation of Boards of Higher Studies for each of the subjects in which post-graduate teaching is imparted in Calcutta. The Board in each subject will consist of all the instructors in that subject and also of such others (not exceeding three in number) as may be appointed thereto by the members of the Council from amongst themselves. With these additional members on each Board, the several subjects would not be regarded as separate compartments of knowledge to be developed without regard to each other. The organization of studies as a whole would thereby contemplate a definite object and common method of progress. Each Board may also be authorised to co-opt not more than two members from amongst those engaged in post-graduate teaching in the subject concerned outside Calcutta. Each Board will elect its own chairman. The resolutions of each Board will be subject to confirmation by the Council.

We are of the opinion also that the work of teaching should be connected closely with that of examination. In awarding an M.A. degree, attention should be paid not only to the examination record of each candidate, but also to his work during the whole of his course. It is also necessary that there should grow up an examination tradition in regard to the length of a paper, the type of questions, and the methods required from the examinees, which will give the student some confidence in the system and will protect him from the wiles and eccentricities of inexperienced examiners. We therefore recommend that each Board of Studies be regarded also as the Examination Board for the M.A. in that subject. We realise that it is impossible to press these principles to their fullest extent, but we are hopeful that by discussion among themselves the members of each Board, with the assistance of the Council, may evolve a system which will meet to some extent the requirements mentioned above. It is necessary in our opinion to associate external examiners with the teachers of the subject.

19. The Boards of Studies will each submit to the Council their resolutions regarding courses of study, standards and conduct of examinations and like matters. They will also, within a date prescribed by the Executive Committee, submit to that body the teaching requirements of their subject for the coming year and proposals regarding appointments to the teaching staff. The Executive Committee will consider these proposals of the Boards and, after further consultation, if necessary, will lay the final proposals including proposals for the remuneration of the teachers to be employed, if that has not already been decided, before the Council. The same procedure should be adopted also in the appointment of examiners. The resolutions of the Council will be submitted to the Senate for final approval. We consider it of great importance that each Board should take a large part in the teaching arrangements and the appointment of teachers and examiners. It will be necessary to pay proper regard to the actual requirements of the students in each subject and to provide that the most suitable teachers and examiners are appointed to meet any particular needs that may arise. It will be the duty of the Committee rather to consider the financial aspects of the proposals submitted and to ensure that one Board is not unduly extravagant at the expense of another. It will be the duty of the Council to check abuse of the arrangements, if this were ever threatened. It will be the duty of the Executive Committee to receive and consider reports from the Boards as to the progress made in their respective subjects and the results of the examinations, and exercise such supervision and give such directions as may be necessary to ensure regularity of work and maintenance of discipline among the students. The proceedings of the Executive Committee will be periodically reported to the Council and may be reviewed by them. The actual carrying out of the teaching arrangements in each subject should be placed under the control of the Chairman of the Board of that subject, who would act in accordance with such resolutions of his Board as have been approved by the Council. The clerical work, the publication of time tables, syllabuses, the checking of registers, etc., should be performed by the Secretary.

Functions of the
post-graduate
authorities.

To meet the danger that the conduct of this important work might fall into the hands of inexperienced people, we would recommend that only graduates of not less than seven years' standing should be eligible for election to the Executive Committee, or the Chairmanship of a Board of studies, except in the case of a university professor. We have reason to hope that when the teachers find themselves associated so intimately with the organization of the higher teaching, they will learn that that work will be best carried out by loyal co-operation. Each authority will have its own part to play. The Boards should be responsible mainly for the enunciation of proper principles and the arrangements for teaching and examining the courses prescribed by themselves; the Committee for the carrying out of these arrangements, the discipline of students, and the financial organization; and the Council should enable all engaged in the work to discuss some definite development of policy and to exercise a general control over the higher teaching.

20. In considering the organization of higher teaching in science subjects, we have been faced by two difficulties. In the first place, the post-graduate teaching in the University classes has been organised on the basis of the two endowments created expressly for that purpose by Sir Tarak Nath Palit and Sir Rash Behari Ghosh. The funds are held on specific trusts; they must be administered in strict accord with the directions given by the founders and through the machinery of the Governing Bodies created by them. Further, the primary object of these two bequests is to further the cause of scientific research and therefore it is not actually incumbent on the Palit and Ghosh professors to do more than supervise generally the arrangements for M.A. and M.Sc. teaching. In the second place, the laboratories of the Presidency College and of the University are located in separate buildings about a mile apart, and consequently amalgamation is more difficult than in the case of arts subjects. We have discussed these problems at some length, and have come to the conclusion that they are by no means insuperable, provided that the principle of University control is accepted and the teachers are recruited as in (a) b) (c) (d) of paragraph 14. We therefore recommend, subject to the exceptions made below, the constitution of post-graduate authorities in science similar to those proposed for arts, and with similar powers, i.e., a

Constitution of post-graduate authorities and teaching arrangements in science.

