Subject

REMOVAL OF THE PRESIDENCY COLLEGE
Circular No. 97 — G., dated Darjeeling, the 17th May 1905.

From—H. W. C. CarnsUFF, Esq., C.I.E., C.I.E., Official Secretary to the Government of Bengal, General Department,

To—(1) Sir Guru Das Banerjee, Kt.; (2) the Hon’ble Babu Bhupendra Nath Bose; (3) the Hon’ble Justice Sarada Charan Mittra; (4) the Hon’ble Justice Ashutosh Mukherji; (5) the Hon’ble Mr. K. G. Gupta, I.C.A.; (6) the Commissioner of the Presidency Division; (7) Babu Nalin Behari Sarkar; (8) Maulvi Semaj-ul-Islam, Khan Bahadur; (9) Dr. P. K. Ray; (10) Dr. E. D. Bose; (11) G. W. Kucbler, Esq.; (12) M. Prothero, Esq.; (13) J. Cunningham, Esq.; (14) V. H. Jackson, Esq.; (15) the Revd. A. B. Wann, Principal, General Assembly’s Institution; (16) the Revd. A. Tomory, (Duff College); (17) Dr. J. C. Bose; (18) Rai Chuni Lal Bose, Bahadur; (19) Rai Sita Nath Roy, Bahadur; (20) Mr. Surendra Nath Banerji (Principal, Ripon College).

I am directed to forward herewith copies of the papers noted on the margin, and am to say that I am to forward herewith copies of the papers noted on the margin, and am to say that His Honour the Lieutenant-Governor will be much indebted to you if you will favour him with an expression of your opinion on the proposal for the removal of the Presidency College to a better site in the suburbs of Calcutta.

(1) Extract from the Hon’ble Babu Bhupendra Nath Bose’s speech in Council.
(2) His Honour the President’s reply to the above.
(3) The Director of Public Instruction’s note dated 19th April 1905.
(4) Dr. P. K. Ray’s letter dated 16th April 1906.

Extract from the Speech of the Hon’ble Babu Bhupendra Nath Bose on the occasion of the Budget Discussion for 1905-1906.

“Sir, I treat on delicate ground when I refer to the expenditure of Rs. 1,00,000 on the Ranchi Model College. I am aware of the difference of opinion which attaches to this scheme. Fears have been entertained in some quarters that the growth of the Ranchi Institution may choke the life of the Presidency College, which has been eradiated us by its long and varied associations. It carries us back to the days of the old Hindostan College, when the Western scholar had to establish his claim against the ancient foundations of the East; it has given us Educationists whose names are remembered with affection and pleasure; it has given us men whom we have learnt to look upon with pride. It serves as an example to educational institutions all over the Province, and it is the centre of our highest hopes and aspirations. Any action which threatens to undermine its foundations are viewed with dismay. We have Your Honour’s assurance that it is not intended to let the Presidency College die. Your Honour will pardon those of my countrymen who fear that Your Honour’s successors may disregard your assurance, and that a day may come when the Presidency College may cease to be.

They point out, not without reason, that column pledges contained in Parliamentary Statutes and Royal Proclamations have not always been fulfilled; that assurances made to the ear have been broken to the hope; and that a succeeding Government may feel no scruple in uprooting the decision of its predecessor. I for my part do not share these fears. Whatever may be the fortune of the Ranchi College — whatever the intentions of any future Rulers of Bengal — it is not possible to conceive that the seat of the foremost University in British India, the seat of the Supreme and Provincial Governments, the seat of the highest Courts and the principal public offices, the centre of all educational activity, should be without an exemplary educational institution in the country.

To the people in the unfasal, Calcutta with its congested population, its outbreaks of epidemic diseases, its dangerous attration and its general expansiveness, it is no easy matter to send boys to be educated in the Presidency College. The parent who lives in Calcutta when a boy is establishing in the close and pestilential atmosphere of the town, it is difficult to decide where to send him to without a break in his studies. The Ranchi College will not amend the Presidency College, just as Darjeeling may, even Simla, has not supplanted Calcutta, but it will supply a long-felt want. In its hosts grouped together will live the Hindus and the
Muwulman, the patrician and the plebian; and in the warm days of youth they will contract friendships which will bind them as citizens and will be no mean factors in the evolution of India.

"Sir, whatever may be said of the Ranchi Colleges Scheme, I think public opinion will unanimously support me in my prayer to strengthen the Presidency College and widen its and active private institutions. No expense will not be grudged by the country in fostering the with pleasure and pride the days when we sat at the feet of men like Satche and Woodler. Their sympathy with the students is still remembered with affection, their influence still permeates our life. Nor is this all. If the Presidency College is to fulfil its destiny, it must be converted into a residential College, and education taught may meet untrammelled by the formalities of the class room. Your Honour must expect what Your Honour has given to Dacca, and a well-equipped Presidency College with its well-stocked laboratories and library, surrounded by neat and nicely-looking quarters for the students and the Professor, overlooking a broad playground, skating it may be the river or the canal, will be an institution which will worthily commemorate Your Honour’s rule."

Extract from Lieutenant-Governor’s Speech in the Budget Debate.

"As to the suggestions made regarding the Presidency College, I shall see that they receive early and careful consideration from the Educational authorities. That very considerable improvement is required in regard to the important duties of accommodation for the students and bringing them more into contact with their Professors, I have no doubt whatever; and I shall be very glad to consider, in consultation with my usual advisers and with others interested in higher education, the steps which should be taken to secure such improvement."

His Honour’s note dated the 13th April was received by me on the afternoon of Saturday, 15th April, and as I am leaving for England on Thursday, 20th, there is little time for me to give a very complete reply to the question raised, or to discuss all the problems which are connected with the case.

I have asked the Department of Public Works to kindly supply the maps and figures required in His Honour’s note, paragraph 2(a) and paragraph 5, and hope to get them in time to forward with this note.

The remarks in the speech of the Hon’ble Babu Bhupendra Nath Bose in the recent Budget Debate in the Bengal Council on the subject of a remodelled Presidency College, together with His Honour’s remarks in reply, raise a question on which to a large extent the future of high education in Bengal will depend, and which must be dealt with in a large and liberal spirit.

The question must be looked upon not as one dealing only with the Presidency College itself or even with Bengal alone. The Presidency College has been for many years far ahead of all other Colleges in India as regards the staff maintained and its appliances for a high standard of teaching. It had always been looked on as not only a model College in Bengal, but a model College in India. It also always has been what may be called a day or non-residential College. On account of its situation, in one of the most densely populated parts of Calcutta, with very little room for expansion, this feature of the Presidency College has been almost unavoidable. But there is no doubt that this has had an unfortunate effect on the character and type of high education which has hitherto been current in Bengal.

During recent years however great efforts have been made, and with considerable success, in other Provinces, to raise the standard of high education with its corresponding teaching.

In the Presidency College in Madras, for instance, the staff is now excellent; the College buildings are very fine. The College has a very fine Biological Laboratory, by far the best in India, together with good Physical Science Laboratories, distinctly better than those in the Presidency College, Calcutta, and a fairly good Chemical Laboratory, which is however not so good as that in Calcutta.

In the United Provinces, at the Muir College, which is a very fine new building, the laboratories for Physical Science and Chemistry are now better than those of Calcutta, and the teaching staff both in Madras and Allahabad is fairly strong.

The Punjab Government College at Lahore is a fine building. The teaching appliances in it are being improved rapidly, though still behind Calcutta, Madras, and Allahabad. In Bombay the Elphinstone College has a good building, but the less said about the teaching appliances for Science the better. Rapid progress is however the order of the day in India, and with new Regulations under the Indian Universities Act of 1904, a raising of the standard still further will be required.
It will be well perhaps to place on record just a few points with reference to the history of the Presidency College, Calcutta, in its present form.

The existing building (less the extension for the Chemical Laboratory) was erected about 1873, and was opened by Sir Charles Napier (then Lieutenant-Governor) either in 1873 or early in 1874. It was a collection of empty halls and rooms of various sizes, the rooms being in no way designed for any special purposes in teaching. No such arrangements as separate Laboratories and Lecture rooms for teaching various subjects in Science such as Physics and Chemistry had been thought of.

At that time also the number of students in the College classes was about a half of what it is now. The figures of the students in the Presidency College in 1873 appear to be about 385. There are now about 764 students attending the College.

My appointment as Professor of Chemistry in the Presidency College dates from May 1873. I was at first given two or three rooms in a house on the opposite side of College Street as a Chemical Laboratory. Later on I was allowed to use the derelict Hare School which I had fitted up. The Professor of Physical Science was accommodated in a two or three large rooms in the basement of the new Presidency College, which had in no way been designed for Science work. Later on, other rooms on the first floor of the College were taken for lecture rooms in Physical Science. As the Chemical Department grew, I was allowed to design an addition to one of the wings of the College building as a Chemical Laboratory. This was erected (I think) fifteen years ago, and was a vast improvement. When the Chemical section went into its new building, the Physical Science section took in the old Hare school building for certain necessary extensions, so that the Physics Department is now accommodated in no fewer than three parts of the College, all separate from one another.

In addition Geological classes had to be started in a tentative form in the Presidency College some years ago, and a couple of ordinary rooms had to be given up for that purpose.

Still more recently Biological classes have been started, and this Department has also been given a couple of rooms quite unsuited for the work.

Both the Geological and Biological rooms have had of course to be fitted up as best could be done.

Then in addition to the B.A. Science classes in the College it has been necessary to open and provide for classes for the B.Sc. Degree. Astronomical classes and observatories have also had to be provided.

During recent years, too, a considerable number of research students have been deputed to work in the College.

Most recently of all, Commercial classes have been added on to the curriculum of the Presidency College, which will, when the recognized scheme comes into existence, make large additional demands on the accommodation available.

Now the complaint has been coming for the last few years that owing to the large increase in the number of students attending the College, and to the great number of different subjects which have to be taught in any system of modern education, that the College is far too small and too cramped for its requirements.

In addition to complaints concerning the unsuitability of many of the adaptations as detailed above, each Professor says he requires more space for the teaching of his own subject.

It is also beginning to be felt that the College staff, though relatively to other Colleges a very large and a very strong one, is still not equal to the work which should be required to be carried on in the model College of India.

There are also complaints about the discipline of the students out of College hours. It is true we have a large Hostel (the Elliot Hostel) for the College, but this is not enough. It holds say 2-0 students, but it is situated in a bad quarter of the town, and undoubtedly the conditions of residence of the students both in and out of the Hostel (and in messes) might be very greatly improved.

I made some enquiries into the requirements of the Presidency College some three or four years ago, but could do nothing as there were no financial resources available for extensive additions. One of the objects, however, that I have steadily kept in view has been the urgent necessity of keeping up the prestige of the Presidency College, and before my retirement to try and arrange for it to occupy fully the position which should be assigned to it. Certain plans for the extension of laboratories and teaching appliances have been submitted during the last three or four years by individual Professors, but I postponed them, first till the discussion about the Ranji College scheme had taken definite shape, and then till I could get a comprehensive and well-digested scheme.

Some months ago, I asked the Principal of the Presidency College to consult his Professors, and specially the Science Professors; and to submit a complete scheme of what was required to place the College on a really satisfactory basis.

Again too, at my official inspection of the Presidency College about six weeks ago, I made some inspection remarks on the subject of the Presidency College being kept up to the mark, and the necessity for it to fulfil the place assigned to it of being a model College for Bengal at all events, not for the whole of India.

During my inspection I also discussed the question of possible extension with the Officiating Principal, Dr. P. K. Ray, and with some of the Professors. The result of this is that a certain scheme has been submitted to me by the Principal, which I append to this letter in full, with the plans referred to in the Principal's letter.
In the discussions which have taken place it is clear that the view is strongly held that it is necessary that the Presidency College should be improved or perhaps remodelled, and that this is so is perhaps not to be wondered at, for what was good enough and large enough 82 years ago is certainly not to be expected to fulfil the wants of education in Bengal at the present time.

We have also to remember that the Calcutta University may under its new Regulations require not only improvements in buildings and teaching appliances, but may also require Colleges to be more of a residential type than formerly.

There appear to be several possible directions in which action may be taken to improve the Presidency College:

A. Land might be taken up in the neighbourhood to allow—
   (1) for the necessary extension and development of the College, and for building two or three new and self-contained Science Laboratories;
   (2) to build a house for the Principal;
   (3) to build houses for some or all of the Professors, both European and Indian;
   (4) to increase the hostel accommodation and to bring the hostels under more strict supervision;
   (5) to provide playgrounds.

The cost of A would probably be prohibitive.

B. The plan might be limited to (1) or A only, and other things left as they are. The cost of this would be much smaller.

C. C might be done, and the hostel arrangements might be made at some place outside Calcutta, the students coming to and from the College by train. If C were carried out it would be well to construct a house for the Principal and some of the staff near the hostel or hostels for the purpose of supervision.

If C were carried out also, the Eden Hostel might be made over to the Medical College authorities, for I have learned in correspondence with the Principal, Medical College, and the Inspector-General of Civil Hospitals, Bengal, that such a hostel is rather urgently required for that College.

There are of course many arguments in favour of this course, but the plan is open to the objection that not only the staff, but the students would be also removed from close proximity to their place of work.

D. Another scheme would be to build any necessary extensions of Science Laboratories at some distance from the existing Presidency College, and for the students to come backwards and forwards from one set of lectures to another. This has been suggested, but I could not possibly recommend the scheme in the form in which it has been put forward.

If it had been proposed to have purely an Arts College in one place, and purely a Science College in another, it might possibly have been discussed.

E. The best possible course would be to remove the Presidency College and its hostels, etc., bodily to some open place in the outskirts of Calcutta, and to start a new and improved College there, making it as far as possible of a residential type, and with its own recreation grounds attached. This is the scheme put forward by Dr. P. K. Ray in the letter which I forward.

Possibly if E were considered, the existing Presidency College buildings might be of use to the Calcutta University for (1) ordinary examination purposes; (2) laboratories for research, and for the practical examinations in science; (3) a Calcutta University Library, and (4) an institution in connexion with the Calcutta University, like the existing Calcutta University Institute, but on a much larger scale.

Again, if E were carried out, the Eden Hostel would be found of the greatest possible use to the Medical College, as enabling them to secure a convenient residence for their students close to the Hospital.

These questions will however have to be approached with great care and caution, for it will not do to allow the Indian public to think there is any intention to harm the College or to remove it from Calcutta.

If E were adopted there is much to be said in favour of such a site as is proposed by Dr. P. K. Ray. Another exceptional site might be Kidderpore House, if it is ever given up by its present occupants, for it is now Government property. There are also excellent sites in such places as Ballygunge, Tollygunge, and on Diamond Harbour Road, etc., all of which will shortly be brought within easy reach of the tramway.

As suggested by His Honour the best plan would be to have the case considered by a small committee. As names for such a committee, I would suggest Sir Guru Das Banerjee, Hon'ble Babu Bhupendra Nath Bose, Justice Sarada Charan Mittra, Justice Ashutosh Mukherjee, Mr. K. G. Gupta, the Commissioner of the Presidency Division, Babu Nainakishore Sarkar, Maulvi Siraj-ul-Islam, Dr. P. K. Ray, Dr. E. D. Josse, Mr. E. Kehler, Mr. Frothero, Mr. Cunningham, and Director of Public Instruction, with Mr. V. H. Jackson as Secretary.

His Honour would preside at the Conference, it would be most popular, and add largely to its weight and influence.

I enclose Dr. P. K. Ray's letter and enclosures in original.
These and those notes will, I suppose, be printed. If so, I should be greatly obliged by six or eight more copies being sent to me. The return of the original enclosures to Dr. Ray's letter is requested.

The 19th April 1906.

A. PEDLER.

No. 450, dated Calcutta, the 16th April 1905.

From—P. K. RAY, ESQ., D. SC., Offg. Principal, Presidency College, Calcutta,
To—The Director of Public Instruction, Bengal.

I have the honour to forward, in original, the suggestions I have received about the requirements of this College from the members of the Instructive Staff in answer to my memorandum forwarding copy of your remarks on the occasion of your last visit and inviting them to make suggestions.

2. It will be seen that these suggestions refer to three main subjects:

(1) The removal of the College to a better site where it may be converted into a Residential College as required by the University Act;
(2) The extension of the present Physical and Chemical Laboratories and the building of new laboratories for Biology and Geology, etc., etc., and
(3) The general organization of the College and the enlargement of the teaching staff. I will take these subjects in order.

I.—Removal of the College to a better site.

3. On the occasion of your last visit I spoke to you of the possibilities of extension of the College on the present site and showed you the lands to the west of it. I annex a plan of the site showing the plots that may be acquired and the pucca buildings, etc., that stand on them. You suggested that for the purposes of the College, that is for the extension of the Physical and Chemical Laboratories and the construction of new laboratories in Biology and Geology and for a separate hall for a common room, for a gymnasium and for the residences of the Principal and two Professors of the College, the plot marked by the red line A, B, C, D, E, as shown on the plan, and containing about 15 bighas and 3 cottahs, would be sufficient. This would leave no space for the residences of other Professors or for the extension of hostel accommodation for students or for the Superintendent and Assistant Superintendent of the Hostel. For this purpose I suggested that the plot marked by the red line, E, D, F, G, as shown on the plan and containing 3 bighas should also be acquired. This plot is close to our Hostel, on the opposite side of the road to the north and is a very bad bustee at present. The total cost of acquiring both the plots would be about six lakhs. Even if both the plots were acquired, the College would not be residential. There is no possibility of having a residential College on the present site. The College has at present no play grounds. It is impossible to have them on the present site. It must be admitted that adequate play and recreation grounds are absolutely necessary for a College in order that the students may be kept occupied in the afternoon and thus acquire a love for health and strength along with their love of study and knowledge,—in order, in short, that the evil effects of excessive mental exercise may be counteracted by corresponding physical exercise. It is therefore desirable to pause and reflect whether the College should be extended on its present site or removed to a better site in the suburbs, where in the near future there might be constructed a residential College with extensive play and recreation grounds as required by the University Act.

5. I beg to submit my suggestions for giving effect to this resolution. A site may be easily acquired of about three hundred bighas in the northern suburbs at a distance of only three miles from the College. It is bounded on the south by a public road which runs to the east and is known as Dum-Dum Road, and which runs to the west to the river and is known as the Gun Foundry Road. To the north we may go as far as the boundary of the GovernmentGovernment. On the western side the site is bounded by the broad Coopore Road. A plan of the site is annexed hereto which will show its situation and surroundings. The site consists mainly of old garden lands, and there are very few pucca buildings on it. As the river is not near, the northern part of Calcutta where reside the gentry whose sons attend lectures at the Presidency College is only two miles or less, the grounds are high and extensive and capable of great extension, where it is not improbable that the private Colleges might migrate in future, moreover as it is proposed to extend the tram line close to it and take the line by its southern and western site the site selected seems to be admirably suited for the location of the "Presidency College" of Bengal.

6. The cost of acquiring this extensive site would not, I believe, be more than that of acquiring the 18 bighas on the present site of the College.
7. At a rough estimate the site and buildings would cost about 25 lakhs. An amount 10 to 12 lakhs might be obtained by selling off the present site and buildings of the College either to the University or to private buyers. The remaining 15 lakhs might be advanced by Government in two or three years. The estimated cost is shown below:

<table>
<thead>
<tr>
<th>Cost of site</th>
<th>Total</th>
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<tbody>
<tr>
<td>College Buildings</td>
<td>6</td>
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<tr>
<td>Physical Laboratory</td>
<td>6</td>
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<tr>
<td>Chemical Laboratory</td>
<td>2</td>
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<tr>
<td>Biological Laboratory</td>
<td>2</td>
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<tr>
<td>Geological Laboratory</td>
<td>1</td>
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<tr>
<td>Astronomical Observatory</td>
<td>1</td>
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<tr>
<td>Hall for common room, etc.</td>
<td>1</td>
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<tr>
<td>Gymnasium and out-offices</td>
<td>1</td>
</tr>
<tr>
<td>Clearing, levelling, draining, laying out grounds, etc.</td>
<td>1</td>
</tr>
<tr>
<td>Residences of Professors</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>25</strong></td>
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As regards hostels for students on the new site, I believe the proceeds from the sale of the present buildings and site of the Eden Hindu Hostel would be sufficient to construct new buildings on improved plans. The present site and buildings might be sold either to private parties or reserved by Government for the students of the Medical College for whom I understand hostel accommodation is needed, and their estimated value might be credited to the new Presidency College.

II.—Extension of the Physical and Chemical Laboratories and the building of new Laboratories in Biology and Geology, etc., etc.

8. On this subject I would refer to the original letters and notes of the Professors appended to this letter (see notes by Mr. Küchler, Mr. Cunningham, Mr. Mahalanabis, Mr. Haydon and Dr. Cullis). They suggest that each laboratory should be located in a separate building, as in Germany, and that Germany and America and also in England, a Psychological Laboratory has become almost as common as a Physical or Chemical Laboratory. It would be desirable therefore to make provision for it in the proposed new College.

9. A separate hall which may be used as a common room by students and Professors and which may be converted into a large Lecture Room or a Theatre whenever required is a matter of necessity for social intercourse between students and Professors outside college classes.

10. A large gymnasium in the German fashion is absolutely necessary. It should be equipped with all the latest implements of physical exercise as well as provided with the old instruments, such as were once prevalent in India.

11. The grounds should be well laid out for walks as well as for games and sports.

12. On the occasion of your last visit you have been pleased to remark, "The College has a very high reputation to maintain. There are over 140 scholarship-holders of various degrees working and reading in the College, so that it contains the cream of those under education in Bengal, and all concerned must realize this and work at the highest possible pressure. It is well to remember that the standard set in all matters in the Presidency College will react generally on collegiate education in Bengal. Great responsibility therefore rests not only on the Principal but also on every professor and teacher in the College, and work of each should be such as will set a proper standard in his own special subject."

13. In order to realize the ideal indicated in the above lines and to raise the College to the level of one in Europe or America it would be necessary to enlarge the teaching staff and to organize the College in such a way as would call forth the greatest individual and collective effort and promote the highest corporate and individual life.

14. On the third subject, namely the general organization of the College and the enlargement of the teaching staff, separate communication will be submitted in continuation of this.
From—Sir Guru Dass Bankerje, K.T.,
To—The Offg. Secretary to the Government of Bengal, General Department.

I received yesterday your letter (Education Circular No. 91, G.), dated the 17th May 1905, in which you have done me the honour of asking my opinion on the proposal for the removal of the Presidency College to a better site in the suburbs of Calcutta.

In reply I beg to submit the following observations for the consideration of His Honour the Lieutenant-Governor.

On going through the copies of papers you have been good enough to send me, I find that the improvements in the Presidency College which have been considered necessary or desirable, are—

(i) the conversion of the institution into a residential College, by having suitable hostel accommodation and play-grounds for students, and houses for the Principal and Professors, close to the College building;
(ii) the extension of the physical and chemical laboratories, the erection of new laboratories for Biology, Geology and other sciences, and the building of more lecture-rooms; and
(iii) the strengthening of the teaching staff.

And it is mainly for the purpose of effecting improvement (i) that the removal of the College to a suitable site in the suburbs of Calcutta has been recommended as necessary.

