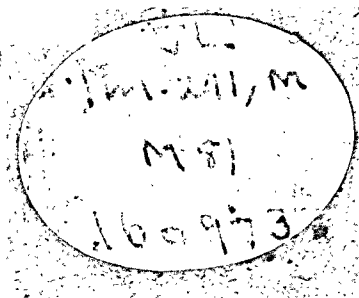


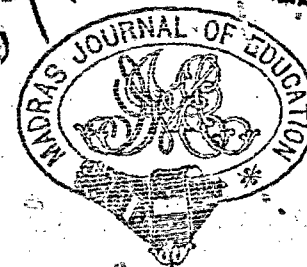
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### THE MONTH.

It is observed by the Director that a large percentage of the pupils of the Upper IVth Class in some schools, were not sent up for the last Middle School Examination. All pupils of this class he thinks should have been presented for examination, as the holding back of pupils detracts from the value of the examination for comparative purposes, and it will be necessary to regard pupils not presented as having failed to pass—in dealing with the results of the Examination in the comparative review. There is another view of the matter that is well put in a letter that we quote elsewhere from *The Standard*.

The Director of Public Instruction has left Madras on an official tour and we learn that he intends to visit the Western coast very shortly. We trust this indicates his intention to move about a little more than his predecessors were in the habit of doing.

We regret to see that not one-third of those who registered their names for the First in Arts Examination of 1880 have succeeded in passing. We give an analysis of the failures on the next page.

The Analysis shows that English and History were the two most fatal subjects, no less than 79 failed in English and 49 in English and History. From our point of view the English papers were extravagantly long. It is a pity that when setting their papers the Examiners do not endeavour to 'put themselves in the place of the Examinees' for a moment. "Put yourselves in his place" is a good old saying.

*Analysis of Failures at the F.A. Examination of 1880.*

a = English.                      d = Mathematics.  
b = Vernacular.                  e = Physiology.  
c = History.                      f = Total marks.

|            |      |    |
|------------|------|----|
| Absentees. |      | 11 |
| Failed in  | a    | 79 |
| " "        | b    | 9  |
| " "        | c    | 1  |
| " "        | d    | 15 |
| " "        | e    | 2  |
| " "        | f    | 3  |
| " "        | ab   | 4  |
| " "        | ac   | 49 |
| " "        | ad   | 33 |
| " "        | ae   | 4  |
| " "        | af   | 4  |
| " "        | de   | 3  |
| " "        | ce   | 4  |
| " "        | de   | 1  |
| " "        | abd  | 33 |
| " "        | acd  | 12 |
| " "        | ace  | 6  |
| " "        | ade  | 2  |
| " "        | bcd  | 1  |
| " "        | bde  | 5  |
| " "        | cde  | 3  |
| " "        | abcd | 32 |
| " "        | acde | 6  |
| " "        | abde |    |

322

Passed 1st Class... 34

2nd Class... 133

Grand Total registered... 489

7m211, m59

m5923

*Summary of the F.A. List, December 1880.*

| Rank. | Names of Institutions.          | NUMBER PASSED. |               |        |
|-------|---------------------------------|----------------|---------------|--------|
|       |                                 | First Class.   | Second Class. | Total. |
| 1     | Madras Christian College .....  | 5              | 26            | 31     |
| 2     | Kumbhakonum College.....        | 8              | 14            | 22     |
| 3     | Presidency College .....        | 6              | 8             | 14     |
| 4     | Trevandrum Maharajah's Col..    | 2              | 9             | 11     |
| 5     | Calicut Kerala Vidyāsāla .....  | 1              | 10            | 11     |
| 6     | Trichinopoly S.P.G. College...  | 3              | 7             | 7      |
| 7     | Calicut Government College...   | 2              | 2             | 4      |
| 8     | Mysore Maharajah's College...   | 2              | 3             | 5      |
| 9     | Bangalore Bishop Cotton's Col.  | 1              | 4             | 5      |
| 10    | Mangalore Government Col. ...   | 1              | 4             | 5      |
| 11    | Bangalore Central College.....  | 1              | 5             | 6      |
| 12    | Doveton Protestant College...   | 1              | 3             | 4      |
| 13    | Rajahmundry College.....        | 1              | 3             | 4      |
| 14    | Berhampore Govt. College.....   | 1              | 4             | 5      |
| 15    | Cuddalore do. ....              | 1              | 4             | 5      |
| 16    | Vizagapatam Hindu College...    | 1              | 4             | 5      |
| 17    | Nagapatam St. Joseph's Col. ... | 2              | 1             | 3      |
| 18    | Masulipatam Noble College ...   | 1              | 3             | 4      |
| 19    | Tanjore S.P.G. College .....    | 1              | 3             | 4      |
| 20    | Ernakulam High School.....      | 1              | 2             | 3      |
| 21    | Salem Government College...     | 1              | 2             | 3      |
| 22    | Tinnevely C. M. S. College...   | 1              | 2             | 3      |
| 23    | Vizianagaram Maharajah's Col.   | 1              | 2             | 3      |
| 24    | Bellary Government College...   | 1              | 1             | 2      |
| 25    | Shimoga do. College...          | 1              | 1             | 2      |
| 26    | Tinnevely Hindu College .....   | 1              | 1             | 2      |
|       | Private Study .....             | 1              | 6             | 7      |
|       |                                 | 34             | 134           | 168    |

We learn that the Director of Public Instruction has lately expressed his desire to encourage all private institutions of standing to seek admission for their Fifth and Lower Fourth Classes to the Government Comparative Examinations. Seeing that promotions from the Upper Fourth Class are to be made on the Results of the Middle School Examination, it becomes exceedingly important that promotions into lower classes should be made with judgment, and especially from the Lower into the Upper Fourth, School Managers and Masters should therefore hail the offer.

We have been desired to note that Mrs. Harris a pupil of Miss Spence of the Government Normal School headed the list of First Grade Female Candidates and not a "private student" as has been stated.

A FREE Scholarship tenable for two years in a Government College, selected by the Director, will be awarded by him, on the recommendation of the Inspector of Schools of the Division, or the Principal of a Government College, to any Master holding a permanent post in the Government Service, who having passed the F.A. Examination, desires to study for the degree of Bachelor of Arts. The free scholar must study the optional subject recommended by the Inspector or Principal and approved by the Director. During the tenure of the scholarship, leave of absence from his appointment will be granted on forfeiture of full pay. The scholarship will be withdrawn for misconduct or neglect of duty.

*Extract from Proceedings of the Local Fund Board, Coimbatore Circle, dated 22nd December 1880.*

22. Proceedings of the Director of Public Instruction No. 5774 of 13th December 1880 passing remarks on the Proceedings of the Local Fund Board limiting the attendance of boys in the practising branch of the Local Fund Normal School to 60.

The Board resolve that the fee system be introduced from 1st January 1881, and that the numbers admitted to the practising branch school be unlimited: free scholars shall never in number exceed 5 per cent., of the total roll. The fees will be as follows:—

- (1) 3rd Standard.—3 annas a month.
- (2) 2nd Standard.—2 annas a month.
- (3) 1st Standard.—1 anna a month.
- (4) Infant school.—6 pies a month.