Council consisting of all those engaged in the higher teaching with additional members, not exceeding six in number, elected by the Senate, an Executive Committee, and Boards of Studies in each subject consisting of all engaged in the higher teaching with additional and co-opted members, not exceeding three and two respectively on each Board. The modifications that appear to us necessary are as follows :—

(a) The Executive Committee shall consist of the President of the Council, two representatives of each of the following branches of study, physics, chemistry, applied mathematics, and botany, and one representative each of physiology and experimental psychology, and three additional members elected by the Senate from among their nominees on the Council.

(b) In order to safeguard the interests of the Presidency College and the Palit and Ghosh Trusts, in electing representatives in physics, chemistry and botany for which teaching provision has been already made in both institutions, the united body of teachers in each subject shall elect one representative from the Presidency College and one from the University Staff.

(c) Should arrangements be made at any time for subjects other than those mentioned above, as for example zoology or geology, that subject will be represented on the Executive Committee by two members to be elected by the teachers in that subject.

(d) It will also be necessary clearly to define a teacher, as it would be desirable that only those who hold independent teaching posts should find places on the Council.

When once the governing authorities have been constituted as proposed, we have every hope that the difficulties in making teaching arrangements owing to the distance between the University College of Science and the Presidency College will be surmounted. It should be remembered that in the M.Sc. there are in each course compulsory and optional subjects. It may be necessary for the compulsory subjects to be taught in both places, but there should be a sorting out of the optional subjects at least between the two institutions by the Executive Committee in order to avoid costly duplication. A certain amount of give and take between Government and the University in the use of equipment will also be necessary, as every effort should be made to prevent unnecessary purchase of duplicate material. It should also be clearly laid down that while working in laboratories belonging to separate institutions, such as the Presidency College or the Geological or Zoological Survey, university students will be subject to such disciplinary rules as may be enforced by the authorities of those institutions.

21. The mere recruitment of a staff of teachers and the constitution of authorities for controlling the work, however, will not necessarily, in themselves, render the teaching effective. There are other factors in the situation to which we would now refer :—

(a) It is essential to have some clear ideas of what is meant by the term post-graduate instruction and what are its objects. This is particularly essential as there has been some misunderstanding in the matter in the past. Some have urged that it is the duty of the University to confine its activities entirely to the work of research; others contend that the M.A. and M.Sc. courses should take the form merely of a more thorough undergraduate course conducted on very similar lines and methods. We hold that neither view is correct. In regard to the former we are inclined to adopt the opinion laid down by the London University Commission in paragraph 73 of their report :— “Institutes of this type, *i.e.*, for research, do not, and in our view should not, form a part of the University organization, and certainly do not justify the establishment by the University itself of institutes at a distance from, and without close connexion with, its other activities. Research work which is carried out with little reference to the other work of the University cannot introduce new vigour and life into the organization to which it is so loosely and externally attached.” We therefore suggest that those teachers whose work lies in the direction of research should take some active part in advanced instruction and not regard themselves as entirely detached from the main work of the institution. On the other hand, it is necessary that

Objects of the
M.A. and M.Sc.
teaching.

graduates should receive instruction of a university type and of a kind different from that ordinarily given to undergraduates. At present a student is inclined to approach the M.A. and M.Sc. courses by a further study of more advanced text-books with the assistance of a teacher, whereas M.A. courses of lectures should stimulate a student and give him some idea of the wide field of investigation open to him and finally lead him to consult not the text-book but the original authorities. The following description of University teaching which was supplied a few years ago by the inspectors of the Board of Education in reporting on the work of the Workers Educational Association classes held by the universities of England expresses very clearly the ideals at which, in our opinion, this University should aim in its M.A. and M.Sc. instruction. "We may assume that University teaching is teaching suited to adults; that it is scientific, detached, and impartial in character; that it aims not so much at filling the mind of the student with facts and theories as at calling forth his own individuality, and stimulating him to mental effort; that it accustoms him to the critical study of the leading authorities, with, perhaps, occasional references to first-hand sources of information, and that it implants in his mind a standard of thoroughness, and gives him a sense of the difficulty as well as of the value of truth. The student so trained learns to distinguish between what may fairly be called matter of fact, and what is certainly mere matter of opinion, between the white light and the coloured. He becomes accustomed to distinguish issues, and to look at separate questions each on its own merits and without an eye to their bearing on some cherished theory. He learns to state fairly, and even sympathetically, the position of those to whose practical conclusions he is most stoutly opposed. He becomes able to examine a suggested idea, and see what comes of it, before accepting it or rejecting it. Finally, without necessarily becoming an original student, he gains insight into the conditions under which original research is carried on. He is able to weigh evidence, to follow and criticise argument, and put his own value on authorities."

It is beyond our terms of reference to discuss how far under the standards imposed at present by the B.A. and B.Sc. examinations and the type of undergraduate teaching imparted in the colleges it is possible to produce a number of graduates fitted for such instruction as we have proposed above, but, judging from the number of lectures which the M.A. students, in particular, are expected to attend, we fear that an appreciable proportion of the students have not attained the requisite preliminary standard. It is not within our scope to advocate sweeping changes; but we are constrained for the present to trust to the gradual improvement likely to result from improved conditions. The post-graduate authorities should have the power to make regulations regarding the admission of students to their classes, and it is essential that they should also have power to cause the withdrawal of a student who is either manifestly unfitted for the work or through negligence is not benefiting by the instruction. It would also be well if a standard of efficiency in teaching, equipment, etc., were contemplated, as free as possible from the cramping restrictions imposed by the present rules for affiliating colleges for M.A. and M.Sc. teaching, especially in scientific subjects.

