

“The strength of the education of the peasantry in Germany is due to the strength of higher education in Germany. *It is the University which makes the School.* It is said that the elementary teacher conquered the Austrians at Sadowa. Not at all. It was German Science and German virtue that conquered at Sadowa. It was Protestantism, it was Philo-ophy, Luther, Kant, Fichte and Hegel that conquered at Sadowa. *The education of the masses is the result of the high culture of certain classes.* The people of those countries which, like the United States, have created a great school system for the people without a serious higher instruction shall for a long time yet expiate their fault by their intellectual mediocrity, their coarseness, their superficiality, and their lack of general intelligence.—Ernst Renan, Preface to *Questions Contemporaries*, quoted with approval in the American Education Report.

ABSTRACT OF OPINIONS  
ON THE PROVISIONAL SCHEME  
FOR  
A RESEARCH INSTITUTE IN INDIA.

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To The Hon'ble

Mr. JUSTICE CANDY, I. C. S.,

CHAIRMAN, PROVISIONAL COMMITTEE FOR POST-GRADUATE EDUCATION,

**BOMBAY.**

SIR,

I have the honour to submit, for the information of the Committee, the accompanying papers. In January, hundreds of copies of our Provisional Scheme were issued to educational experts and men of affairs in the country; and in response to invitation, seventy-six gentlemen have favoured the Committee with their opinion; others are promised at an early date.

It is deemed advisable to present these opinions in a form somewhat more condensed than that of the originals; but it is trusted that the abridgment has overlooked no statement of any importance, nor tampered with the organic integrity of arguments.

With great kindness, the Hon'ble Mr. Justice Ranade has read over the Abstract, and arranged the opinions under 11 heads. It would have added to the value of this accompaniment, if this tabulated summary had been printed also; and only the consideration of the forbidding size to which this compilation would have been swollen has prevented its publication. Mr. Ranade has also, in a separate Memorandum, summed up the drift of the opinions on various points; and the evidence he has summed up is exhibited in an Analytical Index to Opinions.

In this Memo., Mr. Ranade alludes to suggestions to be gleaned from the Opinions, whose constructive value the Committee is likely to appreciate highly. These suggestions have been also classified; and under each head, they have been brought together in one connected view. Particular attention is solicited to the paragraph giving the various suggested Alternatives to the Scheme.

I have the honour to remain,

Your most obedient servant,

B. J. PADSHAH,

*Honorary Secretary.*

Esplanade House, April 25th, 1899.

*List of the Gentlemen whose opinions are summarised below.*

## BOMBAY.

1. The Hon'ble Mr. E. Giles, Director of Public Instruction.
2. Principal J. T. Hathornthwaite, (Elphinstone College).
3. Principal Sharp and Professor Fraser, (Deccan College).
4. Principal Beale }  
and Colleagues } Science College, Poona.
5. Lt. Col. Hatch, F. R. C. S. (London), I. M. S., (Principal, Grant Medical College).
6. Principal Gole and Colleagues, (Ferguson College).
7. Father Kemp, (St. Xavier's College).
8. Revd. Principal Davis, (Gujerat College).
9. Principal Jackson, D. Sc. (London), (Sindh College).
10. Principal Candy, (Rajaram College).
11. Principal Unwalla, (Bhavnagar College).
12. Mr. Prior, (Inspector, C. D.)
13. Mr. Oliver, (Inspector, N. D.)
14. Mr. Karandikar, (Inspector, S. D.)
15. Mr. Covernton, (Inspector, Sindh).
16. Principal Tait, (Baroda College).
17. Mr. J. A. Dalal, (Vidyadhikari, or D. P. I., Baroda).
18. Mr. Nanavati, (Fellow, Bombay University).
19. Mr. Khandalawalla, (Special Judge).
20. Mr. Wagle, (Sub-Judge).
21. Mr. Nagpurkar, (Government Pleader, Sholapur).
22. Mr. Lalubhai Samadas, (Revenue Commissioner, Bhavnagar).
23. Mr. Patel, (Rajkumar College, Kathiawar).
24. Rao Bahadur Patwardhan, (D. P. I., Berar).
25. Mr. Madhavaram Harinarayen, (Devan of Cambay), and Committee.
26. Mr. Bezanjee Merwanjee (Devan of Gondal).

## PUNJAB.

27. Syndicate, Punjab University.
28. Dr. Brown, M. D., (Principal, Medical College, Lahore.)
29. Revd. Dr. Ewing, (Principal, Forman Christian College, Lahore.)
30. Mr. J. Sime, (D. P. I., Punjab.)
31. Mr. Bell, (Inspector of Schools, Lahore Circle.)
32. The Inspector of Schools, Rawalpindi.
33. The Head Master, High School, Delhi.
34. " " " " Husharpur.
35. " " " " Ludhiana.

## THE CENTRAL PROVINCES.

36. Mr. Munroe, (Inspector General of Education).
37. Mr. Sharp, (Inspector of Schools, E. C.)
38. Mr. Michel, ( " S. C.)
39. Mr. Thomson, ( " N. C.)
40. Principal Browning, (Jubbulpore College.)
41. Principal Tamhan, (Morris' College, Nagpur.)

## CENTRAL INDIA RAJPUTANA, MYSORE, COCHIN &amp; CASHMERE.

42. Col. Barre, (Indore Residency.)
43. Principal Cholmondely, (Holkar College.)
44. Principal Gunion, (Daly College.)
45. Mr. Johnstone, (Inspector General of Education, Gwalior.)

46. Revd. Principal Wilkie, (Canadian Mission College, Indore.)
47. Capt. Colvin, (Political Agent, Bundelkhand.)
48. The Resident in Cashmere.
49. Her Highness The Mahrani Regent of Mysore.
50. The Devan of Cochin.
51. The Resident of Jeypore.
52. The Senior Member of Council, Jeypore
53. The Director of Public Instruction, Jeypore.
54. Thakur Warma of Jobnere, a Nobleman of Jeypore.
55. Principal Theodore Beck (Aligarh College).

## BENGAL.

56. The Hon'ble Mr. Justice Gurudas Bonnerji.
- 57 to 63. (Names not given). [62 is Dr. P. C. Ray, Presidency College, Calcutta.]

## N. W. P. AND OUDH.

64. Mr. T. C. Lewis, (Director of Public Instruction).
65. Principal Theodore Beck.
66. The Principal, Agra College.
67. The Principal, Queen's College, Benares.
68. Col. Clibbom, I. S. C. (Principal, Roorkee College).
69. The Principal Reid, Christian College, Lucknow.
70. Principal Challis, (St. John's College, Agra).
71. The Inspector of Schools, 5th Circle.
72. Principal White, Canning College, Lucknow.
73. Professor A. W. Ward, Canning College, Lucknow.
74. Article in the Indian Daily Telegraph of Lucknow, by Professor Ward.

75. The Dewan of Jhabua

76. The Dewan of Morvi

## II.

*Abstract of 76 opinions on the Scheme.*

1. The Hon'ble Mr. Giles, Director of Public Instruction, Bombay, forwards the opinions of 16 Heads of Colleges and Inspectors of Divisions, and observes that "it is not to be expected that anything like general unanimity would be secured when a novel scheme of this kind was placed before a large number of persons," but that "the majority of the gentlemen consulted express a cordial appreciation of the value of the scheme, approve of the order in which the various departments are placed in the scheme, and consider that it is calculated, at least through the medium of Departments I and II, to produce largely beneficial results in the direction of the industrial, scientific and hygienic development of the country." "There is a considerable body of opinion, with reference to Department III," Mr. Giles adds, "that it appears to trench upon the legitimate functions of existing Universities." The scheme is calculated to provide for India an advanced education which is at present non-existent; but its development must be, to some extent, experimental. The scheme would and should have received a most severe scrutiny and perhaps "scanty recognition," if its promoter had not backed his suggestion with a provision of 30 lacs, and had sought to tap the public funds for its support. Mr. Giles proceeds to make 3 remarks: (a) that the large estimates might alarm the public opinion of a poor and cautious country, and that therefore, it is necessary to lay emphatic stress upon the fact that the development is to be gradual, and proportionate to the increase of the resources; (b) that a beginning might preferably be made with Department I, by bringing out one or two experts in Chemistry and Technology to enquire into the resources of the country, and to formulate an opinion as to the eventual location of the Institute, and the immediate expenditure necessary on buildings and their accessories; (c) and that it is premature at this stage to discuss the designation and location of the Institution.
2. Principal J. T. Hathornthwaite (Elphinstone College) considers that the time has arrived to appeal for financial support to Native Princes, Local Governments, and the general public; suggests the acceptance of the name "University," as the most intelligible and attractive designation, and that the Degree of D. Sc. would suffice for all purposes and in all departments. Mr. Hathornthwaite says that the Scientific and Technical department seems to offer the widest sphere of usefulness, and so might, with advantage, be taken in hand first, but thinks that the scheme of studies might advantageously be widened so as to include Biology, to be taken in hand at a later stage. As for students, Mr. Hathornthwaite anticipates little difficulty in attracting a sufficient number of qualified men—"the most brilliant students from the present colleges who had already to some extent specialised in their ordinary University curriculum." "If the new University were once founded, very probably Institutions or private donors might come forward and endow scholarships or bursaries for deserving but poor students." On the completion of their course of higher study, the students would naturally find suitable employment in Colleges and Laboratories, as teachers of the subjects in which they had specialised. Mr. Hathornthwaite would give direct representation on the Senate of the proposed University to the Universities of Oxford and Cambridge; but for the rest, he would reduce its numbers by giving smaller representation to benefactors and the existing Universities. Article VIII. of the Indenture would invest the scheme with an undesirable sectarian character.
3. Principal Sharp (Deccan College) distinguishes between the functions of a Teaching University and a Research Institute, which seem to him disparate and requiring different treatment. The first would aim at a diploma or degree rewarding continuance of study along paths already beaten; while the second would prepare students with special aptitudes to make enquiries along new lines. The first course would have to be short, since people cannot afford to begin their active careers at too advanced an age, while the results of research being precarious, it would be necessary to make a larger provision for the support of the students in the second case; and also a larger guarantee of support *after* the period of training. Mr. Sharp thinks that the Medical Branch is one in which a special course of training, not too prolonged, would have a market-value from the first; and believes that many Medical graduates would be willing to go through a short post-graduate course in Hygiene and Bacteriology. Similar considerations would apply to Electrical Engineering, and some forms of Technological Chemistry. But Mr. Sharp has misgivings about the 3rd division, and says that the men who take to teaching as a profession are for the most part men who cannot afford to wait after leaving College; and that men would hardly go to a distant part of India for any such purpose unless liberally provided for in the way of scholarships. Professor Fraser suggests that a Professor of Educational methods might do very useful work by visiting educational centres to deliver courses of lectures, (teachers who had not completed their University course being not excluded from such lectures) on the Analogy of University Extension lectures in England. Methods of Education will be a valuable discipline only if students are put in charge of actual classes, and the difficulty of arranging this is well-known. There is no need to separate Ethics

and Psychology from the methods of Teaching; as those subjects if treated in the abstract are not likely to attract many students. Indian History and Archæology and the other subjects deserve encouragement, but their small market-value makes Mr. Sharp doubt if many serious students could be got to take them up. Professor Fraser remarks that comparative Philology is a highly specialised study of no general value or interest and requiring a knowledge of old European tongues which is likely to repel Indian students. If, on the other hand, Philology means "teaching some of the classical languages of India" it is a question how far there is a field for such a chair as distinct from the Oriental studies already carried on in the existing Universities. The Bombay University already has a Wilson Philological lectureship, which has produced no striking results in the way of Philology. For location Mr. Sharp observes: "Seeing that it is likely to be a considerable time before the Institute is fully equipped with libraries and museums of its own, I should say that the technical, literary and educational facilities afforded by a great centre of activity such as Calcutta or Bombay, outweigh the geographical advantages of a more central position. In any case the management of its affairs is likely to fall to those members of the Senate who live at hand. Whether any provision for proxies is contemplated does not appear."

4. Principal Beale (College of Science, Poona) has consulted Dr. Thomson and Professors Duxbury, Page, Woodrow and Dastur on the College staff. They consider that a preliminary post-graduate training extending over 2 years will have to precede any original investigation by students; that the students so trained may have specialist careers, or engage on original researches, in the first instance assisting the Professors, to become familiar with the methods adopted. These will be few in number, and will have to be rewarded with some distinction after producing a thesis or creditable investigation. As the University develops, many new sections will have to be added to each division of studies; but as they stand now, the divisions should be taken up in the order in which they are stated in the scheme of studies. Chemistry and Electricity should have precedence over Medical Research which is already beginning to be fostered in several institutions in India, and particularly since "Electricity and Chemistry are very intimately connected with Medical science, and their study in general is a direct aid to progress in that branch." The Professors consider that the provision for Chemistry is excessive, that Technological Chemistry should be the main end in view to which the other departments of Chemistry should lead up; and that it would be possible to commence with one Professor and two assistants. In the Philosophical Division, Methods of Education is the most important section, and Indian History and Archæology should come after. "If there are to be no guaranteed appointments for men who take up post-graduate work and if no scholarships be offered, there will be practically no students. But if a few lucrative appointments be guaranteed annually by Government and the Native States, there will be a good chance of attracting a fair number of men, even without the enticement of very liberal scholarships." There might be some openings for such men in the Educational Service, but "private enterprise in agriculture and the various branches of trade, and specialist practice in the case of engineering and medical candidates are forms of employment open to such men in any country; and we believe that there is ample scope for the energies of a large number of men in such work in India. But at the same time we must state that we are not able to estimate the extent to which the want of capital and labour in India may hamper expansion and progress in these directions." For location, the maintenance of the health and efficiency of Professors is held to be a paramount consideration. Nasik and Poona satisfy this condition, the former has the better climate and is most easily accessible from Calcutta and N. India; but Poona has the better water-supply. Poona was not considered suitable for bacteriological work. *The whole Institute should be located at one station.*
5. Lt. Col. Hatch, I. M. S., (Grant Medical College), is not able to decide which would be the proper centre for such an Institution, but thinks that Calcutta would probably be best fitted, "as land would be easily available, and it is also the capital of India and seat of Government."
6. Principal Gole (Fergusson College) and his colleagues approve of the Constitution proposed in the Draft-Bill, point to the absence of provision for Botany and Forestry and give precedence to Applied Chemistry. They consider the question of careers one of vital importance, and apprehend some difficulty in obtaining openings for such highly-trained men. "Kolhapur and the Southern Mahratta States on this side might well be expected to maintain a few Scholarships or Fellowships at the Institute," but the general public are not likely to contribute much. Though Calcutta has some advantages, Bombay ought to be chosen.
7. Father Kemp, S. J. (St. Xavier's College) objects to the wide powers (para 3, part I. Draft-Bill) sought on behalf of the new Teaching University "to institute chairs and lecturerships in Literature, Science and Arts in all their branches." Such powers, he thinks, would make Research (its primary aim) a mere appendage of the University, would "happily do away with such an unusual notion as a 'post-graduate University,'" make the institution independent of all external influences, and "allow, therefore the new University whenever it may think fit, and without any one having the right of interference, to supersede the existing Uni-

versities, and to ruin the Colleges affiliated to them, at any rate in the province in which it shall be located." Regarding the scheme of studies, Father Kemp considers that *two lacs a year* would scarcely suffice for the staff alone to conduct an advanced course in Chemical Technology and Agricultural Research; that "the Agricultural Department of the new University can be worked efficiently only if it is in some way amalgamated with the practical side of the Agricultural Department of Government; moreover as there exist already Agricultural Training Colleges, the call for high-class education in this science seems not to be pressing." Further, Agricultural Chemistry is out of place in a University which offers no high-class instruction in other Agricultural subjects. There is no pressing need to take up Medical Research; some opportunities for it already exist, others are in process of creation, its benefits cannot reach the bulk of the population for generations to come. Father Kemp deprecates as impolitic the entrusting "to independent, and eventually indigenous agency" the education of the men to whom the education of the people is committed and for which Government is primarily responsible. For the other branches of the Philosophical Division, Father Kemp seems to think them superfluous, as students might prosecute study by themselves after being equipped in existing Colleges. Having thus disposed of the leading subjects, Father Kemp concludes that "Chemical Technology has the first claim on the funds of the new University because at present there exists no opportunity of studying this subject in India." But employments do not exist, at present, for qualified men; "and to send students to the new University as long as they will be unable to find *suitable and lucrative* work on leaving it, only on account of scholarships with which they may be provided, will, in my opinion, amount to the creation of a new set of discontented young men."