While yielding to none in my desire to see the Presidency College, which is the premier College in Bengal and which should be the model College for India, fitted with every possible improvement, and while speaking with all deference for the views of the Hon'ble Babu Bhupendra Nath Bose and Mr. Pedler and Dr. P. K. Roy, which I believe are shared by most European educators and by many of my own countrymen, I feel bound to say that the conversion of the Presidency College into a residential College is desirable in the existing state of things, and is not necessary for increasing its efficiency. My reasons for taking this view may be shortly stated thus:

In the first place, improvements (ii) and (iii) are of much higher importance than improvement (i), and ought to be effected fully before the latter can claim our attention; but the funds available will not leave much for the former purpose if they are applied in the first instance to the latter.

In the second place, the advantages of a residential College are not so clear and unquestionable as they are generally supposed to be, especially when the number of students is so large as it is in the case under consideration. For personal influence of the Principal and the Professors will reach only a few, and the supervision for the most part will be mechanical and a matter of routine; and discipline under such supervision must be far less salutary in its effects than home-training or the necessary self-discipline of those who have to shift for themselves, subject to such supervision as a system of inspection for students' messes might secure.

In the third place, in a country like this with its diversity of races and creeds, and with the teaching staff in its higher ranks belonging to a different nationality, it will be no easy matter for the supervising authorities to have sympathetic appreciation of the situation of students, and to show due regard for their habits and sentiments.

In the fourth place, it is not necessary that a College should be of the residential type in order that it may exercise adequate control over the conduct of students, and its Professors may cultivate...
friendly relations with their pupils. Such control may be sufficiently secured if the Colleges co-operate with the University in the supervision of students' messes and hostels; and the lecture-room and the laboratory may afford ample field for the cultivation of such friendly relations.

5. If then the first improvement suggested, namely, the conversion of the Presidency College into one of a residential type, be left out of consideration as undesirable in the present state of things and unnecessary for increasing its efficiency, the other two improvements referred to above in paragraph 3 which are essential and should occupy our attention in the first instance may, as implied in paragraph B on page 3 of Mr. Pedler's note, dated the 18th April 1905, be effected without removing the College to a different place, whereas, if the first mentioned improvement is insisted upon and with it a change of site, the second improvement will no doubt proceed hand in hand, but the third, the most important of all, will have to be postponed, at least for a time, for want of funds.

6. While thus, on the one hand, no change of site is necessary for effecting improvements (ii) and (iii) (noticed in paragraph 3) which are essential for increasing the efficiency of the College, on the other hand, removal of the College either to the northern suburbs or to Ballygunge is open to objection on various grounds.

The Presidency College is now situated almost centrically with reference to the houses of those residents of Calcutta and its suburbs, who either actually send or are likely to send their sons to that College for education; and the removal of the College, as suggested, will result in considerable inconvenience to large numbers of them. For if the College be removed to the northern suburbs, residents of Bhowanipore and Ballygunge will be put to great inconvenience, while removal to Ballygunge will produce similar inconvenience to the inhabitants of Shambazar and Bagbazar.

Then, again, neither the site recommended in the northern suburbs nor that suggested in Ballygunge is as healthy as the present site of the College, the suburbs and Ballygunge being well known to be malarious places.

Moreover, the removal of the Presidency College, as suggested, will materially affect the supervision of the Hindu and Hare Schools, the two important Government high schools in Calcutta, which are now under the control of the Principal of the Presidency College, and which cannot conveniently be removed along with that College and converted into boarding schools.

7. For the foregoing reasons, in my humble opinion, the removal of the Presidency College from its present site is neither desirable nor necessary; and for its real improvement all available funds should, in the first instance, be applied to the strengthening of the teaching staff and the extension of the laboratories.

8. In conclusion, I should add that my insisting upon the strengthening of the teaching staff must not be taken to imply any disparagement of the merits of the present staff. What I really mean is this, that with a view to increase the efficiency of teaching, the numerical strength of the staff should be increased, so that it may be adequate to take charge of the large number of students who seek instruction, and of the great variety of subjects in which instruction is sought; and the salaries of Professors should be raised so as to offer sufficient inducement to competent men in India and Europe to enter the educational service and continue in their posts as teachers.

[No. 10.]

Dated Calcutta, the 25th May 1905.

From—The Revd. Alex. Tarmory.
To—The Ogg. Secy. to the Govt. of Bengal, General Department.

I have the honour to acknowledge receipt of your letter (confidential), dated Darjeeling, the 17th May, marked Education Circular No. 91—G., and to forward the following opinion on the scheme contained in the papers accompanying your letter.
1. The inadequacy of the present Presidency College site for the purpose of a model College on enlightened principles is admitted. Extensions must be made at once if the primacy of the College is to be maintained, and these extensions must provide accommodation for residences for European and Indian professors, laboratories, and extra class-rooms.

2. Two possibilities present themselves:—(a) Local extensions, (b) Removal—

(a) Local extensions could be procured by tearing down the antiquated buildings on the north side of College Square (Sanskrit College, Sanskrit Library, Hindu School, University Institute) and erecting a modern four-storied building there. The first two floors could be used for class-rooms and laboratories, the third and fourth for residential quarters (provided with lifts and water-tanks on roofs for flushing, etc). This would provide a magnificent frontage. Then the tank (College Square) should be filled up and made into a playground, reserving half for the Presidency College and half for the general public. The old buildings on the north side of College Square are picturesque, but far from economical in their use of space—open quadrangles and colonades in the centre of a city are pleasant, but decidedly wasteful when extensions are needed.

The residences would be for the European staff. Indian gentlemen are not usually comfortable in European houses, which seem too open and draughty. The tank should be filled up in any case. Tanks are a source of danger to the public health as breeding-places of mosquitoes. No doubt the ripple on the surface of the College Square tank on a moonlight night is charming and productive of poetic thoughts, but in this utilitarian age that charm will be less thought of than the possible danger, and the certain inutility of the tank as at present restricted. Filled up, it would make a magnificent square in the centre of the city and such an open space would provide health for thousands. Instead of the ripple of the water there would be trees, shrubs, flowers along the borders, and athletic games in the square itself.

Accordingly if local extension is thought desirable the above scheme would provide it adequately, though not as ideally as removal to a southern suburb.

Before proceeding to consider (b) it would be well to provide for the disposessed Sanskrit College, Library, and Hindu School. These might be very well removed to the outskirts of the town, say to the eastwards on or near Upper Circular Road, and would allow of a return to simple ancient Sanskrit tol conditions. The Hindu School (at present like any other entrance school) should specialize as a preparatory school for the Sanskrit College. Or it might be necessary to buy up the eastern side of College Square under the Land Acquisition Act and erect buildings there that would glorify the centre of Calcutta, where Hausmannising is very much needed.

(b) But if on general principles local extension is less desirable than migration elsewhere, the question arises, where? For the very large expenditure estimated as likely to be required, one would have to consider not only size of proposed site, but general suitability, and probable remuneration.

On a new site it would be possible to erect a College, with residences for professors and students on the best possible lines.

3. Dr. P. K. Roy suggests a site at Cossipore. He gives an elaborate scheme; and it will have to be carefully examined by experts before such a large outlay is incurred.

4. Personally knowing the district as I do from frequent cycle rides in the vicinity, I am very strongly opposed to the selection of Cossipore as the site for the new Residency College—

(a) The district is malarious: the district round Dum-Dum is notoriously so: the eastern part of the district is under water for several months every year. From the road to Dum-Dum Cantonments one sees water as far as the eye can reach in the rains, the period of most strenuous application in Calcutta Colleges, when malaria would prevail among students and others.

It is possible that the malarious nature of the area might be improved by removing jungle, but it would be foolish to plant down at an estimated
cost of 25 lakhs a magnificent College on a malarious site when other sites in more salubrious localities are available. I am not a Health Officer, but it seems to me that when Barranagar is malarious (west of site) and Dumdum district is malarious (east of site) the probability is that the Cossipore suggested site will also be found malarious.

The suggested site is at the wrong end of Calcutta for the European professors and their wives. They would practically have to form a community by themselves, and the social life of Calcutta would suffer from the removal of the educational people from ordinary Calcutta "functions" at the south end of the city where "society" would become more than ever financial and commercial.

The suggested site is three miles from the present Presidency College and the use of tram-cars is emphasized. If a car journey has to be made in any case, would there be any great discrepancy between a journey of three miles northwards to Cossipore and five miles southwards to Alipore, counting from the Presidency College in both cases?

I would venture to suggest that a site be estimated for in the area between Alipore and Tollygunge where there is plenty of good land, no malarial scourge, and contemplated tram-car facilities.

All the institutions of Calcutta—the Imperial Library, the Museum, the European shops, the Town Hall, and the Victoria Memorial—are at the south side of Calcutta, and are much nearer Alipore than Cossipore, to say nothing of the salubrious drive across the Maidan in the one case, and the crawling progress through pestiferous streets in the other. For the residents at the College, students and professors, these are points to be considered.

I may say that I have no idea what such a site might cost in the district named, but the other items would be much the same in both cases.

I would lay stress on the social surroundings in both places. At Alipore a distinctively European element predominates, leading to excellent conservancy, orderly arrangements, and Western amenities. It would be an excellent training for hostel students there to be surrounded by all the influences of European life in college terms, not only in respect of professors but of a general public that would learn to respect the seions of the best Calcutta homes and would impress them with the high character of the general European citizen. Mutual understanding between the two races would result at Alipore. At Cossipore there would be isolation from Europeans, except from the score of European mill employees along the river in the vicinity who would not be likely to fraternise with our students.

On the whole, on hygienic, on topographical, and on social grounds I would prefer Alipore to Cossipore as a site for the proposed new Presidency College. As between the three possibilities—local extensions as indicated on page 1, Cossipore, and Alipore—I unhesitatingly prefer Alipore. Of the other two I am almost sure I should prefer the first, viz., a local extension as suggested on page 1. Cossipore would, in my opinion, be a very risky experiment, and a further removal from the advantages of the European end of this great city than at present exists.

I beg to apologise for the length of these remarks.

Dated Darjeeling, 26th May 1905.

From—M. E. DuS. ROTHERO, Esq., M.A. (Oxon.), Professor, Presidency College,
To—The Off. Secretary to the Government of Bengal, General Department.

With reference to your Circular No. 9T.—G., dated 17th May, asking for my opinion on the proposal to remove the Presidency College to a better site in the suburbs of Calcutta, I have the honour to state as follows.

1. If a site of the size mentioned by Dr. Roy is available in the position stated I should be strongly in favour of his proposal. It will secure the great advantage of converting the College to a closer approximation to the residential type and of bringing the students and the instructive staff more closely together in their leisure time without running contrary to the public sentiment, which is so strongly opposed to the removal of the College from Calcutta.
have only comparatively recently joined a College, having been previously employed for a long time in the inspecting branch, but my own experience of the advantage of a closer intercourse between the teachers and the taught may be thought relevant to the question at issue. During the six months I officiated as Principal of the College, I acquired an influence with the students, which I should not previously have considered possible, by taking an interest in their games, dramatic representations, debating clubs, etc. I never thought the student class capable of much affection or gratitude before, but I have certainly had cause to change my opinion.

2. Another reason which leads me to support the proposal is, that, as it is in contemplation to build houses for the Principal and Professors, in the case of such as are marked men it would certainly be unpleasant for European ladies to reside anywhere near the Presidency College.

This objection would not apply to the proposed site in the northern suburbs.

3. If the College is removed as proposed, it will be possible to secure in a great measure freedom from the undesirable surroundings, objectionable both from the point of view of morality and health, which are well known to anyone who has had anything to do with the management of the Eden Hostel.

4. I would remark that Dr. Roy's scheme takes no notice of the other Government educational institutions in Calcutta more or less intimately connected with the Presidency College, such as the Hindu and Hare Schools and the Calcutta Madrasa. The case for their removal is as strong as that for removing the Presidency College, and inasmuch as the students of the Madrasa reading for the F.A. and B.A. examinations attend lectures at the Presidency College, if the Madrasa is not to be moved, additional outlay will have to be faced for increasing the staff of the Madrasa to enable it to teach up to the B.A. standard.

5. Whilst cordially approving the scheme, I feel bound to express my belief that it will be difficult to enforce residence on a very large proportion of our students. So many of them are the children of parents, who are badly off, that the increased cheapness of living with their parents or relations, rather than in the hostel, which it is proposed to establish, will be a matter of great importance to them. With this liberty, I do not see how the Government can interfere, and therefore for a large number of students, the College must remain a day or non-residential institution. Many of our students live at such a long distance from the College that their time outside lecture hours is fully taken up with going and coming every day. Such students will not derive much advantage from the residential system, or the games and play-grounds, which it is in contemplation to establish. It is only the minority, who will be much influenced by the change, and for them its benefit will be incalculable.

6. A point of some importance relating to the proposed transfer of the Eden Hostel to the Medical College is that the consent of the private benefactors, such as the Raja of Muisadal, by whose contributions the hostel was in a large part constructed, or their heirs, will have to be secured. A similar difficulty will have to be considered with reference to the Elliot Muhammadan Hostel, if, as I have ventured to suggest, it is considered that the removal of the Presidency College entails the removal of the Calcutta Madrasa.

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Dated Calcutta, the 27th May 1905.

From—The Revd. Arch. Tomovy,

To—The Vizag, Secretary to the Government of Bengal, General Department.

In continuation of my letter of 25th instant, I have the honour to say that I have this evening cycled round the site suggested in the letter of
I do not know what the advantage is in having the buildings on both sides of the Barrackpore Trunk Road. But I want to warn you that the ground level in blocks A and B is below the road level and the ground is covered with water all the rains. I visited the Cossipore Horticultural Gardens incidentally. It is part of block A above, and the Manager informed me that it was malaria, and flooded in the rains. The ground level is minor road level. A good deal of the land in question is garden land, not in our sense, but densely overgrown. There are a number of tanks, each garden having at least one for irrigation purposes. These would have to be filled up as part of the scheme.

Block A is very objectionable on other grounds. It is faced to the south by the Tramway Horses Infirmary and the new terminus of the goods traffic of the Chitpore-Cossipore section of the Eastern Bengal State Railway. The noise of shunting would be very disagreeable either for students or residents. The west boundary is the Cossipore road, with open drains on both sides, and a regular low-down native bazaar, peopled apparently by mill-hands and their families and other followers.

I cannot imagine how any responsible person would fix on this block as an ideal site for a splendid College. In charity therefore I am bound to assume that block A is meant as a play-ground or maidan for students, and in that case the question arises whether the expense of raising the whole level and filling up the tanks would not be prohibitive, considering the object. Block B has not the disadvantages of block A, but it is far from a good site for the Model College. There is too much of the mill-hand and similar element about. That might be cleared from the immediate neighbourhood of block B, but even then the approach would be unpleasant.

I felt that I ought to send you these additional notes, based on to-day's observation.

[No. 13.]

No. 21 Con., dated Calcutta, the 1st June 1905.

From—The Hon'ble Mr. F. W. Duke, Offg. Commr., Presidency Division.
To—The Secretary to the Government of Bengal, General Department.

Replying to your Education Circular No. 9T.—G., of 17th May 1905, on the proposal for the removal of the Presidency College to a better site in the suburbs of Calcutta, I have the honour to say that in my opinion the alternative lies between the proposals A (1) and E of Mr. Pedler's note. The former which provides for the necessary extension and development of the College, and for building two or three new and self-contained science laboratories, that is to say, for improving the College as a purely teaching institution, could be effected by the acquisition of land close to the present site at a high but relatively moderate cost. Any of the other proposals would either be prohibitive as involving extensive acquisition in the heart of Calcutta, or partial and ineffective as taking the College very little beyond A (1) and making no real provision for residence, recreation or supervision.

2. It seems to me, however, that the proposal A (1) would not provide adequately for modern requirements. I presume that Government has definitely decided that a model College must be something more than an agglomeration of class-rooms, and that much more is due to its students than
the mere provision of lectures. But the cost involved even in scheme A (1) would probably be so great as to deter Government from making any further extensive changes in the College for another generation.

3. The proposal E is therefore the only one which renders the development of the College possible as a residential or potentially residential College with adequate recreation grounds.

4. I have a superficial acquaintance with Ballygunge and Tollygunge, and also with Cossipore and the land along the Barrackpore Trunk Road. I believe that the region indicated by Dr. Roy is the best, namely, the tract on the Barrackpore Road, north of the Cossipore Gun Foundry Road. In this I am supported by Mr. Bernard who has, I believe, consulted his District Engineer. All the outer suburbs are esteemed unhealthy; but, so far as I can learn, the Cossipore region is less so than the more outlying tracts of Ballygunge and Tollygunge. The country is better cleared and has, I think, a better fall towards the northern end of the Salt Lakes. At the point indicated by Dr. Roy are some extensive gardens in a neglected condition of which the price could not be excessive. The site is also more suitable for local students, it is within walking distance, say ½ miles, of the northern end of Calcutta, and within. I should judge, the smallest tram fare (once lines are laid on the Barrackpore Road, as I believe, they will be) of the Harrison Road. Dr. Roy informs me that of the students whose houses are in Calcutta, about 223 live north of the Harrison Road against 188 south of it. Any site we could find in Tollygunge or Ballygunge would be too far for those at the northern end, even by tram. At least it would involve great loss of time and expense.

5. I am bound to observe, however, that any change of site is likely to occasion an extreme outcry. Assuming residence not to be made compulsory, in the first instance, it seems to me that to make it compulsory would occasion as great an outcry as arose amongst the native community when they assumed that the College would be removed to Ranchi, or suppressed in favour of the Ranchi College, then short of that site which I approve as the best and nearest to the town will still necessitate a regular expenditure on tram fares by the great majority of the students. This expenditure will not be less than Rs. 3, and for those further off may amount to Rs. 6 monthly. This alone is quite sufficient to occasion loud and violent opposition. I need not do more than advert to the perversity with which practically every Government proposal is misrepresented in Bengal. When the natural conservatism and suspicion of the class with whom we have to deal is fortified by a substantial ground of complaint, it can be understood how intense the opposition is likely to be. It has been distinctly shown that the upper and upper middle classes regard the Presidency College as an institution in which they have a vested interest, and its want of conformity to modern ideas on the one hand, or any improvements which we can hope to effect in it on the other, will weigh very little with them as against any change which makes it more expensive or less available.

6. I would therefore suggest that if the step of moving it to a suburban site is considered to be essential to its improvement, that step should be taken with extreme caution, and native opinion should be prepared for it not by obtruding any ready prepared scheme but by gradually exposing the impossibility of progress under existing conditions. If opinion can be brought round to the necessity of reform, the fact that a change of site is an essential condition of reform may be recognised. I make these observations because the benefits of the College are almost exclusively enjoyed by one particular class, and it hardly seems worth while to force a benefit upon that class at the expense of all the abuse and political odium which will be excited, unless it believes that the demand proceeds from itself.

[NO. 14-15.]

Dated Calcutta, the 9th June 1905.

From—G. W. Knight, Esq., Meteorological Reporter to the Govt. of India.
To—The Oflf. Secretary to the Government of Bengal, General Department.

In reply to Circular No. 9T.—G., dated 17th May, in which His Honour the Lieutenant-Governor asks for an expression of my opinion on the proposal
Note on the proposed removal of the Presidency College to a better site in the suburbs.

From hardly any point of view can the present site of the Presidency College be considered satisfactory. Regarded merely as a day college, where work is done between stated hours, the only argument in favour of its situation is that it is central. But such an argument is nowadays considered of little account unless the central situation is accompanied by other advantages of a more essential nature. It is after all a very trifling hardship if young men of college age have to travel either on foot or by some other mode of locomotion a considerable distance to the place of their studies. To my mind it is indeed a distinct advantage, as with many young students this compulsory locomotion forms their only bodily exercise, and even if it take the mild form of transportation by carriage or tram, it still has a certain value. Especially is this true of the Bengali student, whose natural disinclination for bodily exertion assuredly needs no artificial encouragement. The only advantages in fact afforded by a central situation as such are those which arise from libraries, reading and common rooms and laboratories to which access is permitted outside the usual college hours. These advantages have, however, up to the present not been associated with the Presidency College, and even if they had been, they would have been more than counterbalanced by the drawbacks which the situation of the college presents in other respects.

The chief characteristics which in my opinion should be aimed at in selecting a site for a high grade day college are hygienic surroundings, freedom from noise and dust, and sufficient space, not only for present requirements in the matter of buildings, but also for future expansion. Educational work should be done in quiet places and in pure air, and it is especially desirable for scientific work that there should be no noise, no vibration, and no dust.

Judged by these requirements, the present site of the Presidency College considered merely as a day college stands condemned. Its hygienic surroundings are of the poorest, the air is full of dust, and the noise and vibration caused by the traffic in the streets are intolerable. Further, the needs of the scientific departments have far outgrown the space accommodation at present at their disposal, and no relief is possible except by the acquisition of the expensive though unsavoury land surrounding the college. As Mr. Pedler has pointed out, no addition beyond the construction of a well-planned chemical laboratory has been made to the college for the last thirty years, so that a large amount of arrear in the direction of new buildings has now to be made good.

The need for new buildings is most pressing on the science side. This is the natural outcome of the recent awakening of India in common with other countries to the benefits of a real scientific education. It should, moreover, be noted that a special impetus will in Bengal be given to the demand for increased facilities for acquiring scientific knowledge by the regulations founded on the new University Act which are about to come into force. These facilities must necessarily include the provision of new laboratories of a modern type in the various branches of science which the University proposes to include in its curriculum. Now, whatever be the future relations of the University to its affiliated colleges as regards post-graduate studies, I think it would be a great mistake if the leading Government college in Bengal were to give up direct and active participation in the highest kind of educational work. It is, I imagine, no breach of confidence to state here that one of the Committees at present engaged in drawing up University regulations has framed a scheme for determining the relations of the University to the recognised colleges in the matter of post-graduate courses of study. This scheme, which as far I can judge is perfectly practicable, aims at concentrating and economising the energies of the various colleges with regard to higher work following the examinations for the ordinary degrees of B.A. and B.Sc. But, while the University will by this agency actually become a teaching body, it is not intended that the contributing colleges should lose their identity thereby, but merely that they should be drawn into closer union with the University and form a recognised abode for true University studies. It is in this way in fact, i.e., by the provision of men and material, that such of the colleges as are in a position to do so will contribute to the support of the University. Should this scheme be adopted, it will throw on the colleges and naturally in the first place on the Presidency College the chief onus of providing the facilities necessary for carrying on real University work. But with or without it a certain amount of independence of action should be always left to the Presidency College, so that it may form a model for the University and, if necessary, act as a check on any future retrograde tendencies on the part of that institution.

I have digressed at some length on this question of the relations between the University and the colleges, as it depends largely on the necessary for the provision of increased facilities at the present moment for advanced work in the Presidency College and therefore to some extent the question of the removal of that institution to another site.

It is indeed the necessity for the immediate extension of the present complex of college buildings which gives a real practical interest to the question under consideration, as the
unsatisfactory conditions of the present site might hardly by themselves constitute a sufficiently powerful reason for the radical remedy afforded by a complete removal of the college.

If, however, it is admitted that the construction of new laboratories for the Presidency College is urgently called for (and I would strongly press this view on Government), and if the construction of these laboratories on an extension of the present site involves a very heavy expenditure, it certainly seems desirable, provided a reasonable sum can be realised by the sale of the present property, to remove the college to a better site instead of perpetuating the disadvantages of the present one. Such a step would involve little or no pecuniary loss, and besides the very considerable benefits already alluded to which could be secured by a change of situation, there would be the additional one that not only the new science institutes but also the portion of the college devoted to literary and philosophic work would be designed from the outset with a view to their ultimate purpose and not merely consist, as Mr. Pedler has pointed out to be the case in the existing Presidency College, of an aggregate of rooms adapted as best they can be to the particular educational work for which they are required.