The Government rules regarding the collection and remittance of the fees will be adopted.

(True Extract.)

No. 1.

Communication to the Director of Public Instruction for information.

THE GOVERNMENT FEMALE NORMAL SCHOOL, MADRAS.—On Saturday the teachers and pupils of this school waited on Miss Catherine Stafford Spence, the late Superintendent of the School, and presented her with the following valedictory address on the eve of her departure to New Zealand, the address being read by Miss Bernard:—

"DEAR MISS SPENCE,—We, the undersigned Teachers, present and former pupils of the institution for five years under your charge, meet you here to-day on the eve of your departure to a distant land, to bid you a long farewell. Parting under such circumstances cannot but be of a painful nature. How much more is this the case when we lose an honoured and beloved Teacher whose pure, gentle

and guileless nature and self-denying devotion to duty have endeared her to all creeds and classes of her pupils. While we deeply regret the unavoidable loss to ourselves of the invaluable assistance we derived from your experience, erudite knowledge and varied stores of anecdotes and travel enlivening the routine of what would otherwise prove monotonous studies, we congratulate you on your appointment to a new and important sphere of duty in a more congenial climate, and amidst sympathetic and appreciative friends and relatives. May God in his merciful providence, vouchsafe to you and your sister a prosperous voyage to, and a safe arrival in New Zealand. Though you may be parted from us by the wide ocean, your kindness and unwearied patience in imparting instruction will ever live in our grateful remembrance, and we fervently hope that health, long life and continued success in your honourable career may be the reward of your arduous labours. Bidding you, in conclusion, dear Miss Spence, and your sister, a respectful and affectionate farewell, and trusting you will do us the favour of accepting the accompanying slight token of our affection, high esteem and regard, Believe us to be, dear Miss Spence, your most grateful and attached friends and pupils."

Together with the address a gold watch and chain and an album were presented. Miss Spence replied as follows:—

"MY DEAR YOUNG FRIENDS,—I won't try to reply to your kind address, because I don't know what to say about myself in regard to the high opinion which you are pleased to express concerning me. It may be all correct, I should be glad to think so, but I am not sure enough of the matter to appropriate the high praise as it is controvertible, and so I shall just say a few words of affectionate farewell to you, quite irrespective of what you have said to me. Perhaps there is no fact that impresses itself so certainly on the mind at the period of leave-taking as this, "The time is short." Five years ago I landed in India. Of course, I was homesick at first, and I thought, Will the five years for which I am bound to serve ever pass away? How shall I live five years away from my sisters and their children? Five years of tropical heat, and dust, and mosquito bites! Five years the risk of sunstroke, snakes and scorpions! And now five years have passed away, and in the retrospect they look like a single day, but a day full of pleasant memories never to pass away but with life itself. There is no pupil with whom I have come in contact that has not established a claim on my kindly remembrance by attention to work and loving obedience. And now, in bidding you farewell, I would remind you that to you too "the time is short." That at school is short, the time of youth is short life itself is short. Crowd into it then all the happiness that you can. Not the imaginary happiness of selfish devotion to pleasure, but the happiness of doing what is right and of aiding the happiness of your parents, teachers and companions; of being useful members of the community. So that, though the time is short to us all, it may not, through your means,

Darkening as it downward bears,  
Be stained with past and present tears."

There were a hundred and thirteen girls present, besides the teachers.—*The Times.*

**DEPUTY INSPECTRESS OF SCHOOLS.**—At the suggestion of Mr. Fowler Inspector of schools, and on the recommendation of the Director of Public Instruction, the Government have sanctioned the appointment of a Deputy Inspectress of Schools for the Vernacular department, on a salary of Rupees 100 a-month, rising to Rupees 150, with a pension on Rupees 75 per month and contingencies at Rupees 50. The appointment will, we hear, be made on the 1st March.

**ENGLISH READER.**—The Government have sanctioned a grant of Rupees 1,500 to Dr. John Bradshaw, Inspector of Schools, for his Fifth English Reader.

**DISHONEST CANDIDATES.**—The following are notified in the last *Gazette*:—Rajagopala, T. S., registered No. 1,665, having been guilty of fraud at the Matriculation Examination held at Kumbakonam, his examination is invalidated and he is debarred from appearing at the next two Examinations. Chaulapalli Jagannatha Rau, registered No. 2,429, and Madduru Appalaswami, registered No. 2,425, having been guilty of fraud at the Matriculation Examination held at Berhampore, their examinations are invalidated, and the former is debarred from appearing at the next Examination and the latter at the next two Examinations.

In New Zealand, as in some countries nearer home, inspectors are in the habit of larding their lean reports with samples of bad answers. The inspector-general of schools, reporting on the 1880 examination of teachers for certificates, says:—

"In the examination in the outlines of English history it is expected that a candidate shall show sufficient knowledge of the subject to enable him to preside intelligently over a class engaged in reading a lesson from a text-book, and to turn to larger books for matter which may illustrate the lesson. Minute and accurate acquaintance with such a large subject is not looked for, and a liberal value is assigned to all intelligent answers. But it is found that the examination in practice becomes to a great extent a test of common sense. Candidates, who might pass if they knew enough to know their ignorance of historical facts, and if they left many questions unanswered, exhibit a recklessness and a habit of confused thinking that justify their rejection. The candidates . . . were asked to 'name and characterise the great English statesmen of the seventeenth and eighteenth centuries?' Some of the answers illustrate the want of common sense to which I have referred. (1.) 'Pitt, one of the best primers England has seen; Gladstone, Disraeli, Fox, and Sheridan.' (2.) 'Sir G. Grey, W. Fox Pilehard, Carl Crombie, Murray Fisher.' (3.) 'Shakespeare, Chaucer, Wm. Spenser (Faerie Queene) and Dickens.' (4.) 'From his earliest years Pitt was afflicted with the gout.' (5.) 'Pitt led a chequered life; he was troubled with rheumatics.' (6.) 'Laud, better known as Stafford.' The following are portions of answers given to a question which afforded an opportunity of showing any knowledge the candidates possessed with regard to Milton, the Septennial Act, Glencoe, Laud, the Rump, and the South Sea Bubble. 'Milton was a poet, under William the Fourth. A very good poet, and was liked very much by his friends.' 'Milton,

a great poet; translated the Bible." "Milton was a philosopher, who did much to increase our knowledge of the laws of nature, notably gravitation." "Milton also wrote Agonistes and Samson; was married twice and was not loveable to either of his wives." "The Septennial Act was passed once in seven years;" "elected members every five years;" "was that parliament should be closed seven years;" "was an Act drawn up to prevent any sovereign from keeping the meanest subject in prison without bringing them to a fair trial. No more beautiful and perhaps useful lives would be allowed to pine and waste away in damp dungeons," and so on. "Glencoe, a Scottish chieftain who rose in rebellion against the Protestants, and wanted to have Presbyterianism established in Scotland." "They rose up in the middle of the Knight, and began their work of Blood." "Archbishop Laud, Minister of St. Andrews, and who was murdered by Balfour Burleigh"—"a Royalist general"—"an archbishop." He did much good in promoting Puritanism." "The Rump, so called from the Whigs and Tories having had quarrels"—"so called from one of its members." "The (South) Sea Bubble is spoken of in history as being similar to a waterspout. . . . Ships have been known to meet this strange sea-bubble, and of course journeys upward with it unless it is foreseen; and, if so, the seamen discharge fire-arms into it to break or burst. . . . Ships have been carried many miles overland by it. In fact, everything is, as it were, sucked into it." It would be easy to multiply instances not less absurd. I have quoted these, because I think they show—first, the necessity of having children taught history so far as to render them incapable of making such blunders; and, secondly, the value of an examination in history, for the purpose of preventing those who can make them from becoming school-teachers. It is, perhaps, necessary to add that many of the successful candidates passed well in history as they did also in other subjects, and gave evidence of great ability and considerable attainments."