8. Revd. Principal Davies, of Gujarat College, suspects that the scheme wavers between the ideas of a post-graduate professional and technical teaching University and an institution in which Research shall be the main object. Mr. Davies allows that "on the one hand, students may imbibe a love of research at such a University under a stimulating Professor and that they may follow it up in after-life; and that many instances are to be found of professional men contributing to the advancement of science and the arts. What is contended is, that these are secondary effects, that they are not included in the general idea of the scheme or its details, nor are they likely to be produced to any appreciable extent by its successful operation." By bringing out men of repute as Professors and releasing them from undue teaching work and by allotting Fellowships worth Rs. 200 a month for the more promising students, the Institute might combine the two objects; but the salaries put down do not promise the kind of Professors required. The scheme is then to be considered apart from Research; as Lord Curzon remarked, "there is a distinct gap at the upper end" of the Indian educational system, in Bombay and Madras there is nothing corresponding to the Honours Examinations of Oxford and Cambridge and London. From this point of view the scheme of studies is defective; one Professor of Technology is inadequate; pure Mathematics, Biology and Astronomy find no place; Biology in particular ought to be added to the list. The importance of the Philosophical department, says Mr. Davies, "cannot be over-estimated, and Lord Curzon's seeming disparagement of it must have been due to the very short time which he was able to give to the study of the question. No finer field for the energies of the new University could be found than to help in promoting a scientific secondary education. The function of thus improving and co-ordinating secondary education might very well be undertaken by the Imperial University. There are one or two omissions in the scheme of studies. There should be another Professor of *Logic and Metaphysics*, to give complete advanced teaching in Philosophy. Would it not be advisable to add a chair of English Literature? Technical education should be pushed on first and then the training of teachers. "If the Licentiate of Teaching or some such degree were made compulsory on graduate teachers as in the Madras Presidency, this would mean a steady supply of students in those parts of Division III. Government might do a great deal to encourage the attendance of students in Divisions I and II, by reserving certain appointments to those who passed out successfully in certain branches in those Divisions. The mills and manufactories in India would absorb some, and in time well-trained native graduates might take the place of engineers, mill-managers and others now imported from England. The supply would do something to create the demand. Still.....it would not do to be too sanguine about any considerable number of students consenting to spend two years more in further study unless very strong inducements are held out to them to do so." For the home of the University, Mr. Davies recommends Bombay (a) because it is the first commercial city in India, (b) because its comparative closeness to Europe will be a convenience in many ways to the coming and going of Professors and for the rapid equipment of Laboratories, (c) because as an educational centre it will be important for Pedagogics; and (d) similarly for the Medical Division; and (e) because there is no central station in India at an approximately equal distance from the three capitals which offers the above advantages.
9. Dr. Jackson, Principal of Sindh College, says that Science is in a backward state in India because (a) Natives have shown little aptitude or taste for it, (b) because of the limited prospects for trained scientific men, and (c) because instruction in it is rudimentary, and study perfunctory. "Mr. Tata's liberality enables an interesting experiment to be made on a



large scale which is sure to do much good ultimately, but will perhaps yield results at the start which may appear out of proportion to the expenditure, and is sure to involve some waste of energy and money while the institution is feeling its way." The institution would become, so far as scientific and semi-scientific subjects are concerned *the* University of India; and the present Universities and Colleges would be made junior institutions, something like superior High Schools giving titles.....Great care should be taken that injury should not be done to existing institutions, which might do much more good than the new one if equal energy were applied to their improvement.....Little enough money is devoted to the teaching of science at present, and it might afterwards be considered that enough had been done by the establishment of a bounty-fed "show" institution at the head of affairs, while all the institutions which should be its feeders, and which really bear the burden and heat of the day, remained in a neglected condition. The Committee should clearly see their way to obtaining ample endowments from the start; otherwise the institution may be like a hungry octopus spreading its feelers all over India, and itself starved in times of scarcity. Dr. Jackson thinks that if it is to be an Institute of Research, it should not too closely imitate ordinary educational institutions. "It is something like a confession of weakness to represent the success of the institution as depending so much on adventitious aid from Scholarships, Fellowships and Degrees." The location of it too is a difficult matter. If confined to one place only, it is sure to be local. Again, while Hygiene and Theory of Education would thrive best in a town, the country would be best for Agricultural Chemistry. Climate and touch with Europe have to be regarded also; and "perhaps some town in an elevated district not far from Bombay would approach nearest to the ideal." Dr. Jackson regards the Senate as a too large and ornamental body. He would not criticise the scheme of studies which is confessedly provisional, thinks it is wide, and says that "there cannot be a doubt that a staff so strong and well-paid would be able to do a great deal towards revolutionising the study of Science in India." "I imagine," he proceeds, "that the Professor of Technology is intended to discover his duties for himself. Perhaps he is expected to combine professional duties with those of a sort of general organising Secretary, for whom, as well as for the various subordinate establishments, I discover no provision. I believe that a large number of students would be induced to join the institute at once, though many of them would be useless. As to the ultimate success of such an institute, properly provided for, and the certainty of abundance of work for its past students, if they choose to take it, I have no doubt. It might fairly be expected that one or two good students could be sent from this Province (Sindh), every year. Scholarships might be locally provided, but these would depend upon the exertion of personal interest rather than on the existence of any general desire to forward the study of Science."

10. Principal Candy (Rajaram College, Kolhapur) for himself and his colleagues, approves of the Constitution, the scheme of studies, and the order in which the Committee propose to take them up. They expect in time a fair supply of students and employment for them, in connection with industries, as Health Officers and as teachers in secondary schools. The Kolhapur Durbar would, judging from its action in the past, most probably support one or more students with Scholarships in the new University. They recommend Bombay as the suitable location.
11. Principal J. N. Unwala (Samaldas College, Bhawnagar.) regretfully considers that Mr. Tata's countrymen are not "ready to benefit themselves by a post-graduate system of instruction." The M. A. Degree is at present only moderately appreciated, the M. D., the M.C.E., and the LL.B. (Honours) have scarcely any votaries. Mr. Unwala recommends the appropriation of the gift for developing industrial education "from the lowest rungs of the ladder;" as the need for highly trained men, such as are aimed at by the scheme under review, will not arise till half a century *after* the introduction of a fully organised scheme of Technical Education. Under the circumstances, and as education in the Native States is backward, Mr. Unwala thinks that donations from them should not go beyond the endowment of scholarships for their own subjects.
12. Mr. Prior (Educational Inspector, C. D.) thinks that if the Institute has to be Imperial, no better scheme can be devised, but apprehends that it would be difficult to get a Senate from different parts of India to meet even once a year, and recommends that a more "local" governing body should be entrusted with its administration. Mr. Prior gives no opinion on Divisions I and II of the Scheme of Studies; but in III thinks the distribution of Professorships too liberal, and suggests the assignment of Methods of Education, Ethics and Psychology to one chair. If the Professors are to be young, they might well start on Rs. 700 a month, *plus* pensions. There would be no lack of suitable scholars at the outset, but their numbers would rapidly dwindle away if they did not find employment; "our experience of higher agricultural training is not of happy augury in this direction." "Bombay, both British and Native, would subscribe handsomely," but the poorer cities would not. "As far as I know, both they and the great chiefs, except perhaps the Maharajah of Kolhapur have quite enough to do to provide their own subjects with a much less transcendental form of education.....; they might provide a few scholarships and bursaries." Mr.

Prior suggests location at Naini Tal, Coonoor, or Panchgani, (Poona was found unsuitable for bacteriological work) if scientific work is the chief object, while looking to the attendance of the Governing Body and pupils, a site in Central India would be preferable.

13. Mr. Oliver, (Educational Inspector, N. D.) thinks that the scheme of studies is good as far as it goes, but suggests the addition of a chair on the Theory and Practice of Commercial Economics, and a Chair on the Highest Scientific Branches of Agriculture. Mr. Oliver thinks that the Philosophical and Educational subjects are a very important branch of the new scheme. Seeing how few students pass the M. A. Examination, and fewer in the first class, the number of students to be expected must be small, and in view of this fact it seems to Mr. Oliver desirable to turn the money to better account by founding the proposed chairs in connection with the existing Colleges than in a new University; but if a new University is insisted on, its home should be London.
14. Mr. Karandikar (Educational Inspector, S. D.) thinks that there is little scope for remarks or suggestions on a scheme which, while it is admittedly tentative, seems to have been drawn up after careful consideration. He approves of the syllabus of studies, and the order in which they are proposed to be developed. Mr. Karandikar says that though the classes may not be *full* at the commencement, there would be no difficulty in getting a "decent" number from the whole of India, even at the outset. Mr. Karandikar bases his opinion on the facts that the number of graduates is increasing, while their absorption by places under Government does not increase, so that these will turn to the openings pointed out by the Imperial University. "For such the Institute is a desideratum, and its starting is not a day too soon." Even the Southern Division, backward as it is in higher education, will send its graduate or two. The question of the employment of the graduates will be solved as that of the graduates of Medical Colleges has been solved in spite of the old Vaidyas who took no fees, and inspired great confidence. But in view of recent calamities, and the close-fistedness of the Desais and Baniyas, Mr. Karandikar cannot hold out any sanguine hopes of raising a contribution in his neighbourhood. "Something can be done by and bye," and until funds are forthcoming, the question of location is premature.
15. Mr. Covernton (Educational Inspector, Sind) who has already explained his general views in the *Educational Record*, objects to the description "post-graduate" as etymologically vicious, and because "no University (except perhaps Bombay and its compeers) has ever started on its career with the idea of being solely an undergraduate University." "It is by no means clear from their pamphlet whether the projectors at heart desire a genuine University or a Scientific and Technical Institute. Personally, I incline to the belief that a teaching University really deserving of the name, whether modelled on the English or German system, would be of more general advantage to the Natives of India than an institute for the manufacture of second-rate specialists." Mr. Covernton considers that the Senate is an unnecessary incumbrance, and an insult to the good sense of the Professorial Council, and quotes the example of the Australian Universities where bodies of non-experts interfere most detrimentally with the academic work. "In order to safeguard the property of the University carefully selected Trustees and a few trustworthy permanent officials whose accounts would be regularly submitted to Government inspection should be enough." But if the Senate is to be retained, its functions should be rigidly non-academical. Mr. Covernton approves of the London Committee for the nomination of Professors and would consult it also on their dismissal; thinks the Founder nominates too many representatives on the Senate, while the Professors do not nominate enough; regrets the exclusion of Assist. Professors from the Professorial Council, and the right of the Senate to be represented on it; thinks the functions of the Council of Graduates both vague and trivial, and recommends, instead, the formation of a Board of Studies on which the staff and qualified graduates should have seats. With regard to the scheme of studies, Mr. Covernton thinks that the pay will not attract a first-rate Englishman or American; objects to the specially high pay of the Technologists and thinks that the pay of the Asst. Professors is inadequate. Mr. Covernton does not feel competent to criticise the 1st and 2nd Divisions in the scheme of studies, but the details of the 3rd "offer only a rude and undigested mass;" criticises the combination in one chair of Ethics and Psychology, and the omission from the list of Meta-physics, Logic, Languages and Literature. One of the earliest additions should be a Chair of Indian Languages, while the desirability of adding others should be considered. "If a University in the true sense is desired, it would seem advisable to begin with the 3rd division; if merely a technical and scientific institute, then the claims of the 2 first divisions take precedence." In the existing Universities, "the work required for the B. A. is of an absurdly low standard, and even in the M. A. the quality of the performance leaves much to be desired. On the other hand, the existence of a genuine University would react upon the local bodies and tend to improve them so that in time an adequate number of well-grounded students might be forthcoming. This improvement would probably manifest itself soonest in the non-scientific subjects which, as a whole, are more suited to the peculiar bent of the Indian intellect. I do not consider that there would be any great difficulty in finding work

for students who had passed through such a University. They would naturally displace the less qualified men who at present have to be employed, and to a certain extent would render the present importation of European specialists unnecessary." Mr. Covernton thinks it possible that "wealthy individuals (in Sindh) might be induced to support deserving students if any such were hereafter to be produced in Sindh." And for location, Mr. Covernton would avoid a large town, "yet the University should be within fairly easy reach of some important centre, and also not far from a sea-port and on a good line of railway." "A healthy climate where work can proceed, if need be, continuously throughout the year is essential." These qualifications seem to be united in Nassick. The idea of parcelling the University out into affiliated institutions does not commend itself as sound.

16. H. E. the Dewan of Baroda forwards a memo. from Principal Tait (Baroda College) in which that gentleman remarks that the scheme is an ambitious one, one for which India is not ripe, and that the money for it "might be infinitely better utilised in other ways of a cognate nature." But, discussing the Scheme of Studies, Principal Tait would add, in Division I, Agriculture as distinguished from Agricultural Chemistry, Mechanical Engineering, and Mining Engineering, all to be carried to a higher development than is possible at present in such institutions as the Poona College of Science. "The vast utility of these subjects to India at the present time is so very evident that I need not dwell upon this matter," says Mr. Tait. Mr. Tait would first begin with Bacteriology and Hygiene, add the third Medical Branch when the opportunity arises, follow with the Scientific Division, and let the Philosophical subjects wait for some years to come. Mr. Tait thinks that many Licentiatees of Medicine would come forward as students, and that such men would be in request not only by the Supreme Government, but also by Native States and Municipalities. For the graduates of the Philosophical department, there would be a moderately good demand in the higher branches of the different Educational Departments throughout India; and a fair supply of students might be obtained for a short course of two or three years, provided no fees are charged, handsome scholarships are freely given, and prospects in life indicated beforehand. And for graduates in Division I, there would not be any great outside demand in India, and for such outside work their advanced age would hardly fit them. Speaking of financial support, Mr. Tait must leave it to the decision of the Baroda Government, but imagines that if the scheme in its entirety be approved by His Highness the Maharajah, he might endow a chair, (or taking para. 8 of the Draft-Bill as some guide), the Baroda Government might give a lump sum of five lacs, and in addition might establish five scholarships, 2 for Division I, 2 for Division II, and, one to the 3rd—each of the value of Rs. 50 per mensem. The proper location, Mr. Tait thinks, will be a matter of some difficulty, owing to the mutual jealousies of the Presidency towns; but Mr. Tait suggests Calcutta or Bombay—preferably Bombay. But Mr. Tait would suggest an alternative scheme—local Schools of Art and Technology on an extended scale, Institutes of Bacteriology and Hygiene, and Training Colleges for Secondary Teachers; and Fellowships in Europe and America to be assigned to select men who are to do specified work in Research. Such a scheme would "bring this Higher Scientific Education home to a greater number of the people, the students would gain an education much more practical and useful and better suited to the country, and lastly the cost would not be of such an overwhelming nature." Mr. Tait does not think that there is any felt need for an Imperial University, granting superior degrees, and therefore overriding and lowering the dignity of the existing ones. If a diploma be required, the existing Universities might be induced to grant their D. Sc. to qualified students from the institutions proposed above by Mr. Tait.