So far I have confined myself to the arguments in favour of moving the Presidency College as a non-residential institution. If, however, it is intended, in accordance with the requirements of the new University Act, to give a more or less residential character to the college, the arguments for removal acquire overwhelming force. It may I think be taken for granted that while great improvements can no doubt be introduced in the matter of hostel supervision and while much can be done to increase amenities of student life in the present hostel by the provision of reading and other common rooms, by the institution of clubs, literary and athletic societies, and by the consequent encouragement of social intercourse amongst the students themselves, in a word by giving a collegiate instead of a mere lodging-house character to the hostel, any attempt to retain a residential character of the present site is out of the question. The expense alone would be prohibitive, but quite apart from this the mere provision of professors' houses in more or less proximity to the hostels would constitute a very small step towards the realisation of the conditions of a residential college in the full sense of the term. Moreover, it is doubtful whether one of the chief objects of such an institution, viz., the promotion of friendly intercourse between professors and students, would be materially furthered by the mere proximity of residence of these two classes in such a neighbourhood as College Street. It is true that the minimum requirements of the University Act amount to nothing more than the provision of residences for the Principal and perhaps one or two professors as near as possible to the college or the hostel, but it is hardly likely that the Government would be content to work down to this minimum, and even if it did so the expenditure entailed in the provision of adequate residences and in the improvement of the hostel would still be very heavy and out of all proportion to the very meagre results which would follow.

The real objection, however, to the perpetuation of the present hostel and to any scheme for the addition of further residential quarters either for students or professors lies in the utter unsuitability of the site. All that I have said above with regard to the hygienic surroundings of a non-residential college applies with double force when the residential element comes in, and in the case of the students an even more important point is that the moral surroundings should be as pure as possible. The less however said about the moral and hygienic conditions of the neighbourhood of the Presidency College the better. It is true that there are many other Arts Colleges in the same neighbourhood and, further, that the Medical College is not only close to the Presidency College but that the authorities of that institution propose acquiring a hostel in the quarter which I have just stigmatised as objectionable. With regard to the latter there are special reasons why the Medical Hospital and consequently the college attached to it should be in the centre of the town, and there are also special reasons why the students attending the college, who moreover are on an average considerably older than the Arts students, should live close to it. As for the private Arts Colleges, they are for the most part day colleges, to which not even all the reasons for removal (such as for instance the demand for additional space) hold in the case of the non-residential part of the Presidency College, are applicable. Moreover, should the authorities responsible for these institutions propose to erect hostels in connection with it, it is not possible that they might follow an initiative act by Government and choose more desirable sites for this purpose in the suburbs of Calcutta.

I have purposely kept the questions of the removal of the non-residential and residential parts of the Presidency College separate, as many objections, which however I do not anticipate, should arise in the way of removing the college as a whole, the removal of the hostels alone would, as I have pointed out in the previous note, be still quite feasible. Moreover, and powerful are the arguments in favour of this part of the scheme that it seems a case where an opportunity for its execution should not merely await a Government. Fortunately, however, the opportunity is here again forthcoming, for, as has been already pointed out, the provisions of the University Act make it necessary to face the question of very considerable expenditure in connection with the improvement of the hostel and the erection of houses for at least the Principal and one or two professors.

There is one aspect of the project which I have not touched on, and that is, the attitude which the leading Indian residents of Calcutta would assume towards the scheme. The matter for congratulation that the speech by the Hon'ble Bhupendra Nath Bose in the Legislative Council seems to indicate that not only would there be no opposition to the
removal of the College, but that such a removal would actually be welcomed by the great body of Indian opinion. I have likewise in the above remark made no reference to the proposal to erect new science laboratories, which will presently be required, in a less congested area than College Street. Having the present buildings to the Arts Section of the College as, though I still think that in the absence of anything better such a scheme would be both desirable and practicable, it has not nearly so much to recommend it as the other alternatives put forward and need not therefore be taken into present consideration.

Finally, the opportunity of removal afforded by the present juncture of affairs is improved still further by the possibility which seems to offer of finding a purchaser not only for the existing Presidency College but also for the Eden Hostel. It is, after all, not sufficient to assess the buildings and land of the College and Eden Hostel at a certain value and then to set the amount against the cost of the acquisition of new land and the erection of new buildings. Property such as the Presidency College and the Eden Hostel hardly finds a ready market, and unless a purchaser were found, ready to acquire the property at its nominal value, the financial difficulties in connection with the project would still be considerable. If, however, the Medical College authorities are willing to take over the Eden Hostel and if the University should find the existing college buildings suitable for the purposes of the extension which it is at present contemplating, one serious obstacle in the way of the realization of the scheme will have been removed.

To sum up, the points in connection with the question of the removal of the College which I have endeavoured to establish are the following:—

(1) The situation of the Presidency College regarded merely as a non-residential institution is highly prejudicial to the work carried on there.

(2) The situation of the Eden Hostel is open to still more serious objection, and if nothing else be done the hostel at least should be removed to an open healthy site in the suburbs, and houses for the Principal and some of the Professors built in connection with it.

(3) Should the Presidency College and the Eden Hostel be retained in their present site, a very heavy expenditure will have to be faced in connection with the acquisition of land, the erection of new laboratories and Professors' residences and the institution of other improvements, and with it all the result will be unsatisfactory.

(4) Indian opinion is apparently in favour of the removal of the College.

(5) It seems therefore desirable to combine the funds necessary to carry out the improvements mentioned in (3) with the money which could be realized from the sale of the existing land and buildings and devote the total amount to the erection of a model residential college in the suburbs of Calcutta.

The above is the case for the removal of the College as it seems to me to stand at present. With regard to the selection of a new site should the removal be decided on, it is perhaps premature to say anything, as it would probably be left to a special Committee to make recommendations on this question. I would merely remark here that apart from the question of healthiness which will probably be the most important determining factor in the selection of the site, there are certain considerations which seem strongly to favour the choice of a southern suburb. The north side of Calcutta is practically isolated from the chief scientific institutions of the city, and it certainly seems a matter of considerable importance that the new Presidency College should be within easy access of the Indian Museum, the Zoological and Horticultural Gardens, and the Imperial Library. It seems particularly desirable, though no less on account of the fact that the new College should not be far distant from the Maidan, the great open space of Calcutta, to which there is nothing equivalent in the north end of the town.

Lastly, I am tempted to say a word with regard to Dr. Ray's estimate of the probable cost of the scheme. This estimate seems to me unduly high, and it would certainly be a pity if a project eminently desirable in itself were wrecked simply owing to an impression that the cost would be prohibitive. There are many obvious directions in which the estimate could, if necessary, be reduced. For instance, in the case of the minor laboratories it is sufficient that the buildings should satisfy the requirements of the present and of the immediate future, but that they should be so designed at the outset as to admit of extensions at a later period when these become necessary. If this were done, the biological and geological laboratories could certainly be cut down to half a lakh each, while thirty thousand rupees would be ample for the astronomical.

Again as to the Professors' houses, it is neither necessary nor desirable to house all the Professors nor even a majority of them, and a corresponding reduction might be made under this head. The common room and gymnasium seem also too highly estimated. As for the land, 300 bighas appears excessive, but it is difficult to estimate the cost of this item beforehand. Certainly if the land of Kidderpore House, which is one of the suggestions made by Mr. Feller could be acquired, it would form an ideal site, as the grounds would require few alterations to adapt them to their new requirements and the cost of acquisition would, I believe, under Government regulations be nil. In any case, the estimated cost of the scheme might readily be reduced to 2 lakhs. Again, if this be the estimated cost of the scheme might readily be reduced to 2 lakhs. Against this may be set the cost of improvements and additions to the existing buildings of the Presidency College in case of non-removal, which can hardly be put down at less than
10 lakhs, as well as the amount to be obtained from the sale of the Presidency College, say from 6 to 10 lakhs. Under these circumstances I venture to think that the removal is financially justified.

The 7th June 1905.

G. W. KUCHEL.

[No. 16.]

Dated Calcutta, the 12th June 1905.

From—BABU SITA NATH ROY,
To—The Hon'ble Mr. H. W. C. CARNDUFF, C.I.E., Secy. to the Govt. of Bengal, General Department.

I have the honour to acknowledge the receipt of your Educational Circular No. 9T.—G, dated the 17th May, and enclosures, inviting an expression of my opinion on the proposed removal of the Presidency College to a better site in the suburbs of Calcutta. In reply I beg to submit the following observations.

When the idea of starting a residential college at Ranchi on the lines of the well-known institutions at Cambridge and Oxford was first mooted by His Honour, some of my educated countrymen were startled and surprised, for they then apprehended that the new institution partly from its novelty and partly from its numerous superior attractions, and especially on account of its several new features and advantages, would gradually draw away a large number of students from the Presidency College and thus make it die of inanition. In the proposal for a new college, which, it was supposed, would in time beat down the Presidency College in all respects, some of my countrymen saw a design to smother the old one and thereby do away with high education altogether.

Instead of being grateful to Government, instead of thanking it for its earnestness and benevolence in promoting and developing high education and in introducing a new feature in it and thereby imparting a powerful impetus to high education, my countrymen did not hesitate to ascribe motives for attempting to supply what was so urgently needed. But this much may be said in defence of my countrymen that they had no motive in being wilfully perverse: they were simply carried away by the panic of "high education in danger." Moreover, it is well known that the Presidency College has hallowed associations of its own, which have rendered it an object of affection and reverence to all.

It is the premier educational institution in this country, the best of its kind, and in one sense the oldest Government College, and almost all the best and respected men amongst us in different professions and walks of life and almost all the distinguished and highest Indian Judicial and Executive officers and most of the well-known savants having been the products of this College, and it being still looked upon as the pivot of the hopes and aspirations of our youths, anything that goes or is apprehended would go to detract from the usefulness of the Presidency College, or lessen its importance in the eyes of the public or render it less attractive is sure to be looked upon with distrust and suspicion, if not with positive disfavour.

The opposition to the Ranchi College scheme was due, and there would have been little or no opposition—at last it would not have been so acute—if with the proposal for a residential college at Ranchi the present scheme for renovating the Presidency College on such a broad and satisfactory basis and converting it into a residential one had been simultaneously put forth. But at the same time it must be admitted that, so far as English education in this country is concerned, the idea of a residential college is a thing of yesterday, is a new growth, and as such before the Ranchi scheme was broached by His Honour and before the present Dacca College scheme was matured, the idea of bodily transferring the Presidency College from its present central and advantageous site would have been considered as outrageous and looked upon with positive disfavour. But now with the Ranchi and Dacca schemes before us, people are rather wondering why nothing has yet been done to convert the Presidency into a residential college and otherwise to remodel and renovate it, and thereby enlarge its sphere of usefulness.

Formerly it would have surely been considered as an act of sacrilege even to think of removing the Presidency College from its present site, and I myself
would have seriously questioned the propriety of any such proposal. But whatever doubts I might have had on the subject, they have entirely been dissipated by the perusal of the very able and thoughtful notes of the Hon'ble Mr. Pedler (my former guru) and of my esteemed friend and countryman, Dr. P. K. Roy.

On account of its situation in one of the most congested quarters of the city, surrounded on all sides by large and costly buildings, with no room for expansion except at a prohibitive cost and by dislocating a very large population, whose ancestors settled there with the foundation of the city itself, it is not possible to secure the very large quantity of land so necessary for the extension and development of the College and its various other purposes.

As pointed out by Dr. Roy, about 300 bighas of land would be required to carry out the above objects and to place the college on a sound footing and make it worthy of its position as the premier College in the Province, if not in India. But I beg to submit that it would be a sheer waste of money to make such an extensive acquisition in the heart of the city itself, and that large acquisition cannot be made without encroaching on the Harrison Road itself and on the sites now occupied by some of the oldest residents of the city.

Another fatal objection to the enlargement of the College on its present site is that plague, which has secured a permanent footing in the Northern Division of the city, where the College is, breaks out periodically with great virulence in February and March, that is, when the University examinations are held, and this has not only a great disturbing effect on the studies of the students, but has the further serious effect, by creating a panic amongst the students, who mostly live in the congested quarters of the city, of scaring away a large number of them from such examinations.

Moreover, it is extremely desirable that students and their professors should live in an atmosphere of absolute purity. It does not seem appropriate to make a lavish expenditure of money for providing residential quarters for 7 to 800 students and their professors on a site which is so temptingly close to all the vile allurements of the city.

For the above reasons, with the necessity of converting the Presidency College into a residential one demonstrated beyond doubt, I have no hesitation in heartily supporting the recommendations of the Hon'ble Bhupendra Nath Basu, the Hon'ble Mr. Pedler, and Dr. P. K. Roy that the Presidency College should be bodily removed to a suitable site in the suburbs.

While it is admitted that the proposed site should be in the open country on high and dry land free from the influence of malaria and should be near the river, it must not be very far away from the Northern Division of the town, for the majority of the students of the Presidency College are recruited from the Northern side, and it is here where the higher and middle and educated classes and the merchants and traders, whose sons and relatives attend lectures at the Presidency College, live.

The site selected by Dr. P. K. Roy, which is bounded on the southern side by the Gun Foundry Road and on the west by the broad Cossipore Road, seems to be admirably suited for the location of the premier College in India.

Besides its other advantages, its close proximity to the river Hooghly and the enormous piles of buildings occupied by the Gun Foundry and Shell Factory, and having a large open space on the south, the location of the College on the above site, while ridding Cossipore of its numerous filthy and congested bustees and thus adding to the sanitation and beauty of Cossipore, will have the most desirable effect of automatically relieving a good deal of the congestion of the Northern part of Calcutta.

For various reasons I cannot approve of removing the College to Ballygunge or Tollygunge or to any site east of the Barrackpore Trunk Road, as they are all more or less tainted with malaria and far away from the Northern Calcutta.

For some years past the Presidency College has not been able to retain its old reputation of being the premier College in India. If it is intended to fulfil the place assigned to it of being the premier educational institution in India, of serving as an exemplar to others, of serving as a model, of what a high-class educational institution should be, of moulding the character of high education in India, it won't do merely to raise a magnificent building for the
College, to erect attractive residences for the professors and equally attractive hostels for the students and to provide an extensive and beautiful play-ground for the boys, but something more solid is necessary to be done which may increase its efficiency and usefulness, and thus make it the coveted resort of all genuine seekers after knowledge. I therefore heartily support the suggestions of the Hon’ble Mr. Pedler and Dr. P. K. Roy, that the teaching staff should be strengthened and recruited by the very best of professors in the several departments available here and in England, and that the College should be fitted up with first class laboratories and all the necessary appliances for teaching Physics, Chemistry, Biology, and Geology, and, lastly, it should have a first-class library worthy of the premier College in India.

If His Honour would be gracious enough to give us a renovated Presidency College on the lines indicated above, fit it up with all the necessary laboratories and costly appliances and man it with the best of teaching staff and convert it into a residential institution and otherwise place it on a solid and satisfactory basis, His Honour’s name, associated as it will always be as having been the author or founder of three residential colleges in Bengal, will for ever remain enshrined in the grateful hearts of a grateful nation, and will be handed from generation to generation as having been the best promoter and patron of high education in India.

Lastly, a word or two about the proposed site for the College and the hostels. In my humble opinion, a site nearer the river is more desirable, as it will enable the several hundreds of students and their professors, whose health must be the first consideration with the authorities, to inhale the pure air of the Hooghly. I therefore beg to recommend that the residential quarters for students and their professors should be built on that extensive ground (to the west of Cossipore Road) now occupied by the numerous bustees and the Jheel Press, while the College and the play-ground may, if necessary, be placed on the site to the east of Cossipore Road.

Dated Colombo, the 17th June 1905.

From—J. A. Cunningham, Esq., Professor of Chemistry, Presidency College, Calcutta,

To—The Offg. Secretary to the Government of Bengal, General Department.

I received your circular letter (Education Circular No. 8T.—G.), dated the 17th May 1905, a few hours before leaving Calcutta on a previously arranged expedition to investigate the electrical state of the atmosphere in the south-west monsoon as it passes over Ceylon. My hands were, at the time, very fully occupied in getting my apparatus into ship-shape order; and during, and since, a voyage which was delayed by two days owing to the breakdown of the main circulating pump of the S.S. Sumatra, I have been busily engaged taking observations over a field which was already too wide for the time at my disposal. I trust therefore that His Honour the Lieutenant-Governor will accept my apologies for the delay in forwarding, as well as for the other defects of the Note on the removal of Presidency College which I now enclose.

NOTE ON THE REMOVAL AND RECONSTRUCTION OF PRESIDENCY COLLEGE.

Introductory—Some suspicions that Government did not mean well by higher education in India have from time to time been expressed, especially à proposito the recent legislation affecting the Indian Universities. It could not indeed be regarded as wonderful if the subject, from its very foundations, had been seriously discussed by those in authority. We are at the present time in India, and I believe most acutely in Bengal, exposed to all the proverbial dangers of a little learning. It must be remembered that India is not altogether exceptional in this matter, though the evil is perhaps more pronounced here than elsewhere. But in France and Russia the same sort of disturbance is being felt, and perhaps we have really much to be thankful for that the disappointed B.A. does not take himself to dandy and nihilism in Bengal. In Russia the prime motive of this disturbance is, probably
legitimately, political rather than educational. In France, however, it is almost certainly attributable to a very faulty system of public instruction. There is indeed a quite remarkable books, the learning by the help of memory alone, and the total absence of the scientific instruction in this system, which is entirely happy in their education and well satisfied with the strict examination is the one right sort of, in the main. I take it for granted that if the question has been fundamentally reconsidered in India, it has been authoritatively decided in favour of education—more more delicate, deeper education, and, in short, real education.

Similarly I shall assume that it has been concealed by the Government of Bengal that Presidency College does fill what, without it, would be a serious gap in a complete scheme of education; that its usefulness must be extended and its influence deepened.

In response to the Principal's invitation to the professors of Presidency College, I have already submitted a brief note dwelling on what I conceive to be the most urgent possible reforms in the general organisation of the teaching staff (and which I thought might have been forwarded by the other professors), and also submitted a preliminary list of the special requirements of the chemical department with which I was most intimately and particularly concerned. In that note, written after the speech of the Hon'ble Babu Bhumipendra Nath Bose and His Honour's reply on the occasion of the Budget Discussion for 1905-1906, I practically took it for granted that, as soon as the matter was looked into at all, the case for the removal of the college would be found overwhelmingly strong. I gather from the enclosures circulated with Circular No. 9,—that many things have been forwarded by Mr. Pedler's note, and have been submitted to His Honour the Lieutenant-Governor. I feel, therefore, in what follows freely express my own private opinion on all the points which appear to me for the most important, and especially such as I think may not be so fully dealt with by the other professors, in connexion with education in Bengal who are likely to have been similarly consulted, confidently believing that such a free expression of opinion is in accordance with His Honour's wishes. Some of my views may not be in entire agreement with what has come to so much more or less generally accepted in Bengal, and I therefore consider it to be necessary to support them with what arguments I can muster; and as this course may lead me on to a considerable length I shall not re-emphasise as fully as might be, what I have already written in my previous note. I would ask this to be taken in conjunction with that.

Presidency College.—I do not think that it is at all an exaggeration to say (with Mr. Pedler) that the rate of progress towards the highest education in Bengal depends very largely on the promised reorganisation of Presidency College. The education given must be on sound lines even if those should necessitate a separation from a possibly again demoralized University, though we all hope that will not be necessary. Mr. Pedler's note gives what may, I suppose, be regarded as the historic reasons for the case when all concerned are only too painfully aware, viz., the hopeless unsuitability of the present site and buildings of Presidency College to the purpose for which it presumably exists. Its large doors, wide open, and windows rooms can only help to encourage that slovenliness which seems to come peculiarly easy to the Bengali and perhaps to many other students, if not constantly corrected and discouraged. Our present very limited means of counteracting the physical evils of the Indian climate seem to entail the necessity of keeping large doors wide open, on at least two sides of every room which we wish to have well ventilated, during a great part of the working year. Many of the lecture rooms in Presidency College, thus of necessity kept open, are so situated that they are constantly being passed and repassed by students and teachers in the ordinary course of their necessary movements from one part of the college to another. Indeed the college is so near to two streets, that in nearly half its rooms it is often difficult for a professor to make himself heard, even after he has had to close windows in direct violation of sanitary laws and against the protest of his own olfactory senses. On some occasions the whole neighbouring bazar echoes to a marriage feast quite above and beyond the more ordinary noises of the streets. These are only some of the more general and obvious defects of Presidency College as it is at present, and in respect even of the kind of work that it has up till now attempted. A complete catalogue of its nuisance and shortcomings would probably be only tedious.

In so far as the change of site is practicable, I think it reasonable to re-examine the question in the light of the new regulations for the University Service, and what they appear to me for the most important, and especially such as I think may not be so fully dealt with by the other professors, in connexion with education in Bengal who are likely to have been similarly consulted, confidently believing that such a free expression of opinion is in accordance with His Honour's wishes. Some of my views may not be in entire agreement with what has come to so much more or less generally accepted in Bengal, and I therefore consider it to be necessary to support them with what arguments I can muster; and as this course may lead me on to a considerable length I shall not re-emphasise as fully as might be, what I have already written in my previous note. I would ask this to be taken in conjunction with that.

1 The future of higher education will also be much affected by the organisation of the Education Service. It is not the conviction that men are more important than bricks and mortar, nor that the most important man in Presidency College is its Principal. He must see a leader in educational matters, and his duties on the social side are by no means inconsiderable. At the same time he cannot, ex officio, control the whole University without apparent support. It is the principal duty of the right sort of Principal to make the University to be kept continuously on the straight path of honesty and efficiency. If it would require a Principal (like Professor Hocker in London University), or a Vice-Chancellor who gave the grandest form of the teaching in the University, or a Director of Public Instruction, this would naturally arise, with the development of the post of Assistant Director of Public Instruction, as head of the educative and scientific education in the province. This is practically the present arrangement, but the whole would greatly diminish if any reasonable provision is made.