How Mr. Stewart would have gloated over such padding as this for a report! Why does not Mr. Stewart go to New Zealand? He can be spared from Greenwich.

## Results of Comparative Examination, Sixth Division.

| NAME OF INSTITUTION.                    | No. of pupils sent up for the examination. | No. appeared. | No. OF PUPILS PASSED. |               | Total number passed. |
|-----------------------------------------|--------------------------------------------|---------------|-----------------------|---------------|----------------------|
|                                         |                                            |               | First Class.          | Second Class. |                      |
| Govt. College, Mangalore .....          | 54                                         | 54            | 22                    | 21            | 46                   |
| Do Calicut .....                        | 31                                         | 29            | 6                     | 16            | 22                   |
| Kerala Vidyaśāla, Calicut & .....       | 37                                         | 35            | 7                     | 18            | 25                   |
| Govt. High School, Tellicherry .....    | 24                                         | 24            | 9                     | 13            | 22                   |
| Do do Palghat .....                     | 66                                         | 62            | 19                    | 34            | 53                   |
| Do do Cannanore .....                   | 25                                         | 24            | 2                     | 12            | 14                   |
| Basel Mission High Schl., Calicut ..... | 32                                         | 28            | 6                     | 16            | 22                   |
| Govt. Middle School, Erode .....        | 9                                          | 37            | 3                     | 3             | 6                    |
| Do do Badagara .....                    | 11                                         | 10            | 1                     | 8             | 9                    |
| Do do Chanakad .....                    | 6                                          | 5             | 2                     | 3             | 5                    |
| Do do Dharapuram .....                  | 10                                         | 8             | ...                   | 4             | 4                    |
| Do do Udumalpetai .....                 | 10                                         | 9             | 4                     | 4             | 8                    |
| Total...                                | 315                                        | 295           | 81                    | 155           | 236                  |

## CORRESPONDENCE.

## MATRICULATION TELUGU PAPERS.

TO THE EDITOR OF THE MADRAS JOURNAL OF EDUCATION.

SIR,—The papers set at the last Matriculation Examination are, on the whole, of a decidedly easy character. If the candidates, who went up for the examination, secure the requisite number of marks in English, I doubt not that a good number may pass. I have, however, a few remarks to pass on the two papers on the Telugu language. The one on the Telugu text is too long for the time given, and also more difficult than it should be. In the paper on Translation and Composition, the only question that was fair and suited to the capacities of the candidates was the first, in which a nice passage in English was given to be translated into Telugu. The subject selected for Composition is, I think, a very dry one, and such that few could attempt to answer intelligently. In the third question there are seven sub-divisions. Two passages in the Telugu Prose and four stanzas in Poetry were given for translation into English; but I am sorry that, with the exception of the fifth sub-division, the other three stanzas are not such as to be given for translation. Those who know any thing of Telugu Poetry and how difficult it is to render even translatable stanzas into idiomatic English will, no doubt, agree with me that those three stanzas would do more for an exercise in paraphrase than for translation. If the examiner was a fair one and if he wished to test the abilities of the examinees, he could have selected other stanzas (and they

may be counted by scores) suited to the purpose. I therefore think that injustice was done to the students by the selection of the stanzas above referred to. If the examiner thinks that my complaint is not well-founded, let him publish his own translation of the said three stanzas in the next issue of your valuable Journal; and then all the impartial public will see how far he has himself succeeded in rendering them into idiomatic English. If the stanzas are such as to puzzle teachers of experience (of course, in translation), it is not at all fair, I think, Mr. Editor, to make such a selection to the utter disappointment of the unfortunate candidates.

A SCHOOL-MASTER.

TO THE EDITOR OF THE MADRAS JOURNAL OF EDUCATION.

SIR,—Near the beginning of De Quincey's "Confessions," the following sentence occurs: "A metaphysical fix, unprovided for even by Thomas Aquinas, or the prince of Jesuitical casuists." Will you, or any obliging reader inform me who this prince is?

OBTACUMUND,  
15th January 1880.

I am, yours truly,

W. K.

## MIDDLE SCHOOL EXAMINATION.

TO THE EDITOR OF THE MADRAS STANDARD.

SIR,—In a circular addressed to the head-masters of some of the aided schools, the Director of Public Instruction remarks that 10 per cent. of the pupils reading in the middle school classes of the S. P. G. College, Tanjore, 20 per cent. of the Wesleyan Mission students of Negapatam, and 25 per cent. of another institution, did not appear for the last examination. The Director thinks that this circumstance detracts from the value of the examination for comparative purposes, and hence those pupils who were kept out of the examination must be considered to have failed. The premises and conclusion of the Director are quite illogical and argue a want of thorough acquaintance with departmental affairs. The chiefs of the educational department have very often publicly declared their inability to detain boys who are really unfit from presenting themselves for any examination they may wish to apply for. Instead of possessing this salutary check, which the Director thinks they exercise for their own private interests, they are absolutely powerless. Then again it is not an uncommon occurrence that seven or eight out of a hundred boys are irregular in attendance or fall sick in the course of a year. In the case of such boys, the head-master cannot compel them to appear against their own free will and choice. Lastly, I don't see how their voluntary exclusion affects the value of the examination for comparative purposes. In the matriculation and the higher examinations, no such rule obtains. For my own part, I think it is of infinite value that head-masters of schools should try their best to shut out realuffers, and so save them a few rupees. There is also a moral obligation in the relation between teacher and parent, that the progress of the scholar should be truly interpreted and the value of these examinations clearly explained.

L. S.

explain the more difficult words in it. These words would be pointed out previously by the teacher as a part of the home-work. The explanation of scientific words with their derivation might be made a very interesting feature of the reading-lesson.

Books prepared for beginners, Science Primers, will be found generally to be well adapted for the purpose I have described. It must be understood that I do not recommend this as a substitute for the ordinary School Reader, but that it should be used with it in elementary schools, and in the lower classes of our more advanced schools. It would prepare the boys for the lectures in the higher classes. It is a familiar and easy method of teaching, and would in my opinion, if universally carried out, be laying a good foundation for general science instruction. If teachers would take it up in this way, I am quite sure that the Government would not be slow to reward them. It would be easy to insert another column in the Grant-in-Aid Report-sheet for "Science Reading," and the examination might be conducted in a way similar to that which comes under the head of "Reading." It would pay in every way.