17. Professor Jamshedji A. Dalal, (D. P. I, Baroda State) is of opinion that "the scheme is well conceived, and bound to succeed in course of time, and to be of great benefit to the country. If it does nothing more than turn out 2 or 3 men yearly..... (and of that there cannot be a reasonable doubt), the results will be worth the money spent." Mr. Dalal commends the feature that it is to be an Imperial post-graduate teaching University, and that select students are to be sent out to Europe for the finish. He, however, notes some defects; there is no clear distinction made between a Research Institute and a Teaching University, the preparation of students for the two being different; there ought to be, in a post-graduate institution, finishing courses in Law and Civil Engineering, conspicuous by absence in the scheme of studies; and if the Philosophical Department be omitted, "the very large numbers, and generally the portion reputed to be the most intelligent in the Colleges, those who take up Languages, History and Philosophy would be shut out from partaking of any benefit of this great Institution. The only fortunate Faculty is the one for Medicine." Coming to the details of the scheme, Mr. Dalal would not have separate qualifications for admission to the various branches; the mere fact of graduation should suffice, the choice being left to the intelligence and taste of the graduate. For the five chairs in Division III, Mr. Dalal would substitute the following five:— (a) Ancient Language, History and Archaeology of India, (b) Ancient and Modern European Languages and Literature, (c) Logic, and Mental and Moral Philosophy, (d) History and Politics, (e) Mathematics, Statistics and Economics. Mr. Dalal deprecates the introduction of Pedagogics because (a) it will be impracticable to attach practising schools, (b)

because the normal schools can do better work for hundreds of students, and (c) because there will be no opening for expensively trained teachers. Mr. Dalal would have all the three divisions start simultaneously, or *one* of the first two *and* the third. Mr. Dalal apprehends that the number of students will be inconveniently *large*, from whom it will be some difficulty to select; and for these, even outside Government service, there will be ample market, Mr. Dalal thinks; but he would not confine the measure of advantages to flow from the institution to purely utilitarian results. Location need not be discussed at present, but Bombay as the entrance-gate and leading city of India, and the home of Mr. Tata, has some claims, while Naosari or Bangalore would present no difficulty with such facilities of communication as now exist.

The Honourable Mr. Crowe, I. C. S., C.S.I., forwards the opinions of the four following gentlemen:—

18. Mr. Nanavati (Fellow of the Bombay University), writing from Poona, says that as the Viceroy is to be Chancellor, and as ultimate control is vested in Government, the efficient discharge of these functions would become difficult if the seat of the University were anywhere away from the seat of Government (Calcutta), and there is some fitness in the suggestion, as Bengal is educationally more advanced, and is the first to achieve European fame in Science. But other reasons are adduced why Bombay should be selected. Mr. Nanavati does not think that the fictitious aid of Degrees is essential to the success of the scheme; and that, as the scheme is to be carried out gradually, there need be no apprehension that Professors would have to lecture to empty benches, except perhaps at the birth of the Institute. Its graduates are to have a training professional and technical rather than liberal; and so can, in the last resort, always rely upon their own resources; and in any case, may supplant the holders of the present inferior qualifications in Medicine, Science and other subjects. Mr. Nanavati thinks the subjects covered by the Philosophical Division are best left to be taught at the existing Colleges; he would have a post-graduate Institute of General Science, beginning with the 3 Medical subjects and following with the Scientific and Technical. The admission qualification for students should be high, care should be taken to have the highest class of Professors, for whom the scale of salaries laid-down in the scheme, Mr. Nanavati considers to be low. Mr. Nanavati would not amalgamate the Dholpur funds with the Institute's, as competition is to be encouraged. The number of chairs in Physics appears insufficient, nor ought there to be wanting a provision to reward Professors who do distinguished research capable of being converted into cash, which, of course, would accrue to the Institution. Mr. Nanavati concludes with a few suggestions for amending the Draft-Bill.
19. Khan Bahadur N. D. Khandalavala says that the scheme is a well-considered one, needing at present no alterations or additions with regard to the Constitution or the studies. Mr. Khandalavala foresees no difficulty in attracting a sufficient number of qualified students. "About 12 or 15 at a time in each Department will make a manageable class where personal instruction could carefully be imparted, and such a number could be easily drawn out of the whole of India. This small number of students, when duly trained, will not find it difficult to get suitable work when they leave the University.....If the Provisional Committee went to work in a proper manner, they will certainly be able to secure a certain amount of support from the Native Princes and Ruling Chiefs, and rich persons here and there will be found willing to provide scholarships to graduates from their part of the country. The location of the Institute should be in Poona which has a fine and healthy climate all the year round, where living would be cheap for the students, and where there is already the College of Science to which students from Bengal and Madras are attracted. "Indian students are generally very poor, and the place where the Institute is located should be one where cheap living could be had, and where the climate would be agreeable all the year round." Mr. Khandalavala concludes: "Graduates trained properly in European methods of education would be greatly in want in Government as well as private schools, and the third Department will perhaps attract a larger number of graduate students than the other two Departments. Various difficulties will of course have to be encountered in the commencement and the difficulty about securing adequate monetary support will be the greatest. All these difficulties will, however, in course of time be surmounted. A number of endowments have been made to the Bombay University, but with the exception of a few, the majority of them do not serve much useful purpose. It appears, therefore, that for the far more useful object of the Research Institute, endowments in course of time will be forthcoming. The proposed Research Institute can at present make but a humble beginning, but it has a great future before it. Medical graduates who go through the post-graduate Medical course will have greater facilities for getting suitable appointments than at present. Just now there appears very little opening for those who would qualify in the Scientific and Technical Department, but in a few years more post-graduates from this Department will be greatly in requisition.
20. Rao Sahab Venkatrao Vaikunth Wagle, B.A., LL.B. (sub-Judge of Talegaon) notices the omission of Higher Astronomy from the 1st Division and of comparative *Materia Medica*

and Theories of Diseases and their Cures from the second. Indian vegetable drugs have a great field in medicine, and it would be advantageous to study the various schools of cure—Homeopathic, hydropathic, electropathic, Unani and Ayurvedic—as well as the school now in fashion. Mr. Wagle would cultivate the three Departments side by side, and if that be not possible, then, in the order in which they are mentioned in the scheme. Mr. Wagle recommends Government to guarantee to the highest graduates of the new institution appointments in the Educational, Medical and Scientific Services; without Government encouragement, “private munificence will be barren of results,” but if Government give the encouragement other public bodies must follow their example. Little financial support is to be hoped for from the public of Mr. Wagle’s neighbourhood. Mr. Wagle makes two suggestions—one for the admission of students who have no degrees, and will expect none from the new University; the other for residential quarters. While the plague rages, Mr. Wagle holds the decision of location premature.

21. Mr. Nagpurkar, writing from Sholapur, generally approves of the scheme, but thinks it has great difficulties in its way—the vast distances in India from any centre that could be chosen, the great expense, initial and recurring, and the question of Government help. The Mossalites may, at best, be expected to suggest what industries in their districts require special study at the hands of students of the Institute when started, and may contribute their poor mite when occasion comes.
22. The Dewan of Bhawnagar has kindly forwarded the opinion of Mr. Lalubhai Samaldas, the Revenue Commissioner of the State, who suggests Nagpur, as being central, for the proper home of the Institute. Mr. Lalubhai is of opinion that “excepting Native States very few private individuals from his part of the country will give monetary support to the proposed Institute. It is possible, however, that when the Institution is opened and the way in which it is to work is more publicly known, some people in Kathiawar may form themselves into Committees to collect funds for Scholarships, &c., for students studying in the Institute. Mr. Lalubhai ascertains from the examination of the number of M. A.’s and M. D.’s in the Bombay University, that there will not be many students to join the Medical and Philosophical Departments whose maintenance would be consequently unduly expensive; he therefore suggests the omission of them, and the retention of the science division, and the training of Teachers. Work can be found for such Trained Teachers if they receive preference over the untrained graduates in educational appointments; the same demand cannot be said to exist for men scientifically trained. Mr. Lalubhai suggests the election of some industrialists on the Provisional Committee who would help to make the science courses more directly practical than they are in the scheme.
23. Mr. R. D. Patel (Rajkumar College) at the request of Rao Bahadur G.N. Laud, State Karbari of Rajkot State, sends an opinion in which he calls attention to the omission from the scheme of studies of Geology, Mineralogy and Metallurgy, which he considers subjects of some importance, in view of the great future for the exploration of the mineral wealth of India. Mr. Patel would combine Physiology with Ethics and Psychology, the *philosophy* of History, or the science of politics, with History and Archæology, and Ethnology with comparative Philology. Mr. Patel considers that there is some risk of money being wasted unless secondary Education, declared by Sir R. West to be in a chaotic state, be put on a sounder footing.
24. Mr. Hill, C.S., Secretary for Berar, kindly transmits from the Hyderabad Residency a memorandum from the D. P. I., Berar. This officer welcomes the scheme as one aiming at supplying a long-felt want, and as supplementary to the existing University training. “I hope,” he adds, “that the days of apathy have gone for good, and that honest endeavours will hereafter be made by all classes of the people to avail themselves of the professional technical and scientific training which the new post-graduate Teaching University intends to impart.” The Director thinks that the constitution is on the whole well-considered, but that as neither the Senate nor the Professorial Council would be able to pay sufficient attention to the details of management, there should be a responsible officer—a Principal—to look to them. The scheme of studies can be accepted only as tentative, and is sure to be modified at the hands of specialists when the University will actually begin work. All the Departments should begin work at once, if sufficient funds be available; otherwise they should begin one after another in the order in which they stand; or all departments should begin simultaneously on a small scale and gradually develop. “As this will be the only Post-Graduate Teaching University for the whole of India, I do not think that there will be a lack of qualified graduates willing to prosecute their studies in one of the three departments. Many of these candidates will be poor and needy, and will stand in need of support. I am, therefore of opinion that the number of graduate students will greatly depend upon the provision of scholarships and fellowships the University will be able to make. After the completion of their studies they will find no difficulty in finding suitable and remunerative work for themselves.....I feel sure that if scholarship worth Rs. 40 per month and tenable for five years be sanctioned from Provincial Revenues, a qualified Berar graduate can be found every year willing to join the Uni-

versity and prosecute his studies there. I think Bombay will be the proper place for the location of the institution, being the most important commercial and industrial centre in the whole of India."

25. Rao Bahadur Madhaoraw Harinarayen, Dewan of Cambay, is good enough to forward the conclusions of a Committee of Cambay officers interested in education. They declare the scheme to be a desideratum felt for a long time past, praise the labour evidently bestowed on a preliminary study in Europe of cognate institutions, and the avowedly tentative nature of the scheme. They specially approve of the Council of Graduates as "the proper medium of communication between the students and professors." They have no doubt that the Scientific and Medical courses should have precedence, but they are afraid that the Philosophical Department may be underrated. The post-graduate University cannot very well neglect the very courses which are favoured by the majority of students for graduation; and the new rules prescribing books for a Departmental Examination for Teachers must be taken as Government countenance to Pedagogics. The Committee rejoice that Agriculture has received recognition; "we want a number of Agricultural Chemists, and the new University may be expected to supply a long-felt want in this direction." Further there is a strong impression that there are many Native States and Principalities whose resources have not been sufficiently investigated, and who being unable to afford such a costly agency (as the Geological Survey) might well look for trained men issuing out of this University. The Dewan has not the slightest doubt as regards finding a sufficient number of students. The mere existence of such an Institution will bring students, "the post-graduate class opened by the late Dr. Bahadurji attracted a large number, and his scheme could have worked well, had sufficient support been accorded to it." Nor need there be any apprehension on the score of want of employment for these men. "Native States largely absorb graduates, and will do so in future. The Government can give a good deal of impetus by reserving the posts in the Revenue Departments for those who have got degrees from this Institute in Agricultural Chemistry. Other State Departments which are practically closed to Natives for want of sufficient attainments may now be opened to them. Forest, Meteorology, Telegraph and other Departments suggest themselves. Railways require competent Engineers and other officers, and Municipal and Local Boards greatly avail of the services of scientific men to look to sanitation and other kindred subjects with the increasing needs of progress." "The financial support that the scheme requires is sure to come as its importance is recognised. A general appeal can be made, and when the responsible heads of the Government have expressed their sympathy, much difficulty will not be experienced." In conclusion, the Dewan thinks Bombay a suitable habitation for the University.
26. Mr. Bezanji Mervanji, Dewan of Gondal, wishes success to the scheme, and suggests the "Imperialising" of the Committee by adding on it names from other Presidencies. He would omit the Medical Branch, and add Geology and Mineralogy to the scientific Department, which should be taken up first. There would be no lack of students, except at first, since there would be only one Institution, and the whole of India to draw from; but their employment would depend on the starting of Joint-Stock Companies. The number of graduates in Kathiawar is small at present, but in a few years, Kathiawar might become a recruiting-field for the Institute. "If these States at all send students, they will, no doubt, institute scholarships for their benefit." The proper location of the Institute should be some healthy place in the vicinity of Bombay.
27. The Registrar, Punjab University, favours the Committee with a copy of para. 24 from the proceedings of the syndicate of the Punjab University, dated 17th March 1899, which says: "It was resolved that the opinions already received from several Heads of Colleges connected with the University be transmitted to the Honorary Secretary. The Syndicate further resolved to record their full sympathy with the aims of the proposed institution for the promotion of original research, and their opinion that the work as indicated in the scheme inculcated could be carried on in full harmony with the operations of this University."
28. Dr. Browne, M. D. (Principal, Medical College, Lahore) is of opinion "that the most useful field for the new Institution would lie in its work as a Research Institute, pure and simple, the services of the staff being devoted mainly to the elucidation of the many problems in Medical and General Science now awaiting investigation in India. In such an institution workers could be specially trained in the investigation of sanitary, Medical and Scientific questions, closely affecting the welfare of India generally, and employment would almost certainly be forthcoming for these specialists either under Government or in the larger cities." Otherwise, for mere post-graduate instruction in medicine, Dr. Browne does not anticipate many students from the North, where eight years' study is required for a Medical Degree, after which the student naturally wishes to get some compensation for his labours. "The new University can scarcely devise a degree or diploma which would be of much practical advantage to a medical graduate in India." Dr. Browne thinks that the scientific and Medical Departments should take precedence of the Philosophical, and that in the Medical Division, the study of Pharmacology with reference to the indigenous drugs of India ought not to be over-looked. Discussing the Constitution, Dr. Browne does not see the utility of a Council

of Graduates, and suggests that all purposes might be answered if provision be made for the representation of Graduates on the Senate. Poona seems a suitable location; climatic conditions are essential for efficient work in Bacteriology.