(b) We trust that the economies which may be rendered possible by an improved organization and an effective co-operation between the colleges and the University will be the means of liberating a certain amount of teaching effort which may be used for giving tutorial guidance to the students. At present, in the university classes, it has not been possible to do much more than give additional lectures to a smaller number of students whereby some discussion and explanation of difficulties is possible. Such a practice, undoubtedly, has its uses, but we would wish to go further. All students gain inestimably from an intimate association with a teacher of ripe experience and scholarly habits who will not only assist him in solving difficulties but also inculcate in him the proper habits of study and thought. We would yet again express our meaning in the words of the London University Commission's report:—"It is the personal influence of the man doing original work in his subject which inspires belief in it, awakens enthusiasm, gains disciples 'Anyone,' says Helmholtz, 'who has once come into contact with one or more men of the first rank must have had his whole mental standard

Tutorial instruction.

altered for the rest of his life.' Lectures have not lost their use, and books can never fully take the place of the living spoken word. Still less can they take the place of the most intimate teaching in laboratory and seminar which ought not to be beyond the range of the ordinary course of a University education, and in which the student learns not only conclusions and the reasons supporting them, all of which he might get from books, but the actual process of developing thought, the working of a highly trained and original mind." Every possible effort therefore should be made to provide arrangements by which all students will receive, at least, some individual attention.

Libraries.

(c) We would say a word on the subject of libraries which form so large a part in the proper equipment of a University but, unfortunately, are a source of very considerable expense. We suspect that in the purchase of expensive publications and scientific periodicals there is a large amount of overlapping between the various libraries in Calcutta. There is rarely need for more than one copy of such publications within the city, but it should be easily accessible to the scholar who requires it. We would suggest, therefore, that the University might consult other libraries in Calcutta to discover how far a spirit of co-operation is possible in this direction and also consider the relationship between its own library and those of the affiliated colleges.

Residence.

(d) We have experienced very great difficulty in discussing the thorny question of residence for students. The Act of 1904 entrusted the Senate to draw up regulations regarding the residence and conduct of students. The regulations of the University provide that 'every student reading in an affiliated college with the object of appearing at a University examination, who does not reside with his parents or other legal guardian, or guardian approved by the principal of his college, shall reside either in his college, or in lodgings approved by his college.' The following classes of lodgings may be approved by a college:—

- (i) Non-collegiate hostels, that is, hostels under external management.
- (ii) Messes attached or unattached.
- (iii) Private lodgings.

A committee of the Senate, called the Students Residence Committee, is appointed to deal in accordance with the regulations with questions relating to the residence of students in non-collegiate hostels, messes and private lodgings. This committee is not empowered to interfere with the internal management of a hostel or mess, or with the control of a principal over his students. But if the Committee is satisfied, upon the report of one or more of its members, or of an inspector, that a hostel or mess is maintained or conducted in a manner contravening the regulations, the Committee shall report the matter to the Syndicate.

From this it will be seen that the real responsibility rests with the college authorities and that the Students Residence Committee merely advises the Syndicate whether or not a hostel or mess is conducted in accordance with the regulations. A college principal, however, is usually powerless in the matter. Owing to the fact that the examination results are not usually published until the middle or end of June, principals find it impossible to make previous arrangements for residence of their students and have, in most cases, to accept such arrangements as are made by the students themselves. Moreover, the Students Residence Committee can only say that this or that hostel or mess is unsatisfactory; it is not empowered to tell a student that he must leave his place of residence and go to another, for the very simple reason that such accommodation does not exist in Calcutta. It will be observed also that the regulations apply only to students in the affiliated colleges and not to those attending the university classes. It should also be remembered that the post-graduate students have all attained their majority, have consequently no legal guardians, and most of them are married. We could easily recommend that the governing authorities of the post-graduate teaching should make it their business to see that suitable rules are drawn up for the purpose and that an effective body be constituted to see that the rules are carried out, but we fear that the problem is far too grave to be settled by the mere issue of rules and regulations

which would soon prove unworkable, as have those provided for undergraduates. It would also be within our scope to offer a pious hope that some day suitable residences would be provided for the post-graduate students, but again it is a matter of funds and, when funds are forthcoming, it is clear that the under-graduates should have the preference. Besides, even if there were large funds, it is difficult to suggest how suitable residences could be provided. We have paid earnest attention to what seems to us an insoluble problem under present conditions, and we are agreed that the only practical remedy lies in the removal of the University. Naturally, we have not had the opportunity of considering such a proposal, except as a mere suggestion, and we should be going beyond our terms of reference in offering any definite recommendation.