(To be continued.)

#### UNIVERSITY EDUCATION IN MADRAS AND CALCUTTA.

Mr. ADAM, the new Governor of Madras, before he started from England, received the usual deputations from those who are specially interested in missionary enterprise, professedly asking for help in promoting the education of the masses, but covertly aiming a blow at the higher English education as now favoured by Government. Mr. Adam, in England, was, however, like Lord Ripon in India, wise in his generation, or rather in expressing his present ignorance on the subject, together with his strong desire to do all he could to remove that ignorance at the earliest possible date. He stated in reply:—"Of course I speak here in much ignorance of what the state of education may be in the Madras Presidency. I should not pledge myself in any way to any course of action until I have been in that Presidency for some time, and been able to make myself acquainted with the whole system of education there, and, therefore, while I express, as I do, my hearty sympathy with what you have said, you must understand I can make no promise except that the matter shall have my most careful and attentive consideration." With a view of helping in some small measure to remove the shroud which veils the benighted presidency from Mr. Adam and others equally ignorant, though equally interested, we have obtained a copy of the Madras University Calendar for 1880-81, in order to obtain some insight as to the comparative status of higher education in Madras and in Calcutta; and caused the Madras Calendar to be rigidly compared with the Calcutta Calendar by experts in whose judgment we can confidently rely, with a view to ascertaining the relative difficulty of the two University courses of instruction, as laid down by the respective Universities for purposes of examination and assigning degrees.

With regard to the English Literature Courses, we are informed:—"There are three different examinations to be passed to obtain the B. A. degree, and the Madras question-papers in English Literature

in each case are superior to the corresponding question-papers in Calcutta. The Madras entrance questions are far less crabbed than those at Calcutta, and are really a much better test. The First Arts question-papers are more severe at Madras than at Calcutta, partly owing to the difference between the two courses, the Madras English Literature course being more difficult and far better selected than the English Literature course at Calcutta. But the questions themselves are also intrinsically better at Madras and more carefully drawn up. At Madras, however, great encouragement is given to 'paraphrasing,' which is a decided mistake, and it is rightly discouraged at Calcutta. The subjects selected for English Literature at the B. A. degree are so far superior at Madras to those selected at Calcutta, that it is difficult to form a fair comparison between the two sets of examination questions. So far as the subjects permit, the Calcutta papers are usually not bad, though following each other from year to year too much in a groove, but they do not include the same extent of subjects as those at Madras, the Calcutta subjects being more archaic than those at Madras, where modern English is better represented. With regard to the examination for Honours, no fair comparison is possible, as the Honour degree at Calcutta is taken upon one language as chosen by the candidate, for example, the English language; whereas at Madras two languages must be taken up, one of which being compulsory, the English language. Hence the Calcutta range is necessarily more extensive than the Madras, and the examination more rigid." This being the case, it seems clear that the Calcutta University has a good deal to learn from the Madras University in the way of improving and better regulating the various examinations in English Literature, excepting, of course, the Honour Examination, which is allowed universally to be a severe test and excellent standard.

With regard to Natural and Physical Sciences, our information is as follows:—"The course in Physical Science prescribed for Arts degrees in the Madras University resembles in some ways the Science course in the University more than the Calcutta 'B' course in Arts. For example, the matriculation candidates in Madras are expected to have some knowledge of the elements of Physics (including Dynamics), while in Calcutta nothing is expected in this line until the F. A. Examination. The requirements of the Madras University are so very meagre, however, that the inclusion of Physics in the Entrance course does not perceptibly increase its difficulty. The F. A. Examination in Madras is almost entirely literary and mathematical. The only science subject required is Elementary Physiology, and the questions set in this subject are very easy. In Calcutta the examination includes Dynamics and Elementary Chemistry. The Madras B. A. Examination differs from that of Calcutta in that no option is allowed to those who take up Physical Science. In Calcutta a candidate may take up, together with Chemistry and Physical Geography, either Physics or Botany, or Zoology or Geology; in Madras all alike must pass in Chemistry, Physics, and Botany. The consequence is, that the knowledge the Madras students acquire loses in depth even more than it gains in breadth when compared with Calcutta. The examination papers in Chemistry, Physics, and Botany are all easy, compared with those set at Calcutta. One point in which Madras is immensely in advance of Calcutta is the institution of a

- (b). The preparation of the reading lessons in every language, with the aid of Dictionaries and Grammars.
- (c). Getting up portions of the Text-books in Geography, History, Grammar, Geometry, Physics, and Physiology.
- (d). Recapitulation and revision.

Under the head of paper work come.

- (a). Translations from and into English.
- (b). Exercises in Arithmetic, Algebra and Trigonometry and Deductions in Euclid.
- (c). Exercises in Grammar and Composition.
- (d). Map drawing.
- (e). The transcription into fair exercise books of such corrected exercises as may be ordered.

#### PHYSICAL TRAINING AND FIELD GAMES ASSOCIATION.

A MEETING was held at the office of the Director of Public Instruction, Pantheon Road, for the purpose of starting the above Association. A large number of European and Native gentlemen, above a hundred and fifty, were present, including the principals and head-masters of almost all the colleges and schools in Madras and those interested in education.

On the motion of the Hon'ble Meer Humayoon Jah Bahadur, seconded by the Hon'ble J. G. Coleman, Sir Charles A. Turner, Kt., C.I.E., was voted to the chair.

Sir Charles said that it was almost unnecessary for him to say that the meeting had been called to form an Association for the purpose of encouraging physical training in colleges and schools. He was pleased to see such a large attendance of all classes of society, a circumstance which he took to be an earnest of the public desire to establish an Association. The encouragement of physical training, the hon'ble chairman said, it was well known was conducive to health; it developed those mental qualities so requisite in all those who had to discharge the duties of every day life. It was essentially necessary for those who lived under the influence of an eastern sun. It had often been observed that Indian students had a great aptitude for intellectual work—and the Association that they were about to start would do everything to assist students in their studies, it would make them energetic and confer upon them advantages which English students derived from undergoing a regular system of physical education. It was a very important branch of education and the gentlemen who had assisted in drawing up the scheme had done all that they thought would secure for the Association the support of gentlemen interested in education. Sir Charles said that if any gentleman present wished to make any remarks or offer any suggestions he would be glad to hear them.

Mr. Justice Muthuswami Iyer, C.I.E., moved the first resolution which was to the effect that the Madras Physical Training and Field Games Association be formed having for its object the improvement of the youth of the Presidency in manly exercises.

Mr. George Duncan in seconding the motion said that the name chosen for the Association was arrived at after much deliberation and discussion. The resolution was put to the meeting and carried.

The Very Rev. J. Colgan proposed the second resolution which was to the effect that H. E. the Governor, H. E. the Commander-in-Chief, the Chief Justice, the Members of Council and the Maharajah of Travancore and Mysore be invited to become Patrons of the Association. The resolution was seconded by the Hon'ble Meer Humayoon Jah Bahadur.

Mr. Wodderburn suggested that the Maharajah of Vizianagram's name be added to the list of Patrons.