29. Revd. Principal Ewing (Forman Christian College, Lahore) expects inestimable good if the scheme be efficiently carried out, is certain that students would be found in sufficient numbers, and that there will be a large demand for men so trained, suggests that the several Provinces might well provide a limited number of bursaries to be competed for in the respective Universities, and the diversion of some of the existing scholarships to the same purpose. "What the country needs is better trained men, not a greater number of partially equipped men." Dr. Ewing would begin with the scientific, then take up the Philosophical and end with the Medical subjects; and for location would suggest Allahabad, Lucknow or Calcutta.
30. Mr. J. Sime (D. P. I., Punjab), enclosing some expert opinions, observes: "There are differences of opinion as to how the object in view should be carried out, but almost complete unanimity as regards the need in India of encouragement being given to advanced original research in the sciences which have a bearing on the industries and general progress of the country. Personally I believe that a public benefaction in this behalf would be deserving of the gratitude of the people at this time almost more than anything else. The endowment might be in connection with existing Universities or with an entirely separate foundation; but so long as it involved the employment of distinguished specialists to guide some of the best Indian students into the higher fields of practical science, it would not fail to be of immense ultimate utility. It even seems to me that an endowment of Scientific and Technical Research only in connection with the Bombay University, leaving the other Presidencies to follow the example later, would probably be the best way to enter upon this new enterprise." Mr. Sime thinks that with so few M. A.'s every year, the Punjab is not yet quite ripe for the scheme.
31. Mr. Bell (Inspector of Schools, Lahore Circle) expresses pleasure at the prospect of the establishment of a Teaching University for India. He expects as a consequence that considerable changes may be introduced into the working of existing Colleges, so that graduates may be fitted for entering upon research work with a likelihood of success. Mr. Bell approves of the Draft Constitution and the scheme of studies; but sees no immediate necessity for the third department at all, and suggests the establishment of "Travelling Scholarships" in connection with certain subjects now not adequately recognised in the scheme, and which cannot be conveniently investigated in Laboratories—*e.g.* Botany, Zoology, Geology, Mineralogy, Anthropology, &c. Few students will enter unless as scholarship-holders, and for many years to come there will be few openings for those who leave the Teaching University. The support from the Punjab will largely depend on the attitude and action of the Government.
32. The Inspector of Schools (Rawalpindi Circle) very much doubts "if in this country, where at present education is viewed by the natives from a purely utilitarian stand-point, such an institution would be a success, would be popular, or would be likely to attract a sufficient number of suitable men. Of course it might be bolstered up by a liberal distribution of scholarships and stipends, but the large majority of the men taking these would think more of their money-value than the object for which they were bestowed. At present the European Universities act, and will act for many years to come, as post-graduate Universities for Indian graduates; and even if the proposed University were established, the best scholars would still prefer to go to Europe for their further education to joining it. In doing so they would be doing well. What the native needs so much is the broadening, widening and generally expanding of his mental view; and the proposed University would not do this sufficiently, but would tend to turn out mere book-men devoid of that educative experience of men and countries and of that liberality and freedom of thought which a sojourn of some years in one of the best University towns of Europe must insensibly impart to any man of intelligence and culture." It is, therefore, suggested that Mr. Tata's money be used in erecting hostels for Indian students at some university town in Europe, and in providing stipends for these students. If the scheme be carried out, however, the Medical group of subjects should have precedence as likely to be the most popular, and as being the most useful. The salaries of the Professors in the 3rd branch are inadequate; being non-pensionable, they are really less than those granted to the Professors at Colleges for teaching standards lower than those proposed by the new University. If the methods of education mean only a Theoretical course, a two years' course in a Training College would be of far greater practical value to a man intending to become a teacher. The Inspector disclaims the right to speak with certitude on the subject, as his work for years has lain among schools, and he has not been in close touch with University work; but he would remark in conclusion that the scheme "is not one in which either the Imperial or Local Governments bearing in mind the present state of primary and even Middle Schools Education, and the claims of the masses on the Public Revenues for the development of such education, could legitimately or wisely expend their money."

33. The Head Master, Municipal Board School, Delhi, prefers the designation "Imperial University" to "the Research Institute," since Professors will give bulk of their time to instruction and not research, while students after their training would hardly be in the position to continue researches. Such a University is exceedingly desirable; but the Committee can hardly be too cautious in proceeding to plant an exotic of this species on the uncertain soil of India. Research of any description is not a thing that appeals to the Indian mind. There would also have to be frequent examinations, as industry on the part of students cannot be taken for granted, and as the selection for further training in Europe and America can only be made after examination. The Constitution should be tentative, and be shaped by requirements indicated by experience, and by the scheme of studies adopted. The Scientific and Medical Departments should be taken in hand together; there is no room for the Philosophical. Bacteriology, as a science, is not in an advanced state, and should, therefore, be last on the list. Mechanical Engineering should not be left out, and more provision should be made for Technological Chemistry and Electro-deposition of metals. Work would be found for the students in the Medical Faculty, and next to them for those in the Science Faculty, provided they were content to begin on comparatively small pay. The best students would not be attracted by Scholarships, they could continue to gravitate to the Bar, the Judicial, Revenue, and Public Works Services. The measure of support likely to be secured in the Punjab, will almost entirely depend upon the exertions and interest of the local European officials, and any interest communicated by them to their native acquaintances and subordinates. Spontaneity is doubtful. Jubbulpore has claims superior to all other stations in India, as the home of the University. Its climate is healthy, temperate, and extremely moderate, the hot weather is not oppressive and extends only over 2 months, and it has emphatically a central situation. It "is free from the filth of Bombay and Calcutta, the cold of Lahore, the heat of Delhi and Agra, the humidity of Dehra, the natural calamities of Poona, the immorality of Lucknow, the extreme orientalism and dissatisfaction of Hyderabad." For a branch Institute, Bangalore is remarkably suited.
34. The Head Master, Municipal Board School, Hoshiarpur, recalls the general complaint that our University men do not carry their studies to higher stages when they enter into life, and that they are extremely backward in prosecuting research. These are not inherent defects of the Indian mind, but may be ascribed to the want of the necessary training, and of means and facilities for patient research. This distinct want the new Institute will supply, if it does not aim at mere continuation of the present University education. The institute, considering the present circumstances of the country, should have the power of granting degrees. The retention of Methods of Education is desirable as influencing the tone of schools, and for the comparative study of systems of European and Indian Education with special reference to the immediate needs of the country. There should be a practising school attached for the purpose. There might be some difficulty in sending students from the Punjab, but the number of Punjabis going to England to qualify in Medicine is increasing, and some have done themselves credit at Cooper's Hill. Unless Government give encouragement by opening offices in the higher branches of its services, the field of employment will not be very large. Bombay may be suggested as the home of the University.
35. The Head Master, Municipal Board School, Ludhiana, has never had an opportunity of studying the working of Indian Universities; but asks why students should not be sent to Europe and America immediately after graduation, and recommends the employment of a portion of the funds in founding chairs for a fixed period in the existing Universities, and their gradual extension to other subjects, as a sort of trial how far the Research Institute, working independently will be patronised to justify its establishment. It is doubtful also whether Mr. Tata's enterprise will be promoted by other opulent men who may be rather trusted to start independent institutions of their own to perpetuate the memory of their public spirit. Many students are not to be expected, because men of position are apathetic to European practical education, while the others would feel that they had waited long enough for an income. Delhi or Nagpur may suit for location, though it would be difficult to keep the peace with such heterogeneous elements as would be brought together in a Central Institute.
36. Mr. Monroe (Inspector General of Education, C. P.) in forwarding some opinions, expresses his general agreement with the views of Mr. Sharp.
37. Mr. H. Sharp, B. A. (Inspector of Schools, E. Circle) holds that the general intention of the Institute is too vaguely defined. If the object is original Research, the money would be better spent in endowing handsomely some few posts for original Research, to be held by men of the highest promise; if on the other hand, it is proposed to train men for the highest posts in the useful professions, and that too, in a technical way, the Philosophical Department seems an unnecessary adjunct. Secondary Education as a science is not advanced enough to justify India, a country backward in education, in proceeding with it. Any funds would be well spent that went to aid original research in Indian History and Archaeology, but it may be doubted whether the researcher should be trammelled with Professorial duties. The subject is fully worth the concentrated and uninterrupted efforts of a life-time. Courses I and II seem well-planned; the medical should precede as the best calculated to meet the practical needs of the country, and to attract students who would look upon their special



training in the University as the preparation for a professional career. In view of the straitened circumstances and family cares of Indian students which compel so many F. A.'s to break off their education and seek employment at once, Mr. Sharp, speaking without wide experience, would doubt if the classes would be swelled by graduates taken from all India to an extent which would justify the expenditure. If the degrees of the Institute have a marketable value, a few B. A.'s whom caste scruples would deter from a journey to Europe, might be induced to continue their education; yet the wholesome and broadening influences of a residence in England would not be supplied by even the highest training in a University situated on Indian soil. The openings for the trained men would be few; original research is not a lucrative employment, and it would be hardly feasible that each graduate should continue a burden to the State till he should reward its generosity by some useful discovery; and as a researcher is like the poet: *nascitur, non fit*, there would be no guarantee that a student has a natural aptitude. Again a C. S. could be no better for proficiency in Organic Chemistry, or a Lawyer for Comparative Philology. An Agricultural Chemist would be able to bring his knowledge into practical working in an essentially conservative country like India, only by employment under a benevolent Native Ruler as Director of Agriculture armed with unlimited powers to force the peasants to manure and sow their land according to scientific methods. The most practically useful Department would seem to be the Medical; for a trained specialist can always find employment when his reputation is established for any particular group of ailments; and the prosecution of original research is by no means inconsistent with the maintenance of private practice. The analogy of Germany, and Switzerland for the industrial value of the doctorate of Science is fallacious. Some large town like Calcutta would be the only practical spot for the foundation of the Institute, and granting the necessity and desirability of founding it, it should be of the nature of an Independent degree-giving University. As regards the Constitution, the composition of the Professorial Council which is to settle the very important questions of courses and examinations is too professorial; the practical element should be more largely introduced both on the Council and on the Senate. The Council of Graduates would probably be a sham, and as such objectionable. Moreover there would be difficulty in bringing together a large body of men from different parts of India even for one meeting either of the Senate or the Graduates.

38. Mr. A. Mitchell (Inspector of Schools, S. Circle) considers that both the Constitution and the scheme of studies have been sufficiently elaborated for the present by the Provisional Committee, and that there is a due provision for further adaptations to be suggested by experience. A sufficient number of qualified students can at once be ensured by Government undertaking to reserve a certain proportion of the vacancies in the educational, scientific and Technical Departments of its service for the graduates of the new University. "If this were done, it would give the University a good start, and eventually result in an improvement in the general personnel of the Departments." Jubbulpore, as being central and accessible, with a climate suitable to all classes of Natives and Europeans—a combination which would be difficult to find elsewhere,—as neither too large nor too small, and about equidistant from Bombay, Calcutta, Madras and Lahore, is an ideal town for a University.
39. Mr. George Thompson (Inspector of Schools, N. C.) has no doubt that from the Central Provinces students could be found willing to pursue a course of research if adequate stipends were provided, but not otherwise. The addition of a Teachers' College, with a highly paid staff, to such an Institute, is a proposal that will hardly commend itself to practical educationists.
40. Mr. Collin H. Browning (Principal, Jubbulpore College) deprecates the title of a Teaching University, as the essential difference between the English and the Indian Universities is that the first are self-governing and the second are not; and as the proposed institution rightly disclaims independence, its much-talked-of superiority over existing Universities disappears. If it is to be a Research Institute, on the other hand, the Philosophical Department ought not to figure in the scheme of studies; while many important subjects now omitted ought to find a place, if the institution is to be a real University. If the scheme "were limited to the foundation of 1st, a scientific Research Institute, and on its success, extended to 2nd, a Medical Research Institute, it would have its uses." The Philosophical and Educational Departments should be cut out altogether. The existing Training Colleges can always be extended. Philosophy is already probably a great deal too much taught in every Indian University. A chair of History and Archaeology might be included on the scientific side if necessary. The number of students would at first be small, probably so small that it would be less expensive to send all such students to England than to keep up an expensive staff in this country for their training; and the advantage to the student would bear no comparison. Suitable work would always be at hand for a few highly trained scientific and medical men. The location should be either at Bombay or Calcutta.
41. Mr. K. G. Tamhan (Principal, Morris' College) highly approves of the scheme and congratulates Mr. Tata on realising practically what has been so long felt as a want. He would favour the Third Department, but would defer its introduction till there are separate endowments for the chairs. Mr. Tamhan insists on the need of scholarships and prospects to

attract students, and dwells on the need of a rigid demarcation of the functions of the Senate and the Professorial Council, to ensure smooth working.

42. Colonel Barre (Indore Residency) forwards five opinions from the Native States of Central India, and draws attention to the fact that they agree in expressing doubt as to whether under the present conditions of University training and study in this country, a sufficient number of students will be forthcoming to enter upon post-graduate studies unless they are assured of some compensation in the form of scholarships or an assurance of appointment on completion of their course of study. Colonel Barre further notices as worthy of attention the remarks made by the Revd. J. Wilkie and Mr. Johnstone on the subject of the initial scope of operations. Speaking solely from his experience of Native States in Central India, Colonel Barre urges that in his opinion if education in these States had been left to the initiation of Rulers, there would be probably neither school nor college in any State at the present day. The States of Central India are not likely, therefore, to furnish qualified students in numbers proportional to their area; nor is there probability of suitable work being found for such students in Central India when they leave the University. The interest in education of the kind our Institute contemplates is limited; and the disposition in Native States tends towards a close conservatism of local Institutions, and a disregard, if not a jealousy of more important schemes for the advancement of knowledge and science in British India. So far as the C. I. States are concerned, Colonel Barre does not hesitate to fix on Bombay as the suitable place for the University.
43. Mr. E. C. Cholmondely, M. A., (Principal, Holkar College and D. P. I., Indore State) urges caution in carrying out and extending the scheme, and says that if suitable work with suitable pay can be found for every student who obtains a diploma, there can be very little doubt but that a sufficiency of students would be forthcoming. But as a matter of fact, the present local demand for diplomate graduates would be small. They could scarcely consent to take posts in Colleges on the rate of pay that now attracts Bombay graduates, much less would they care for assistant masterships when the salaries of Head Masters would not suffice. Of some twenty students who have during the last five years graduated from the Indore College, only two have found employment in the State, and one of them in a military capacity. Mr. Cholmondely is speaking of a particular State of things at a particular time, which is not necessarily any guide for the future. It is conceivable that the course of time may bring developments; the State might require an Engineer, a Sanitary Inspector, or a Chemist; in which case, there would be no lack of students anxious to qualify. The majority of the students being poor, scholarships will have to be furnished; and if the principle of advanced education were approved, Mr. Cholmondely thinks it probable that two or three scholarships would be given annually. The location of the University will be a great difficulty, seeing how both Indian students are to leave home and incur the expense of travelling long distances. For the Parsee and Deccani Brahmin students from Central India, Bombay would undoubtedly be the most desirable locality.
44. Mr. R. N. Gunion, B. A., (Principal, Daly College, Indore Residency) gives an admirable summary of the proposals, and then explains that considering the circumstances of the country at present, the Medical department would appear to have the first claim, while it seems doubtful whether the Philosophical Department should form part of the scheme at all. The Professors of the Colleges may be supposed to be capable of lecturing on such subjects to post-graduates as well as to ordinary students. The probability of attracting students, and of employment being found for them when they have gone through their course, are very serious considerations. A Hindu youth is generally, before he has taken his degree, weighted with the responsibilities and obligations of a family; scholarships will be looked forward to; nor will students, without prospects, continue studies from the pure love of learning. There is an old warning against the evils that are apt to come upon a State "when more are bred scholars than preferments can take off." The proposal of affiliated branches put forward by the Diwan of Mysore seems open to the objection that it might tend to a dissipation of the resources of the University.
45. Mr. J. W. D. Johnstone (Inspector General of Education, Gwalior), cannot dispute the importance of higher training for graduates who prove themselves peculiarly fitted for any special branch of research. The best method of giving practical effect to this object is the question to be decided. Mr. Johnstone thinks that the estimated expenditure is somewhat low, a stronger staff of specialists will be needed, and the scale of pay is not sufficient to compensate the best European talent for a trying climate and inferior facilities for research. In consideration of the acknowledged fact that it is extremely doubtful how many students would be likely to take advantage of the proposed institution, would it not be advisable to begin by utilising the available income for the training of a certain number of promising graduates in Europe, where the best equipped centres for the highest scientific training exist, and to postpone the erection of large buildings and the formation of laboratories and libraries—until more data are obtained? Moreover, if after a certain interval, there was a good prospect of the scheme being carried out, the men sent to Europe for training could then be offer-

ed chairs in the special branches of knowledge which they had been sent to Europe to study. With regard to the support from Gwalior, Mr. Johnstone thinks sufficient time has not been given for an investigation of the subject by the Durbar, but giving an opinion based on temporary local circumstances, he thinks that very few students would be anxious to continue studies in a Research Institute, unless salaried on a scale which the Durbar is not likely to sanction. Hence it is not likely that any pecuniary contribution would be forthcoming. The Gwalior Durbar has already in a few instances sent men to receive instruction in certain specified subjects to Japan and England, and it would be likely to continue this policy for the present.