We have discussed also whether or not a student attending the University classes, should be permitted to remain attached to his college for the purpose of residence and for such other benefits as he may derive therefrom. In the case of the Presidency College and the Scottish Churches College, which are now affiliated for post-graduate teaching in certain subjects, we should recommend that students who have graduated from either of these colleges would be entitled, with the permission of the college authorities, to remain on the roll of their old college. The college should inform the post-graduate authorities and agree to accept responsibility for such students, except in those matters in which they will come under the supervision and discipline of the post-graduate authorities. Students should, with the permission of the college authorities, be permitted to reside in the hostels of other colleges, but their names would not appear on the college rolls. Such residence would be merely in the nature of a private arrangement and would not be reported to the post-graduate authorities.

(e) We fully realise that the proposed concentration of teaching will entail additional lecture rooms, etc., and accordingly recommend that the scanty accommodation at present available be supplemented as soon as funds are forthcoming. The Fish Market site may be used temporarily for the development of arts teaching. For the present, it may be possible for some of the colleges to assist the University by lending for certain periods of time a modicum of accommodation for the use of a member of their staff who may be delivering a course of lectures for the University. Teaching accom-
modation.

22. In discussing the financial aspect of our proposals, it will be convenient first to record the following extracts from the budget for 1916-17, as passed by the Senate. Finance.

POST-GRADUATE TEACHING.

<i>Receipts.</i>	Rs.	<i>Payments.</i>	Rs.
Contribution from the Minto Professorship Fund	15,000	Salary of the Minto Professor	15,000
Contribution from the Hardinge Professorship Fund	13,000	" Hardinge "	13,000
Contribution from the George V Professorship Fund	12,000	" George V "	12,000
Contribution from the Carmichael Professorship Fund	12,000	" Carmichael "	12,000
Fees (1,000 students)	84,000	" Professors, Assistant Professors, Assistants, and University Lecturers (unendowed)	1,37,400
Government grant for University Lecturers	15,000	Pension contribution of Assistant Professors	2,250
Contribution from the Fee Fund	44,650	Proportion of electric expenses	4,000
Total	1,95,650	Total	1,95,650

It will be observed that Rs. 1,95,650 will be spent on post-graduate teaching during the year. Out of this sum, Rs. 40,000 represents the Government of India grant for three professorships (the annual grant for these chairs is really Rs. 37,000, the difference, Rs. 3,000, representing the unspent balance of previous years). Rupees 15,000 represents the Government of India grant for salaries of lecturers. Consequently, about 24 per cent. of the expenditure is met from Government grant. The fees paid by the

students produce an income of Rs. 84,000, *i.e.*, 45 per cent. of the actual expenditure. The remaining 30 per cent., *i.e.*, Rs. 56,650, represents the contribution of the University; Rs. 12,000, contributed by the University for the Carmichael Professorship, comes from the sale-proceeds of Sanskrit publications; and the balance comes from the current fee income.

UNIVERSITY SCIENCE COLLEGE.

BUDGET FOR 1916-17.

<i>Receipts.</i>		<i>Payments.</i>	
	Rs.		Rs.
Contribution from the Palit Fund—		Salary—	
First Trust	41,420	Palit Professor of Physics	9,600
Second Trust	49,100	" " " Chemistry	9,600
Contribution from the Ghosh Fund	61,200	Ghosh Professor of Applied Mathematics	7,200
Contribution from the Fee Fund towards salary of Ghosh Professor of Mathematics	1,200	Ghosh Professor of Physics	6,000
Contribution from the India Government Laboratory Grant Fund	37,000	" " " Chemistry	6,000
Contribution from the Fee Fund towards equipment of Laboratory, etc.	46,860	" " " Botany	6,000
Balance of contribution from the Fee Fund, 1915-16	2,000	Assistant Professors and Assistants	11,100
Fees from students—		Pension contribution—	
Chemistry (16 students at Rs. 10 each per month)	1,920	Palit Professor of Chemistry	2,100
Physics (10 students at Rs. 10 each per month)	1,200	House allowance to Palit Professor of Physics	1,500
Applied Mathematics (50 students at Rs. 7 each per month)	4,200	Stipends—	
		Palit Research Scholars	18,600
		Ghosh " "	7,200
		Salary—	
		Staff—	
		(a) General—	
		Menials	816
		(b) Chemistry Dept.—	
		Menials	1,056
		Laboratory Assistant, Store-keeper and Compounder	1,284
		(c) Physics Dept.—	
		Menials	1,128
		Laboratory Assistant, Mechanic Carpenter, etc.	2,000
		(d) Psycho-Physics Dept.—	
		Menials	120
		Laboratory Assistant and Clerk	1,260
		(e) Mathematics Dept.—	
		Menials	240
		Staff	6,900
		Clerk	480
		(f) Bio-Chemistry Department—	
		Menials	120
		Recurring Expenditure—	
		(a) Chemistry Department—	
		Chemicals and Contingencies	5,636
		Gas and Electric current	800
		(b) Physics Department—	
		Research grant	3,600
		Contingencies	360
		Gas and Electric current	1,200
		(c) Psycho-Physics Department—	
		Electricity and Laboratory Contingencies	500
		(d) Bio-Chemistry Department—	
		Laboratory Contingencies	800
		Equipment—	
		(a) Physics Department	30,000
		Ditto (1915-16)	30,000
		(b) Chemistry Department	24,000
		Ditto (1915-16)	22,000
		(c) Psycho-Physics Department	3,000
		(d) Bio-Chemistry Department	5,000