Dr. Oppert proposed the Maharajah of Cochin.

A Mahomedan gentleman proposed the Prince of Arcot. It was decided that the names of the Maharajah of Vizianagram, the Maharajah of Cochin and the Prince of Arcot be included in the list of patrons.

Mr. Arundel proposed the third resolution to the effect that the scheme recommended by the preliminary meeting as the basis of the Association be accepted. The scheme adopted at the preliminary meeting of the Committee has already appeared in these columns. Mr. Arundel said that he thought that there was a great future for the Association. The subject of physical education should receive more attention than it does at present. Two objects were to be gained by the establishment of the Association. It would give the public service and even private employers a well-developed class of men capable of enduring hard work, and it would also form a bond of union among students who would often remember their companions and rivals in the different manly exercises and competitions in which they had taken part. It would foster cohesion among students, such as those of the Free Church and the Presidency colleges and other institutions. The competition for the different prizes would cause a good deal of healthy rivalry and emulation between the students of different schools which would be a great advantage. He had every reason to believe that an Association of the kind would confer great advantages on the rising students of our colleges and schools. (Mr. Arundel here read the memorandum alluded to above for the information of the meeting).

Mr. P. Ramaswamy Chetty seconded the proposition.

Mr. Ramachandra Iyer said that he would draw attention to the fact that, in certain schools in Madras, it was the custom to close at 5 o'clock and not at 4 o'clock as was the case in all Government schools. If the hour of attendance was not changed, it would be difficult for boys attending non-Government schools to take advantage of the opportunities offered for physical training. Unless, therefore, there was a modification in the hour of attendance at private schools, the present scheme could not work as successfully as they would wish.

Mr. Grigg said that the scheme placed before the meeting was a large one and that it would rest with the Committee to modify the details in order to work it successfully. He had read in the papers a remark that the Government demanded a great deal of work from private schools and that consequently the hour of attendance was increased. He did not think that this charge could be sustained. It was true that the Government schools were successful in their results, much more so perhaps than other schools. Saturday was a holiday in all schools and he thought that on that day the public gymnasium might be resorted to. In all Government schools, physical training formed a part of the curriculum and if the same course was adopted in private schools, a proper position would be given to an important branch of education. He was sure that, if fathers of families were to give this subject their attention and impress upon the minds of their children the advantages of physical training, the best results would follow. Their children would become clear-headed, well-developed, well-balanced men. He reminded them of the old saying that "all work and no play makes Jack a dull boy," indeed, he said, that boys trained as it was the habit of most parents to train their children now-a-days, would only grow up as dull men and useless members of society.

Mr. John Cooke wished to know if each school would have its own apparatus.

The Rev. Mr. Miller said that he believed that it was intended that each school should have its own apparatus and instructors. In an Association of

this kind there would be difficulties to overcome and he hoped that with the assistance of parents who take care to see that their children were regularly promoted, will also take as much interest in their physical training. The Committee to whom the scheme will be relegated will modify it to suit the requirements of schools and he thought that the question now under discussion was one of detail.

Mr. Jugga Row suggested the assignment of marks to students who had done well in physical exercises, so that by this means a healthy rivalry may be created.

Mr. D. Duncan wished to know whether aid would not be given to schools to establish gymnasia.

Mr. Grigg said that that would be a matter of detail. It will be necessary to keep a roster to show the attendance at the gymnasium.

Dr. Oppert wished to know whether attendance of pupils at the gymnasium would be compulsory. Five to 6 P.M. would be a proper hour for this kind of exercise.

Mr. Cooke wished to know how weakly boys would be dealt with.

Mr. Arundel said that weakly boys, by attending the class, might develop into strong men.

The Chairman said that he believed that the discussion had gone too much into detail which heads of schools should look into and arrange. So far as the meeting had gone he believed that the scheme was favorably received and he put the original proposition to the meeting which was carried.

The Rev. W. Miller, with a few remarks, moved the resolution to appoint a Committee of management to consist of not less than 30 gentlemen: President, the Hon'ble Macfadyen; Committee, the Hon'ble Meer Hamayoon Jali Bahadur, the Hon'ble Mr. Muthaswami Iyer, the Hon'ble J. G. Coleman, the Very Rev. J. Colgan, Mr. J. T. Fowler, Mr. E. Thompson, Captain H. D. Love, Mr. Soondrum Sastry, Dr. King, Col. Chamier, Mr. A. T. Arundel, Mr. A. M. Saunders, Mr. Kristanna Charriar, Mr. Vijiarungum Moodelliar, Mr. Mahomed Khan Bahadur, the Hon'ble G. N. Gajapathi Row, Mr. Ranganatham Moodelliar, Mr. Ranganatha Row, the Rev. A. W. Atkinson, Mr. John Cooke, Mr. Kalyasoundrum Chetty, Col. Shay Stewart, Mr. D. Sinclair, Mr. L. McIver, the Hon'ble Mr. Ranganatha Sastry, Major Galloway, the Rev. W. Miller, Mr. H. B. Grigg and others. Mr. Geo. Duncan and Mr. H. G. Wedderburn to be Honorary Secretaries and Mr. Chentsal Row, Treasurer.

The Hon'ble J. G. Coleman seconded the resolution which was carried.

The Hon'ble Mr. Ranganatha Sastry, in moving a vote of thanks to the chairman for presiding on the occasion said that he wished to make a few remarks. He said that he often felt that education levelled distinction between classes and physical education would do more than that. He alluded to the benefits which physical education would confer upon the rising generation. Alluding to himself, the hon'ble gentleman said that when he was 8 years old he entered a Mahomedan gymnastic school, that he attended it regularly, that he for 8 years attended the riding school of the Body Guard and had obtained a certificate as a rough rider, and that he attributed his present condition of health to the out-door exercise he had always taken. The great Sanskrit author Kalidasa had enjoined proper physical training; Kalidasa said that by a man taking bodily exercise he would become strong and be able to labor and be charitable, and where as a weakly man would, were he ever so intelligent, be unable to be charitable towards his neighbour. He attended the meeting with great pleasure and was willing to do all that he could to promote the aims and objects of the Association which Sir Charles had so kindly consented to inaugurate.

Mr. Saunders said that the meeting was fortunate in securing Sir

Charles as its Chairman, and he hoped that with his countenance and support the Association would prove a success.

Sir Charles Turner said that it gave him very great pleasure to preside at this meeting. He had always felt a great pleasure in physical training; he twice rowed second at University sculling matches, he was an athlete in his way, having undergone a regular course of training in that exercise, though he had not won a certificate as a rough rider. He was sure that his honored friend Mr. Saunders would support the Association in so far as to entertain favorably applications for employment from those who had obtained certificates from the Association and he was thankful to the Hon'ble Mr. Ranganatha Sastry for moving the resolution he did. Sir Charles then closed the meeting by asking the gentlemen present to enroll their names as members of the Physical Training and Field Games Association.—Times.