46. Revd. Principal Wilkie (Canadian Mission College, Indore) cannot, owing to limited experience, claim to speak with authority. In his opinion the time has come when it is most important to have in India an Institution in which specialists can pursue their studies beyond that provided for in any of the existing Colleges of India. The greater number of those who attend such an Institution will work the more faithfully if stimulated by an examination before them; and there should, therefore, be a degree—such as Ph. D.—conferred by the new University, and by it only in India, on those whom the Professorial Council considered worthy of it after a course in some Department of the University. But while the need for special training in all the Departments named in the Prospectus is only too manifest, genuine students who will look on the courses otherwise than as a means of living will be rare; and as positions available to such men in India will be few, not many will take the courses unless bribed by handsome scholarships—which would be unfortunate. Mr. Wilkie would have, therefore, more confidence in the success of the Institute and its permanence, if it were started on a very modest basis, buildings being erected and additions to the staff made as the University made the need felt.
47. Capt. Colvin, Political Agent, Bundelkhand, says that *prima facie* any scheme of post-graduate education in such subjects as those mentioned in the outline of the scheme would involve those receiving that education in making so late a start in the work of life, as to seriously hamper them in competition with their fellows, and that were it found possible to do so in conformity with the wishes of Mr. J. N. Tata, to combine with the course of graduate education solid instruction in various sciences and technical studies, instead of relegating that instruction to a post-graduate course, would better serve the interests of those whom the gift of Mr. Tata was designed to benefit.
48. The Resident at Kashmir says that “considering the limited financial resources of the Kashmir Durbar, and the extra strain that will be placed upon them shortly in connection with the contemplated Railway, the Resident is not prepared at present to recommend to H. H. the Maharaja and the State Council to contribute towards the proposed Research Institute.”
49. “Her Highness the Mahrani Regent is pleased to accord her general approval of the project.”
50. The Divan of Cochin observes that whatever may be the case in other parts of India, there has been as yet no demand worth the name in the Madras Presidency for such men as the Institute proposed will produce. The following figures in regard to those who have passed the examinations for the degrees of B. A., B. L. & L. M. & S., and who have proceeded to the corresponding higher degrees, appear to show that, while men find it advantageous to take the lower degrees, very few of them consider possession of the higher degrees of any value.
- | B. A. | M. A. | B. L. | M. L. | L. M. & S., | M. B. | M. D. |
|-------|-------|-------|-------|-------------|-------|-------|
| 5684  | 124   | 807   | 15    | 203         | 33    | 8     |
- It is to be feared that only if it can be shown that fairly lucrative employments will be obtainable by men who pass through the Institute, will a large number of students be forthcoming from this part of India. As matters at present stand in this Presidency, it is doubtful if it can be said that the mere love of research in itself will incite any large number of men to prosecute it.
51. Mr. G. R. Irwin, C. S. (Resident at Jeypore) says that having regard to the existing social and industrial condition of India, Mr. Tata's proposals seem to him premature. A Technical Institute in which the higher classes of intelligent industrialists might be taught how to utilise practically scientific discoveries already made would supply a much more pressing need of the India of the present than a University having for its object the promotion of purely scientific research. Mr. Irwin would not be understood in any way to depreciate the value of the latter, but he thinks that the establishment of such a University in India can well be postponed until the gap in technical education is filled up, and that in the meantime the pursuit of the higher branches of Science by Indian students can best be carried on in the Universities of Europe and America, with the aid, if necessary, of subsidies from the funds provided by Mr. Tata's munificence.
52. Rao Bahadur Kantee Chunder Mookerji, C. I. E. (Chief Member, Council, Jeypore) does not think India is yet far enough advanced to adopt such a scheme. While only a select few

would benefit by Mr. Tata's scheme, millions might be reached by the establishment of industrial schools for artisans. The late Maharajah of Jeypore established a School of Art in his capital, about 30 years ago, where many of those workmen who turn out the brasswork, marble figures, &c., so highly valued by all lovers of art, got their training. The present Maharajah contemplates the foundation of Technical Schools throughout his State. Under the circumstances, the Darbar cannot be expected to give support to Mr. Tata's scheme.

53. The D. P. I., Jeypore, says that in Rajputana with all the lavish backing of scholarships, it is found difficult to keep young men to the highest stage of studies, and endorses Lord Curzon's apprehensions that liberally paid professors would have to lecture to empty benches if the Imperial University be founded. Under the circumstances, the proposed Research Institute should for the present "be constituted as a Committee for selecting the best graduates of the Indian Universities, and sending them up for further training to Europe or elsewhere—its main function being to encourage these students in making original researches, and reward them with diplomas and emoluments on their attaining a higher standard of proficiency in the sciences they take up for their special study." The studies encouraged should be preferentially scientific or technical. As for their appointment on the completion of their studies, preference is sure to be given to them over others not so qualified; but there can be no guarantee that all the candidates will be duly provided. If there must be an Institute in India, Poona, though geographically a little way off from the northern Presidencies, being now joined to all parts of India by rail, and enjoying a temperate climate, is the best place.

54. Thakur K. S. Varma of Jobnere (a nobleman of Jeypore State) says that the present want of laboratories and scientific museums makes Scientific Research impracticable; that he apprehends no difficulties in attracting a sufficient number of qualified students, that he does not doubt that with the moral support of Government, the Native States will be able to contribute their quota to the scheme; that Native States would be greatly benefited by sending students (with scholarships) for training to the University, and then giving them suitable employment; that there is great room yet for the development of the natural resources of the Native States and many parts of British India. There is plenty of work to be done even now. There is not a single competent native firm of Chemists, in the Medical and Sanitary Departments there is more room for work than is ever likely to be done by the graduates of the University. The Thakur Sahib then proceeds to make suggestions. The Health Institute should be incorporated in the University; Bombay or failing that Calcutta should be the proper spot for such a University. In the scheme of studies special and independent provision should be made for researches on the Ancient Hindu Sciences. The Third Division may stand over till the University is in good working order.

55. Principal Theodore Beck, M. A. (Aligarh) says that if what is aimed at is a Technical Institute, then the preponderance given to Chemistry is justified; if what is wanted is industrial progress, then the Committee have gone about the right way to give real Higher Industrial education. But "if the object is really *Research*, then the most fruitful field is not natural science, but History, Economics, Philology, Folklore, &c. The Chief object of the scheme which proposes to spend 1½ lacs annually on the teaching of Chemistry seems to be to train up expert technical chemists in the hope that mill and factory owners will create post and laboratories for them to enable them to invent more economical processes of productions. The scheme postulates the pre-existence of manufacturing industries, and an intelligent appreciation in the capitalist class of the utility of an outlay, the return from which is neither immediate nor certain. It is a common complaint in England that manufacturers have not yet grasped the commercial benefit of applied science. Whether Indian manufacturers are more enlightened, Mr. Beck has no means of judging. Both from the industrial and scientific point of view, the omission of Biology gives the scheme a lop-sided appearance. More weight should have been given to agriculture, and a chair of Botany ought to have been contemplated, seeing that the merits of jute were first discovered by a scientific Botanist. Apart, however, from such criticisms, the main idea is a sound one: to do one science at least, and that which has a direct connection with the arts, so thoroughly as to make it possible to turn out real scholars and experts. If research is the real aim, the Philosophical Division is undoubtedly the most important branch of the whole, as it offers an opportunity to investigate branches of knowledge which can be pursued only in India. A Biologist went to the Malay Archipelago to study the peculiarities of savage races before they were destroyed by the advance of civilization, on the principle that one of the duties of the present generation is to preserve perishable knowledge. So in India there is an immense field for research in Philology, Ethnology, Comparative Mythology, Folklore, &c., which can only be studied on the spot; while natural sciences can be investigated with at least equal ease in the laboratories of Europe. Again, the foundation of chairs of Indian History and Indian Economics might be of great benefit to Indian education, even if no students studied under the Professors. For, we need books on Indian History and Political Economy treated from the *Indian* standpoint, which Indian Professors of the subject have neither knowledge nor leisure to write. It would be a service not merely to Economic Science but to education and to the Government, to bring to India for a few years a man such as Prof. Foxwell, and

ask him to investigate Indian Economic conditions. Mr. Beck is sceptical about Pedagogy; a habitual practice of cricket and football are probably of greater use to a schoolmaster than technical instruction in the art of teaching. Hence the Tata University is not likely to achieve any great success as a training school for schoolmasters, though it may be of the greatest importance for training the Professors of the various Colleges. With reference to locality, if the climate of the place chosen be a good one, better men would be willing to come out as Professors. And as the ultimate success of the scheme must in the long run depend on the quality of the Professors, it would be desirable to arrange for vacations not shorter than those of the leading Universities of Europe.

56. The Hon'ble Mr. Justice Gurudas Bonnerji welcomes with joy Mr. Tata's proposal for aiding and encouraging post-graduate study and original research in India, for the encouragement of which he had more than once appealed to the public to endow Fellowships in connection with the Calcutta University. Considering that the main object of the projected institution is to teach and not merely to examine students, and that the existing Universities have, or are in course of having, regulations for conferring the highest degrees in literature and science, it would be in accordance with the principle of non-interference with existing agencies which the framers of the scheme very properly have kept in view, that the institution should be in the nature not of a University but of a College or Institute for Research. It would add to the efficiency of the Institute if none but holders of one of the higher degrees of B. Sc., and M. A. be eligible for admission. The laboratory and museum of the Institute, however well-equipped they may be, can furnish appliances for carrying on research only by a limited number of students. Moreover, the existing Colleges are sufficient for the training of the lower grades of students. To attract the best talents available, suitable Fellowships tsnable for at least five years should be established; and to ensure real work being done by the holders of these Fellowships, their continuance after the first two years should be made conditional upon the work done in the fields of original research, or of application of science to art, and being pronounced satisfactory by a Committee of experts appointed for the purpose. This condition is indispensable; for the success of such a scheme must depend less on the efficiency of the teachers than of the students, the best of whom can only be so attracted. The full staff is not needed; such help as the junior Professors can give will not be needed by advanced students; the more advanced Fellowship holders would be of some assistance; nor need the full Professors be full-time Professors; they may be sometimes competent experts engaged in other work.

Mr. Pedler, F. R. S. (D. P. I., Bengal) sends extracts from the opinions of a number of gentlemen whose names are not given:—

57. *No. 1* says that without openings in the way of employment for students, no one will seek admission to the Institution.
58. *No. 2* recommends a Research Institute on the *Java* lines to begin with. In that institution a number of experts, with European or American experience, might carry on the work of Research and Original work in various departments, be *assisted* in their labours by *Pupil Assistants*, who, if the necessity arises, might later on become a nucleus of students, and gradually raise the Institution to become a teaching University
59. *No. 3* is not certain that an Institute of Research in India, however munificently endowed, will be a success as a working educational business concern unless the pupils or students are paid to attend, and unless they see a possible appointment at the end of their research career. Few students in India study for the sake of knowledge itself. Nevertheless, he hopes the scheme will be a success.

*No. 4* is the Hon'ble Mr. Justice G. Bonnerji whose opinions have been already summarised.

60. *No. 5* makes trenchant criticism on the scheme of studies. “(a) Though the manufactures of the country are in their infancy, it is proposed to spend more than half the resources of the Institute on subjects, such as Chemistry, Physics and Electricity, that have their application in the most inventive manufacturing centres. (b) Though agriculture is as conspicuously important in the economy of the country as it is conspicuously in need of the assistance of modern research, the scheme provides no teaching either in Botany and Vegetable Physiology and Pathology, or in Agricultural Zoology, and allows only a junior Professor in Agricultural Chemistry. (c) Though the mineral wealth of the country is still insufficiently known, no instruction in Geology and Mineralogy is proposed. (d) Though the fisheries of India are of untold value and are absolutely neglected, no provision is made—though the maritime position of Bombay offers every facility for the purpose—for research in all the branches of Zoology and Physiography that deal with this important subject. (e) It is proposed to devote a fourth of the estimated resources of the Institute to a Medical Department in which pharmacology is ignored, in which Physiological and Pathological researches are restricted to their chemical aspects, and in which advanced instruction is to be afforded in at least one subject, namely, Bacteriology, for the preliminary teaching of which no provision, I believe, is yet in existence in this country. (f) How are ‘Methods of Education’ and the

modern study of 'Ethics and Psychology' likely to be advanced when the teaching of Physiology and Biology, according to modern methods, is still to be sought? (g) No provision is made for Ethnology and Anthropology in a country teeming with matters of great import in that subject. More might be expected of research in this direction than of research in comparative Philology, for the elucidation of which India affords no special advantages."

61. No. 6. sympathises with the scheme; but thinks its difficulties have been underrated. Its graduates *must* compete with those of the existing Universities; the Government Medical and Sanitary Services can only absorb a very limited number of students; it is doubtful whether there is a considerable field for remunerative employment for higher trained Indian Scientific students in Native States; nor can varied subjects be easily taught in a Central Institution. The establishment of a number of Fellowships and Studentships for specific research purposes in the older Universities would be better suited to the present needs of India than the establishment of a brand new degree-granting Institution.

62. No. 7.—(Dr. P. C. Ray, of Presidency College, Calcutta) begins with the statement that "the Research Institute as foreshadowed in Mr. J. N. Tata's scheme if successfully launched into its career of utility is destined to open a new era in the History of the intellectual and industrial development of India", but concludes with the advice that private energy and philanthropy should harmoniously co-operate with the State. "Let the various State agencies which are already at work for the propagation of scientific education...be utilized to the fullest extent, and whenever necessary widened in scope and improved upon. At present there does not seem to be any necessity for the creation of a separate Institute." The Presidency College (Calcutta), has laboratories whose upkeep costs 60,000 rupees a year, which is the income of a capital of 20 lakhs. The outlay on the laboratories, fittings and apparatus cannot fall short of four lakhs. Comparing with this the figures put down in Mr. Tata's scheme for the Chemical Laboratory, Dr. Ray does not expect that our Laboratory will at all come up to the standard of the one at Presidency College, and the same conclusion applies to the Physical Laboratory, and the new Physiological, Pathological, and Chemical Laboratories of the Medical College, Calcutta. The reasons why these Calcutta laboratories have not produced original workers are the small opening for scientific Research, the inability to apply science to the arts in India, and more than all, the want of encouragement in the shape of Research Post-graduate Scholarships, for the creation of which "the fund proposed to be raised, with Mr. Tata's Endowment as nucleus, should be set apart". This fund Dr. Ray would distribute to the several Provinces of India; the graduate with Honours in Botany would work under the specialist Superintendent of the Royal Botanical Gardens, the graduate in Medicine would be associated with Dr. Haffkine or Mr. Hankine; the Physical and Chemical laboratories of the Presidency College would each be able to accommodate half-a-dozen post-graduates; and the most promising ones might be sent to Europe. Taking the scheme as it stands, Dr. Ray finds the Chair of Analytical Chemistry superfluous, and the Chair of Technology not specialised enough for the various industries it would deal with. A dozen Chairs of Technology would barely suffice; and perhaps it would be best to send up annually to Europe or America a chosen and picked number of promising students to be there apprenticed for a number of years, under the payment of premium. Experts so trained will always be in request. Dr. Ray considers that Geology, Mining and Metallurgy ought not to be overlooked, and that a single chair of Agricultural Chemistry is nothing for an Agricultured country. Not that anything is wanted; the school of Forestry at Dehra Dun, the Agricultural farm at Saidapat, the newly opened lecturership on Agriculture at Sibpur and Poona, the School of Veterinary Surgery and Medicine, Sodepur, fulfil much of what is expected of a College of Agriculture, such as we see attached to the Imperial University of Tokio. The Electric Engineering and Agricultural Chemistry waiting at Presidency College, Calcutta, are represented at the Sibpur Engineering College, though on an elementary scale.