2 This College should, for instance, refuse to accommodate different science courses (such as Law, Science, respectively) as have been in the old University. I understand, however, that the Committee of the Senate have rejected this scheme, as it would not be to the same extent scientific as its present scheme, called B.A., B.Sc. (cf. Mr. Pedler's note, section of paper 2).
by those most likely to know. Even to meet these general defects every detail of the new design must be very carefully scrutinised. It will obviously not suffice to take a design intended for Europe and plant it in its Western simplicity in India. Nor will it on the other hand, do to take an Indian design intended for an office or a barrack and call it a college. I am doubtful if the proper lines have yet been struck combining the requirements of a college with those of the Indian climate. This is more particularly true of science laboratories where the educational requirements are of a very special character. It is one of the minor points in favour of the suggestion to house several of the natural sciences separately. A suitable arrangement of such institutions (if I may adopt the German word) in the same compound would make it possible greatly to diminish the interference which each department suffers from the perfectly legitimate, but often most disturbing movement of students to and from the other departments of the college. It would also allow of a certain amount of invaluable experimenting as to details of construction by the individual professor concerned with the designing of his own institute. I am one of these unfortunate heretics who cannot believe in one individual or group of individuals, arriving at once at the final and the absolutely "best" solution of any problem that arises in actual life. Each professor—if he is worthy of the name—will have his own ideas as to the most suitable plan; and even though a professor, he may be pardoned for some of the weaknesses to which flesh is heir, and in particular for taking an innocent pride in carrying out his own individual ideas to a conclusion on a consistent plan. For it does not by any means follow that because there is an element of real value in each individual scheme that that element will be alone, or at all, preserved by a departmental hash of it and half-a-dozen other, perhaps quite inconsistent, schemes, though each separately capable of being carried to a successful, and perhaps very valuable, conclusion by its own inventor. While I have tried to indicate here in particular relation to buildings I have already hinted at in a less material and tangential fashion on 3rd April 1922. Such suggestions, if they are not utterly presented as "revolutionary" (and I personally feel sure that no Western education will be incorporated into Indian life without a revolution from past methods of routine and hum-drums), are apparently open to the objection that it would never do in India to work on lines which depended for their success on the life of one or even on the continued occupation of the same post by one officer. I cannot indeed restrain the hope that some arrangement will shortly be made to obviate the present insecurity of tenure of professorial chairs and Government colleges in Bengal. I am confident that the general outlines of the arrangements which I indicated in my official note as those by which this could be achieved are entirely practicable. If the Government colleges were given a full months' vacation, I believe no professor who was really interested in his work (which implies that he is allowed enough liberty to develop such an interest) would ever wish to go on furlough, and then only for long periods which would enable him to work up some special development of his subject, or of educational problems; and also allow of a docun temere being brought from England if none of his own subordinates were capable of carrying on the work of his institute. The other disturbing influence, viz., that due to breakdown of health, as I have also pointed out, is likely to be greatly diminished by the said four months' vacation during the most unhealthy part of the year; and the accident of death is liable to happen several times within my own experience of science schools being built up by comparatively young men. Such a misfortune is sometimes irreparable, but not necessarily so, if another good man can be got to fill the vacant chair. My point is that a school which is to exert a deep influence on its disciples must have a consistent plan— a "Lehrgeist"—a spirit of its own. A new man stepping into charge of such a school, if he does not entirely agree with the plan of his predecessor, will at least be enabled to recognise that there was an intelligible plan, and he will be able to exercise and prove his own ability by grafting his new ideas on to those belonging to the past history of the institute so as to continue its development for good. But what I want to insist on, with all the emphasis at my command, is that the first essential of real education, of the real-life of a school, is the man who controls it and that he must not be smothered by, or lost in, the official.

The preceding remarks apply generally to all the instructive work of the college.

Paris.—On what may be conveniently grouped together as the Arts side of the demands generally made impossible and on a less expensive scale than those of the natural sciences; their share of a very much expanded library. Such renovation and expansion can only be at patching the present accommodation.
most of the German Universities there are now four separate institutes for the different branches of modern chemistry. Probably two is as much as we could at present expect in Calcutta—one specially for physical and inorganic chemistry and the other for organic chemistry. With the approaching development of chemical industries in India, applied chemistry would gradually grow out of organic chemistry, and therefore it might be the most convenient and natural division to make between inorganic with physical chemistry.

Biology.—One hesitates to plunge into the advocacy of the claims of biology for fear of unwittingly assailing a possible injustice to vested interests, yet in anything approaching to a complete review of what work should be provided for in a new Presidency College one cannot possibly neglect the very great importance of biology. We must keep constantly in mind that our ultimate object is the awakening of India to the progressive spirit and scientific knowledge of the West. For such a stirring up to be more than surface-deep we must look forward to the future extending of it to the masses of the people through their schools. As I shall presently more fully explain, I look upon science as distinctly the most certain and the most powerful instrument of the hope for awakening. To teach a programme will always be one of its most serious drawbacks in the eyes of a properly economical Government keeping a careful hand on the strings of the public purse. Hence it is not without interest to note that elementary biology, and especially botany, can be far more cheaply taught in primary and secondary schools than chemistry and physics. This will be seen to be especially fortunate when it is further pointed out that biology—or let us say botany or definiteness' sake—has an even greater educational value for children and beginners than the other sciences. Even the stupidest teacher can scarcely avoid printing out the true connection between observation and deduction, between experiment and theory, when he starts on the teaching of biology. Botany further combines all the advantages of a simple nature study, developing a love for and a sympathy with the surrounding world, to say nothing of its technical value to an agricultural people. The new University syllabus is, I understand, going to recognise the importance of botany in the schools by admitting it as a subject in the Entrance Examination. The same remarks apply to physiology on whose teaching in schools the medical profession is insisting at home, and a spread of the knowledge of the laws of health is certainly not less desirable in Bengal than in England.

So there ought if there is to be any material progress, very soon to be a considerable demand for teachers of biology. It is obviously to the advantage of the Commonwealth that such teachers should be educated at Presidency College under the best possible conditions. It is here that biology has a second great advantage. Chemistry and physics can be pursued at any place with facility and advantage, which vary inversely as the distance of that place from Cambridge or Berlin, and hence the often recurring difficulty
There are, however, many imagination that used to satisfy even so modest an experience, the freshest to be a perfect flow of wisdom. As a simple matter one familiar with the way in which each of the methods of research the claim of science as a subject by a continuance of the determinist theory, "let's meet, and testify to it. Selection is found to serve admirably. One would have thought, a priori, that it were possible to let a man teach history, and that the best teachers are themselves students, and in fact the material before he starts to educate it. Hence there is a magnificent field for a special school of psychology in India, and that school would most naturally and properly be attached to a scientific training school for teachers. Such a school is urgently required, even from the most narrowly "practical" point of view, in India, and I think it would not be unnatural for such a school to find its location in Bengal. (I understand there is already an education degree at the Punjab University.) To establish any claim to being really scientific such a school would require a number of chairs of the kindred and allied sciences, and I can well appreciate the reluctance of the Government of Bengal to launch another big scheme when it has already the Presidency College and the Model College at Kolkata (to say nothing of Dacca and the Engineering College) on its hands. But I think it is not too much to expect that we may be allowed to look forward to such an institution in the not far distant future.

It would ultimately and essentially be a self-contained college independent from, though set up on British lines. But I think it is not too much to expect that there is already an education degree at the Punjab University. To establish any claim to being really scientific such a school, and that school would most naturally and properly be attached to a scientific training school for teachers. Such a school is urgently required, even from the most narrowly "practical" point of view, in India, and I think it would not be unnatural for such a school to find its location in Bengal. (I understand there is already an education degree at the Punjab University.) To establish any claim to being really scientific such a school would require a number of chairs of the kindred and allied sciences, and I can well appreciate the reluctance of the Government of Bengal to launch another big scheme when it has already the Presidency College and the Model College at Kolkata (to say nothing of Dacca and the Engineering College) on its hands. But I think it is not too much to expect that we may be allowed to look forward to such an institution in the not far distant future.

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all, except as a recompense for exile) a matter of salary, as of the other conditions attached to the appointment that will contribute its attractiveness to the right sort of men. The College, Calcutta,' and not merely as an official "Jack-of-all-trades," I think it would be unwise of his own laboratory and museum. Such a laboratory might begin, on a quite expansion of the school required it. Professor Kielhorn has already mentioned college. The sources of the suggestion is obvious, and it is a further argument in favour additions as these become necessary.

Commercial Classes.—The commercial classes are at present a considerable source of disturbance to the more proper work of Presidency College. When the course has been thoroughly remodelled and made more business-like, and especially when the fees have been very large proportions. They threaten, in fact, by the more weight of their numbers literally to squeeze the other students out of the already insufficient space. That is another argument in favour of removing Presidency College, and the new college should I think be relieved of this burden of commercial classes. They cannot be said to have any claims to recognition in University College. The education they give is little more than a thorough drilling in elementary school-work. These students, paying Rs. 3 a month, are evidently aiming at clerical work and have no use for University education. Their presence would also very naturally be represented by students paying Rs. 12, and aiming at something more ambitious in after-life. If the Calcutta University consents to buying the present buildings of Presidency College, a cheaper class of college might be erected in some central part of the town for the special requirements of a Commercial College. If not, the present building would probably very soon be filled with the new classes.

Development of character.—So far I have dealt almost exclusively with the more purely instructive part of college work, that part which has to do with the training of the intellect. There still remains the more purely moral part of education, that which is directed particularly to developing the character of our students. It is only repeating a truism to say that it is not so much what a man knows as what he is that constitutes the difference between one man and another. It is character far more than knowledge that makes a man a desirable, and in that sense a useful, citizen, and which makes one nation succeed where another fails.

Character is clearly a factor far too important to be neglected. It has been the uniform policy of the British Government to do nothing which could at all be interpreted as a direct interference with the religious beliefs of its Indian subjects. But there can be no doubt that one of the results of our Western education must in many cases be the shaking of those primitive religious beliefs which have been the pillars of society in Hindustan. It is therefore clearly the duty of Government to do what it can to supply the place of those religious guides to conduct, without of course infringing its declared policy of religious neutrality. I am one of those who believe in the possibility of sound education even on the purely instructive side doing a great deal in this direction. There can be no finer test of moral fibre than the carrying through of a piece of honest intellectual work—the worrying through to solution of a tangled problem in some branch of historical research, or of the scientific investigation of nature. It certainly requires and inculcates orderliness, self-reliance, patience, perseverance and a love of truth. It is just as obvious that the mere mechanical memorising of test-books is only a shallow mimicry of education, whose very motto is dishonesty, commencing with partly unconscious self-deception and ending in a scarcely disguised attempt to cheat the examiner. So that no one who has ever thought seriously about education would be surprised to hear that the University system up till now prevailing in Calcutta had not done anything to encourage sound morals. A strange examiner could interfere with work at frequent intervals can scarcely escape being looked upon as a legitimate enemy—as in fact he is. I do not believe that it was possible for ninety-nine Bengali students out of a hundred to get through such an appalling series of examinations as those to which he had to submit himself without resorting to dishonest means—intellectually dishonest first, and then dishonest in every sense. And if we, the instructors—the prophets come from the West—sanctioned such a system, we must obviously sanction the necessary means, and hence dishonesty itself, by a simple train of logic in the student’s mind. There is, however, much hope of, as there is much room for, improvement in this direction at the present juncture of University affairs.

There is then also the other side of educational influence, that which appeals more simply and directly to the more wholesome instincts of our student community. We can already exercise an influence by the force of our example in matters of work. Still more it is hoped may be exercised in a more intimate intercourse between the teachers and the taught in the relations of daily life apart from and outside the intercourse of the class room and laboratory. In recognition of this the Universities Act has indeed laid it down that all affiliated colleges must make some provision for the residence of a portion of the teaching staff in or near the college. This I think is the most imperative reason for moving Presidency College to a more airy place in the suburbs. It would be quite preposterous to ask the Principal and professors to live near the present site in the middle of the Burra Bazar. And this, even
from the more purely instructive point of view, is a very serious drawback to good work. Every science professor is very largely dependent on his laboratory for the carrying on of original work. It is there that he may set an active example of work to all his students and especially inspire his best students who have obtained recognition from Government by the award of research scholarships. But the climate of Calcutta is such that during a large part of the year it is almost a physical impossibility to do any delicate manipulation except in the cool of the morning and evening. Hence it is especially useful to science teachers to live near their laboratories. This need scarcely have been laboured, as it is very fully recognised that it is greatly to the advantage of the whole life of a college to allow its members to constitute a society living together; and I take it that professors' houses will form an integral part of the new college.7

One does not like to appear to throw even a little cold water where so much enthusiasm has been stirred up by the prospect of all that may be accomplished by a more intimate social intercourse between professors and students in the playground and the hostel. The subject has been constantly under discussion in the professors' room at Presidency College since I joined its staff. I think most of those who have had experience in Europe do not share the fear that a professor may lose dignity in the cricket field. But the fear is characteristic and its expression by Indian professors is a trifling reminder of how far points of view and standards of conduct may vary. This variation does become of real importance when we pass into the hostel. I think no one who has listened to our professional discussions with at all an open mind, can fail to have been struck by the very wide differences that exist between Indian and European views of the relative and actual importance of different moral rules, and far more of the, perhaps at bottom inessential, but none the less dearly cherished, conventionalities of polite behaviour and good manners. I have not heard any Indian agreeing with Meredith Townsend's dictum that the more the two races kept at a respectful distance in social intercourse the better for the happiness of both and for the future of the British Empire in India. I may claim to have made a very considerable effort to get on to really intimate terms with some of my Indian colleagues and students (as well as with some old college friends at Cambridge), and have succeeded in maintaining a perfectly frank friendship in a few cases. But even in my short experience, I have been struck by how often slight, though serious misunderstandings have arisen on what seemed to me utterly trivial grounds, and I have been assured that I have often given pain when I was evidently least aware of it. In fact I believe the problem is a very much more difficult one than is generally realised. At the same time I feel sure that it would be very wrong to put any restraint on the enthusiasm of those, who believe in doing good in this way. And I think we might all contribute something very real towards the solution of the problem, and that ultimate good to the students concerned, provided always that each man is allowed to work along the lines in which he believes, only subject to the mildest direction from a Principal of really elastic imagination.

Conclusion — I must, for very shame at their already excessive wanderings, bring my remarks to an end, without having at all touched upon many of the interesting topics raised by the speeches and notes which have been circulated. I am confident that a sound decision on these matters will be arrived at by common consent.

In conclusion I need only reassert my emphatic opinion that the proposed reconstruction of Presidency College will afford a splendid opportunity of substantial and permanent

7 This fact must also be kept in mind in choosing the new site. I do not think that many of the present professors of Presidency College can expect to find an excessive observance of his so-called "sociability" in Calcutta, bearing in mind that the certain exigencies of society outside that of the College. And, I venture to think, that the absence of the climate of Calcutta is such that during a large part of the year it is almost a physical impossibility to do any delicate manipulation except in the cool of the morning and evening. Hence it is especially useful to science teachers to live near their laboratories. This need scarcely have been laboured, as it is very fully recognised that it is greatly to the advantage of the whole life of a college to allow its members to constitute a society living together; and I take it that professors' houses will form an integral part of the new college.7

One does not like to appear to throw even a little cold water where so much enthusiasm has been stirred up by the prospect of all that may be accomplished by a more intimate social intercourse between professors and students in the playground and the hostel. The subject has been constantly under discussion in the professors' room at Presidency College since I joined its staff. I think most of those who have had experience in Europe do not share the fear that a professor may lose dignity in the cricket field. But the fear is characteristic and its expression by Indian professors is a trifling reminder of how far points of view and standards of conduct may vary. This variation does become of real importance when we pass into the hostel. I think no one who has listened to our professional discussions with at all an open mind, can fail to have been struck by the very wide differences that exist between Indian and European views of the relative and actual importance of different moral rules, and far more of the, perhaps at bottom inessential, but none the less dearly cherished, conventionalities of polite behaviour and good manners. I have not heard any Indian agreeing with Meredith Townsend's dictum that the more the two races kept at a respectful distance in social intercourse the better for the happiness of both and for the future of the British Empire in India. I may claim to have made a very considerable effort to get on to really intimate terms with some of my Indian colleagues and students (as well as with some old college friends at Cambridge), and have succeeded in maintaining a perfectly frank friendship in a few cases. But even in my short experience, I have been struck by how often slight, though serious misunderstandings have arisen on what seemed to me utterly trivial grounds, and I have been assured that I have often given pain when I was evidently least aware of it. In fact I believe the problem is a very much more difficult one than is generally realised. At the same time I feel sure that it would be very wrong to put any restraint on the enthusiasm of those, who believe in doing good in this way. And I think we might all contribute something very real towards the solution of the problem, and that ultimate good to the students concerned, provided always that each man is allowed to work along the lines in which he believes, only subject to the mildest direction from a Principal of really elastic imagination.

Conclusion — I must, for very shame at their already excessive wanderings, bring my remarks to an end, without having at all touched upon many of the interesting topics raised by the speeches and notes which have been circulated. I am confident that a sound decision on these matters will be arrived at by common consent.

In conclusion I need only reassert my emphatic opinion that the proposed reconstruction of Presidency College will afford a splendid opportunity of substantial and permanent
The 17th June 1905.

J. A. CUNNINGHAM.

[No. 19.]

No. A., dated Calcutta, the 17th June 1905.

From—The Hon'ble Mr. F. W. Dyer, E.I.C., C.B., Commissioner of the Presidency Division.

To—The Secretary to the Government of Bengal, General Department.

In continuation of my confidential letter of 30th ultimo, on the proposed change of site of the Presidency College, I beg to enclose a plan showing four possible sites. I think that marked A, which is the one I described before, is the best.

[No. 20.]

Dated Calcutta, the 22nd June 1905.

From—RAI CHUNI LAL BOSE BHADUR, M.B., F.C.S., Additional Chemical Examiner to the Government of Bengal,

To—The Secretary to the Government of Bengal, General Department.

I have the honour to acknowledge receipt of your Confidential Educational Circular No. 9T.—G., dated Darjeeling, the 17th May 1905, with enclosures, asking for an expression of my opinion regarding the proposed removal of the Presidency College from its present site to somewhere in the suburbs of Calcutta, and in reply I beg to make the following observations.

2. The present situation of the College commands so many advantages that in my opinion it would be most unwise to remove the College elsewhere unless it can be satisfactorily shown that the extension of buildings needed for improved teaching of science, for play-grounds for students, for quarters for Professors, and for hostel accommodation, cannot be effected at the present site. From a careful perusal of the notes submitted by the Principal of the College and by the Director of Public Instruction, Bengal, forming enclosures to your letter, I am not convinced of the necessity of removing the College to the suburbs of Calcutta as recommended by them.

3. There is no doubt that the present accommodation in the College building is not sufficient for making suitable arrangements for the teaching of different branches of science with practical classes which has devolved upon the Presidency College during recent years by the creation of various degrees in science by the Calcutta University. The play-ground attached to the College may be remodelled on new and approved methods, but extensive grounds need not be set apart for such a gymnasium. A suitable piece of land for outdoor games, such as cricket, football, &c., which afford both exercise and recreation and to which our students are more fondly attached than to gymnas-tics, is certainly wanted, but it need not necessarily be a part of the College compound. To supplement this accommodation in the College compound, the Marcus Square, which is within a stone’s throw from the Presidency College, may be utilised for outdoor games by the students of this College; and a suitable piece of ground may be found out in the maidan and set apart for this purpose also.

4. I have already said that I agree with the Principal that better arrangements should be made for the teaching of some branches of science in the Presidency College, but I fail to see why this may not be effected at the present site. The existing buildings may be extended on the piece of land to the west of the College, which should be acquired for this purpose.
of students attending or likely to attend in the near future the different science classes (excepting Physics and Chemistry) is not so great as to necessitate the abandonment of the existing College building and making arrangements for the teaching of each branch of science in a separate house on German method as has been recommended by the Principal (vide paragraph 8, Principal's letter). In India, in any College other than that devoted to the study of Medicine, a separate biological laboratory on an elaborate scale will, still for a long time to come, be as an ornamental appendage. Likewise, considering the insignificant number of students who take Geology for their special study, a separate building set apart for the teaching of this branch of science is, at present, quite unnecessary. The physical laboratory undoubtedly requires expansion and improved fittings. A separate building should be raised for the location of the new physical laboratory in which provision may also be made for the teaching of Biology and Geology according to the present requirements of the University.

3. The chemical laboratory in the Presidency College is one of the best of its kind, and, in the opinion of very competent authorities, it is no way inferior to the chemical laboratories attached to many of the British Universities. It is the product of a good many years' experience of one of the best Professors of Chemistry in the Presidency College, and Government too has been lavish in their expenditure for its proper equipment. It could hardly be considered an act of economy and utility to demolish all the structure and raise it anew in a different place. It is interesting to note that neither the Principal nor the Director of Public Instruction has any depreciating remarks to make in respect of the chemical laboratory about its insufficient accommodation or defective fittings to teach Chemistry according to recent methods. Then even if an extension is required for this purpose, it may be effected on the present site to which I shall shortly refer. If the present physical laboratory is shifted to a new quarter, a number of rooms will be vacated which may be utilised for the extension of the chemical laboratory. The removal of the College would entail the sacrifice of the large sum spent recently in erecting the Astronomical observatory, while the same may with much less expense be extended and improved as occasion arises.

6. The question of hostel accommodation for the students of the Presidency College has always engaged the careful consideration of Government, and the Eden Hindu Hostel was established some years ago for the benefit of the muhassal students mainly of this College. It has supplied a much felt want and has greatly relieved the anxiety of parents of muhassal students who were otherwise exposed to various dangers and temptations attending residence in private houses in Calcutta, devoid of all responsible control. If the present accommodation in the Eden Hindu Hostel does not appear to be sufficient and requires enlargement, the hostel buildings may be extended by acquiring the pieces of land to its north and the east. The Hindu Hostel is so close to the Presidency College that it may be regarded as in the same compound with the College. In this connection, it has been suggested to convert the Presidency College into a residential College in accordance with the regulations of the University Act of 1904, and to erect houses for the Principal and other Professors of the College on the proposed site of transfer, in order that they might be in greater touch with the students outside the College hours and thus influence their conduct and character.

7. While fully admitting the advantages of a residential College, I do not consider it to be an unmixed good. There is no influence which helps the formation of the character of a boy so powerfully as good home influence. Reversion to parents and other elders, attachment to brothers and sisters, duty towards other relations and towards neighbours, training in religious rites and exercises, &c., are taught nowhere better than in a well-disciplined home under the influence and example of God-fearing parents and guardians; and one must be prepared to see these virtues ill-developed in a young man early removed from all good home control and placed in a residential College. Instances of young men falling into bad habits in residential Colleges are too numerous, and the dormitories of residential Colleges are too often the breeding places of vices and evil practices which have made many young men moral invalids throughout life. The presence of Professors in a residential College
is hardly sufficient to stop the evil. The visits to Indian theatres paid openly
and otherwise by students living in hostels have become rather too frequent—an
indulgence seldom allowed by parents to their boys living with them. It
cannot be otherwise expected in a place where a large number of boys are
brought to live together, drawn from all sections of the community (either too
advanced or too backward), nurtured under widely different social influences
and family traditions, and practically uncontrolled during their residence in
the hostel except by the hardly felt presence of the Superintendent.

I would rather stick to the present arrangement of providing hostel
accommodation only to non-fassal students with facilities for a stricter supervi-
sion of their conduct and character, and keeping the College open alike to
boarders and day-scholars who live with their parents or guardians in Colle-
ses and its suburbs. Quarters should be provided for some of the Professors of the
College, but all the Professors need not reside within the College compound.
Residence in the hostel should be made compulsory in the case of non-fassal
students only, and optional in the case of students living with their parents or
guardians in the town and its suburbs. If this modification as to compulsory
residence in the College is adopted, the extra accommodation needed will not
be very great, and there will be no occasion to remove the College to the
suburbs for want of adequate space.

8. There is another objection to the conversion of the Presidency College
into a purely residential College. Many of the brilliant students of this
College, as in other Colleges, are sons of middle-class men who somehow or
other manage to pay the College fees and other necessary educational expenses
of their boys, but it would be difficult for them to pay the hostel charges in
addition. It may be pointed out that the boarding of boys in the family is
scarcely felt by the parents as an extra item of expenditure.