#### *Sketch of Project for the Promotion of Gymnastic Training, and of Field Games among the youth of the Madras Presidency.*

1. To form an Association of persons interested in the subject throughout the Presidency to be called "The Madras Gymnastic Training and Field Games Association."
2. The number of persons constituting the Association to be unlimited.
3. Subscribers annually of the sum of Rupees 10, if resident in Madras, or of Rupees 5 if resident in the Mofussil or Native States, to be Members of the Association.
4. The Governor, the Commander-in-Chief, the Chief Justice, the Maharajahs of Mysore, Travancore and other noblemen to be Patrons.
5. The conduct of the affairs of the Association to be entrusted to a General Committee consisting of a President, two Vice-Presidents, and thirty Ordinary Members, to be selected at the Annual General Meeting of the Association to be held in December.
6. The General Committee to appoint a standing Executive Committee consisting of the two Vice-Presidents, six Members of the General Committee, two Secretaries and a Treasurer and the operations of the Association.
7. A Code of Rules to be drawn up regulating the conduct of business by the General and Executive Committees and defining the duties of the Secretaries and Treasurer.

#### *Means of effecting the objects of the Association.*

- (1) In regard to Gymnastics. (2) In regard to Field Games.

#### *1. GYMNASISTICS.*

- (a) The establishment of a properly constituted Gymnasium at the People's Park, under cover sufficient to afford shade.
- (b) The employment of an efficient instructor in Gymnastics. Duties (1) instructing classes at the Gymnasium, (2) instructing classes at schools in Madras.
- (c) Aiding pecuniarily, or otherwise the formation of gymnasia in the Mofussil and in Native States.
- (d) Forming a Normal Class to train gymnastic teachers for schools, Government and Private; providing stipends for such students, and granting certificates on completing course.
- (e) Instituting exhibition days for competition in gymnastics at regular intervals and granting prizes to successful competitors.
- (f) Granting certificates of efficiency to pupils at the gymnasia and schools who have undergone a regular course of training and who on examination are declared to be proficient in certain prescribed exercises.
- (g) Forming a depot for the manufacture and supply of Gymnastic Apparatus.

## II. FIELD GAMES.

- (a) Establishing grounds for Lawn Tennis, Badminton, Quoits, Bowls, and other suitable games, in the neighbourhood of the Gymnasium, People's Park.
- (b) Adding pecuniarily and otherwise the establishment of similar games in connection with Gymnasias in the Mofussil and in Native States, especially in Schools.
- (c) Establishing a Cricket Club in connection with the gymnasium and aiding pecuniarily or otherwise the establishment of similar Clubs in connection with Schools in Madras, in the Mofussil and in Native States.
- (d) Instituting exhibition days for Athletic Sports—Public, or in connection with schools.
- (e) Granting prizes to successful competitors or aiding in giving such prizes.
- (f) Forming a depot for the supply of *materiel* for games at cost price.

## MISCELLANEOUS.

- (a) Members to have free use of gymnasium.
- (b) Fees for pupils
- |                                        | Monthly.  |
|----------------------------------------|-----------|
|                                        | RS. A. P. |
| School Boys under fifteen years of age | 0 2 0     |
| Do. do. over that age                  | 0 4 0     |
| Others                                 | 1 0 0     |
- Entrance fee—One month's subscription.
- (c) Special fund to be raised for erecting the gymnasium in the People's Park.
- (d) MacLaren's system to be adopted supplemented by drill and single-stick exercises.
- (e) Fee for attendance of Instructor at Schools, 10 Rupees monthly.

## ESTIMATE.

## Receipts.

## Ordinary.

|                                                |        |       |
|------------------------------------------------|--------|-------|
| By 200 Madras subscribers                      | Rupees | 2,000 |
| " 100 Mofussil do.                             | "      | 500   |
| " Government grant for gymnastics              | "      | 600   |
| " Fees for attendance of Instructor at Schools | "      | 1,000 |
| " Fees at gymnasium                            | "      | 900   |
|                                                |        | 5,000 |

## Expenditure.

## Ordinary.

|                                        |        |       |
|----------------------------------------|--------|-------|
| Gymnast                                | Rupees | 1,200 |
| Other establishment                    | "      | 600   |
| 10 Scholarships, (at 5 Rupees monthly) | "      | 600   |
| Miscellaneous                          | "      | 400   |
| Fund for grants                        | "      | 2,200 |
|                                        |        | 5,000 |

## Extraordinary. (To be met by special donations)

|                                |        |       |
|--------------------------------|--------|-------|
| Building shed in People's Park | Rupees | 2,000 |
| Additional Apparatus           | "      | 1,000 |
|                                |        | 3,000 |

8th February 1881.

H. B. GRIGG.

(From the Westminster Review.)

THE story or framework for the true poetical diagram, of "Enoch Arden" is very simple and natural—such an one as the complications of human society, and the involved notions of marriage, death, remarriage and miscalculation, must necessarily ever render possible, though the actual situation imagined may never yet have been really displayed. Here everybody does their duty, everybody acts even wisely and nobly, and yet, such are the conditions of our complex and incalculable circumstances in this world that the fruit is heart-broken misery and disappointment, and the curtain falls on a vision of all that is unutterably sad and hopelessly desolate.

The first scene is of a small village at the seaside, a narrow wharf, a mouldered church, a "long street climbing to one tall-towered mill." Three children are represented playing together, one little girl, Annie Lee, and two little boys Philip Ray, the son of the miller and Enoch Arden, an orphan and a "sailor-lad." The description of their seafaring amusements is very pretty, and natural, and reminds the reader of Hooke's pictures of Clovelly. Till lately it seemed impossible correctly to describe the talk and sports of children: they were always made too wise or too foolish, too much resembling the lower animals, of else mere pygmean likenesses of old men and women. George Eliot led the way in the "Mill on the Floss" to a truer conception; and Mr. Tennyson in this passage has certainly rivalled, for he could not excel, his gifted contemporary. So the children play very prettily together, and, as they get older, both the boys, as might be expected, fall in love with the little girl, but, as might be expected also, the little girl does not fall equally in love with both the boys—in fact "she seemed kinder unto Philip than to him (Enoch): but she loved Enoch though she knew it not, and would if asked deny it." However, Enoch perseveres like a man, and one day Philip climbs a hill, "and sees the pair, Enoch and Annie, sitting hand in hand," and "in their eyes and faces reads his doom." Heart-broken, "he had his dark hour unseen, and rose and past, bearing a life-long hunger in his life." The marriage of Enoch and Annie consequent on this little scene may be regarded as the first crisis in the tale. The second crisis is the departure of Enoch to sea. He becomes anxious to give a good education to his children and provide comfortably for his family; but he breaks his leg while clambering on a mast in harbour. As he lay recovering, he has an offer from a ship-master to make him his boatswain in a voyage to China. He has much difficulty in procuring his wife's consent to this, and his determined courage in doing what he knew was ultimately best for all, coupled with his love and tenderness in giving pain, is described in Mr. Tennyson's best style, and cannot fail to touch the feelings of most readers.