63. No. 8 regrets that the Committee's proposals aim at combining under one scheme three separate, and in some respects incompatible, undertakings, i. e., (1) a Technological Institute, (2) a Teaching University, (3) an Institute for original Research. Whatever prospects of success might attend the foundation of any of these separately, the attempt to combine all three would, on account of the multiplication of the difficulties inherent in each individually, inevitably lead to failure. One is not inclined to form very extravagant hopes of success in any of these directions, but an Institute of original Research is the most hopeful. If, in addition, Government could be prevailed on to associate therewith the proposed Institute for Bacteriological Research which has been so long under its consideration, there is every reason to hope that the work carried out would lead to results which would confer credit on India and its inhabitants. The reasons for opposing a Teaching University are that the number of students cannot exceed a hundred, that these would be mostly poor scholarship-holders, and that an outlay of four lacs a year would be an unjustifiable expenditure for so small a number. And after all not even a first class Teaching University would be the result of so much sacrifice. The philosophical faculty is hopelessly inadequate; no single Professor—not even Hopkinson—could give all the advanced instruction included under Physics, and there is no Chair of Mathematics. Again, such a Teaching University would sweep away all the degrees of the

Calcutta University above that of B. A.; and yet a student who has gone through the courses of study at the Presidency College which are even now necessary for the M. A. is fully equipped for the work of original research, and if he is incapable of prosecuting such research, it is not because of defects in his education, but because he is wanting in those qualities which go to make an original investigator. And it would be an equally unjustifiable waste of public money to overlook Engineering Colleges like those at Sibpur with magnificent laboratories and workshops, and to found a brand new up-to-date Technological Institute. India cannot be said to have a very great demand for practical scientists; and it is an ominous fact that the scholarships for Electrical Engineering at Sibpur have been extremely unpopular with students. Even a Research Institute would be more or less an experiment; but if the result should prove negative, it will at least have been carried out at a less cost than would otherwise have been incurred. A scheme of this kind would involve an initial expenditure for Chemical and Physical Laboratories of about ten lakhs. For this sum buildings fitted up according to the most improved modern pattern could be provided. Two Directors, one on the Chemical and the other on the Physical side could be secured on salaries of say Rs. 1,200 a month. The duties of these Directors would be to supervise and guide the work undertaken by the students, and perhaps to deliver sets of occasional lectures on special branches of this respective sciences. They would, naturally, besides this, devote the greater part of their time to carrying out original researches themselves. It is quite unnecessary to fix the salaries at an extravagantly high figure. These gentlemen would be engaged in extremely congenial work which to a really scientific man is an object of much greater consideration than a few hundred rupees more or less a month. They would further be working in an excellent climate, and would not, therefore, suffer from the drawbacks in the way of efficiency which scientific men in the plains of India would ordinarily be subject to. There would accordingly be no difficulty in obtaining men of the very first class for these two posts at the salaries above suggested. Should it be considered necessary at first to recruit these officers from England, an exile allowance of some Rs. 300 a month might be added to the pay. It should, however, be noted that the incumbents of these posts must ultimately be natives of India; for, if after a certain period it be impossible to find two individuals sufficiently endowed by nature and training to fill these appointments with distinction, then the whole *raison d'être* of the research Institute at once disappears. It would further be necessary to appoint some four assistants, say at salaries of Rs. 400 a month, and these posts should from the very outset be conferred on distinguished Indian students. Besides the above, some 12 or 15 Research Fellowships of Rs. 150 a month, tenable for 2 years, should be assigned to the five Indian Universities. The Institute would, of course, be open besides to all who wished to work therein, and who, in the opinion of the Directors, possessed the necessary qualifications. Government should, as in Germany, grant leave on full pay to School and College teachers anxious to undertake special investigations, but precluded from so doing by the want of facilities for research where they are stationed.

64. No. 9 has for some years past been directly connected with certain investigations into the Arts and Industries of this country. Confining himself to Technological Research, he doubts the advisability of separating from the existing organizations. By offering special fees it might be possible to secure a large portion at least of the necessary professorial staff from the body of eminent men who are already teaching kindred subjects; and for the more technical branches of study, the professors might go on circuit from school to school. Without museums, the Technological section of the programme undoubtedly cannot be fulfilled, but not for a century could the new University succeed in creating a museum any way comparable to that at Calcutta. But above all, experience in England has shown the need of decentralising Technical Education; there is something in the climate, soil and water of the great manufacturing centres that has allowed of an evolution into specific industries; and there is something in the character of the pupil himself that allows of his intellectual culture more readily and successfully in certain directions if he has been born in a locality where the special industries he is being taught have for centuries held a high place in public estimation. It is highly questionable that an educational institution should conduct useful investigations or turn out fully trained experts in connection with the industry that was not being pursued in the immediate neighbourhood of the school. The Imperial University of India, if located in Bombay, cannot possibly investigate more than one-half the staple products of the Bengal agricultural and industrial interests; the class-rooms and laboratories would require to be within the area of the production of jute, in figs, tea, lac, &c.; and the laboratory becomes valuable when it starts from technical experience only. Moreover, centralisation in manufacturing and education is fatal to individuality; and if the Imperial University keep, as it should, a development on purely indigenous lines as its chief aim, it should borrow *reluctantly* designs and methods from foreign countries; but this means abandonment of the idea of a central Institution. Its class-rooms and laboratories should be dispersed all over India—the scheme should assume the form of a University Extension, controlled by a central organization like the Science and Art department in Great Britain, which should also control the local museums, and devise a system of exchanges between them.

65. Mr. T. C. Lewis, M. A. (D. P. L., N.-W. P. and Oudh) writes : Some uncertainty exists regarding the most useful way of laying out the income of Mr. Tata's noble endowment. It is suggested that greater help would be accorded to education in its most advanced stages if additional Professorships were founded in connexion with existing Colleges, all of which are insufficiently equipped in this particular. Again the suggestion has been made that the immediate encouragement of research would be most effectively encouraged by founding scholarships tenable in England, similar to the State Scholarships, but be reserved for special study in some branch of knowledge, and not to be available for those whose aim it is to compete for the I. C. S., or to be called to the Bar. These suggestions have probably already received attention, and if the intention of the donor is fixed in favour of a Research Institute, it only remains to consider the details of the scheme to be adopted. It appears to be of the highest importance that the new Institute should not conflict with the older Universities, and therefore that it should begin where the present Universities leave off. Its influence on these bodies might even in that case not be inconsiderable, and would most likely be beneficial, while the opposition of rival institutions would be evaded. The views of Mr. A. W. Ward, Professor of Mathematics and Physics, Canning College, Lucknow, more especially on the cost of equipping good laboratories, may be commended to the notice of the Committee.
66. The Principal of Agra College does not consider that a Research Institute is either at present wanted or that it is likely to yield results at all in keeping with its cost. What is required is doubling of the present number of Professors in the existing colleges who, being overworked, are unable to specialise in any one subject. One or two scholarships worth £200 a year, tenable for two or three years, might be awarded to students who should proceed to Europe, not as Government scholars do now--to qualify for the bar or the I. C. S.,—but to devote themselves to the special study of some one branch of knowledge.
67. The Principal, Queen's College, Benares, having regard to the needs of India, and the present attainments of Indian graduates, would begin with Medical studies, then take up the Scientific and Technical Branch, and last of all, the Philosophical Group. Apart from those who had already graduated in Medicine, it appears unlikely that the supply of properly qualified students would be sufficient for some years to come, or that this great scheme would receive spontaneous and liberal support, in the way of scholarships and bursaries, from even the richer sections of the Benares Community.
68. Col Clibbon, Principal, Thomasson College, Roorkee, says that it would be very difficult, if not impossible, to combine both the functions of research and high-class teaching, in one institution for a very large number of students, unless, indeed, the funds admitted of the entertainment of separate Professors for research and for teaching. Deep study and investigation demand leisure and protection from interruptions—advantages which teaching Professors rarely enjoy. A few advanced students in each class of work ought to be entertained in an institution devoted to research for assistance in experimental work, and these students would in time gain valuable experience. A Research Institution is badly wanted in India; the existing Universities might with great advantage undertake the teaching portion of the programme, being kept up to date by the results of the research investigations. Purely examining Universities are now out of date; and it would be better to complete the theoretical education of men *before* they were stamped by a University. In view of the present condition of India, Col. Clibbon would put the Medical Department first; moreover, qualified officers for investigation in this department are ready to hand, all that appears necessary is to combine existing centres in one suitable locality. The Scientific and Technical Department should come next. This department covers a vast range, and the details of its organization Col. Clibbon would not lightly sketch. But about the Philosophical Department, Col. Clibbon concurs with the views expressed by Lord Curzon to the Bombay Deputation. The attraction of students will depend entirely on the quality of the instruction given. Natives of India are particularly keen critics on this point. In the profession of Engineering at least, India offers a good field for highly educated men, who can make a practical use of their theoretical attainments. The demand for Roorkee men has spread to Africa, China and Singapore, and it is certain that excellence in other lines will feel the same demand. Some students now join Roorkee without any intention of availing themselves of the guaranteed appointments. As for location, unless a situation on the hills is considered essential, Roorkee seems a very favourable site, and has many manifest advantages in the existence of the Thomasson College which will be equipped with excellent Laboratories and high class Workshops in a short time. The College is already doing research work; and the results of some of its investigations have induced the Indian Government to spend some nine lacs of rupees, and are also being utilised in the engineering questions relating to the Nicaragua Canal.
69. The Principal, Reid Christian College, Lucknow, approves of the Constitution, and also the order in which it is proposed to take up the various departments. Indian youth need most encouragement in Science and Technology, and as soon as possible after that, in Medicine and Sanitation. It is wise to move slowly, and with the demand enlarge the field of research;



but the scheme of studies is scarcely ample enough to give it the name of a University. The University might be made for all India a school where students would be privileged and encouraged to pursue advanced study or undertake original research in any subject usually included in post-graduate work. Some difficulty may be experienced at first in attracting qualified students; but it will be largely overcome if sufficient inducements be held out in the shape of scholarships and bursaries. As to the demand for such technically educated men—that will come and must come, in the nature of things. The Departments of Railway, Telegraph, Medicine, Law, Education, Commerce, &c. &c., offer, and will continue to offer, ever-increasing inducements. On the head of financial support, it should be remembered that the Native is generally quick to lay hold of any scheme that looks towards the improving of his own race; and this commendable feature betokens success to this enterprise. Should Government endow the scheme, Native Princes might be led to endow the Institution in handsome sums. Bombay and Calcutta offer superior advantages over any inland town.

70. The Principal, St. John's College, Agra, suggests the throwing open of Lectures to those who are not regular students, e. g. to Professors or Teachers who wish to profit by the Institution in their long vacation. Geology and Mineralogy should be included in the scheme of studies when funds permit, to further the development of the mineral resources of India. In the long run, there will be no difficulty in securing a good number of students, but some sort of scholarships should be allowed to poor and deserving students. Suitable work for the students of the Philosophical Department would be rather difficult to get; but no difficulty should be experienced by the medical men, and none also by the scientific-graduates if Government and private firms (whose number is daily increasing) recruit men more from India than from Europe. If the Lieut.-Governor of N. W. P. sympathises with the movement, enough funds for providing the scholarships and bursaries can be raised; but otherwise from such a comparatively poor Province, very little support can be expected except from the nobles of Oudh and Native Princes. Nagpur or some place in its vicinity will be the best, as equidistant from the three Presidency towns.
71. The Inspector of Schools (5th Circle) is of opinion that there is very little love of knowledge for its own sake, that the Meerut and Barreilly Colleges show that the demand for higher education is limited by the conditions required for employment by Government, and that before a University such as the one proposed can serve any useful purpose, it will be necessary to increase the efficiency of existing Arts Colleges. But the Inspector says he speaks only from local experience.
72. The Principal, Canning College, forwards a memorandum by Professor Ward, and says that he considers the scheme too ambitious, and that, if carried out as proposed would fritter away both energy and money on a variety of subjects. It would be expedient to limit the scheme to the advanced teaching of Science in all departments, which would call for very heavy expenditure. Should there be funds to spare, the further study of History, Education, &c., might be promoted by establishing a Reference Library in connection with the Institution. Graduates who had already gone through a course of training in those subjects would be able of themselves to prosecute their studies further if the means were within their reach.
73. Professor Ward, (Canning College) understands it to be agreed that the Institution, whose existence has become possible through the munificence of Mr. Tata, is to be *post-graduate*, and one furnishing special facilities for original research. Professor Ward protests that it is well to leave the existing Universities to work out their own salvation; they already *are* teaching Universities, and have *not* taken London for their model; their present teaching power is fairly efficient, and becoming greater year by year. "The difficulties that education has to contend with are to be mainly found in the mental indolence of the Oriental character, and would not be removed if the University of Berlin could be suddenly planted in India." Not only should the institution be *post-graduate*; no diplomas of any kind should be conferred, though perhaps candidates might there prepare for such examinations as the 3rd D. Sc. of the Allahabad University. Professor Ward canvasses the arguments advanced in the Explanatory Memorandum to explain why a University constitution was adopted. The preference of a German Chemical Factory is not for University degree-holders, (as suggested in the memo.) but for theoretically trained men who see possible improvements more readily than the technically trained Chemists. It is not unusual again, for graduates of Cambridge to work for a year or two in the German Chemical or Physiological Laboratories; but such genuine workers seldom take the German degree of Ph. D. Turning to the Scheme of Studies, Professor Ward considers that at the present time nothing more should be attempted than the establishment of good Physical and Chemical Laboratories with proper libraries of reference. The Committee's estimates are too low, the equipment of a Physical Laboratory would not cost less than ten to fifteen thousand pounds; fifty thousand rupees would buy hardly much more than an efficient electric installation, engines, dynamos, accumulators, lamps, &c. Again Mr. Ward does not see the wisdom or the need of conjoining Mathematics and Physics in one chair; since the Physics students, before admission, would have received their necessary equip-

117 125

ment of Mathematical knowledge. For the staff in Physics recommended by the Committee, estimated to cost Rs. 32,000 a year, Mr. Ward suggests the following Budget :—

1 Director of the Laboratory	...	...	...	...	...	Rs. 15,000
2 Assistant Directors	...	...	...	...	...	" 24,000
2 Demonstrators	...	...	...	...	...	" 12,000
1 Mechanician	...	...	...	...	...	" 3,600
1 Glass Blower	...	...	...	...	...	" 3,000

or a yearly expenditure of Rs. 57,600. When the class has less than 20 students, 1 Assistant Director, and 1 Demonstrator might be omitted. In Chemistry, the Chair of Technology (an indefinite term) ought to be omitted. "It is certainly desirable that in time the new Institute should include a Technical Department; but it is better to let it grow out of the Physical and Chemical Laboratories we have suggested, than attempt to establish one from the beginning." For such an institution, it would not be difficult to get together 40 or 50 students, either M. A.'s. of the existing Universities, or otherwise certified as possessing qualifications for admission; such restrictions on admission would warrant the assumption that really valuable work might be accomplished, and avoid all conflict with the older Universities; if the admission qualification be lowered, a large number of students would, no doubt, seek to be enrolled, but the scheme would be a curse to education. Not one B. Sc. of the Allahabad University known to Mr. Ward was, at the time of graduating, fit to join an Institute for advanced work. At the end of their course, these men of ability, highly trained to think and act, will not be long in finding useful work to do in a great country like India—chiefly educational and professional. Again, the Institute would also be open to men who already held posts, but had no efficiently equipped laboratory at their disposal. "The scheme should not be blasted by the promise of Government appointments." A reasonable number of scholarships would be locally provided in the various University centres if the new Institute in no way conflict with the existing Universities; and in this connexion, "it is worth while noting that the State Scholarships and Gilchrist Scholarships are often rejected by able natives who from family and other reasons cannot leave India. Such men would very often have been glad to join an Institute for advanced work on a much smaller stipend than £250 a year." "The claims of Bombay to be the habitation of the proposed Institute are obvious, but on the other hand the climate is not suitable. Hill stations such as Ootacamund have much to recommend them, but the rarefaction of the atmosphere and consequent lowering of the boiling point of water would be a drawback. If the plains are to be chosen, then the N.-W. P. or Panjab are advisable. A four months' vacation would get rid of the worst part of the hot weather, and the cold weather is unexceptionable." Mr. Ward strongly opposes the inclusion of Bacteriology and Pathology in the scheme, as "there is little or no connection between Physical and Physiological Laboratories, and there are already some good medical schools in the country to which Physiological and Pathological Laboratories are attached." Mr. Ward concludes by cautioning the Committee against taking too literally the statements in the explanatory Memorandum, (where little reference is made to Oxford and Cambridge, and none to the Cavendish Laboratory), and against too much weight being given to the opinions of Mr. P. whose knowledge of Indian education is too narrow, and of European Universities too superficial.