9. The present situation of the College in my opinion is an exceptionally
good one. It holds a central position in the town, equally accessible to students
from Bhawanipur, Kidderpore and Ballygunge, as well as from Cossipore and
Chitpur, while it is also within easy reach of students coming by the East
Indian and Eastern Bengal State Railways. It is situated on a site which
may be truly called the educational quarter of the town. The place is
associated with the history of the foundation and growth of English education
in Bengal for nearly a century and with the hallowed name of David Hare, the
pioneer of English education in this part of the country: it is in close
proximity (within a mile) to the best missionary and private Colleges of the
city and placed practically in the same compound with three Government
schools, the University of Calcutta, and the Medical College of Bengal. It is
within reach by tramway from all parts of the city and suburbs. If it is
removed to Cossipore, as has been suggested by the Principal of the College,
the day-scholars both from the city and suburbs will be put to heavy carriage
expenses, particularly during the rains, until the tramways are constructed.
Moreover, the site selected by the Principal is open to objection on sanitary
grounds. The piece of land has for a long period been extensively used for
wet cultivation and will necessarily be damp and unhealthy and infected with
malaria, from which no parts of the suburbs, particularly those situated on
either side of the Barrackpore Trunk Road, are free. Moreover, the close
situation of the cattle-mart of Chitpur will always be a danger to the health
of the inmates of the new College and Hostel. If after the expenditure of so
much money for the establishment of the new College, it so turns out that the
place is insanitary on the ground of malaria, the history of the Shibpur
Engineering College will simply repeat itself in the case of the new Presidency
College.

10. With the prospect of soon opening a residential College at Ranchi,
it would hardly be justifiable to shut the Presidency College against day-
scholars. Such a step would in my opinion also prejudice the cause of the
Ranchi College.

11. It now remains to be seen if the necessary improvements required for
the College may not be effected at the present site. The acquisition of 18
bighas of land on the west and south side of the College, referred to in para-
graph 3 of the Principal’s memorandum, will in my opinion be sufficient for its
requirements. Owing to extensive railway works lately carried on in Chitpur
and Co. and Co. do not think that the acquirement of 300 bighas of land there and the building of the new College and Hostel thereon would, when an actual estimate is taken, be more economical than the alternative proposal of remodelling the College on its present site. I would allot the 18 bighas acquired for this purpose in the following manner:

<table>
<thead>
<tr>
<th>Description</th>
<th>Bighas</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) New physical laboratory, including Biological and Geological Departments</td>
<td>2</td>
</tr>
<tr>
<td>(2) Extension of the present hostel</td>
<td>5</td>
</tr>
<tr>
<td>(3) Building of the quarters for the Principal and two Professors</td>
<td>3</td>
</tr>
<tr>
<td>(4) Enlargement of the playground</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

12. The Principal appears to hold that the 18 bighas of land above referred to will meet all the requirements of the College, except in the case of the College being converted into a residential one, for he says in the same paragraph that "even if both plots are acquired, the College would not be residential. There is no possibility of ever having a residential College on the present site." I have already noted my objections against the College being converted into a residential one; if it is not made so, then I think the piece of land on the west and south of the College, if acquired, will be found sufficient for the purposes of its enlargement and improvement. The bastis which are situated over this piece of land are very insanitary; every year plague breaks out in these bastis and causes anxiety to the authorities for the safety of the inmates of the Hindu Hostel. The acquirement of this piece of land for the purposes of the College will immensely improve the sanitation of this part of the town. The Senate at their last meeting appointed a Sub-Committee for the purpose of acquiring a piece of land close to the University Hall to enlarge its accommodation, of which it is in urgent need. If the University decides upon purchasing the unhealthy bazar on its south side which is so dangerously close to the Medical College Hospital, then the whole large plot of land bounded on the north by the Harrison Road, on the east by the College Street, on the west by the Medical College Street and its continuation north, and on the south by the Champatalla 2nd Lane will be entirely occupied by Government School and College buildings and by hospitals and hostels. It will be one of the most healthy and finest quarters in the town of Calcutta.

I beg to summarise my conclusions thus:

1. That the idea of removing the Presidency College to some place in the suburbs of Calcutta is unsound on the grounds of economy and convenience, and that it should not be removed from its present site.
2. That it should not be converted into a wholly residential College, but that it should remain open to day-scholars also.
3. That the 18 bighas of land on the west and south side of the College, referred to in paragraph 3 of the Principal's memorandum, should be acquired and devoted to the expansion of the College both for teaching and hostel purposes and for the enlargement of the play-ground.

[No. 21.]

Note on the proposed transfer of the Presidency College to the Suburbs.

The old University Act did not contemplate the establishment of residential Colleges, and the Presidency College was not intended to be a residential institution. But there is a hostel attached to it, which provides accommodation for about 280 students, i.e., somewhat more than one-third of the total number (764) attending the College.
2. Apart from providing suitable quarters for students and professors, the present accommodation in respect of class rooms and laboratories in the College falls far short of actual requirements. The deficiencies are outlined in page 2 of Mr. Pedler's note, dated 19th April 1905. Various suggestions have been put forward to remedy them, but before considering them, it is necessary to come to a decision on one important point, viz., whether the Presidency College should be converted into the residential type or it should maintain its character of being mainly non-residential. If the former, then it is obvious that it cannot remain in its present site, but must be removed bodily, as it is impossible to find enough land in the vicinity except at a cost which must be fairly regarded as prohibitive, and that would be no scope left for future expansion.

3. I see no special advantage in removing the College to the suburbs. A very large proportion of the students reside in their own houses and attend as day scholars, and the removal of the College from its present central position in the heart of the Indian quarter would be a source of serious inconvenience to most of them. On the other hand, if residence at the College is insisted on in every case and day scholars are wholly excluded, there is no particular merit in locating the College in the outskirts rather than at a distance.

4. The considerations that should have weight in determining the site of a self-contained residential College are—

(a) Open country.
(b) Healthy climate.
(c) Pleasant environments.
(d) Cheap living.
(e) Freedom from the distractions and temptations of town life.
(f) Room for future expansion.
(g) Easy communications.

As regards the suburbs of Calcutta, they have none of the above advantages except (g); rather the reverse. Further, the initial cost of land and buildings, though not so high as in the city, would be very heavy.

5. If, therefore, it is decided to make the College residential, the best, cheapest and simplest course would be to transfer it to a place like Ranchi which has all the advantages referred to above, except in the matter of communication, the want of which should, however, be soon removed.

6. For these reasons the proposal of the Principal that the College should be removed to the suburbs does not commend itself to me. It would be resented by those who attend College from their own houses, and as for those who come from the mufassal, they would much prefer to be in a healthy locality where living is not dear and which is free from the evils of a city life. There is little doubt that if a properly equipped residential College with an efficient staff were opened at Ranchi, the great bulk of the mufassal students would resort to it, and for good reasons.

7. The character of the Presidency College, mainly a non-residential institution, should not be changed, but the present defects in respect of inadequate teaching accommodation should be removed by taking up land in the neighbourhood for the necessary extension and development of the College and for building new and approved science laboratories (Mr. Pedler's B), and if necessary, the hostel accommodation might also be improved and enlarged, though this would hardly be the case, as with a good College at Ranchi, most of the mufassal students who form the majority of the boarders would prefer to go there. I am not aware whether this would meet the requirements of the new University Act in the matter of residence, for if it does not, the question will assume a different aspect, especially in reference to the various private Colleges, upon which no terms could well be imposed that would not be equally applicable to the premier Government College.

8. Nothing should be done to impair the efficiency and high character of the Presidency College. It is the leading educational institution in India and is situated at the main centre of intellectual activity.

There will always be a sufficient number of students recruited from the resident population of Calcutta, who will not require any boarding accommodation. It will continue to be of the type of the University College of the
King's College in London. All want in respect of class rooms and laboratories should be removed, the latter being equipped in the best way possible. At the same time there is ample room in Bengal for another first class Government College which should chiefly be intended for students going into residence. This should also have the best professors and fully provided with science laboratories.

9. I see no reason for the apprehension entertained in some quarters that the establishment of a good College at Ranchi would imperil the status, if not the existence, of the Presidency College. As I have already said, there is ample room for both, and Government should be prepared in the interests of high education to maintain both in a state of efficiency, especially as it is not improbable that some at least of the existing private institutions will disappear owing to their failure to conform to the requirements of the University Act.

K. G. GUPTA.

The 24th June 1905.

[No. 22.]

Dated Calcutta, the 1st July 1905.

From—The REV. A. B. WANN, B.D., Principal, General Assembly's Institution,

To—the Ofg. Secretary to the Government of Bengal, General Department.

In answer to your confidential Circular No. 9T.—G. of 17th May, I have the honour to submit the following observations,

1. The proposal under consideration is not simply one for removal of the Presidency College to a more suitable site as regards accessibility and facilities for work. It involves—

(a) The transformation of the Presidency College into a residential college both for professors and students, with extensive play-grounds, etc.

(b) The erection of buildings on a considerably larger scale and with a more complete equipment.

And it also contemplates—

(c) A considerable strengthening of the staff.

These involve a heavy initial expenditure, and also a considerable increase in annual expenditure.

2. From an educational point of view the scheme proposed by Dr. Ray and endorsed by Mr. Pedler is very attractive. It provides for full equipment and for advanced teaching and research in all the branches of study. It provides for students being brought under the supervision of and into constant touch with their professors and enabled to combine physical with mental culture. It plants the college in a site where most of the advantages of country life can be gained, while it is within convenient reach of the great industrial establishments with which scientific education is bound to come into increasingly closer relations; and it is accessible from the homes of the many well-to-do families of Calcutta who will prefer that their young men should not go into residence at the college. (I would remark, however, that this last advantage is purchased at the cost of so far sacrificing the residential system.) If, therefore, the care of the Government extended only or even mainly to the students, numbering 750 or thereby, who attend the Presidency College, I should heartily endorse this scheme, without qualification.

3. My difficulty arises when I remember that there are some 8,000 arts students in the province of Bengal, all of whom are objects of concern to Government. Not ten per cent. of them attend the Presidency College. And there are some 30 colleges,—Government, aided, and unaided—all doing work which the Imperial Government recognizes to be its work. If it is right to expend the large sums indicated in Dr. Ray's letter on one college with 750 students, how much should justly be allocated for the remaining 30 colleges and 7,000 students? For many years Government has been pledged to the principle of grants-in-aid and has contemplated the extension and improvement.
of education in Bengal mainly by aiding colleges other than purely Government colleges. Is it prepared to increase its grants-in-aid to something commensurate with the very large expenditure contemplated on the Presidency College?

4. It may be objected to this that the Government must maintain at least one "model" college to "set the standard," even though the expense is disproportionately great. But is there not a fallacy here, due to the ambiguity of the word "model" and such phrases as "set the standard?" "Model" may mean "perfect," completely equipped and thoroughly organized, as good as brains and money can make it. But "model" may also mean "set up for imitation," of such a standard as may be at least approximately reached by others. I would respectfully represent that this latter meaning is the meaning involved in the grant-in-aid system, and the recognition, now universal, of the responsibility of Government for the whole condition of education in the country. There should be some reasonable proportion between the amount spent on the "model" college and the amount granted to other colleges, otherwise how can they make it their "model?" Well-qualified teachers, well-equipped laboratories, hostels, and playing-grounds are needful or helpful for all students, and not for ten per cent. only; but without liberal Government aid they are impracticable, and especially so in Calcutta. Without such aid, the carrying out of the proposed change in the Presidency College would mean the establishment of one really first-rate college, and the relegation of all others to a hopelessly second or third-rate position. Such a result cannot be contemplated with equanimity by those interested in other colleges, or, I venture to say, by a Government which takes a full view of its responsibilities in the matter of education.

5. It may still be urged that the Government cannot consent to keep its principal college permanently below the level of a good European college because of the difficulty or impossibility of raising all the colleges in Bengal to that level; that, in short, the Government should have at least one "model" institution in the first sense I have indicated, as good as money and brains can make it. And to this I heartily assent. But I would urge the absolute necessity of concurrently placing the grant-in-aid system on a most liberal basis, unless collegiate education outside the Presidency College is to be degraded in proportion to the raising of the standard of equipment within that college.

6. I would further urge that the fees payable at the remodelled Presidency College should be raised, in consideration of the increased annual expenditure, and of the great initial expenditure. If a first-rate residential college with playing-grounds, &c., is provided, the beneficiaries ought to pay a considerable part of the expense. Otherwise a great gift will be made exclusively to sons of the well-to-do from the taxation which includes the poorest.

7. I would also urge that no special advantages should be held out to scholarship-holders, but that they should have to pay their way like others. It is not simply the desire to continue to have some men of first-rate ability in our own college, but also the conviction that undue concentration of the best men is not in the interests of education, which makes me urge this. In our educational system, with many colleges affiliated to the University, it would be fatal to hopeful and inspiring teaching if one college not only possessed an incomparable equipment, but also drew in all, or nearly all, the best men. To be condemned to teach only the second-rate would be disheartening to the teachers; and to feel that they were studying in a hopelessly inferior college would prevent any esprit de corps from arising among students. A healthy spirit of emulation among the affiliated colleges is a great help both to teachers and to students in a University like ours; but if the colleges cannot enter upon competition on something like equal terms, this emulation is impossible.

8. I recognize, however, that in some respects Government must concentrate efforts on one institution, e.g., in promoting research work, in providing for the highest teaching (personally, I should be willing to see all above the B.A. and B.Sc. concentrated), and in affording instruction in those branches of study, both in science and arts, for which only a handful of students offer themselves. It would be unreasonable to expect Government to fritter
away its funds in aiding many institutions to do badly what could be done
in one institution well. I have used the word “institution” advisedly;
for in my opinion it would be much more satisfactory to do as much as possible
on those lines in connection with the University rather than in connection with
the Presidency College, so long as that is a college competing with other
colleges on nominally the same footing.

I would therefore finally suggest that Government should carefully
consider how the large expenditure they are evidently prepared to make may
be made helpful to the largest number of students and to the work of the
University as a whole.

[No. 23.]

Dated Calcutta, the 8th July 1905.

From—Dr. E. Denison Ross, Ph.D., Principal, Calcutta Madrasah,
To—The Offg. Secretary to the Government of Bengal, General Department.

I have the honour to acknowledge receipt of your Education Circular
No. 97, G., dated the 17th May 1905, and of the papers connected therewith,
on the subject of the proposal for the removal of the Presidency College to a
better site in the suburbs of Calcutta.

There can be no two opinions as to the advantages which would accrue to
the institution by the acquisition of more extensive premises, and the question
from this aspect has been fully dealt with in the correspondence enclosed with
your letter.

If the enlargement of the premises is not practicable in the present site,
and it is decided to remove the college, I have only to remark that the site
suggested by Dr. P. K. Ray, namely, the Dum-Dum Road, seems to me the
most suitable that could be found.

However, the manner in which the removal of the college to the outskirts
of the town would affect the students is a question not so easily disposed of,
and the following difficulties present themselves to my mind:

(1) If it is not residential at all, of course it will be of no benefit to
students, as, apart from the long distances they will be obliged
to journey, they will still be returning to their homes in the
evening, and be subjected to all the temptations of a large
town.

(2) For the same reasons, if the college is only partly residential, I
cannot see how it will attract boys living in Calcutta.

(3) If it is to be wholly residential, will it not seriously endanger the
Ranchi scheme? Moreover, will it in any case attract Calcutta
students? Will they care to live in a hostel three miles out
of town, when they have the alternative of living with their
parents or guardians and attending one or other of the private
colleges which are so plentiful in Calcutta?

It seems to me that if Presidency College is wholly residential in its new
site, it will attract only mufassal students.

But though it is very much to be desired that the best possible conditions
of student life be offered to undergraduates coming from distant parts of
Bengal, I am under the impression that the Presidency College is primarily
intended for the citizens of Calcutta, whose sentiments have been voiced
in the speech delivered in the Bengal Council by the Hon’ble Bhupendra
Nath Bose.

[No. 24.]

Dated Calcutta, the 15th July 1905.

From—Khan Bahadur Seraj-ul-Islam,
To—The Offg. Secretary to the Government of Bengal, General Department.

With reference to your letter No. 97, G., dated the 17th May 1905,
calling upon me for an expression of my opinion regarding the proposed
transfer of the Presidency College to a better site in the suburbs of Calcutta,
I beg to submit the following observations.
The tendency of public opinion nowadays seems to be in favour of a residential college with healthy hostels attached, and with extensive recreation grounds, at a distance from the busy bustle of the town and its concomitant evils. The parents and guardians, especially of the muftassal students, are generally afraid of sending their boys to Calcutta for education by reason of the various dangerous attractions and evils to which they might fall victims. I think the present site of the Presidency College is objectionable on various grounds. There seems to be a consensus of opinion as to the desirability of removing it to a better site in the outskirts of Calcutta.

There is no doubt that the Presidency College requires improvement to make it a model college. The question is how to do it. I do not think that the mere extension of the college premises and the addition to it of a better staff will be sufficient to effect the desired improvement. No real improvement can be expected by retaining it in its present site. Unless the college is located elsewhere outside the town, the causes of complaint will not be removed. I am therefore inclined to think that the change of site is essentially necessary. As to the proposal of extending the college premises, I agree with Mr. Pedler in thinking that the cost of acquisition would be almost prohibitive.

In connection with the question of removal, the main point for consideration is a suitable site. In considering this question, we ought to keep two points in view. The first is that the place must be a healthy one and the second that it must be within easy reach of the town. Now it is well known that the suburbs of Calcutta are notoriously unhealthy. It is of first importance that a residential college should be located in a healthy site, otherwise the whole scheme will fall through.

The site proposed by Mr. Ray may do in the absence of any better place, provided it is certified by sanitary experts to be a healthy one. Objection may also be raised that it is out of the way. The students residing with their parents and guardians within the town will find it very inconvenient to attend the college. Unless it is made a wholly residential college, most of the day scholars will have to reside in the town. Hence is the necessity of easy communication between the college and the town.

In conclusion, I venture to submit one observation for the consideration of His Honour. I am afraid that the establishment of a residential college close to Calcutta may have the effect of interfering with the success of the Ranchi College. If the parents and guardians of the students find a residential college with hostels and other improvements within easy reach of Calcutta, very few of them will care to send their boys to an out-of-the-way place like Ranchi.
small space set apart for the College under the direct disciplinary jurisdiction
of the College authorities.

(6) Under the present system, when the boys are only for a few hours
in their class room with their teachers, the personal influence of the teachers is
wholly lost: he is too much engrossed in the work of teaching to converse
with the boys, to attend to their moral needs, to cultivate their acquaintance
or to acquire their confidence. Most of the professors do not and cannot know
their boys, and the students on the other hand do not know their professors,
except as teaching automatons. The professors cannot impart to the boys
what is best in them, and the highest and best in the character and life of the
students remains dormant and undeveloped.

(7) The association of the students with their European professors will
lead to the development of greater sympathy, mutual understanding and
respect, and will be politically a source of great advantage and strength to the
country, the rulers and the ruled alike.

I come now to the question of site.

So long as the site is easily accessible for day-scholars, it does not much
matter whether the site is at Ballygunge or Tolla. The latter site will
undoubtedly be much healthier: it has the advantage of proximity to the river
and the canal, and is intersected by the Barrackpore Trunk Road, one of the
best roads in Bengal for a walk, ride or drive. Moreover, most of the students
of the Presidency College who live in Calcutta come from the northern
portion of the town, and to them Tolla would be a near and convenient site.
With the extension of the tramway, which is under contemplation, all diffi-
culties of communication will be removed.
Circular No. 9T.—G., dated the 17th May 1905, and the replies thereto.

In April 1905, in the course of the debate in Council on the budget for the year 1905-1906, the Hon'ble Babu Bhupendra Nath Basu referred to the fears which had been entertained in some quarters that, in view of the new College which it was proposed to establish at Ranchi, the interests of the Presidency College might be neglected, and that the latter institution might ultimately cease to exist. He referred to the assurance which had been given by Sir Andrew Fraser that there was no intention on the part of the Government to do away with the Presidency College, and he appealed to the Government to strengthen the College and widen its sphere of usefulness. In the course of his remarks, he drew a picture of a resuscitated Presidency College, the realisation of which would involve the removal of the Presidency College from its present site in the heart of Calcutta to a site somewhere in the suburbs where ample space would be available. In summing up the debate Sir Andrew Fraser touched upon this subject. He recognised that in the case of the Presidency College very considerable improvement was required in regard to the important matters of accommodation for the students and bringing them more into contact with their Professors, and he promised to consider, in consultation with his official advisers and others interested in higher education, what steps should be taken to secure such improvement.

2. Accordingly, in May 1905, a circular letter was addressed to a number of prominent persons, official and non-official, inviting them to favour the Government with an expression of their opinion on the proposal for the removal of the Presidency College to a better site in the suburbs of Calcutta. The replies received to this letter disclosed a considerable variety of opinion. Officers of the Educational Department were generally in favour of the removal of the College, while of the other gentlemen consulted, some were for, and others against, removal. Those who prefer the present site attach importance to the traditions with which it is associated and to its accessibility in the case of those students who live in Calcutta with their parents and guardians, and who are perhaps unable to afford the expense of living at a hostel. They represent that if the College be removed to a place outside Calcutta, the expense of conveyance to and from the College might prove burdensome in some cases. On the other hand, those who would prefer a new site in the suburbs point to the necessity of room for expansion and to the other advantages which might be secured in the shape of closer contact between the teachers and taught, more commodious buildings, extensive play-grounds in close proximity, a better moral atmosphere, and more healthy surroundings.

3. Estimates have been prepared of the cost of improving the College in situ and of transferring it to a new site. The cost of each of the two schemes which have been sketched for this purpose is nearly the same and approximates to twenty lakhs of rupees. But it will be understood that the estimates claim to be no more than rough estimates of comparative cost. In respect to the cost of removal, the value of the land now occupied and the buildings upon it have been taken into account.

4. Before any scheme of improvement can be laid before the Government of India, it is desirable that the question of the future location of the College should be subjected to a more extended examination. The Lieutenant-Governor is unwilling to take any further steps in the matter until he is more fully
informed as to the trend of public opinion on this question, and as to the reasons for any difference there may be between the views prevalent in the metropolis and those which find acceptance in the districts. The present Resolution therefore has been recorded in order to give a wider publicity to the discussion and to ascertain, so far as possible, the state of public feeling on the subject both in Calcutta and in the mufassil. The Resolution will be published in the Calcutta Gazette and copies will be forwarded to public bodies and Associations, who will be invited to favour the Lieutenant-Governor with their opinions. His Honour will also be glad to consider communications addressed to the Government by persons interested in the future of the Presidency College.

ORDERED, that the Resolution and the papers referred to in the preamble be published in the Calcutta Gazette, and that copies be forwarded to public bodies and Associations with a request that they will be so good as to favour the Lieutenant-Governor with an expression of their opinion on the question whether the Presidency College should be transferred from its present site to a site in the suburbs of Calcutta.

By order of the Lieutenant-Governor of Bengal,

T. W. RICHARDSON,

O5g. Secy. to the Govt. of Bengal.

[No. 27.]

Nos. 91-100, dated Calcutta, the 22nd January 1907.

From—W. S. MILNE, Esq., Under-Secy. to the Govt. of Bengal, General Dept.,

To—The Secretary, British Indian Association, Indian Association, National Muhammadan Association, Muhammadan Literary Society, Bihar Land-holder’s Association, Bhagalpur Land-holder’s Association, Bengal National Chamber of Commerce, Bengal Land-holder’s Association, Muhammadan Defence Association, and Orissa Association.

I AM directed to forward the accompanying copy of a Resolution, No. 2624, dated the 13th November 1906, regarding the Presidency College and to request that you will be so good as to favour Government with an expression of the opinion of your Association on the question whether the College should or should not be transferred from its present site to a site in the suburbs of Calcutta.
Enclosure (c) to note by Mr. Pedler, dated 19th April 1905, on proposed removal of Presidency College to the Suburbs of Calcutta.
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II.—PAPERS LEADING ON TO MR. KÜCHLER’S NOTE.