<i>Receipts.</i>	<i>Payments.</i>	Rs.
	Equipment— <i>contd.</i>	
	(e) Furniture	2,000
	(f) Books	5,000
	(g) Journal	2,500
	Workshop—	
	(a) Room }	10,000
	(b) Appliances }	
Total		<u>2,64,100</u>
		<u>2,46,100</u>

The science programme submitted above shows that the University intends to spend, during the session, Rs. 2,46,000 on science teaching. Towards this expenditure Rs. 37,000 will be taken from the Government of India's grant of previous years, Rs. 48,860 from the current University fund, and the rest will be drawn from the Palit and Ghosh funds.

From the financial statements which have been reproduced above it is clear that the University has at its disposal a fairly large sum of money for the development of post-graduate instruction, and it may also be hoped that our proposals will result in certain economies through the elimination of unnecessary duplication. On the other hand, it is obvious that if postgraduate teaching is to be carried on in Calcutta in a manner worthy of a large university, more money is required. The library should be extended, the staff increased and liberally paid, and provision made, if not for pension, at least for a provident fund. Much also will have to be done even to bring the higher teaching in natural science up to a level with the arrangements made at Allahabad, Bombay and Lahore for that work. We desire to record our appreciation of the valuable assistance rendered to students in the past by the Geological and Zoological Surveys, but at the same time some provision at least should be made by the University for the needs of these subjects. In making such provision, care should always be taken to ensure a healthy co-operation between all engaged in similar work, and therefore we would suggest that the University would do well, before embarking on any new scheme, to consult the authorities of the Geological and Zoological Surveys. We understand clearly that there is little or no hope of any additional grants being made by Government for some time, but recommend that the University should consider the possibility of raising its resources by an increase in the examination and teaching fees paid by its students. Provided that no undue hardship is imposed on the students, it is reasonable to expect that the University authorities will be prepared to accept an additional burden, when it is realised that such increases in revenue as may be effected will be put at the disposal of the post-graduate authorities for the development of higher teaching which has been declared by the Act of 1904 to be a part of the functions of the University, and which should appeal to all who are interested in its welfare.

It has been stated already in this report that the initial proposals for carrying out the teaching requirements should first be considered carefully by the Boards of Studies in each subject and that these proposals should then be submitted to the Executive Committees and Councils but, according to the constitution of the University, financial control must rest ultimately with the Senate. It would be convenient, however, if the Executive Committees discussed their proposals with the University Board of Accounts before submitting them to the Councils and the Senate. The work of these bodies will thereby be lightened considerably by the assurance that the proposals for the conduct of higher teaching had already been adjusted to the financial position of the University.

23. It is obvious that our proposals will entail considerable expenditure in the matter of making appointments, and especially in the case of those which will be temporary or consist merely in the delivery of a course of lectures for the University. Delay in this respect will be fatal to the scheme. For instance, a lecturer may be appointed, not necessarily

because of his scholarship in his subject as a whole, but because he is considered to be the most suitable man to deliver lectures on a small branch of his subject in which he has taken particular interest. Any cumbrous system by which it will be necessary to submit detailed information of a lecturer's record will quickly prove unworkable. Besides, under our proposals, each appointment will have been made on the recommendation of the teachers themselves and with special reference to the actual requirements of the course. Little safeguard therefore will be necessary to ensure the propriety of appointments on academic grounds. It is right that in the case of those posts which have been endowed by Government, the fullest information should be submitted and that the sanction of the Government should be necessary. In the case of other appointments, however, we would suggest that a notification should be sent, within a prescribed limit of time, to Government for their information. If for other than academic reasons the Government of India have objection to any appointment, their orders should be binding on the University, but apart from this safeguard, it would be harmful to the interests of the post-graduate teaching if the definite sanction of Government were required before any appointment could take effect.

Association with
other Universities
and learned
Societies.

24. In making these proposals we are aware of the fact that other Indian universities also have been improving their arrangements for higher teaching, and there are, in addition, a number of Government institutions and learned societies keenly interested in the work of research. In the course of this report we have laid emphasis on the necessity for co-operation and sympathy between all those who are engaged under the University. We would now go further and suggest that scholars living in different parts of the Indian Empire should be brought into close relationship one with another. It may be hoped that the bonds of union that result from a common pursuit of knowledge, may be the means of bringing races and peoples into harmony with each other. In this task the University of Calcutta should not be behindhand. If India is to add to the stock of human knowledge, she cannot afford to dissipate her energies or allow her scholars to work in isolation. No inter-university rivalry should be permitted to interfere with the prosecution of the work under the most favourable circumstances. If, for these reasons, Calcutta scholars may have to go far afield, so also should Calcutta be prepared to welcome from elsewhere scholars wishing to avail themselves of the facilities provided in this city. To effect this there should be frequent communication between the various universities, which communication might be encouraged by the employment, from time to time, of distinguished scholars from outside as temporary lecturers and examiners. Co-operation also is possible in the editing of journals and learned works. Advantage might also be taken of inviting men of practical experience not only from Calcutta but also from elsewhere to deliver courses of lectures under the terms of recruitment which we have proposed. It has been the practice of Calcutta and certain other Indian Universities to invite to India scholars of great distinction from Europe. If such a policy is continued, it offers another admirable opportunity for valuable co-operation between the universities. The higher teaching and research need money, favourable surroundings and an intimate association between scholars, and these factors should not be neglected in any discussion of this nature.