74. Professor Ward kindly sends an article on the scheme, contributed by him to the *Indian Daily Telegraph* in November 1898. The article begins by a warning that the Committee should steer clear of all diplomas. The diploma has its uses in the preliminary stages of education, making a classification of students, and certifying to the possession of aptitudes in demand by the public. But the moment a diploma possesses a market-value, the winning of the diploma in the easiest way, and not science, becomes the goal of students; and breeds a feverish haste in studying which, if not suppressed with a strong hand, converts a house of learning into a den of crammers. There will be after all very few men working in the Institute; these need no classification, and they have simply to do pure scientific work, and not plod for degrees. Again, the Committee should not aim too high; the language used by Lord Reay and others would seem to imply as if no one below the standing of Kelvin Rayleigh, Roscoe or Cayley would suffice for the needs of the proposed institution. Nor should there be any blinking of the defects of the Oriental mind—its almost incurable laziness and repugnance to work. Let the Committee be content with a small beginning, and let the development of the nucleus depend on its environment. There is a real demand in India for a well equipped Physical and Chemical Laboratory. Efficient Professors in these subjects can be got at £1,000 a year, and Demonstrators could be got for less than half this. Before building a Laboratory the Committee should choose from England two directors, one for the Chemical, and one for the Physical Laboratory. These two directors might well be paid £1,200 a year, and should be given time and money to draw up plans. Lastly, the Committee is urged to move very slowly in the matter of providing Technical Education. It is very easy to suggest improved methods of agriculture, but it is next to impossible to get ryots to use them. India is a very poor and very ignorant country, and how education can make it richer and happier, is a great problem. The problem can be solved, however; and Mr. Tata is wise in recognising that education spreads from above downwards. The article concludes with good wishes for the scheme, but *festina lente*.

- 75.** The Divan of Jhabua says the scheme is grand and worthy ; but regrets there are no Heads of Colleges in the State whose opinions he can forward.
- 76.** The Divan of Morvi sends the opinion of the Superintendent of Education in that State. That officer dwells on the need of spirituality to a self-respective nation, and urges union with the Central Hindu College at Benares.

126  
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### III

*Memorandum by the Hon'ble Mr. Justice Ranade, summing up the preceding Abstract.*

The accompanying précis gives the summary of the opinions of 76 authorities consulted about the draft-scheme of studies and the draft-bill of the proposed Imperial University. Of this number 19 belong to the Bombay Presidency, and 7 to the Native States of Baroda, Bhavnagar, Gondal and Morvi (in Kathiawar), one from Cambay, and there is also the opinion of the Director of Public Instruction, Berars, included in this number.

Thirteen are European Officers of the Department, Principals of Colleges and Inspectors of schools, with the Director of Public Instruction, Mr. Giles, at their head; the remaining 13 are natives, two Principals of Colleges, 2 Directors of Public Instruction, 1 Inspector, 3 Members of the Judicial Service, and the rest are officers in Native States.

There are 8 opinions of the Punjab authorities consulted: 1 Director, 2 Inspectors, 2 Principals, and 3 Head Masters; 6 Officers from the Central Provinces have favoured the Committee with their opinions; five of them being Englishmen, 3 Inspectors, 2 Principals, 1 Inspector-General and 1 Native Principal. From Central India 6 Officers have sent their opinions, including the Residents, 3 Principals, and 1 Inspector-General of education. The Resident at Cashmere, and at Jeypore, and the Dewan of Cochin, and Her Highness the Maharani Regent at Mysore and the Senior Member of Council and the D. P. I., and a nobleman of Jeypore have also favoured the Committee with their views.

From the North-West Provinces and Oudh the Committee has received opinions from Mr. Theodore Beck and the Director of Public Instruction of N.-W. P. and Oudh. From Bengal 10 opinions have been received, 2 of them being those of Justice Bonnerji and Dr. Ray, and 4 Principals and 1 Professor. In all thus it would be seen that excepting the Madras Presidency\* all the Provinces in India have responded to the call made upon them—Bombay, Berar, Central Provinces, N.-W. P. and Oudh, Bengal, Punjab, Baroda, Kathiawar, Jeypore, Cashmere, Central India, Rajputana, Cochin, and Mysore.

2. These opinions may be arranged under eleven different heads: (A) Designation (B) Location, (C) Criticism on the scheme of studies, (D) Will students come? (E) Will they find employment? (F) Constitution, (G) Additional subjects suggested, (H) Miscellaneous, (J) Advantages and disadvantages, (K) General advice, and (L) Support expected.

3. With regard to designation there is almost an unanimous opinion that if the scheme is to be a post-graduate teaching University and a Research Institute, there is no objection to the name Imperial University being given to it as being the most intelligible and attractive. Without the power of granting degrees the scheme will not flourish. Only three or four officers seem to object to the idea of an Imperial University, but their objections are met by the replies given by Principal Hathornthwaite (Bombay,) and Mr. Bell (Punjab), Mr. Sharp (Nagpur), and Mr. Dalal, D. P. I. of Baroda; Mr. E. Giles, of (Bombay) thinks the discussion of the question is premature.

Dr. Ray and one or two others in Bengal and a similar number in N.-W. P. and Punjab, seem to think that instead of starting a separate institution combining the function of a teaching University and a Research Institute, the money should be utilized by helping existing Institutions with additional chairs, and founding scholarships to be held in India and England by selected students. This objection will be considered later on. For the present it may be noted that the name seems not to meet with any opposition and the Punjab University has passed a most sympathetic resolution in support of the new scheme. †

4. With regard to the location, 41 replies referred to this point. Mr. Giles and a few others think the discussion of this question to be premature. Nearly half the opinions are in favour of Bombay. Calcutta comes next. Poona, Nasik, Jubbulpore, and Nagpur find smaller number of supporters, while Naini Tal, Coonoor, Panchgani, London, Allahabad, Lucknow, Delhi, Bangalore and Roorkee have been suggested by one or more gentlemen. Climate, easy communication, nearness to great industrial centres and cheapness of land and living, suitability for Bacteriological work—these are the considerations which have been suggested, as the points to be chiefly attended to. Taking Bombay, Poona and Nasik together, the majority of those who have given their opinion favours the Bombay Presidency as combining these

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\* The Director of Madras has been good enough to intimate that the opinions of experts of his Province will be transmitted on receipt. Dr. Duncan, acknowledging the Articles on the Java Research Institute, wrote that in his view the establishment of a similar Institute would be of enormous benefit to India.

† See "Opinion" (27.)

advantages in largest measure. The most satisfactory feature is that many men not connected with the Bombay Presidency favour some place near Bombay more than in any other part in India.

5. As regards the third head about 52 gentlemen among those consulted have given their opinions ; and these will be found summarised in the précis. So far as these criticisms relate to details they will be found useful by the Committee when they set to work in a practical manner. It is natural to expect a variety of opinions as to which class of studies should be taken up first and which should be postponed. There are many who think that the third or philosophical department should be the last to receive attention, as it is already provided for in the existing Universities. The general inclination seems to be in favour of confining attention for the present to the first class of studies—technical and scientific. Next, the Medical branch should be taken up. It is not necessary here to notice the details of chairs, salaries, and additional subjects. The criticism of some of the authorities from Bengal, and North India, and two or three gentlemen from Bombay also, go to the root of the matter, and they think that the scheme is defective because it seeks to combine the functions of a teaching University, a Research Institute and a technological school. These critics think that there should be no such combination, and that the scheme should be exclusively devoted to research work or to supplying laboratories or libraries as many of them would promote the main object of the scheme by strengthening the existing colleges and institutions with new chairs, and by attaching select students to learn under specialists brought out to India, and then sending them to Europe to complete their training. This alternative scheme as observed above goes to the root of the matter. It would obviously defeat one of the chief objects of the founder who has very strong ideas about the necessity of a teaching University which, while it will not interfere with existing Universities, will take up their best graduates at the stage where they are left to themselves and give them a final course of finished teaching under the best masters. The founder attaches as much, if not more, importance to this work as to research work pure and simple. The general inclination of a very large majority of the authorities consulted is in favour of this combination, and as our colleges can not be as in England located together within the same town, the only practicable and efficient way of securing a teaching University in India is to bring the best men from all places to one Central University and try to utilize our resources to the best advantage. Under these circumstances, it appears that the minority, who advocate a Research Institute pure and simple, or the devotion of the funds to the provision of laboratories and libraries only, have failed to realize the full scope of the scheme. At the same time their criticism is of value as showing how at the commencement we might start by bringing out a few specialists and attach to them select students, and gradually expand our organization as more funds become available.

6. The fifth head relates to the query whether qualified students in proper numbers will join. Of the gentlemen consulted 47 have given their opinions on this point, and the proportion of those who think that there will be no difficulty to those who apprehend that many will not join is as to 2 to 1, and even this minority admits that if some scholarships are provided there will be no difficulty. Of course in the case of poor students the provision of scholarship will be necessary, but the experiments made in Bombay by Dr. Bahadurji and others in the way of post-graduate instruction warrants the hope that there will be no lack of students who will join the new classes from a desire to learn. The minority of the opinions noted above is made up chiefly of officers in the more backward Provinces and Native States. Their hesitation can thus be easily explained. The numbers can not be in the nature of things very large, but when the University is to be opened to select men from all Provinces, there should be no difficulty on this head.

7. The next point relates to the probability of finding employment for graduates trained in the University. 37 Officers have given their opinions on this point, of whom 27 apprehend no difficulty, and 7 think there will be difficulties. Of course, the Government, Native States, Municipalities, &c., will have to show a sympathetic attitude, but there is no reason why they should not do so. With a development of our industries, these trained men must be in general request, and if Government and Native States can get good men on the spot, sooner or later, these men will naturally have the preference.

8. In regard to the constitution, there is a general agreement that it is, so far as it goes, a good tentative scheme which might be improved with further experience. Minor suggestions are made which will be found useful by the Committee. \*

9. The seventh head related to the additional subjects suggested ; the suggestions are very valuable, but those who make them must be themselves aware that the number of chairs is limited by the funds available, and if the Committee has limited the chairs to a few subjects, it should not be supposed that they have over-looked the claims of other subjects. They have chosen representative subjects which have the largest relations to the development of our country's resources and the scientific training of our best men. Two of the opinions from Bengal are very suggestive in this respect.

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\* See under "Suggestions" (page 29.)

127  
~~117~~

10. The eighth head relates to miscellaneous suggestions, which call for no special remark.

11. The ninth head sets forth what, in the opinion of the authorities consulted, are the advantages and disadvantages expected from the new University. Out of 34 officers who have noticed this point, a bare majority of 18 welcome the University as opening a new era in our educational advance; against them must be set 16 others who think that it will do some injury to the existing Universities by dwarfing their growth and they object also because it will substitute a less efficient agency for the more liberal influences of residence in European Universities for the purposes of post-graduate instruction. With regard to the latter objection, it seems to be forgotten that the scheme proposes to send select men to Europe and America to complete their studies. It is evident that if men are sent out after careful selection and training, they will turn their stay in England to better account and at less cost. With regard to the first objection the apprehension seems groundless as the scheme of the new University takes the students up at the stage where the existing Universities leave them to themselves. The misgivings felt by some appear to be due to want of full acquaintance with the history of the subject, and the advance which the country has already made.

12. The tenth head brings together the directions in the way of advice, given by those who wish well to the scheme. The advice is of caution and slow progress before embarking on a large expenditure. The necessity of slow progress is enforced by the novelty of the experiment and the limits of our resources. This advice will be welcomed by the Committee. The conflict between the advocates of research pure and simple and of a post-graduate teaching University joined with research is reproduced here, and needs no further remark.

13. The last head brings together the views of the gentlemen consulted as to the likelihood of securing support to the scheme. Out of 29 gentlemen, who have given their opinions, 20 think that Native States and the wealthier classes will come forward to support the scheme by endowing scholarships, fellowships or chairs. The minority of 9 think that the chances of such support are small. This minority however includes the residents of Cashmere, Indore, and the Chief Minister of Jeypore and the Educational Minister of Gwalior. On the other hand, Her Highness the Maharani Regent of Mysore has expressed her cordial approval, and the Dewan's views are too well-known to need repetition here. Mr. Tait, Principal, Baroda College, holds out a hope of munificent support from His Highness the Maharaja, and the Dewan of Gondal and the Revenue Minister of Bhavnagar think Native States will come to the help of the institution. The late D. P. I. of Berar expresses himself strongly in favour of Provincial help to the new University. A nobleman of Jeypore thinks Native States will contribute if Government shows its sympathy and lends feeling its moral and financial support. The Principal, St. John's College, thinks if the Lt. Governor lends support Native States will give help. These opinions reflect public feeling correctly on this point. The success of the scheme depends upon the attitude of the Government of India and of the local Governments towards it. If these Governments show full sympathy, the rulers of Native States will not be backward, as has been exemplified on many previous occasions, notably in connection with Lady Dufferin's scheme. Without such support no start can be made.

## IV.

## ANALYTICAL INDEX TO OPINIONS.

## A. DESIGNATION.

[Note by Mr. Ranade. Most of the authorities consulted have not given their opinions on this point; but the perusal of their opinions does not suggest that the designation of "Imperial University" would be objected by more than two or three gentlemen.]

1, 2, 17, 30, 31, 33, 34, 36, 37, 40, 46, 56, 68, 73, 74.

## B. LOCATION.

1, 3, 4, 5, 6, 8, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24, 25, 26, 28, 29, 33, 34, 35, 36, 37, 38, 40, 42, 43, 53, 54, 55, 68, 69, 70, 73, 74.

## C. SCHEME OF STUDIES.

1, 2, 3, 4, 7, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 28, 29, 31, 32, 34, 36, 37, 38, 39, 40, 41, 44, 45, 49, 54, 55, 56, 58, 60, 62, 63, 64, 65, 67, 68, 69, 70, 72, 73, 74.

## D. PROBABLE NUMBER OF STUDENTS.

2, 3, 4, 8, 9, 10, 12, 14, 16, 17, 18, 19, 22, 24, 25, 26, 28, 29, 31, 32, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 50, 54, 56, 57, 59, 63, 67, 68, 69, 70, 73, 74.

## E. CAREERS FOR GRADUATES.

2, 4, 6, 8, 9, 10, 14, 15, 16, 17, 18, 22, 24, 25, 26, 28, 29, 31, 33, 34, 36, 37, 38, 40, 42, 43, 53, 54, 61, 62, 68, 69, 70, 73.

## F. CONSTITUTION.

2, 3, 9, 10, 12, 15, 19, 22, 24, 25, 26, 28, 31, 33, 36, 37, 38, 69.

## G. OMISSIONS IN THE SCHEME OF STUDIES.

3, 6, 8, 13, 15, 16, 20, 23, 25, 31, 33, 55, 60, 62, 70.

## H. MISCELLANEOUS SUGGESTIONS.

2, 8, 9, 17, 18, 20, 24.

## J. PROBABLE RESULTS OF THE NEW INSTITUTION.

1, 7, 8, 9, 11, 13, 15, 16, 17, 27, 28, 29, 30, 31, 32, 34, 35, 37, 41, 45, 46, 50, 51, 52, 53, 54, 55, 56, 61, 62, 66, 68.

## K. GENERAL ADVICE.

1, 2, 3, 4, 12, 15, 16, 17, 31, 44, 46, 47, 54, 68, 69, 71, 72, 73, 74.