1. Letter No. 1540, dated the 6th February 1904, from the Director of Public Instruction, returning Mr. Edwards’ letter No. 54, dated the 15th January 1904, about the extension of the College Laboratories

2. Mr. Edwards’ letter No. 54, dated the 15th January 1904, to the Director of Public Instruction, and enclosures, forwarding Dr. J. C. Bose’s letter, dated the 14th January 1904, and Mr. Stapleton’s letter, dated the 2nd January 1904, and plans regarding the extension of the Physical and Chemical Laboratories of the College, respectively

3. Mr. Küchler’s letter, dated the 30th June 1904, regarding the extension of the Physical Science building of the Presidency College

4. Letter No. 1435, dated the 29th November 1904, from the Director of Public Instruction, about the extension of laboratories
I.

Copy of the Director of Public Instruction's remarks.

"I paid a visit of inspection to the Presidency College on this day, and spent a long time in discussing with the Principal and some of the Professors the needs of the College. Official representations will be made on some of the more urgent requirements.

"The College is developing in many directions, and is indeed now too small for its work; but every effort must be made to utilize its present facilities to the utmost. The development of the practical side of the teaching must also always be kept very prominently in view.

"The College has a very high reputation to maintain. There are over 140 scholarship-holders of various degrees working and reading in the College, so that it contains the cream of those under education in Bengal, and all concerned must realize this and work at the highest possible pressure. It is well to remember that the standard set in all matters in the Presidency College will react generally on collegiate education in Bengal. Great responsibility, therefore, rests not only on the Principal, but also on every Professor and teacher in the College, and the work of each should be such as will set a proper standard in his own special subject.

"The College is on the whole doing excellent work, and I was pleased with my visit, though there are directions in which improvement is possible."

The 14th March 1905.

ALEX. PEDLER.

FORWARDED to the members of the Instructive Staff for information.

The undersigned will be glad to receive suggestions from the Instructive Staff about the requirements of the College on or before the 22nd March 1905.

P. K. RAY,
Offg. Principal, Presidency College.

MEMO.

Mr. Küchler's note with plans is circulated to the Professors of Mathematics, Physics, Chemistry, Biology and Geology, for any suggestions they may like to make.

I submitted it to the Director of Public Instruction yesterday. He seemed to be inclined to the view that land should be acquired to the west of the College for the building of the laboratories, etc., etc.

PRESIDENCY COLLEGE,
Calcutta, the 15th March 1905.

P. K. RAY.

Note on a new Physical Laboratory for the Presidency College.

I have here drawn up a scheme for a new Physical Laboratory for the Presidency College, in accordance with the general principles which I put forward in my letter of 30th June 1904, to the Principal of the College. The plan which I have roughly sketched, represents the minimum requirements, which the Physical Laboratory of the leading College in Bengal should fulfill, and shows that even with this limitation it will be necessary to utilise the whole of the space which can be gained by the maximum extension of the College buildings in their present grounds, if simultaneous provision is to be made for a moderate extension of the other departments of the College. Should these requirements increase, as they undoubtedly will in the future, it may become necessary to acquire land adjoining the College grounds for further extensions.

Under these circumstances, it seems desirable that the question of the location of the Presidency College with its connected hostels and scientific institutes should be definitely decided before schemes, not only expensive in themselves, but likely to lead in the future to the necessary acquisition of very expensive land, are sanctioned and carried out. It has of course been settled that the Presidency College shall remain in Calcutta, but it does not necessarily follow, I presume, that the whole or part of it should not be removed from its...
present cramped situation to some other site, in the suburbs of Calcutta, which would be free from the hammering restrictions connected with the present site, and would admit of the various Scientific Laboratories being designed strictly according to their several requirements. There are various alternatives which suggest themselves in this connection. Either the whole would leave a large amount of room available for other purposes, or what would leave the present buildings for the literary side and for the commercial classes, which extensive accommodation. The latter alternative may seem to be a counsel of perfection, but it would probably be the most economical plan in the end, if we judge economy by the criterion of the best return for the expenditure incurred, and it would further avoid the difficulty which would arise in connection with the problem of finding accommodation for the Physical Science department while a part of its present abode was being reconstructed. This plan of building new Scientific Laboratories in the suburbs, where land at moderate prices is plentiful, has been followed for some time past in German University towns, and it has this recommendation that while the land has to be acquired and a complete plan of the future buildings with possibilities of extension should be drawn up from the outset, the execution of the various parts of the project may be carried out gradually and as funds become available. Nor need the distance between the College or one department of the College and the hostels be regarded as an obstacle with the present excellent means of communication afforded by the electric tramways. Very cheap season tickets would no doubt be issued by the Tramway Company to such students as wished to avail themselves of this method of transit.

If neither of these schemes be considered feasible, it would in my opinion be much better to acquire at once, even though the expense be great, sufficient land to the west of the College to admit of the erection of adequate scientific laboratories and other buildings, such as a common room, etc., which will be presently necessary to make the College complete in every respect.

To sum up, the reconstruction and extension of the buildings on the present grounds of the College according to the plans I have drawn up, though providing for a good Physical Laboratory and giving temporary relief to the congested condition of the other departments, are open to the following objections:

(a) While the reconstruction was being carried on, the physical department would be deprived of a considerable portion of its present accommodation, and its work would be dislocated.

(b) The free circulation of air through the College buildings would be considerably interfered with by the practical enclosure of the College quadrangle.

(c) The scheme is at best imperfect and admits of no future extension of the Physical Laboratory according to a properly conceived initial plan.

(d) Only temporary relief will be afforded to the other departments, and the question of the acquisition of land (yearly increasing in value), in order to meet their urgent needs, will have to be faced in the immediate future.

It would seem therefore that, whatever form the extension of the Presidency College take, acquisition of a considerable amount of land should be the first step. When this is done, a complete scheme for the future complex of buildings should then be drawn up, and should be carried into execution as funds permit. In this way no disturbance of the present work of the College will take place, and the buildings will be free from the patchwork appearance which they will necessarily present if provision be merely made for additions as the latter from time to time become urgently necessary.

With regard to the scheme for a Physical Laboratory (under present conditions) for which I have sketched some rough plans, I have little to add to the letter which I addressed to the Principal of the College in June 1904. I have in these plans followed out the general principles which I suggested in that letter, and I think it will be found that they satisfy the requirements of the various Professors interested as far as circumstances permit. Provision is made for a large general laboratory for F.A., students; for laboratories for the B. Sc. and M.A. classes; for spacious private laboratories for the Professors; and for rooms for advanced work for assistants and research students. All the other requirements of modern laboratories, which my experience in Germany has shown me to be essential, have also as far as possible been met, and special regard has been had in drawing up the plans to the necessity for the admission of abundant light into these rooms, where a good natural light is called for. The plans are of course only drawn up with a view to providing a basis for criticism on the part of the other Professors to whom the papers will be circulated.

G. W. KUCHLER.

PRESIDENCY COLLEGE, CALCUTTA.

The 8th March 1905.
DEAR DR. ROY,

I MAKE a few remarks in reply to your invitation for suggestions about the requirements of the College.

It is needless to reiterate that the College is woefully deficient in the number of its teaching staff and in its class room accommodation. The interests of earnest and competent students are sacrificed to those of less competent students, who derive very little benefit from the instruction given. Many of the students are capable of far better work than that which they now do, but as circumstances are, they do not and cannot receive adequate encouragement. This state of affairs can only be remedied, if the teaching staff is largely increased, and the number of students largely diminished by the exclusion of undesirables. For a single man to each Mathematics to a class containing 150 students of very mixed capacities is a mere farce. Instruction in Mathematics (unless the students are all exceptionally keen) can only properly be carried out when the teacher can keep an actual oversight over the work of his students, and give some individual attention to them, and this cannot be done when the number in the class exceeds 30.

I consider that the Mathematical staff of the college ought to be increased by a dozen assistant teachers, who would take the students in small classes and exercise a close control over their work. Such assistants need not be highly paid, but should not be overburdened with work. Many of them might be young M.A.'s who wished to carry on their studies.

Again I consider that there should be in the College an M.A. class in pure mathematics as well as one in mixed mathematics. Both classes could not, however, be taken by the same Professor, unless he were to confine his teaching to M.A. work. At present the College admits an M.A. student, however poor his qualifications, but rejects an M.A. student in pure mathematics however good his qualifications may be.

The various parts of a large telescope ordered by Mr. Little have recently been received. A new dome will have to be constructed before this telescope can be set up. This I presume will be left over till Mr. Little's return, as I have no knowledge of his plans.

Yours sincerely,

O. E. CULLIS.

DEAR DR. ROY,

PERHAPS you will expect to receive a few remarks from me concerning the astronomical observatory, though it is difficult for me to speak quite candidly, as I do not consider myself competent to criticise Mr. Little's plans.

Mr. Little seems to have entertained the ambitious design of establishing an observatory fitted up for carrying on research work. This of course involves considerable expenditure, and can even then be only imperfectly realized, the cost of complete realization being practically prohibitive. When all the instruments which have already been received are set up, the trouble and cost of maintaining them in proper working order will again be considerable, and will necessitate the continued employment of some subordinate staff at present.

But all this expenditure will be almost thrown away, unless some specialist in Practical Astronomy is added to the College staff, whose sole duty it shall be to use the instruments for purposes of research, and to guide and direct the few students who may be attending the observatory with the hope of doing research work. The observatory will inevitably come either to be neglected altogether, or to be a source of expense for which no adequate return is received unless this is done.

If I had been planning an observatory for the College, I should have advocated merely a demonstrating observatory, fitted with comparatively simple instruments, handy to manipulate and easy to keep in order, though not particularly precise, for a much smaller outlay than that which has been already made, and the instruments would have been more suitable for class teaching, and could have been used by a larger number of students. Further, if the College were made residential, it would then be possible, though not desirable, to dispense with a specialist in Astronomy on the staff.

An observatory in which work of real practical utility can be done should be an independent institution with a competent staff of its own.

I make these remarks, in order to put you in possession of my views, but I recognise that it would be unfair to criticise a scheme which is only in the stage of inspection, even if I considered myself competent to be a critic.

Yours sincerely,

O. E. CULLIS.
DEAR DR. ROY,

In reply to your invitation for an expression of opinion on Mr. Kuchler's scheme for a new Physical Laboratory, I beg to make the following remarks:

1. It appears to me to be quite impracticable for the Physical Laboratory or for all the science buildings to be erected in the suburbs, while the other Lecture-rooms of the College remain where they are. This would double the disadvantages arising from the non-residential character of the College. Students working on science subjects have also to attend lectures on art subjects; and so much time and energy would be spent in travelling to and from between their homes and the College, and between the College and the science buildings, that they would be unable to attend to their private studies or to social or athletic interests.

I approve of the plan of having a separate building for each branch of science as is customary in Germany, but these buildings should be all in the same immediate neighbourhood and, if possible, in the same grounds. Most German Universities are situated in quite small towns, and even in the case of those situated in large towns, the distances between the various University buildings are small, so that a student can walk from one to another in five minutes or less.

2. I think that it would be unwise to erect the new laboratory in such a manner as to convert the present College buildings into a closed quadrangle.

Mr. Kuchler's reasons for objecting to that seem to me to be quite sound.

3. The two practicable alternatives appear to be—

(1) to purchase and build upon more land adjacent to the present site of the College;

(2) to remove the whole College (and not the science buildings only) to the suburbs.

4. I do not favour the plan of enlarging the present site of the College, or of erecting new buildings near the present site. The site is an extremely undesirable one for both students and teachers. A proper healthy corporate life is impossible when the students (and Professors) are obliged either to reside at a distance from the College or in undesirable surroundings. It seems to me almost a matter of certainty that the necessity for changing the position of the College will be recognised before long, and that it would be therefore wasteful extravagance to spend large additional sums on the present site.

5. I am strongly of opinion that the whole College should be transferred to the suburbs and placed in grounds sufficiently extensive for all requisite buildings, including hostels, Professors' quarters and recreation fields. It is only under such circumstances that students who have no homes in Calcutta can receive a proper physical, moral and social training, whilst those whose homes are in Calcutta would be at little greater disadvantage than at present. If students of promise are encouraged to come to Calcutta (many of them by Government scholarships), it is due to them that the environment in which they are placed should be such as will favour their best development. Under present circumstances I fear that many of them come here more to their hurt than to their good.

6. If the College were removed to the suburbs, I should favour the construction of a number of detached buildings, a physical institute, a chemical institute, an observatory, a library, and so on.

Yours very truly,

C. E. CULLIS.

Dated Calcutta, the 22nd March 1905.

From—BABU SARADA PREMANA DAS, Professor of Mathematics, Presidency College,

To—The Principal, Presidency College.

WITH reference to your memorandum, inviting suggestions from the Instructive Staff about the requirements of this College, I have the honour to suggest that there should be a fully equipped Astronomical Observatory in connection with the Presidency College. The observatory, as at present equipped, affords very little facilities for carrying on researches in Astronomy. Research scholarships in Astronomy are granted by the Government from time to time, and the holders of these scholarships are attached to the Presidency College, but it is idle to expect them to carry on Astronomical researches of any importance, so long as the existing observatory is not raised to the status of a real Astronomical Observatory like the one at Madras.

The essential elements of a good observatory are good instruments to observe with, and regular observers to systematically record their observations. No arrangement has as yet
been made for making regular observations and recording them, though it must be gratefully acknowledged that the Government has kindly provided the Presidency College Observatory with some valuable instruments.

There can be no question as to the desirability of having a good Astronomical Observatory in the metropolis of India. The only question that might be raised is whether such an observatory could be more appropriately established elsewhere, e.g., in connection with the Meteorological Observatory. It may, however, be pointed out that the Government has already spent a large sum of money for the Presidency College Observatory, and it would therefore be economic to expand this observatory rather than establish a fresh one. Moreover, the premier College in India, for that is the proud position to which the Presidency College aspires, should afford every facility for the study of Practical Astronomy to its research students.

Dated Calcutta, the 29th March 1905.

From—BABU SARADA PRASANNA DAS, Professor of Mathematics, Presidency College,

To—The Principal, Presidency College.

With reference to your memorandum calling for suggestions in connection with Mr. Kucher's note, I have the honour to submit that in any scheme of extension or removal of the Presidency College to the suburbs, the question of improving and properly fitting up the Astronomical Observatory of the College should receive due consideration. A great deal of attention has been and is about to be bestowed (of course deservedly) upon the Physical and Chemical Laboratories of this College, with the object of fitting up these laboratories, not only for the purpose of demonstration to students, but also for affording facilities to advanced students (i.e., research scholars) to carry on researches. Astronomy is a very important branch of science, certainly not less important than Physics or Chemistry. It is therefore desirable that this hitherto neglected branch of science should receive its proper share of attention, and that the observatory of the College should be placed on a sound basis so as to serve like the Physical and Chemical Laboratories the double purpose of research and demonstration.

In connection with the question of acquiring land for extending the boundary of the Presidency College, I therefore beg to suggest that provision should be made for a separate building for the Astronomical Observatory and for the quarters of at least one (for the present) Resident Astronomical Observer who would make observations during the night. By way of explanation of the last suggestion, it may be added that it is often necessary to make astronomical observations even at some inconvenient hour of night, and that in good Astronomical Observatories regular observations are made during the whole night by several observers in rotation.

In conclusion, I beg leave to suggest that a small committee, consisting of the Professors of Mathematics and Physics in this College with the Principal as ex-officio Chairman, may be appointed to consider and report upon the question of improving the Astronomical Observatory of the Presidency College.

Re : Mr. Pedler's Inspection Note on the Presidency College.

I wish to make the following remarks in response to Mr. Pedler's note calling for expressions of opinion from the Professors of the Presidency College, more especially in connection with the special requirements of their several departments.

In the first place, with regard to the Physical section, there are one or two alterations or additions which I should like to suggest.

A.—The annual grant for the purchase of scientific instruments.—At present a sum of Rs. 3,600 is annually allotted for the purchase of scientific instruments through the India Office in London, and there is likewise a small special grant of Rs. 500—nominally a research grant—but subject to the same conditions as the former. The total amount of Rs. 3,600 is intended to cover the requirements not only of the lecture-room and students' laboratory, but also of the recently created research scholars. When the latter scholarships were first instituted, no additional Provision was made for the necessarily expensive apparatus required for research in Physical Science. Further, no distinction was recognized between the different classes of the needs of the two classes of students, i.e., ordinary students and research students. For instance promptitude in supplying apparatus for laboratory and class use, though no doubt desirable, is not of paramount importance, while in the case of instruments required for research work it is absolutely necessary. It may happen that the necessity for a particular instrument in connection with a piece of research work may present itself just after the annual indent has been sent in, in which case there will be a delay of about two years before the instrument reaches the Presidency College, as according to present regulations it can only be included in the succeeding annual indent. Under these conditions any serious work of a higher kind in Physics is materially hampered. I would therefore propose—

(1) that the total grant be raised to Rs. 4,000, i.e., by Rs. 500. The additional amount here suggested is not large, but as the laboratory is becoming fairly well...
stocked with apparatus for purely educational purposes, the annual demand in this direction may be considered as having to a certain extent diminished, while simultaneously that for instruments of higher class has increased.

(2) that this grant be divided into two, i.e., Rs. 2,000 for the ordinary wants of the Physical Science section, and Rs. 2,000 for instruments required for higher and research work.

The former grant of Rs. 2,000 may remain under the same conditions as before, but the purchase of apparatus, etc., from the latter should be placed under the same favourable regulations that in the case of the purchase of apparatus for scientific purposes the officer who has the key from the instrument manufacturers, as only in this way can the delay, which is inevitable when apparatus is obtained from Europe, be so reduced as to cause a minimum of interference with the scientific work for which it is intended. Until this is done, workers in science in India will always be a serious disadvantage compared with their European competitors. Pending, however, a general order of Government, which will place the purchase of apparatus for purely scientific purposes on an entirely different footing from that of ordinary stores, I would ask for the slight concession indicated above in the matter of the Presidency College grant for the purchase of Physical Science apparatus.

B. Workshops.—The workshop for the carpenter and mechanic is in a very unsatisfactory condition. I have already in a preliminary note drawn attention to the fact that, although the work of the Physical Science section has enormously increased, the services of the carpenter and mechanic, which were formerly exclusively reserved for that section, have to a great extent been diverted to other departments of the College as well. Besides this, the workshop suffers from being insufficiently supplied with the ordinary machines, such as lathes, etc., which are the necessary part of the equipment of a modern laboratory. I may mention that the Muir College in Allahabad has already, with the help of the liberal grants assigned for the improvement of its Physical Laboratory, been able to remedy the deficiencies of its own workshops, and to reorganise them on a scale which is far above that shown by the Presidency College at present. I admit that any representations under this heading should have been made earlier. I had, however, always hoped to be able at a very early date to put before Government a complete scheme for a new Physical Science Laboratory in which all details of improvement would have been included, but although I have drawn up and submitted to the Principal plans for such a laboratory, it now seems doubtful whether any scheme for enlargement of the present accommodation in co-ordination with the other departments of the College can be satisfactorily carried out on the present site, so that pending the decision of Government on this point the consideration of all such schemes must naturally be postponed. Under these circumstances it is undesirable to delay improvements of detail which can be carried out irrespective of the construction of a new laboratory.

Under this head I would therefore advocate—

1. That the full time of the present carpenter and mechanic be again allotted to the Physical Science section.

2. That the following machines be procured as soon as possible:

(a) Universal Milling Machine No. 13 from the Cincinnati Milling Machine Company, Cincinnati, Ohio, United States of America, price delivered at New York, £125.

(b) Tools for the same, £6.

(c) Drilling machine to be obtained locally, Rs. 400.

(d) The Universal Cutter and Tool Grinder (Cincinnati Company), £55.

(e) A small electric motor to work these machines, to be procured locally, £50, shipping charges, etc., £25.

These machines might be obtained at once, as a skilled native mechanic would have no difficulty in manipulating them, at least to a certain extent, and they would be invaluable in the manufacture of apparatus for the different classes of students. In order, however, to get the maximum value from these machines, it would be necessary to engage for a term of years an English mechanic specially trained in the manufacture of scientific apparatus. Further, in order to turn out the highest kind of work, it would be necessary to add to the machines already enumerated a special high grade lathe. There are several of these in the market; but as the various scientific workshops at home have in many cases their own particular form of lathe to which the mechanics working there are accustomed, it would be better that if a mechanic is sanctioned, he should be allowed to select the lathe to be used in the Presidency College, and that he should bring it out with him. It would therefore add to the above recommendations.

3. That sanction be obtained for a skilled English mechanic for a term of five years on a salary of Rs. 300—350 a month, with passages paid both ways.

4. An additional lathe completely fitted for the finest class of work, to be selected by the above mechanic, price about £120.

5. That in the meantime an additional mechanic on Rs. 80—100 be entertained.
I have made enquiries at the local workshops, such as that attached to the Telegraph Department, with regard to the salary which it would be necessary to pay a man with the qualifications indicated in (3), and I find that Rs. 300 a month is the least that should be offered.

The chief objects in employing a skilled European mechanic would be to put the workshop on a proper basis and to set it going, as well as to train native mechanics in the complete manipulation of those machines and the execution of the class of work which can be produced from them, not only for the Presidency College, but also for the other Government Colleges in Bengal, which would in the course of time require workshops of their own provided with the same kind, even if not so liberally as the Presidency College. The services of this mechanic would also be of the greatest value in making the fittings for the new laboratory which it will probably be necessary to erect in the immediate future. Great expense would be saved by having these fittings made on the spot, instead of as would otherwise be necessary, importing them from England and its equipment, as well as the provision of skilled labour for carrying it on, little need be said as to their direct utility. If they are considered a necessary adjunct of laboratories in Europe, where manufacturers of scientific instruments abound, how much more must this be the case in India where such manufacturers are non-existent. It should be clearly realised that the class of work, that should be done in a workshop attached to the Physical Science department of the Presidency College, is not and cannot be turned out by any workshop in Calcutta, even by those of a semi-scientific character such as the Telegraph workshops, the Mathematical Instrument Department, and perhaps the Shibpur Engineering College workshops, with the help of the proposed workshops and technical work by students and others would be carried on under much more favourable conditions than at present. But apart from these considerations a properly equipped workshop would likewise possess a high educational value. It is desirable that every student of Physical Science should know how the instruments with which he works are made, and also that he should to a certain extent be able to turn his hand to making rough apparatus himself, or at least to repairing instruments when they get out of order. In most laboratories at home students spend part of their last year in learning to construct elementary apparatus, and such a system would be even more desirable in Bengal, where outside the capital a knowledge of this kind on the part of teachers of Physical Science may be considered as essential if they are not to be seriously handicapped in their work.

With a properly equipped and organised workshop at the Presidency Colleges such a training could be easily imparted. So far for the special requirements of the Physical science section. With regard to the general remarks of the Director of Public Instruction on the position and working of the College, these seem likewise to invite comment, and I may therefore be pardoned if I take the opportunity of briefly calling attention to a question affecting the staff of the Presidency College which is indirectly raised by the inspection note.