25. In conclusion, we would point out that in our deliberations we have taken things as they are, and have tried to submit recommendations whereby the best use may be made of the existing resources of the University and of its colleges. Our proposals amount, in the main, to the acceptance of two fundamental principles:—

- (a) An intimate association and co-operation between the college and the university staffs is imperative in the interests of all concerned and of the development of higher teaching.
- (b) It is necessary to constitute a suitable organization within which these teachers will be enabled, by discussion among themselves, efficiently to conduct the teaching and examination of graduates.

Beyond this we have been unable to go, and have refrained from commenting on the wider problems which now confront the University. We have no illusions that our proposals will result in a perfectly satisfactory state of affairs, though it may be hoped that there will be some real improvement on existing conditions which seem to us degrading to the professional status of the teacher. We believe our principles to be sound, and that the acceptance of them will assist the work of more thorough reconstruction when the time for it arrives.

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W. W. HORNELL.

H. H. HAYDEN.

G. ANDERSON.

BRAJENDRA NATH SEAL.

GEORGE HOWELLS.

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W. C. WORDSWORTH.

CALCUTTA;
The 12th December 1916.

APPENDIX I.

Staff employed by the Calcutta University on Post-Graduate teaching.

ENGLISH.

PROFESSORS.

Dr. Henry Stephen, M.A., D.D.; for many years Professor in the Free Church Institution and the Scottish Churches College.

Mr. R. S. Knox, M.A. (Oxon.), now on leave.

ASSISTANT PROFESSORS.

Mr. Harendra Kumar Mukharji, M.A., Gold Medallist, 1898; for many years Professor in the City College.

Mr. Rabindra Nath Datta, M.A., Sanskrit, Calcutta, 1903; Mediæval and Modern Language Tripos, Cambridge, 1906.

Mr. Suniti Kumar Chatarji, M.A., Gold Medallist, 1913.

LECTURER.

Mr. Heramba Chandra Maitra, M.A., Gold Medallist, 1880; Principal, City College, Calcutta.

ASSISTANT.

Mr. Susil Kumar De, M.A., Silver Medallist, 1911; formerly Lecturer, Presidency College.

PHILOSOPHY.

PROFESSOR.

Dr. Brajendra Nath Sil, M.A., Gold Medallist, 1884; Ph.D., 1910; for many years Principal of the Berhampore College and the Cooch Behar College.

ASSISTANT PROFESSORS.

Dr. Hira Lal Haldar, M.A., 1887; Ph.D., 1910; for many years Professor in the Krishnath College, Berhampore, and the City College, Calcutta.

Dr. Ramdas Khan, M.A. (Yale), 1909; Ph.D., 1914.

Mr. Ambika Charan Mitra, M.A., Class I, 1886; for many years Professor in various Government Colleges.

Dr. Narendra Nath Sen Gupta, M.A., Ph.D. (Harvard), 1915.

LECTURERS.

Mr. Jnanranjan Banarji, M.A., 1888, Gold Medallist; Vice-Principal, Metropolitan Institution.

Mr. Bimal Chandra Ghosh, M.A., 1894-96 (All.); M.A., 1898-99 (Cantab.); M.B., B.C., 1904-1908 (Cantab.); Professor, Metropolitan Institution.

Mr. Prafulla Kumar Chakrabarti, M.A., 1904, Gold Medallist; M.A. (Cantab.); Mental and Moral Science Tripos, Class I, in both Parts I and II.

ASSISTANT.

Mr. Susil Kumar Maitra, M.A., Gold Medallist, 1913; formerly Lecturer, Barisal College.

ECONOMICS.

PROFESSOR.

Mr. C. J. Hamilton, M.A. (Cantab.).

ASSISTANT PROFESSORS.

Mr. Satis Chandra Ray, M.A., 1886.

Mr. Manu Subedar, B.A. (Bom.); B.Sc. (Lond.), 1913, (Class I, London School of Economics).

Mr. Satis Chandra Chakrabarti, M.A., 1912, Silver Medallist; formerly Professor, Cooch Behar College.

ASSISTANTS.

Mr. Bhujanga Bhushan Mukharji, M.A., Gold Medallist, 1911; Premchand Roychand Student, 1914.

Mr. Durga Gati Chatteraj, M.A., 1914, Silver Medallist.

Mr. Jogis Chandra Sinha, M.A., 1915, Gold Medallist.

HISTORY.

PROFESSOR.

Vacant since the death of Dr. Thibaut.

ASSISTANT PROFESSORS.

Mr. Bipin Bihari Sen, M.A., Gold Medallist, 1891; for many years Professor in Government Colleges.

Mr. Surendra Nath Mazumdar, M.A., 1910, Gold Medallist; Premchand Roychand Student, 1911.