"He let her plead in vain; so quivering held his will and bore it thro'." His courageous parting with Annie and his provisions for her in his absence, "the shelves and corners" put up in the cottage, the sale of his boat, "his old sea-friend," and his hopeful words of farewell, are all told with affecting particularity, and bear us along in a current of genuine interest and sympathy. Annie is left alone

and year after year Enoch is heard of no more. She fails to manage properly her little shop. She and the children become impoverished, and the only friend who lends them a helping hand is the faithful Philip, the friend of her childhood, the boyish lover, the broken-spirited rival of her husband in those days gone by, and now the well-to-do owner of the mill on the hill. Year after year goes by, and Philip and all else, all but Annie believe Enoch to be no more. Slowly and with infinite delicacy, such as only the pure Saxon of the poem itself can properly denote, Philip renews the suit of his youth. He is adored by the children, he is Annie's dearest friend, he alone by marriage can raise them all from the abyss of poverty and after many a delay first of a year, then of month after month, the widow with fear and trembling takes him to her heart, and they are married. This is crisis the third.

The scene then changes to follow the fortune of Enoch. He has been shipwrecked and cast upon a lonely island, and is there subjected to all those vicissitudes of hope, fear, labour and anxiety which since the days of Daniel De Foe are sufficiently familiar to all. This forms a fine opportunity for some gorgeous scenery painting, which Mr. Tennyson has not neglected, and of which more will be said by-and-by. At length as usual, the long-watched ship arrives and takes him off. He reaches home and hastily re-seeks the spot to which his life-long thoughts had ever reverted with unwearied tenderness and indomitable hope. He hears in the village from a talking gossip the circumstances of his wife's remarriage; and this may be regarded as crisis the fourth. Certainly the situation here, to which all the previous detail has borne us steadily on, is extremely artistic. There are in it the elements of curiosity as to what he will do next, of sympathy of his heart-rending disappointment, of perplexity as to the duties incumbent upon all persons concerned; and all these feelings are at last absorbed in simple admiration for the course that Enoch, at the price of any personal self-denial, ultimately adopts. He ventures to visit the peaceful abode of those his heart yearns for, he peers in upon the domestic scene with longing, lingering eyes, and—he turns away. He turns to bury again his hopes and his love, to hide away all his passion and his agonizing desire, and bears but one resolve in his bosom, "as though it were the burthen of a song." "Not to tell her, never to let her know." "He was not all unhappy." Such men never are and never can be. This is the real critical point of the whole tale, and it quickens in the reader the warmest and strongest sympathy. After all Enoch's watching, waiting, nursing his hope for months and years, it has all ended in nothingness, or in worse than nothingness; for the affection of his wife and children are not buried in the grave after a life-long faithfulness to himself, but they have been weaned and diverted from him, and he stands in a world where he is wanted not, thought not of except by one in some still anxious hours, and where his known presence could only produce unutterable confusion and far-reaching pain. It is a sad spectacle the poet has conjured up for us, but we are the better for it, if we learn to bear the fits of life with patience and meekness. Enoch bows before them in religious reverence, and does the only duty, and the last earthly work left for him to perform—"never to let her know."

The story closes with a very picturesque description of Enoch's

death, and his telling his tale in his last moments to the village gossip, who first broke to him the crushing news. We are anxious to know more—how Annie, how Philip how the children behaved on hearing of that noble act of self-denial, what the village thought and said; but the only satisfaction to our curiosity is given in one suggestive glimpse of a later scene—

"When they buried him, the little port  
Had seldom seen a costlier funeral."

There are at least three situations in this simple story each of which arrests our interest, and strongly stimulates our sympathies. There is, first, the deliberation of Enoch with himself and with his wife as to going abroad. There is much to be said either way, and his wife does not help him. Her motherly and wife-like feelings plead too strongly for her even to bear to contemplate absence from her husband. Her womanly eloquence is exquisitely described—

"Not with brawling opposition she  
But manifold entreaty, many a tear  
Many a sad kiss, by day by night renewed."

This is intensely true to nature, and we have the liveliest fellow-feeling with the whole scene. It must here be noted that Mr. Tennyson has attained such exquisite ease, grace, and finish in manipulating his Saxon words and making the line an echo to the sense, that a truly pathetic picture like this is set off to the very fullest advantage. The ear, the understanding and the heart are at once all actively employed and deliciously entertained. The next situation of marked and affecting interest is the scene of Annie's scruples as to remarriage and Philip's urgency in his suit. It is not mere selfishness in Philip that presses him on, though he too has had a life-long love as well as Enoch, but he can only give real and efficient help to the whole family in their hour of extreme need by the proposed plan. He has loved long and faithfully; he has not availed himself of any dishonest advantage acquired by his friendly relations to the family; he is tender, patient, and forbearing and we cannot help wishing him well. Though in turn we have the tenderest consideration for the unsatisfied mind of Annie, for her extreme hesitation for her clinging hope, and finally for her grateful abandonment of every available plea. Love, duty, anxiety, memory, hope, faith, and matronly modesty, all combine to irradiate the occasion with the manifold colours of the truest and deepest feelings we know; they are reflected back on to our own hearts, and they kindle emotions there, and we discern in ourselves that we are in the presence of a poet and a poem.

As to the third and culminating situation of all, the return of Enoch, enough has already been said. It remains to say a few words on the truly poetic description of Enoch's life on the desert isle. There are some glowing lines here, that remind one of the gorgeous imagery of Shelley; such as

"The sunrise broken into scarlet shafts,  
Among the palms and ferns and precipices;  
The blaze upon the waters to the east;  
The blaze upon the island overhead;  
The blaze upon the waters to the west;  
Then the great stars that globed themselves in heaven  
The hollow-bellowing ocean, and again,  
The scarlet shafts of sunrise."

This portraiture is vivid and powerful, and it is beyond doubt part of a poet's function to be thus sensitive to all the sights and sounds of the outer world, to see what others see not, and hear what others hear not. It is a pleasure to the reader to have his memory refreshed and his imagination exercised by a replenishing store of bright and beautiful colouring. Further, also, in accordance with the theory of poetry above enunciated it is only thus that the poet can impart absolute reality to his work, and so engage the sympathies of his readers for the emotions of those he depicts.

### NOTES FOR SCIENCE TEACHERS.

By the Rev. S. Langdon, Kandy.\*

#### INTRODUCTION.

THE educational course ordinarily pursued in our Indian schools has been of late years the subject of unsparing criticism. It has been weighed in the balances and found wanting in many respects; and its greatest deficiencies, so its critics say, have been in the various departments of practical knowledge. Government offices are crowded with applicants for a vacant clerkship. Merchants have no difficulty in getting their desks filled at what would appear in England fabulously low salaries, and the courts of law have just as many proctors as litigants; but the great working trades and professions, agriculture, engineering and cognate branches, are, as a rule, manned by either educated Europeans or ignorant coolies. The educated native has no taste for trade or manufacture. Either his natural instinct or his education has given him a deep contempt for any department of work that will involve soiled hands or a practical application of knowledge gained to the purposes of our daily life.

A young man passes through one of our high schools and perhaps graduates at a University, and his father's estate derives no benefit whatever from the education which the son has received. The land is worked as it was worked in the patriarchal times, and the young man says, "I must try to get a place under the Government or see what I can do at the bar." And frequently this is the only alternative with such an education as he has received unless he takes to medicine, or what is not so likely an alternative in India as in England, enters the church.