In his note, Mr. M'cder has once more emphasized the fact that the Presidency is the College in Bengal, and presumably the term model is intended to include not only the material equipment, but also the staff. It has indeed been the avowed policy of Government to make the Presidency College a model in every respect, and yet notwithstanding this intention not only have the best men in the Educational Service been ordered no inducements to accept the professorships at the Presidency College, but they have not even, as is the case in India, received any compensation for the increased expense of living in Calcutta. I consider this a grievance with respect to which the Professors of the college are legitimately entitled to make a representation to Government, and I am perhaps in a position to speak more freely on the subject, as I am employed as a local allowance as Meteorological Reporter, I am personally not affected thereby. The above remarks with regard to the Professors apply with even greater force to the Principal of the Presidency College. In addition to the qualifications of high academic standing and distinguished scholarship which are necessarily demanded by his intimate relations to the University, the Principal should also possess a large amount of tact and a great capacity for organisation. In the selection of such an officer the claims of seniority should be a necessary, for it is a necessary corollary that the principalship position is that of Director. Till within recent years the Principal of the Presidency College was a real " ex-officio " Registrar of the Calcutta University as well, and although it yet had the effect of materially increasing the attractiveness of the post, such an arrangement, as it is in contemplation to make the registrarship a full-time appointment. Under the most acceptable, can hardly be blamed if they seek to decline seconded to such a position, for even in the case of the poorer present conditions. On all grounds therefore should be reconsidered, and it does not seem extravagant to ask that his salary should be equal to, let us say, that of the Principal of the neighbouring Medical College. There is no other point in connection with the general scheme of college work on which I should like to say a word or two, i.e., the question of college vacations. A proposal
increase these vacations by one month has already been mooted, and there is no doubt that the present time when University students in Bengal are being completely reorganised is favourable for bringing the college vacations more into line with those which obtain in other similar institutions in Europe. An addition to the vacations of the Presidency College for the special disadvantages under which they labour, but it would I think be difficult to withhold this concession from the university colleges as well, and it seems therefore desirable to discuss this question on its own merits.

In the first place, an increased vacation need in no way diminish the total amount of lecturing work which is done in the college. At present at least a month and a half is wanted in connection with the university examinations, and either by a rearrangement of the times of examination or by the erection or provision of an additional examination hall (which will be carried into effect almost immediately), or by both of these agencies, at least an additional month will be gained for purify College work. Secondly, there is no doubt that, if the system of vacations were framed on a scale more consonant with European ideas, the work of recruiting the Educational Service with first class men would be greatly facilitated, as the paramount consideration with the genuine scholar or student of science in accepting an educational appointment is not so much the pay attached to it as the amount of leisure which he will have for doing original work and for keeping abreast of his subject. Thirdly, the grant of a continuous long vacation of say 6 to 8 months would have the desirable effect of reducing the amount of furlough taken by Educational officers, and the consequent continual changes in the college staffs which are especially undesirable in educational work. An increase in the vacation would work automatically in this direction, but there is no reason why, if the concession indicated be granted, the amount of furlough (i.e. six years) now allowed to Educational officers should not be proportionately or more than proportionately reduced. Lastly, I may mention that in Bombay the Colleges are annually closed for two vacations of two months each, and it certainly seems incorrect in principle that more favourable terms should be granted to Educational officers in one Province than in another. In this connection however I would point out that, if the total vacations be increased in Bengal, an endeavour should be made to provide one continuous vacation of at least 3½ months, so as to enable officers to go home and put in, if they so desire, two months of work at a University or other institution.

The 11th April 1906.

Dated Calcutta, the 31st March 1905.

From—J. C. Bose, Esq., Professor of Science, Presidency College,
To—The Officiating Principal, Presidency College.

In 1897, when in response to the deputation of the leading scientific men in England, the Secretary of State for India approached the India Government regarding the construction of a Research Physical Laboratory for the better carrying out of researches initiated by myself at the Presidency College, I was requested by the Government to submit a scheme for the purpose. This scheme was duly submitted. Last year I was again requested by Principal, Mr. Edwards to send on my scheme for the extension of the Physical Laboratory of the Presidency College. This request I also met fully. On this subject then I have nothing further to say.

G. W. KÜCHLER.

DEAR DR. ROY,

I herewith enclose my suggestions for some of the most important improvements necessary in the Presidency College. I have separated them into (1) those dealing with the general organization of the College, and (2) the special requirements of the Chemical Department.

I shall be greatly obliged if you will forward them to the Director of Public Instruction as soon as possible.

Yours sincerely,

J. A. CUNNINGHAM.

Note on the improvement of the Presidency College.

In response to the Director's remarks, and the appeal for suggestions as to possible improvements in the Presidency College which has been circulated by Dr. F. K. Roy, I would like to call attention to two matters whose general and fundamental importance will, I feel sure, justify their discussion and careful consideration by every one concerned with higher education.
I venture to express the belief that if a full four month's continuous vacation (which I understand is up for the favourable consideration of Government) were granted during the most unhealthy season of the year, the chances of serious illness among the Professors (as well as among the students) would be greatly diminished, and I feel sure that the members of the Educational Service would on these conditions gladly resign all claims to short leave (and possibly even to long furlough, though in that case it is comparatively easy to get on a special substitute from home without disturbing three or four other departments of College work). At Oxford and Cambridge there is six months of vacation, during six or seven weeks of which the more hard-working students are encouraged to come up again for an extra term. In America too (where they always have an eye to sound business) there is a very long vacation during which students are free to make an honest dollar by healthy open-air work.

The 3rd April 1905.

J. A. CUNNINGHAM.

Note on a new Chemical Laboratory for the Presidency College.

It seems somewhat in the nature of dancing on a dead mouse to abuse the Presidency College in its present site, and I hope that it is no longer necessary. Professor Küchler has made the utmost possible out of the present ground, and his demands for a physical Laboratory certainly do not err on the side of extravagance; but when we proceed to divide up what is left over of the present compound among the other departments of the College, we find at once that there is not enough to go round. Much of the present building is not at all suitable nor easily adaptable to the special needs of Natural Science.

In trying to adapt the present buildings and space to the requirements of the Chemical Department, the very first difficulty that arises is in finding space for a proper lecture-theatre. The present lecture rooms are hopelessly inadequate to the large classes that we have at the Presidency College, and their acoustic qualities are mainly occupied in resonateing to the noises from the closely surrounding streets. This last characteristic is of course inherent in the present situation. The Director of Public Instruction has himself seen how insuperable the former structural difficulty is, and the futility of all suggestions short of requiring a new site. If that view is finally accepted by Government, there will be no difficulty in drawing up detailed plans for the requirements of the Chemical Department.

Their most important features will be—

1. One large lecture-theatre with modern fixtures for complete experimental demonstrations and adjacent preparation room.
2. Two smaller lecture rooms for taking advanced classes in the special branches of their work.
3. A large elementary laboratory.
4. A large laboratory for advanced analytical work with adjuncts, including balance rooms, etc.
5. A laboratory for Physical Chemistry.
6. A room for organic preparations.
7. A room for combustion and for electric furnace.
8. A water analysis room.
10. A large experimental dark-room and a spectroscope room.
11. A room for work with radioactive substances.
12. A room for a liquid air machine.
13. A room for working at very low temperatures.
14. Three or four rooms for research students (the number of these rooms required will increase rapidly when we get started on real University work).
15. A private laboratory for each of the Professors.
16. A private room for the Professors.
17. Two rooms for the Demonstrators and Assistants.
18. A museum for chemical specimens.
19. Two or three store rooms.
20. A workshop and glass-blowing room.
21. A battery room (though this might advantageously be amalgamated with that of the Physical Department, if the two departments are adjacent as would be natural).

The present annual grant to the Chemical Department (Rs. 3,000) is only barely sufficient to meet the cost of the chemicals and apparatus actually consumed in the laboratory to experimental science, and there should obviously be an annual margin over and above this, which could be devoted to the gradual accumulation of apparatus of permanent utility. The research students would require a further allowance for their special requirements, and I think the grant should be made up to Rs. 4,000 at least.
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should be  tbo  very  best
man that  the  Educational  Service  could furnish,  iu position  and  authority  second only  to the
Director  of  Pubhc  Instruction.

2. As  the  Director  has  pointed  out,  the  education  given  in  each  department  of  tho
Presidency  College  should  and  would  naturally  be  the  standard  in  the  subject  towards which
tho  teaching  iu  all  other  Colleges  should  be  encouraged  to  aspire.  If  I  may  say eo,  without
presumption,  the  G  overnment  does  already  provide  the  best teachers  that  are  to "be found  in
India.  But  teaching  is  essentially  a  slow matter  of  gradually  leading  up  tho  subordinates  of
a department  to  a  higher  standard  of  work,  and  gently  encouraging  students  to  push  ever
further  and  further  ahead.  It  cannot  be  taken  up  by  one  Professor  at any  accidental  point
where  the  previous  lecturer  may  have  had  to  drop  it,  without  serious  loss  of  effootiveness  and
dissipation  of  the  energy  of  the  students.  The  more  able  a body  of University  teaohei
is,  therefore,  absolutely  ruinous  to  good  work  to  have  a  change  of  teactiers  every  few  rao;

Daraoclas above  cur  heads.  This  fear  of change  is  almost  as  unsottlemg  and  as  destructivo
of through  work  us  the  actual  dMurbance  when  it  occurs.
I would,  therefore,  respectfully  suggest  that  a certain  seoiu-ityof tenure  should be guaran-
teeed to  all  Professors  and  teachers  at the  Presidency  College.  I  may,  perhaps,  mention  that  it
is the  present  insecurity  and  uncertainty  that  is  the  chief  deterrent  to  recruiting  the
Educational  Service  at home.  One  begs to  have  the  transferring  clause  deleted  from  one's
agreement  at  the  India  Office,  and  one  is only  induced  to  come out by  tho  asBurauoe that  it
is'^practically"  a  dead-letter,  w  •  n  t

I am  well  aware  that  there  are  very  great  prachcal  difficulties  in the  way  of  promiBing
such continuity  of  work.  Even Professors  are  mortal,  and  get ill or go on leave. But
As regards the workshop and glass-blowing room, this is closely connected with the scheme more fully detailed by Mr. Küchler in his note. The two main arguments in its favour seem to me to be—

(1) That all European laboratories find it economical to keep a much larger workshop going than is proposed for the Presidency College, though they have many manufacturers of scientific instruments close at hand. And though it will be necessary to give a European foreman instrument-maker more wages in India than at home, yet his native assistants will work much more cheaply than in Europe, and it is hoped that in four or five years it will be possible to train a number of natives of India to do foreman's work both in the Presidency College and in the mufassal Colleges where they are certain soon to be required.

(2) A good workshop in connection with a College Laboratory has very great educational value. Students learn much more about the construction of an apparatus by seeing it made than by merely looking at the outside of the finished article. This educational value acquires further definiteness from the fact that the school and College teachers whom we train at the Presidency College will be much more valuable servants of the State if they are able to make apparatus with their own hands. The value of such a course as a scientific training has long been recognised at the Royal College of Science and elsewhere.

The 3rd April 1905.

J. A. CUNNINGHAM.

Dated Calcutta, the 27th March 1905.

FROM—B. C. MAHALANOBIS, Esq., Professor of Biology, Presidency College,
To—The Officiating Principal, Presidency College.

PURSUANT TO your invitation for suggestion about the requirements of the College, I have the honour to submit my representation as regards the needs of the Biological Department.

"The College is developing in many directions," as the Director of Public Instruction has been pleased to remark; and indeed in no department this is more in evidence than in the Biological Department. The Biology classes were opened in September 1900, with about a half-a-dozen students. I presume, more or less as an experiment. The number of students attending these classes has steadily increased, amounting, at present, to sixty-three. That the experiment has been very successful is proved not merely by the numerical strength of the classes, but more convincingly by the keen interest which the students take in these subjects; and indeed "the eagerness to learn is, in many cases, quite touching."

Unfortunately the accommodation and other necessary arrangements fell far short of adequate requirements for maintaining the reputation of the " premier College of Bengal." It has been my constant endeavour to develop the practical side of the teaching as fully as possible, and representations setting forth the needs of the department have, from time to time been submitted.

The question of extending the College building to relieve the present cramped and congested condition has been already raised, and I take this opportunity to point out that the condition of congestion has attained its maximum degree in the Biological Department. The small room (measuring 35'6" x 25'6") at present available, is used as a laboratory preparation room and as well as a practical class room. In this multum in parvo of a laboratory only twelve students can be accommodated for practical work, and even at that rate the same working benches have to be used for Practical Physiology, as well as Practical Botany. Under these circumstances, only the B.Sc. students get instructions in Practical Physiology and Botany whereas a large number of B.A. students (about 50) do not get the opportunity of having a regular course of practical training in these subjects. This is to be greatly regretted, for, without efficient means to give practical training, all attempts to teach Science are bound to be futile.

Thus, even to meet the immediate needs of the Biological Department to a very moderate degree, the addition of a room measuring 70' by 26' fitted as a Practical Class Room is absolutely indispensable.

Judging from the present rate of growth of the Biological classes, I am convinced that within near future the Biological Department will develop into just as important a department as that of Chemistry or Physics. We cannot lose sight of the fact that a reformed University is fast coming on us, and under the new order of things, it is presumed, the students of Biology in the more advanced stages will not be fettered by the compulsory subject of Mathematics. Besides, as Physiology and Botany are going to be introduced in the course of study for Matriculation Examination, there will be a growing demand in schools for men qualified to teach these subjects. Such teachers will, presumably, be recruited from among the graduates who pass Biology. In view of these most recent and approved methods of practical training in those branches of science are introduced in the Presidency College.
If we are to have anything like a modern Biological Laboratory worthy of the Presidency College, we must have sufficient accommodation for two lecture-rooms, a preparation room, a Galvanometer room, a Professor's room and a Museum. A detailed plan for these requirements will be submitted when the question of the College building has been decided upon.

Then, Sir, I hold it nothing short of folly on the part of a Professor of Science to expect to be abreast of the times and to be able to inspire his students with new ideas, unless he keeps himself cognisant of recent advances in science, and devotes a good deal of his time to research work. It is also highly desirable that the more advanced students should receive an introduction to, and an adequate training in, methods of active enquiry which will be their duty and glory to develop throughout later life. This necessarily involves in addition to the existing teaching staff of the College. At present the Professor of Biology having two different and more comprehensive subjects (viz., Physiology and Botany) to teach, can hardly find time even to do justice to either of these courses of study. I may add here that no other University recognises courses of lectures on these two subjects when the question of the teaching of Zoology. Under these circumstances an addition to the present staff of teachers is essential.

I beg to suggest that two lecturers (one of Botany and the other in Zoology) be appointed, who will give courses of lectures on their respective subjects—somewhat on the plan adopted by the Calcutta Medical College. The Professor of Biology will lecture on Physiology, and being a whole-time teacher will be in charge of the practical classes, the research work and the laboratories. In conducting the practical classes, the Professor will be assisted by two Demonstrators.

In conclusion, I beg again to draw your attention to the fact that the present arrangements are quite inadequate to meet the requirements of the Biological Department, and I respectfully urge the necessity of taking steps in the directions indicated above.

Dated Calcutta, the 21st March 1905.

FROM—H. H. AYDEN, ESC., LECTURER ON GEOLOGY, PRESIDENTY COLLEGE,
TO—THE PRINCIPAL, PRESIDENTY COLLEGE.

With reference to the copy of the remarks of the Director of Public Instruction forwarded by you, and to your endorsement on the above, I have the honour to suggest that the Geological Lecture-room and Laboratory at the Presidency College be fitted with electric fans and lights.

Dated Calcutta, the 30th March 1905.

FROM—BABU RAJENDRA LAL SINGHA, GYMNASTIC INSTRUCTOR, PRESIDENTY COLLEGE,
TO—THE PRINCIPAL, PRESIDENTY COLLEGE.

I have the honour to submit the following suggestions for the improvement of the Gymnastic class in connection with the Presidency College, and hope you will be kind enough to consider them favourably:

1st.—That annual prizes and certificates be awarded to the best three or four students from each class, and that special prizes be awarded for regular attendance in the Gymnastic class.

2ndly.—That as the present site of the College Gymnasium is not quite open and well ventilated, I should suggest that another set of apparatus be fixed in the hostel compound, and that the same be covered by a corrugated roof in order that the class might be held regularly even in the rainy season. A weighing machine and a measuring instrument should be ordered for the Gymnastic class. The weight and measurements of each student might then be recorded regularly in a book every six months or quarterly. It would certainly be a great incentive to the students to find that they have gained an inch in the girth of their chest or in the circumference of their upper arms by taking a regular course of exercises.

3rdly.—That the students of the first and third year classes be compelled to attend the Gymnastic class at least fifty per cent. of the working days.

4thly.—That a grant of at least Rs. 300 be made annually for the general improvement of the class and for awarding prizes in Gymnastics and Indian Club exercises, etc. If this may not be available at present from the Government, I should suggest that the same be paid out of the Athletic funds of the College.

Dated Calcutta, the 22nd March 1905.

FROM—G. W. KÜCHLER, ESC., PROFESSOR OF PHYSICS, PRESIDENTY COLLEGE,
TO—THE PRINCIPAL, PRESIDENTY COLLEGE, CALCUTTA.

In accordance with your memorandum inviting suggestions about the requirements of the College, I have the honour to submit the following minor suggestions, so far as the Physical Laboratory is concerned.
1. The work for the practical and other classes, both for the ordinary and the research students, has increased so much during the last few years that the mechanic and the carpenter attached to the Physical Department are unable to cope with all the work that they are given to do, thus causing great delay and inconvenience in the carrying out of important work. Moreover, the difficulty is enhanced by the fact that their services are available for the Physical Laboratory only for four days out of six in the week, the remaining two days being required for the College Office and the Chemical Department. I beg to suggest that the mechanic and the carpenter be left entirely for the Physical Laboratory. It necessary a new set (one carpenter and one machinist) be appointed to carry on the work of the other departments.

Dated Calcutta, the 10th March 1905.
From—H. H. Haydon, Esq., Lecturer on Geology, Presidency College,
To—The Principal, Presidency College.

In submitting the annual indent for European stores required in connection with the Geology classes in this College, I have the honour to draw your attention to the inadequacy of the space at present provided for the accommodation of the teaching staff and of the apparatus required for effective instruction.

2. For many years Geology was apparently regarded as a subject of mere academic interest, and one of which a sufficient knowledge could be acquired from text-books to enable students to obtain the number of marks requisite to qualify for a degree. The futility of reducing a science of such great practical value, especially in India, to a mere assemblage of ill-digested facts and theories needs no comment. Mr. Holland, therefore, and those lecturers who have succeeded him, have endeavoured to teach the subject in such a manner as to render it one of practical utility. For this purpose, a collection of diagrams, models, apparatus, geological and palaeontological specimens, was essential, and these not being available in the Presidency College, it was found necessary to employ such materials for practical instruction as were available at the office of the Geological Survey of India, until a suitable collection could be obtained for the Presidency College itself. The inconvenience of such an arrangement, both to Lecturers and students, is self-evident, and could not fail to impair the efficiency of the instruction, by divorcing the theoretical lectures from the practical demonstrations necessary for their satisfactory elucidation, and Mr. Holland, with such materials as he could obtain or prepare, laboriously accumulated a number of diagrams, models and geological specimens, thereby forming the nucleus of the present teaching collection which has been gradually expanded by the efforts of Dr. T. L. Walker, Mr. P. N. Bose and Professor Bruhl. This is now in a fair way to become an adequate means of practical instruction and demonstration, without which an intelligent grasp of the subject is unattainable.

3. For this purpose, the Government of Bengal has generously set aside an annual grant of Rs. 2,000, and it should be possible, in the course of a few years, to accumulate a thoroughly equipped teaching collection; a considerable amount of useful material has already been acquired, and further additions, indented for in 1904, should reach Calcutta in the course of the next few months: these additions, although essential to the collection, are nevertheless a cause of some embarrassment, since the one room, at present available for storage of specimens, is already greatly overcrowded and, on receipt of further consignments, it will be difficult to find accommodation even for the cases in which they are packed, much less for their display in such manner as to render them readily accessible to students. I have therefore the honour to urge the necessity of providing further accommodation.

After careful consideration, I am of opinion that the minimum requirements of the Geological section of the College are as follows:

(a) Lecture-room; of the same size as that at present used for the purpose.
(b) Museum of a minimum size equal to twice that of the present geological lecture-room.
(c) Optical laboratory; of the size of the present Geological lecture-room for optical work, microscopic pathology, etc.; this might also contain the chemical balances necessary for assays, rock analysis and similar chemical research.
(d) Chemical laboratory (for rock analysis and research work); of a minimum size equal to that of the present geological lecture-room.
(e) Office for the demonstrator: a small room would suffice.
(f) Godown for storing spare chemical and other apparatus.
(g) Godown or other enclosed space, in the neighbourhood of the Geological laboratory, in which the section-cutter may prepare sections of rocks for the microscope; the nature of this work renders it impossible for it to be carried on in rooms devoted to other purposes, but only a small amount of space is necessary.

These I regard as the minimum requirements, but should it be possible, I would recommend that a small dark room be added for micro-photography, as well as a furnace for the teaching of Practical Assaying.
5. In submitting the above list, it is perhaps desirable to explain the exact purposes for which each of the rooms is required. Thus the Museum would contain glass-topped cases, in which would be displayed collections of typical minerals, rocks and fossils: a considerable number of these have already been acquired, and further additions are desirable as soon as space is available for their display. It is essential that such specimens should be at all times readily accessible to the students, who should be encouraged to handle them freely and thus to familiarise themselves with all the more important types; at the same time, it would be necessary to display a representative collection of such minerals, rocks and fossils as are found in India. For this purpose, at least twice the amount of space at present available is urgently required.

The Chemical Laboratory would be devoted to quantitative and qualitative analysis of rocks and minerals, and should be equipped chiefly with a view to its employment in this respect. Work of this nature cannot now be carried on at the Presidency College, as I am informed that the existing Chemical Laboratory is already overcrowded, and for this reason it has been customery for the Lecturer, with the sanction of the Director of the Geological Survey, to give practical instructions to the more advanced students at the laboratory attached to that department. Owing, however, to the small size of that laboratory, and also to a great increase in chemical work, such an arrangement will, in future, be impossible, and it is therefore a matter of urgent necessity that a suitable laboratory should be provided at the Presidency College.

The Optical Laboratory would be employed for microscopic and all optical work connected with Mineralogy and Petrology, and might at the same time contain the chemical balances.

6. In connection with the question of practical instruction in Geology and Mineralogy, I have the honour further to draw your attention to the fact that in the year 1903 a Demonstrator in Geology was appointed, as a temporary measure, to assist the Lecturer; the greater thoroughness and more practical nature of geological training now aimed at render the assistance of a Demonstrator under existing arrangements, and having due regard to the interests of the student, quite indispensable. At present the appointment of Demonstrator in Geology is combined with that of Lecturer on Physiography; but as I understand that the abolition of the latter post is contemplated, I would recommend the creation of a permanent appointment of Demonstrator in Geology, and would further recommend the present temporary Demonstrator, Babu Hem Chandra Das Gupta, M.A., for the permanent appointment. You are, no doubt, fully acquainted with Babu Hem Chandra Das Gupta's professional qualifications, but I should like to add my testimony to that of my predecessors, Mr. P. N. Bose and Professor P. Buhi, as to his zeal and energy. I have found him most useful and assiduous in the performance of his duties as Demonstrator. I consider him eminently suited for the post, and I fully concur in the high opinion of his capabilities formed by Mr. Holland, as recorded in his letter to you, dated the 17th May 1901.