Mr. Rames Chandra Muzumdar, M.A., 1911, Silver Medallist; Premchand Roychand Student, 1912; formerly Professor, Dacca Training College.

Mr. Gauranga Nath Banarji, M.A., 1912, Silver Medallist; Premchand Roychand Student, 1913.

Mr. A. C. Datta, M.A., B.C.L. (Oxon.); formerly Professor, City College.

LECTURER.

Mr. S. Khoda Buksh, M.A., B.C.L. (Oxon.).

MATHEMATICS.

PROFESSOR.

Vacant at present.

ASSISTANT PROFESSORS.

Dr. Syamadas Mukharji, M.A., 1890; Ph.D., 1910; for many years Professor in Government Colleges.

Mr. Indu Bhusan Bramachari, M.A., 1896, Gold Medallist; Premchand Roychand Student, 1898; formerly Professor, Gauhati College.

Dr. Hari Das Bagchi, M.A., 1908, Gold Medallist; M.A., 1909; Premchand Roychand Student, 1910; Ph.D., 1912; formerly Professor, Gauhati College.

- Mr. Narendra Kumar Mazumdar, M.A., 1912, Gold Medallist.
 Mr. Surendra Mohan Ganguli, M.Sc., 1912, Gold Medallist; Premchand Roychand Student, 1914.
 Mr. Hari Prasanna Banarji, M.Sc. (All.), 1914, Gold Medallist; formerly Sir Rash Behari Ghosh Research Student.

ASSISTANT.

- Mr. Manoranjan Gupta, M.Sc., 1913, Class I.

COMPARATIVE PHILOLOGY.

PROFESSOR.

- Dr. Otto Strauss, Ph.D. (interned).

LECTURER.

- Mr. Rabindra Nath Dutta, M.A. (Cal. and Cantab.).

PALI.

LECTURER.

- Mahamahopadhyaya Dr. Satis Chandra Vidyabhushan, M.A., Sanskrit, 1893; Pali, 1901, Gold Medallist; Ph.D., 1908; Principal, Sanskrit College.

ARABIC AND PERSIAN.

LECTURERS.

- Aga Kazim Shirazi.
 The Hon'ble Mr. Zahadur Rahim Zahid Suhrawardy, M.A., Persian, 1889; Gold Medallist, B.L., Bar.-at-Law.

SANSKRIT.

LECTURERS.

- Mahamahopadhyaya Dr. Satis Chandra Vidyabhushan, M.A., Ph.D.
 „ Guru Charan Tarkadarsantirtha.
 „ Pramatha Nath Tarkabhushan,
 „ Luxman Shastri.
 „ Kali Prasanna Bhattacharyya, M.A., 1876; formerly Principal, Sanskrit College.*
 Pandit Bahu Ballav Sastri.
 „ Sakal Narain Pandey Kavyavyakarantirtha Vidyabhushan.
 „ Sitikantha Vachaspati.
 „ Tara Prasanna Vidyaratna.
 „ Muralidhar Banarji, M.A., Gold Medallist, 1890.
 „ Asutosh Shastri, M.A., Gold Medallist, 1891.*
 „ Bhagbat Kumar Sastri, M.A., Gold Medallist, 1899.*
 „ Surendra Nath Mazumdar, M.A., Gold Medallist, 1910; Premchand Roychand Student, 1911.*
 „ Bhimsen Shastri.*
 Mr. Rabindra Nath Datta, M.A. (Cal. and Cantab.).*

* Not on the staff of the Sanskrit College.

Staff maintained by the University for its Science classes.

APPLIED MATHEMATICS.

PROFESSOR.

Dr. Ganes Prasad, M.A. (Cal., All. and Camb.), D.Sc. (All.); formerly Research Student under Professor Klein at Gottingen (Sir Rash Behari Ghosh Professor).

ASSISTANT PROFESSOR.

Mr. Sudhansu Kumar Banerji, M.Sc. (1914), Silver Medallist; Premchand Roychand Student, 1915.

ASSISTANTS.

Mr. Nalini Mohan Basu, M.Sc. (1914), Gold Medallist.

Mr. Bibhuti Bhusan Datta, M.Sc., Class I, 1914.

PHYSICS.

PROFESSORS DESIGNATE.

Mr. C. V. Raman, M.A. (Mad.) (Sir Tarak Nath Palit Professor).

Mr. Debendra Mohan Basu, M.A. (1906), Gold Medallist; B.A. (Cantab.); B.Sc. (Lond.), Sir Rash Behari Ghosh Professor (now in Germany).

ASSISTANT PROFESSORS.

Mr. Joges Chandra Mukharji, M.A. (1907), Gold Medallist; formerly Professor, Bangabasi College.

Mr. Phanindra Nath Ghosh, M.A. (1908), Gold Medallist; formerly Professor, Bangabasi College.

ASSISTANTS.

Mr. Siris Kumar Mitra, M.Sc. (1912), Gold Medallist; formerly Professor, Bhagalpur College.

Mr. Susil Kumar Acharyya, M.Sc. (1912), Silver Medallist; formerly Professor, City College.

RESEARCH SCHOLARS.