## L. PROBABLE FINANCIAL SUPPORT.

2, 6, 9, 10, 12, 15, 16, 19, 20, 21, 22, 24, 25, 26, 29, 31, 32, 33, 35, 45, 48, 49, 52, 54, 67, 69, 70, 73.

[The numerals in this Index refer to the paragraphs in the Abstract, indicated by those numbers.]

V

SUGGESTIONS.

[The following Synopsis brings together suggestions on various points gleaned from the Reports.]

The Senate is considered entirely a superfluous body (15); its functions of financial supervision would be better discharged by a Board of carefully chosen Trustees. If it is to be retained, its functions should be rigidly non-academical. Too many representatives are allowed to the founder, and too few for the Professors (15). On the other hand, it is held (37) that the Constitution is too professorial, and that practical men should be introduced both on the Senate, and on the Professorial Council. (a). Constitution.

The numbers of the Senate are said to be inconveniently large for practical work (2, 9) and reduction is suggested (2) by giving less representation to Indian Universities and benefactors.

It is also thought that it would be difficult to bring together a large body of men even for one annual meeting from different parts of India, (12, 37) and it is suggested that a local executive body should be formed to supervise administration (12) and that there should be a Principal of the University (24).

Provision should be made for voting by proxy at Senate meetings (3).

There should be some direct representation given to the Universities of Oxford and Cambridge (2).

Assistant Professors should sit in the Professors' Council, and the Senate should have no representation on the Council (15). The question of the dismissal of Professors should be referred to the Appointing Committee in London (15).

The functions assigned to the Council of Graduates are judged to be both vague and trivial (15, 28, 37); and it is suggested that a Board of Studies should be created, on which Graduates might have seats (15), or that the Graduates might receive representation on the Senate (28). But, on the other hand (25) the Council of Graduates is welcomed as the proper medium of communication between Professors and students.

Article 8 of the Indenture would invest the Scheme with an undesirably sectarian character (2).

Attention has been called to the omission of many subjects, e.g., Botany (6, 31, 55, 60), Biology (2, 55, 60), Astronomy (20), Forestry (6), Scientific Agriculture (13, 16), Mechanical Engineering (16, 33), Geology, Mineralogy, Mining and Metallurgy (16, 23, 25, 31, 60, 62, 70), Comparative Materia Medica, Theories of Diseases and their cures, systems of Medical Practice (20), Pharmacology (28, 60), Fisheries (60), Agricultural Zoology (60), English Literature (8), Logic and Metaphysics (8, 15), Ethnography and Anthropology (31, 55, 60), Commercial Economics (13), History and Economics (55). Mr. Covernton (15) wishes that a Chair of Indian Languages should be added as soon as possible; while Professor Fraser (3) points out that a Professor of educational methods would make himself useful by visiting different centres, and delivering lectures; but he would not separate Ethics and Psychology from the Chair of Educational Methods. It has also been pointed out that Comparative Philology as understood in Europe would be repugnant to Indian students (3). There should be provision (17) for finishing courses in Law and Engineering, nor should the more intelligent graduates in History, Law or Philosophy be shut out from the benefits of the Institution. (17). (b). Scheme of studies.

It is recommended that the new University should confer the D. Sc. degree in all departments (2); and should institute a Licentiate of Teaching, as in Madras (8). On the other hand, it is recommended (9) that as a purely Research Institute, the new University should not depend on the adventitious help of Scholarships, Fellowships and Degrees. (Also 73 and 74), and it is even objected (63) that all theoretical teaching ought to be imparted in the existing Universities before the degree is conferred. (c). Degrees.

Separate tests are not necessary, it is argued (17), for admission to the different departments of studies. There should be only one test, viz, of graduation in any one Faculty; and then the choice should be left to the students and teachers to determine what studies should be pursued. Non-graduates should also, under restrictions, be admitted (20). It should be possible (63, 70, 73) for men who already held posts but had no sufficiently equipped laboratory at their disposal, to profit by the Institution in the Long Vacations. For the regular students, the highest degrees of existing Universities, such as the B. Sc., and the M. A. alone should be the admission qualification (18, 56, 73). Not one of the B. Sc. graduates of the Allahabad University would be fit to join an Institution of advanced work at the time of graduating (73). But it is recommended (4) that it would be expedient to create a Department in the Institute where those who are to go on with research might receive a preliminary training, while others who will go on into life may receive a post-graduate education. (d). Qualifications for admission.



(e). Miscel-  
laneous.

As competition is healthy, the Dholpur Scheme should not be amalgamated with the new Institution (18); and provision should be made for rewarding Professors who do distinguished research work (18). Travelling scholarships should be instituted (31) in subjects which cannot be studied in Laboratories. Hostels should be erected for the residence of students (20). Spirituality is a factor not to be neglected; and perhaps its presence would be best ensured by amalgamation with the central Hindu College, Benares (76). The salaries of the Professors are put down too low (8, 15, 18, 32), particularly of the Assistant Professors (15.) The estimates for the Laboratories are too low (45, 73.) As the efficiency of the University will depend on the quality of the Professors, it would be expedient to make their posts attractive to the Professors by selecting a good climate for the habitation of the University, and by granting them long vacations (73) as in Europe. The efficiency of the University will depend even more on the students (56), the best students ought to be captured by an offer of Fellowships tenable for five years under suitable conditions (see 56).

(f). Alter-  
natives to the  
Scheme.

A considerable body of opinion in hand has expressed doubt whether the money to be disposed of by the Committee would not be laid out more advantageously if we travelled outside the ideas favoured by the Provisional Scheme. The alternative ideas are collected here for convenience:—

It is said (11) that the time has not yet come for post-graduate instruction; and that commencement should be made by developing industrial education at the *base* and not at the *top*, for which we can well wait for 50 years more. This view, however, is combated by Mr. Theodore Beck, (55) who says: "There is a current notion in India that an industrial education consists of a superficial instruction in Chemistry and Physics, and that students who have acquired this may be expected to acquire great fortunes as the pioneers of manufacture and commerce. I do not know who originated this idea, nor on what facts this rests. But when one remembers the contemptuous ignorance of science that characterises the prosperous commercial classes in England, and the indigence of men of science, as well as the wide divergence in ideals, methods and training of these two classes, it seems legitimate to ask for a proof of the theory." And Professor Ward (74) also thinks that Mr. Tata is wise to recognise that "education spreads from above downwards." Nevertheless the suggestion is persistent for the establishment of Schools of Art and Technical Schools all over the country (16, 64); it has been urged that the pressing need of India is to practically utilise scientific discoveries already made (51, 52, 53), and sometimes the idea is put forward that students should be sent to Europe and America to learn, on payment of premium, special industrial processes (16, 51, 62). And Captain Colvin (47) thinks that the very classes whom Mr. Tata wishes to benefit would be better served if *practical education* were combined with the usual instruction of the classes preparing for degrees. Other suggestions, however, distinctly recognise the need of post-graduate education for Indian students, but some of them assume that it is already available and being availed of in the European Universities; and that all that is necessary, at least for the present, is to give encouragement by the foundation of hostels (32), and perhaps stipends also (16, 32, 35, 40, 45, 53, 66). It would be a great pity, it is said, if the broadening influences of residence in Europe came to be neglected (32, 37). Statements, however, appear which show the need of caution. Professor Ward (73) calls attention to the State Scholarships and Gilchrist Scholarships which are often rejected by able natives, who from family and other reasons cannot leave India. Mr. Tata has just had a similar experience personally. Again, twice we are reminded (65, 66) that if such Scholarships are awarded, in some way care should be taken that they are not made a convenience of by men who wish to compete for the I. C. S. or qualify for the bar. And we are warned (34, 54) that the present backwardness in India in original production is due chiefly to the absence of local facilities of Libraries and Laboratories; and this defect of existing facilities and the need of providing them at least centrally somewhere in India is incidentally pressed upon us in the suggestions that work in the Institute should be open to others besides regular students, even men who hold posts but have no Laboratories or appliances at their disposal (63, 70, 73). \* Indeed, it is urged (63) that Government would do well to send to the new Institute, on full pay as in Germany, men who are already doing teaching work, but can produce no new knowledge for want of appliances where they are stationed. Dr. Ray, however, is convinced that the want is not of appliances and Laboratories, and directing Professors, but of a commercial demand for scientific qualifications, and in the absence of such demand, of Research Fellowships in connection with a whole number of efficient institutions whose successful work he fully describes (62). A different view comes into evidence with the proposition (65, 66, 71) (c. f. 13) that "greater help would be accorded to education in its most advanced stages if additional Professorships were founded in connexion with existing Colleges all of which are insufficiently equipped in this particular." But Mr. Ward (73) thinks that the teaching power

\* Nor should we omit to notice that according to Dr. Brown [28] and to Mr. Theodore Beck [55], the leading function of our Institute will be to help to solve distinctively Indian problems now awaiting investigation—the Scientific and Medical problems [28] as well as those arising from the more perishable material of Indian Anthropology or Indian Economics [55]. This function, obviously, would have to wait if the Tata Endowment were converted into a fund for Scholarships tenable in Europe.

is fairly efficient, and is increasing, and that it would be best to leave the existing Universities to work out their own salvation, and establish a post-graduate institution of pure research without the power of granting degrees. The idea of a Research Institute, pure and simple, has been presented by the Hon'ble Mr. Justice Gurudas Bannerji (56). Mr. Theodore Beck (55), Dr. Jackson (9), by Principal Brown, M. D. (28), by Col. Clibbom (68) and by (63) and (58). There is, however, some considerable variance among these gentlemen as to details. Mr. Ward strongly opposes the conjunction of the Medical Branch with physics and Chemistry, "as there is little or no connexion between Physical and Physiological Laboratories, and there are already some good schools in the country to which Physiological and Pathological Laboratories are attached." Mr. Ward would also wait for the Technical to gradually evolve itself out of the Pure Sciences. (73, 74). The Professors of the College of Science, Poona, would also begin with the Scientific Branch, but they would emphasise the Technological side, to which other subjects should lead up; they would postpone the Medical for the present, because Medical Research is already fostered, and has made a beginning, and because "both electricity and chemistry are very intimately connected with Medical Science, and their study in general is a direct aid to progress in that branch." The Principal of Roorkee (68), in view of the present condition of India, would begin with Medical Research; "qualified officers for investigations in this department are ready to hand, and all that appears necessary is to *combine existing centres in one suitable locality.*" And, in discussing what that locality should be, Col. Clibbom expressly maintains the advantages of the neighbourhood of the Thomasson College. No. 63 strongly urges that the best application of the funds at the disposal of the Committee would be to the creation of an Institute for original research; sketches a detailed scheme very much like Mr. Ward's; but is of the opinion that "if Government could be prevailed on to associate therewith the proposed Institution for Bacteriological Research which has been so long under its consideration, there is every reason to hope that the work carried out in an Institute of this kind would lead to results which would confer credit on India and its inhabitants." †

Father Kemp, after an able criticism of the Committee's Scheme (7), concludes that Agricultural and Technological Chemistry are subjects which, under competent Professors, may be expected to prove of the greatest material advantage to India. But for efficiently conducting an advanced course in these subjects, a yearly expenditure on the staff alone, amounting to 2 lacs of rupees, would be barely sufficient, and as the call for high class education in Agriculture is not pressing, since there are the Government Agricultural Colleges, Chemical Technology ought to have the first claim on the funds of the new University, because at present there exists no opportunity of studying the subject in India. Another plan, also aiming at technological research, which is declared to be impossible in a central Institution, combines local activity with central supervision (64). It advocates the creation of a central body like the Science and Art Department of London, now under revision or in process of disestablishment. This body would control a system of museums, promote among them exchanges of industrial products, work in conjunction with local Universities and Laboratories, and promote the highest scientific training by a system of Peripatetic Teachers who would, like the University Extension Lecturers, visit the localities where they were most needed. A different proposal (58) looks to Java for a model to begin with. "A number of experts, with European or American experience, might carry on the work of Research and original work in various departments, and be assisted in their labours by *Pupil Assistants*, who, if the necessity arises, might later on become a nucleus of students and gradually raise the Institution to become a Teaching University." Mr. Theodore Beck takes a line of his own; and boldly asserts that if Research be the aim, then the Philosophical Division is the one most fit to be cultivated in India where special opportunities exist in these subjects (55) (c. f. 60); the duty of attending to perishable knowledge is upheld; and the advantage to Indian education from the preparation of text-books on Indian History and Indian Economics such as would result from the researches on those subjects in a well-equipped University is pointed out. Similar views have been verbally communicated to the Honorary Secretary by Principal Thiebaut (Allahabad) and Principal Stein (Lahore). But Principal White, again, (72) insists on the expensiveness of Scientific Research, from which he infers the expediency of limiting Research to natural science in all departments, particularly as a good Library is all that would be needed for researches in subjects like History. Mr. Covernton inclines to the opinion (15) that a Teaching University really deserving of the name (c. f. 73) whether modelled on the English or the German system would be of more general advantage to the Natives of India than an Institute for the manufacture of second-rate specialists. In Bombay and similar Indian Universities, "the work required for the B. A. is of an absurdly low standard, and even in the M. A. the quality of the performance leaves much to be desired. On the other hand, the existence of

† Compare Mr. Scarp's statement (37) "that if the object is *original research*, the money would be better spent in endowing handsomely some few posts for original research, to be held by men of the highest promise...and again. "The most practically useful department would seem to be the Medical, for a trained specialist can always find employment, when his reputation is established for any particular group of ailments; and the prosecution of original research is by no means inconsistent with the maintenance of private practice."

a genuine University would re-act on the local bodies and tend to improve them, so that in time an adequate number of well-grounded students might be forthcoming. This improvement would probably manifest itself soonest in the non-scientific subjects which, as a whole, are more suited to the peculiar bent of the Indian intellect." A similar opinion has been sent by Principal Davies (8) who would subordinate research to the functions of a Teaching University, and thinks that the Philosophical Department offers a good field for the new University to make itself useful in promoting a scientific secondary education in the country.

(g). Festina Lente  
(1,9,33, 43,46  
69,74).

Other advice claims attention. The caution of the Committee is commended, and its action in putting forward the Scheme of Studies and the Constitution as tentative has been appreciated. The warning is given (9) that "Mr. Tata's liberality enables an interesting experiment to be tried which is sure to do much good ultimately, but will perhaps yield results at the start which may appear out of proportion to the expenditure, and is sure to involve some waste of energy and money, while the institution is feeling its way." Apprehensions have been expressed (7, 9, 16, 56, 61) lest an Imperial University should somehow affect the working of the existing Universities to their prejudice. "Little enough money," says Dr. Jackson (9), "is devoted to the teaching of Science at present, and it might afterwards be considered that enough had been done by the establishment of a bounty-fed "show" institution at the head of affairs; while all the institutions which should be its feeders, and which really bear the burden and heat of the day, remained in a neglected condition." Dr. Jackson has no doubt that a staff so strong and well paid would be able to do a great deal towards revolutionising the study of Science in India. The Hon'ble Mr. Giles also (1) insists that development is to be gradual and proportionate to the increase of resources. If so, he believes that a beginning would be most usefully made by bringing out one or two experts on Chemistry and Technology to enquire into the resources of the country, visit various centres of industrial activity, and formulate an opinion as to the eventual location of the Institute, and the immediate expenditure necessary on buildings and their accessories. Principal Hathornthwaite thinks that the scheme has been sufficiently sketched by the Provisional Committee to warrant an appeal for financial support being made to Native Princes, Local Governments and the general public (2). That the response in the shape of scholarships to be established by Princes, Local Governments, wealthy gentlemen, Municipalities, and Colleges will be large, seems certain from the frequent references to the subject, but the assurance of a more general help will depend on the attitude of Government (20, 21, 25, 31, 33, 34, 38, 54, 69). "Without Government benevolence, private munificence is sure to be barren" (20.)