I would further recommend that a pay of at least Rs. 100 per mensem be attached to the appointment. That this amount is not excessive may be readily gauged by the fact that another ex-student of the Presidency College, whose professional qualifications are similar to those of Babu Hem Chandra Das Gupta, is at present obtaining, as a geological expert, a salary five times as high as that which I now suggest.

Dated Calcutta, the 9th February 1904.

Memo, by—A. C. Edwards, Esq., M.A., Principal, Presidency College.

FORWARDED to Mr. G. W. Küchler, Senior Professor of Physics in the Presidency College, for favour of his specific opinion on the proposals for extra accommodation for the laboratories of the college.

2. A true copy of my letter No. 54, dated the 16th January 1904, addressed to the Director on this subject, is also forwarded herewith for his perusal.

3. The return of all these papers is requested, duly signed, when no longer required.

No. 1540, dated Calcutta, the 5th February 1904.

From—The Hon’ble Mr. A. Pedler, F.R.S., C.I.E., Director of Public Instruction, Bengal.

To—The Principal, Presidency College.

In returning herewith the papers submitted with your letter No. 54, dated the 16th January 1904, to the address of the office regarding extra accommodation necessary for the Physical, Chemical and Biological Laboratories of the Presidency College, I have the honour to state that, as Mr. G. W. Küchler, the Senior Professor of Physics, has now returned to the College, it is, in my opinion, desirable to have his specific opinion on the proposals, as, according to Mr. Küchler, his opinion on the matter does not appear to be an urgent one. I have also to draw your attention...
to the recommendations of the Indian Universities Commission about the desirability of establishing residential Colleges with residences for students, Principal, and some Professors, and to inform you in this connection that a scheme has recently been mooted to transfer the Presidency College from Calcutta, but it has not yet taken a definite shape. In view of the probability of such changes, proposals for large extensions and additions will have to be dealt with very cautiously.

No. 54, dated Calcutta, the 16th January 1904.

From—A. C. Edwards, Esq., M.A., Principal, Presidency College,
To—The Director of Public Instruction, Bengal.

As I believe you are aware, Mr. Stapleton, Senior Professor of Chemistry in this College, now on deputation, considers that extra accommodation for the Chemical Department of this College is absolutely necessary, and, as I understand, in accordance with your desire, he has had two rough plans prepared, which are herewith submitted along with his letter No. 4, dated the 2nd January 1904, in original, in which he formulates his proposals in connection with the proposed extensions.

In view of the fact that a good deal has already been done (when you yourself were a member of the College staff) towards bringing the Chemical Laboratories of this College more nearly up to the standard of modern requirements, while the Physical Laboratories have practically been left without any improvements at all, I believe you will agree with me in thinking that, in any scheme for providing increased accommodation for the Chemical Laboratories, the requirements of the Physical Department should also be fully taken into account.

The Physical Laboratories and lecture-rooms are at present scattered all over the College building, with the result that great delay and inconvenience are caused by instruments and appliances having to be sent about in different directions to the Professors when engaged in their work, not to mention the risk of damage to the more delicate apparatus thereby incurred. Further reasons showing the need of improved accommodation for the Physical Department will be found in a letter from Dr. J. C. Bose, C.I.E., Professor of Physics, herewith enclosed in original. It seems, therefore, most desirable that all the necessary Physical Laboratories and lecture-rooms should be provided in contiguity to one another in one part of the College building.

With this object in view, it is proposed that new laboratories and lecture-rooms should be built on the north-west and north sides of the College premises, the existing covered ways on the north-west side and one-storied building on the north side being dismantled, and a complete arrangement being formed by the erection of new three-storied buildings on those two sides. A portion of the ground floor on the north-west side would have to be reserved for the extension of the College Library, but with that exception the whole of the new buildings on the north-west side and nearly the whole of the two upper floors of those on the north side would be appropriated to the Physical Department, while on the ground floor of the north side it is proposed to provide a large Chemical and Physical Laboratory for the F. A. classes, capable of holding some 250 students.

Further details of the new accommodation will be found in the two letters from Dr. Bose and Mr. Stapleton, respectively.

It will be seen that Mr. Stapleton’s rough plans provide for a one-storied building only on the north side, but to apply the necessary accommodation for the Physical Department, a three-storied building on this side would in my opinion be absolutely necessary. Indeed, if a one-storied building only were required on the north side, the existing building there, or at least part of it, might, I think, be allowed to stand. Mr. Stapleton’s plan No. 2 may, I think, be left out of account, as unsuitable. Considering the large intramural compound, I do not think that a three-storied building on the north side would appreciably affect the rough plans are not yet sent in, but I do not think it necessary to withhold them before submitting these papers. The College rooms, now occupied by the Physical Department, would, in the event of the accommodation being provided, be appropriated to meet the requirements of other departments of the College. A lecture-room and Museum for the Biological classes are urgently needed, as at present it is necessary to use the Biological Laboratory as a lecture-room and also for holding practical classes in. The Lectorium for general College purposes is also desirable.

Before asking the Public Works Department to prepare plans for submission to Government, I have thought it expedient to send you the accompanying papers, in order that you may let me know your views on the subject and the course which you would wish me to take in the matter.

The favour of the return of the rough plans with your reply is solicited.

I may add that, in my opinion, it may be necessary to take up the strip of land marked Department.
Dated Calcutta, the 14th January 1904.

From—Dr. J. C. Bose, F.R.S., Professor of Physical Chemistry, Presidency College.

To—The Principal, Presidency College.

In urging the extension of the Physical Laboratory at the Presidency College, it is
perhaps well that I should make some definite reference to various considerations which
before you under two headings—(a) the requirements of the College for teaching purposes,
and (b) its requirement for the advancement of original research.

With regard to the requirements for teaching purposes, I may say that the
recently opened B. Sc. classes make increased provision for practical work a matter
of the creation of a special Science course, and it is necessary to get the laboratory and its
Presidency.

3. With the recommendations of the recent Universities Commission for creating new
high standards of education, there ought to be some attempt to represent the ideal
proposed in more or less concrete form.

4. A more immediate and pressing consideration is the need for the laboratory and
lecture-rooms to be in close contiguity. At present they are scattered over the College, and
there is much loss of time in the transport of apparatus from place to place. A large lecture-
hall will be a great advantage, in order not to divide classes into sections as has to be done
previously.

5. As regards the advanced research in Science, I need only refer to the fact universally
admitted, that the highest function, to which all Universities aspire, is the advance-
ment of the existing sum of human knowledge. The Presidency College has tried to
endanger this function, and it is already well known to you that I have been able to carry on
investigations on various scientific lines during the last ten years in this College. This has
been done under great difficulties arising from the want of special requirements as regards
the experimental rooms and appliances demanded by the highest kind of research.

6. Many important investigations are, therefore, unnecessarily delayed, because of the
want of special facilities; and the Government of India was pleased to send me, on deputa-
tion to Europe on special business, in consequence with the Professors held by Dr. Bose. I
am hoping to solve to some extent certain most difficult problems, which have hitherto baffled inquiry. But, in order to carry this out, greater space
and other facilities are absolutely essential.

7. I beg to submit, for favorable consideration of the Government, a rough sketch
of the proposed Physical Laboratory for teaching purposes and for advanced research.

8. Subsequently (April 12th 1897) some of the most distinguished members of the
English scientific world, including the President of the Royal Society, Lord Kelvin and
others formed a deputation to present a memorial to the Secretary of State to the same effect
(see Appendix A).

9. In a Dispatch, dated the 6th of May 1897, to the Governor-General in Council,
the Secretary of State was pleased to say: "I am of opinion that the question of establishing
an institution of the kind mentioned is deserving of consideration by Your Excellency in
Council."

10. What was already necessary in 1897 is much more urgently required now. I have
within the last few months commenced new lines of investigations, which is only partially
completed, but whose scope and importance will be gathered from the following extracts from
letters (dated the 3rd December 1897 addressed to me by Professor E. H. Vines, President
of the Linnean Society, who has been kind enough to undertake the communication of these
discoveries to the Scientific Societies in Europe:—

"It seems to me clear that you have revolutionised in some respects, and very much
extended in others, our knowledge of the response of plants to stimulus and of the electromotor
phenomena associated with the response. These results are important not to botanists
only, but to all physiology. It is a matter of wide biological interest to be able
demonstrate (as you have done) that the phenomena, which are well-known in the case of
animal tissues, such as muscle and nerve, are repeated so exactly by the undifferentiated
protoplasm of the plant-body. I cannot think but there must be a great deal more to
discovered along the lines that you have opened up, and I hope that you will have at your
disposal both time and opportunity to pursue what you have so well begun."

11. I may state I am hoping to solve completely certain most difficult physical-biological
problems, which have hitherto baffled inquiry. But, in order to carry this out, greater space
and other facilities are absolutely essential.

12. I beg to submit, for favorable consideration of the Government, a rough sketch
of the proposed Physical Laboratory for teaching purposes and for advanced research.

The detailed plan will be submitted by me after consultation with the Public Works Department.
13. The proposed building is to be three-storied, occupying the north and north-west end of the College, thus forming more or less a quadrangle with the rest of the College building. The north end will have a ground-floor area of about 115 into 45 square feet; the north-west end will have an approximate area of 30 into 45 feet.

14. I may state here that the area we are now occupying for the Physical Department (about 14,000 square feet) will be required for other classes in connection with the College. The new building will give us only a slight increase of space, i.e., only about 10 per cent., the new area available being about 15,500 square feet. Larger space would have been preferred had it been available. Much will be gained by bringing in scattered rooms near each other.

GROUND-FLOOR.

In the ground-floor of the proposed building a space is required for the extension of the library, and for a common room in Physics and Chemistry. This leaves space for—

(1) Mechanic’s workshop.
(2) Carpenter’s workshop.
(3) Rooms for dynamo-machine and storage cells.

FIRST-FLOOR.

West and North-West end.

Lecture-hall for advanced students, 38 into 30 feet. Large lecture-hall for elementary students, 70 into 30 feet.

North end.

Four rooms, 40 into 28 feet each—

(1) Optical room.
(2) Dark and photo-electric room.
(3) Galvanometer room.
(4) Room for other apparatus and general experiments.

These rooms are for the advanced researches referred to above will give the minimum space necessary for the particular work.

SECOND-FLOOR.

West and North-West end.

(1) Experiment room, 38 into 30 feet, for general practical work for M.A. students.
(2) Experiment room, 70 into 30 feet, for the B.A. and B.Sc. practical classes.

North end.

Four rooms, 40 into 28 feet each—

(1) and (2) For advanced students doing research work.
(3) Galvanometer room for M.A. students.
(4) Optical room for M.A. students.

No. 4354, dated Calcutta, the 4th August 1897.

Copy of endorsement No. 1830, dated the 14th July 1897, from the Government of Bengal, General Department, with enclosures, forwarded to the Principal of the Presidency College for favour of his opinion.

No. 39, dated India Office, London, the 6th May 1897.

From—The Right Hon’ble Lord George Hamilton, M.P., Her Majesty’s Secretary of State for India.
To—His Excellency the Right Hon’ble the Governor-General of India in Council.

I forward, for the consideration of Your Excellency in Council, a copy of a letter from Mr. C. E. Schwann, M.P., enclosing a memorial from certain distinguished scientists in this country, advocating the establishment of a Central Laboratory for advanced teaching and research in connection with the Presidency College at Calcutta.

2. I am of opinion that the question of establishing an institution of the kind mentioned is deserving of consideration by Your Excellency in Council, and I shall be glad to be favoured with your views upon the subject.
From J. F. Hewett, Esq., C.I.E., Secretary to the Govt. of India, Home Dept.,
To—The Secretary to the Government of Bengal, General Department.

I am directed to forward a copy of a Despatch and enclosures from the Secretary of State for India, transmitting a memorial from certain distinguished scientists in England, advocating the establishment of a Central Laboratory for advanced teaching and research in connection with the Presidency College at Calcutta, and to request that the Government of India may be furnished with an expression of the opinion of His Honour the Lieutenant-Governor on the proposal.

Dated House of Commons, London, the 12th April 1897.
From—The Right Hon'ble CHARLES E. SCHWANZ, M.P.,
To—Her Majesty's Secretary of State for India.

I have been requested by Sir Henry Rose, on behalf of his co-signatories to the enclosed memorial, to hand it over to you personally, and to recommend it to your earnest and favourable attention. It is hoped that you will have the goodness to forward it, with the remarks you may judge suitable, to the Government of India.

To

The Right Hon'ble LORD GEORGE HAMILTON, M.P., Her Majesty's Secretary of State for India.

My Lord,

We, the undersigned interested in the progress of Physics, desire respectfully to draw your Lordship's attention to the great importance which we attach to the establishment in the Indian Empire of a Central Laboratory for advanced teaching and research in connection with the Presidency College, Calcutta, the most important educational institution under the Government of India. We believe that it would be not only beneficial in respect to high education, but also that it would largely promote the material interests of the country, and we venture to urge on you the desirability of establishing, therefore, in India, a Physical Laboratory worthy of the great Empire.

We remain, etc.,
KELVIN.
LISTER.
W. DE W. ARNEY.
R. S. BAILL.
W. G. BOND.
E. T. CARTER.
H. P. CLIFTON.
G. CARRY FOSTER.
G. T. FUDGEALD.
W. GARRETT.
J. H. GLADSTONE.
J. HOPKINSON.
W. HOGG.
J. H. POYNING.
W. RAMSAY.
H. E. ROSE.
A. W. JUCKER.
A. SCHUTTER.
G. G. STOKES.
W. STROND.
S. P. THOMPSON.

Memo, by—E. M. KONSTAM, Esq., Under-Secretary to the Government of Bengal, General Department.

Copy forwarded to the Director of Public Instruction, Bengal, for favour of an early expression of opinion, with the request that, when reporting on the proposal, he will state the probable cost of such a laboratory as is now suggested.
No. 1, dated Calcutta, the 2nd January 1904.


To—The Principal, Presidency College.

I have the honour to lay before you two plans that have lately been drawn up at the request of the Director of Public Instruction, together with certain proposals for extending the Chemical Department of the Presidency College.

As you are aware, the recent Universities Commission devoted much attention in their report to the practical teaching of Science, and having recognized that the amount of practical work at present demanded from candidates for the B.A. and B.Sc. was very much less in India than at any English University, the Commissioners stated that they considered that it was necessary not only to have increased practical instruction in the B.A. and B.Sc. classes, but also to introduce laboratory work for F.A. candidates.

The demand for an increased amount of practical instruction for the B.A. candidates had already been partially met at Presidency College by the starting of the third-year class in Practical Chemistry, attendance at which has now been made compulsory, and the experience of the requirements of this class has undoubtedly been most useful in considering the possibility of extending the advantages of a practical course to F.A. candidates as well.

The first difficulty met with was that of laboratory accommodation. It is scarcely exaggeration to say that the third-year students, including the B.Sc. candidates, have filled up every available seat in the upper laboratory, while the lower laboratory (formerly the M.A. laboratory) has now to accommodate the fourth-year B.Sc. and failed B.Sc. students besides. No space is therefore at present available at Presidency College for the practical tuition of F.A. candidates, and if, as is probable, the reorganised Calcutta University calls for adequate practical teaching from Colleges as a sine qua non of their continued recognition, the chief Government College will have to confess with the smallest College on the roll of the University that it cannot immediately satisfy the demand. I feel therefore little hesitation in putting forward at this juncture a scheme for the extension of the Chemical Laboratory at Presidency College, which, in combination with a similar scheme for the other scientific departments, will enable Presidency College under the new régime to still fulfill the idea of serving as a model to all other Colleges in Bengal.

The only possible extension that can now be carried out at Presidency College is to complete the quadrangle round the space that is at present used as a gymnastic ground. Between the two horns of the existing buildings stands one of the Physical Department's laboratories, and I began by inquiring whether this building could be worked into any scheme of addition to the present structure.

This, however, I soon found had already been answered in the negative, as the building in question is a very old one and its foundations were several years ago shown to be incapable of carrying the extra weight of even a single storey. As it is important at the present time to utilise at least part of the site for the erection of a three-storied building, I have been reluctantly compelled to draw up plans on the supposition that the laboratory must be removed, compensation being given to the Physical Department elsewhere.

My scheme briefly is as follows:

1. To extend the existing three-storied Chemical Department 20 feet north, adding at the end balance and map rooms corresponding to those already existing on the extreme north-east side. The upper and lower laboratories will be thus enlarged, and greater accommodation given in the northern first-floor lecture-room.

2. To construct at right angles to this lengthened building a one-storied laboratory 80' x 45' for practical instruction of all our F.A. students in a joint course of Chemistry and Physics. This room would be unpretentiously fitted up with working benches and stools—primarily for employment as a laboratory; but it could also be made use of as a lecture-room by the device of a large lecturing rostrum projecting from the centre of the southern wall, at a higher elevation than the bench level.

3. To remodel the interior arrangements of the Lower Chemical laboratory, so that a preparation-room could be provided for this F.A. Department.

4. That if the scheme already alluded to for accommodating the Physical Department in a corresponding three-storied building to that occupied by the Chemical Department be adopted, the Chemical Department may be allowed to extend their lower M.A. (and B.Sc.) laboratory by taking in 15' of the physical room at present occupied by the electric installation, together with the small room now used as a carpenter's shop. This would enable extra provision to be made for the fourth year B.Sc. students, and would provide them with a small balance room.

The large joint Physical and Chemical Laboratory that I propose would be large enough to accommodate both sections of the first or second year at one time, thus saving four hours' duplicate lecturing per week to both Chemistry and Physics Professors. The practical work would be jointly supervised by two extra Demonstrators, one chemical and the other physical, and the Science course for beginners must necessarily include as much of the one science as of the other.
Various objections have been raised to erecting only a one-storied building at the end of the compound, such as for instance that if a certain part of the ground-floor of the proposed building will be smaller in area than the Chemical Department, and also that it is therefore need to build over which a somewhat smaller F.A. Laboratory runs north and south, and extra space is allotted to the proposed physical site. In this second scheme, it is proposed to convert the old M.A. into a new laboratory on the north side of the building. It will be seen, however, that the three-storied building, as the north and south breezes would be completely cut off, and the College rendered almost uninhabitable during the hot weather.

Dated Alipore, the 30th June 1904.

From—G. W. KUCHLER, B.A., Professor, Physical Science, Presidency College.

To—The Principal, Presidency College.

In reply to your communication of the 29th February last, asking me for my opinion on certain proposals with regard to the extension of the Physical Science section of the Presidency College, I have the honour to submit to you the following notes on the points suggested.

I understood from the letter of the Director of Public Instruction that, in view of the possible alterations, important structural additions to the existing buildings were not likely to be sanctioned at present, and that consequently the question need not be considered as urgent. For the same reason I do not think it necessary or desirable to put forward alternative plans to those already submitted, but merely to offer a few criticisms which suggest themselves in view of the experience of Physical Laboratories which I acquired in my recent visit to German and Austrian Universities. With the main idea of completing the quadrangle of the Presidency College and thus adding a new three-storied building to be devoted to the requirements of the Physical Science section, I am thoroughly in accord, provided that it is intended to retain the College in its present situation; but with regard to the proposed internal arrangements, I feel constrained to enter certain objections. There are, in the first place, certain omissions which unless remedied would render the suggested physical institute somewhat incomplete. No provision has, for instance, been made for a room to contain the large and ever-increasing collection of instruments. Such a room, well-lighted and furnished with handsome glass cases, so as to allow of ready inspection of any particular apparatus, is an essential feature of every modern institute. Secondly, no mention is made of rooms, for the private work of the individual Professors and assistants. Three rooms at least should be set apart for this purpose, one for each of two Professors and one, I think, for the chief assistant, as it is desirable that the assistants should be encouraged as much as possible to go in for original research. Thirdly, there is no mention of preparation-rooms which should adjoin the lecture-room and which cannot be dispensed with. The necessary space for these would therefore in Dr. Bose's scheme have to be deducted from that allotted to the lecture-rooms. Lastly, the provision for two rooms only for advanced students doing private work seems inadequate. The general arrangement of a physical institute attached to a University and occupying a three-storied building should, I think, in this country conform to the following lines: On the ground-floor the carpenter's and mechanic's workshops, the rooms for accumulators, dyes and machine generally, as proposed in Dr. Bose's scheme. In European laboratories these usually occupy the cellar floor, but as this is impossible in the plains of India, it is necessary to make a virtue of necessity and to take up the ground-floor instead. There are, however, other rooms as well which cannot with advantage be placed on any other floor, i.e., those rooms which are intended for private work were involving precise measurement is to be conducted, and from which accordingly all vibrations must be eliminated as far as this is possible. Two rooms at least should be set apart for this purpose. The ground-floor area is not sufficient, some of the machine-rooms, etc., should take the form of out-houses. If two such rooms were added to the present scheme, the deficiency in the accommodation for advanced students would be remedied, as the work of one or two of the advanced students would probably involve their occupying these so-called precision-rooms instead of ordinary ones allotted to them on the top floor in Dr. Bose's scheme. There would then be practically four rooms available for advanced students, which I think would be sufficient. On the first-floor would be the lecture-rooms and the hall for the selection of instruments; on the top-floor the students' laboratories. The remaining space of the two upper floors would be allotted to rooms for private work for the Professors, assistants and research students. It is clear that under this amended scheme it would not be possible with the limited space available to include the four rooms suggested by Dr. Bose, which are to be designed and fitted for work of a special kind. Nor are such rooms, with the exception of the optical room, necessary. In all the institutes I visited, every room which was intended for private work was supplied with gas, water and electric (high and low potential) connections, and was consequently fully adapted for research work of any kind. It is only in private laboratories or in institutes where ample space and ample funds are available that such provision can be made.
available that rooms are constructed and fitted up for special work. It is obvious that such an arrangement is uneconomical, and could only be justified after provision has been made for the more general requirements which I have indicated above. One special room, however, has to be provided, and that is the optical room, as this latter requires special dispositions, and it would be extremely inconvenient to have to alter the arrangement of the ordinary rooms so as to adapt them for optical work whenever this was necessary.

No. 14535, dated Calcutta, the 29th November 1904.

From—A. Pedler, Esq., F.R.S., C.I.B.,
       Director of Public Instruction, Bengal,
       To—The Principal, Presidency College.

With reference to letter No. 54, dated the 16th January 1904, from Mr. Edwards regarding the improvement of the Presidency College by providing certain extra accommodation necessary for the Physical, Chemical and Biological Laboratories of the College, I have the honour to state that the question was originally kept in abeyance, as it was thought possible that a portion, but not the whole, of the work now being done at the Presidency College, such as parts of the F. A. and B. A. work, might in the future be of smaller importance than they are at present. It seems now, however, desirable to maintain the Presidency College at the highest possible point of efficiency in all respects. I therefore request that you will be so good as to consult both individually and collectively the various Professors who would be interested in the developments of the College which have been proposed in recent years. A self-contained, comprehensive and detailed report of the improvements considered necessary, with any rough outline plans, may then be submitted for consideration. Detailed schemes for the development of the present Chemical Laboratory have been submitted previously. When you take up the question, you can consult all the previous correspondence on the subject, in order to formulate new proposals.

Dated Calcutta, the 30th November 1904.

Memo. by —M. Prothero, Esq., Ofg. Principal, Presidency College.

Forwarded to Mr. Küchler, Dr. J. C. Bose, Dr. Cullis, Mr. Jackson, Mr. Stapleton, Mr. Cunningham, Mr. Hayden and Mr. Mahalanabis, for favour of a very early report and return. The previous reports of Messrs. Küchler, Bose and Stapleton are herewith sent for ready reference.