Mr. Abinash Chandra Saha, M.Sc. (1914), Gold Medallist.

Mr. Satyendra Nath Basu, M.Sc. (1915), Gold Medallist.

Mr. Megh Nath Saha, M.Sc. (1915), Silver Medallist.

CHEMISTRY.

PROFESSORS.

Dr. P. C. Ray, C.I.E., Ph.D., D.Sc. (Sir Tarak Nath Palit Professor).

Dr. P. C. Mitter, M.A., Ph.D. (Berlin) (Sir Rash Behari Ghosh Professor).

DEMONSTRATOR.

Mr. Pulin Bihari Sarkar, M.Sc. (1916), Silver Medallist.

RESEARCH STUDENTS.

Mr. Jnanendra Nath Ghosh, M.Sc. (1915), Gold Medallist.

Mr. Jnanendra Nath Mukharji, M.Sc. (1915), Silver Medallist.

EXPERIMENTAL PSYCHOLOGY.**ASSISTANT PROFESSOR.**

Dr. Narendra Nath Sen Gupta, M.A., Ph.D. (Harvard).

LECTURER.

Dr. B. C. Ghosh, M.A., M.B., B.C. (Cantab.).

ASSISTANT.

Mr. Manmatha Nath Banarji, M.Sc. (1916).

BOTANY.**PROFESSOR DESIGNATE.**

Mr. S. P. Agarkar, M.A. (Bom.); formerly Lecturer, Elphinstone College, Bombay; Sir Rash Behari Ghosh Professor (now in Germany).

APPENDIX II.

Staff engaged in Post-Graduate work in the Presidency College,
Calcutta.

Name.	Qualification.	Length of service.
<i>English.</i>		Years.
T. S. Sterling, Esq.	M.A. (Cantab.)	7
J. W. Holme, Esq.	M.A. (Liverpool)	6
M. Ghose, Esq.	M.A. (Oxon.)	21
P. C. Ghose, Esq.	M.A. (Cal.); P.R.S.	9
<i>Philosophy.</i>		
Dr. P. D. Shastri	M.A. (Punjab), Ph.D. (Kiel), B.Sc. (Oxon.)	11
„ A. N. Mukherji	M.A., Ph.D. (Cal.), P.R.S.	15
K. N. Mitra, Esq.	M.A. (Cal.)	14
<i>History.</i>		
E. F. Oaten, Esq.	M.A. (Cantab.)	7 (Now on deputation to military duty.)
J. N. Das Gupta, Esq.	B.A. (Oxon.)	26
H. C. Ray Chowdhuri, Esq.	M.A. (Cal.)	2 (Transferred to Chittagong College.)
[The staff is in process of reconstruction.]		
<i>Economics.</i>		
W. C. Wordsworth, Esq.	M.A. (Oxon. and London)	9
J. C. Coyajee, Esq.	B.A. (Cantab.), LL.B. (Bombay).	6
K. Zachariah, Esq.	B.A. (Oxon.)	1
P. D. Mukherjee, Esq.	M.A. (Cal.)	1
<i>Mathematics.</i>		
Dr. C. E. Cullis	M.A. (Cantab.), Ph.D. (Jena)	16
„ D. N. Mallick	B.A. (Cantab.), Sc.D. (Dub.), F.R.S.E.	23
S. P. Das, Esq.	M.A. (Cal.)	18½
K. Khastgir, Esq.	M.Sc. (Cal.)	4
<i>Physics.</i>		
C. W. Peake, Esq.	M.A. (Oxon.)	21
Dr. E. P. Harrison	Ph.D. (Zurich), F.R.S.E.	(On deputation to military duty.)
S. N. Maitra, Esq.	B.A. (Cantab.), A.R.C.S. (London).	9
P. C. Mahalanobis, Esq.	B.A. (Cantab.)	(Temporary.)

Name.	Qualification.	Length of service.
<i>Chemistry.</i>		Years.
Dr. P. C. Ray . . . . .	. D.Sc. (Edin.), Ph.D. (Cal) .	27 (Recently transferred to University)
J. Bhaduri, Esq. . . . .	. M.A. (Cal.), P.R.S., F.C.S. .	19
Dr. R. L. Dutta . . . . .	. D.Sc. (Cal)	1
„ A. Sircar . . . . .	. Ph.D. (Cal), P.R.S., F.C.S. .	1
„ B. B. De . . . . .	. D.Sc. (London), M.A. (Cal.), (Appointed temporarily.) P.R.S.	
<i>Physiology.</i>		
S. C. Mahalanobis, Esq. . . . .	. B.Sc. (Edin.), F.R.S.E.	16
N. C. Bhattachari, Esq. . . . .	. M.A. (Cal)	12
<i>Botany.</i>		
J. C. Nag, Esq. . . . .	. B.Sc. (California)	3
S. C. Banerji, Esq. . . . .	. M.A. (Cal)	3.

**Staff engaged in Post-Graduate work in the Scottish Churches
College, Calcutta.**

Name.	Qualification.	Length of service.
<i>Philosophy.</i>		Years.
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2. Revd. G. Ewan M.A. (Edin.)	3½
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