Now, if this is true—and I am afraid there is little doubt about it in the main—it is evident that there is something wrong somewhere. There is a screw loose in our educational machinery. Where is it? It may be said that the fault lies in the mental constitution of the oriental races. Anything that requires memory work has a great attraction for them; and their memories have been made strong, at the expense of their thinking and applying faculties. Supposing that to be true, has the education provided been calculated to correct that deficiency, and encourage a taste for instruction of a more practical kind? The subjects taught in the ordinary English-teaching schools are taught with a view to Government grant examinations, and until very recently no physical science, taught as a science, had

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a place in the prescribed course. The Universities now make a knowledge of some branch of natural science a necessity for every grade in the University curriculum. The direction of education in India depends almost entirely on the University Examinations or the examinations held for the various branches of Government service. Examinations, competitive and qualifying, are for ever held before the student, the passing of which must be the great object of his education. He must think of nothing but that, day and night. That examination is his rubicon—I dare say he will tell you so in a school essay occasionally—and that once passed, he is a man made for life. Everything is easy after that. He is told to read good books and to pick up useful information outside what is necessary for the great struggle, if he can, but he must pass the examination. If he cannot pass it intelligently he must do it mechanically, he must cram. There is a certain amount of paper-work to be done for every office and every position worth having and he must do it. And the fight for office and position in India becomes mainly, a great war of memories. This does not apply to all the subjects taken up at such examinations. In some subjects an intelligent grasp of the thing is exhibited; but there are others, where intelligent insight and application are perhaps more necessary, that are got up on the cramming system which leaves a man after he has passed his examination as really ignorant of the subject in which he has passed, as if he had never touched the study at all. It is said that it is not a very uncommon thing for a candidate for one of the University Examinations, to commit the prescribed parts of Roscoe's Elementary Chemistry to memory, and trust to that for a pass—a simple confidence which often meets with the desired reward.

The examiners deplore this state of things as much as anybody. Their time and work, as well as the work of the examinee are absolutely thrown away. The questions are answered, though it may be in the very words of the book, and the examiner must give the apportioned marks. The difficulty might be met by compelling a candidate to give the answer in his own words, but that would probably introduce other difficulties nearly as great. The sum of the whole matter as put before every boy, seems to be, "The great object of your life is to pass examinations and for this you want a tremendous memory." The statesman who said that "the whole duty of an Englishman of the present day consisted in his passing a creditable examination," might have said it with still greater truth of his Indian fellow-subject. While this is the state of things, we cannot expect much good to result even from including science subjects in the course prescribed for examination, unless the examination be made in some way a test for ability as well as for knowledge. Means might be found of introducing tests that would indicate whether the candidate had a practical acquaintance with the subject, and where these tests failed the examination might fail.

It seems to be generally recognized now that Indian education needs leading into more practical channels, that more of technical instruction is needed: and a great difficulty is and will be experienced in making such instruction general. It is not in the power of the Government, nor of the Universities, to entirely remedy existing deficiencies in these respects. The remedy lies chiefly with the teachers themselves, and it is because of this that I have dwelt at

such length on this question in opening these notes, in the hope that they may fall into the hands of some teachers in whose minds the question is forming itself, "Must I bend my energies to, and employ my talents in, preparing these boys for examinations, or must I try to prepare them for all the practical duties of life?" And it is because I think that science-teaching in the proper sense of the word is calculated to be one of the best methods for introducing a thoroughly technical education into schools, bringing about the application of the knowledge gained to agriculture, manufacture, and other great necessary employments, that I advocate it so strongly and press it on the teachers themselves as a matter of conscience. Teachers should look on it as a bounden duty to teach science in their schools in some way, whether it is required for Government and University examinations or not. The boy is sent to school by the parent not with the sole object of passing certain examinations, but that he may be made a man of; at any rate that ought to be his object. There is a danger under the present system of teachers falling into a strong temptation of aiming at swelling the Government grant or the University list rather than turning out men fit to do the work which the world requires of its men in these hard matter-of-fact days—a form of instruction characterized by Professor Huxley as "pot-teaching."

An upright, conscientious teacher will recognize the increasing necessity that there is for his pupils to be acquainted with the great facts of natural science; to know something of the world in which they live, of the materials of which it is built and the great building processes at work in it. He will impart this knowledge even if the Government does not pay him for it, because of its practical importance in the formation of good mental habits and in the daily work of the after-school life.

Now I do not wish it to be understood from these remarks that I would have examinations abolished as tests of knowledge, or that teachers should not prepare their pupils for them to the best of their ability. The time has not come for that, and perhaps never will come. We have no better tests to substitute for them; and it is possible that an outcry against the system might become a refuge for laziness and want of ability to teach. What I should like to impress on teachers is that while the ordinary course is done, and done well, the other at which I have hinted ought not to be left undone.

Every school teacher in India or Ceylon occupies a very responsible position, more responsible perhaps than is that of teachers in similar schools in England. There is a stronger belief in the East, in the infallibility of the Pandit. Here, too, Western education is young and it lies very much with the school teachers of to-day what the next generations of these countries are to be like, generations of men or of manikins. Before, however, the teacher can take any part in the teaching to which I have referred, he must obtain the necessary knowledge himself. He cannot give something out of nothing, and that brings me to my

#### CHAPTER I. THE SCIENCE TEACHER.

It is a common fallacy to suppose that he must necessarily be a man specially trained and set apart for the work. He would probably be a better teacher in that department, for a special training

and for being set apart to it. But special men with special training are not always to be had, and the means of obtaining a special training are not always at hand, certainly not in India, and where that is the case the ordinary teacher should try to prepare himself for the work and become a science teacher. It is with a view of affording some assistance to men who are trying to do their duty in this way that these notes are written. The first requisite for this work is a taste for some branch of science, and more possess this taste than is generally supposed. Many a man says he has no taste or turn for science, who has really never tried and does not know whether he has or not, or, he has approached the subject at the wrong place, or in the wrong way; has found it disagreeable and given it up with a complaint of want of taste. A little study, in nine cases out of ten, would have produced the necessary interest in the subject, euphemistically called *taste*. This interest requires cultivation. To some it comes more readily than to others, but to nearly all it is the result of careful study. There are very few heaven-born science teachers. There is no divine afflatus which comes suddenly and inspires a man for the work as men are popularly supposed to be inspired for writing poetry. He must learn and apply himself, and with the books now available this is not a difficult matter. With the attempts made to popularise science and make it easy of attainment in these books, no teacher need despair of a successful course of self-instruction.

When the first principles of any science are once mastered, then if the interest has not been awakened, the teacher-student can close his books, sit down and say he has "no taste" for it. That is not at all a probable result; but every teacher will have a favourite study, and this he should make a special subject. He will be able to teach that better than any other. A school, of which the different teachers have various favourite science studies, need not come badly off for science teaching. And there is no reason in the world why a self-taught man should not become a good science teacher. If he is apt at teaching other subjects he will be apt at teaching that. He will frequently be much more deeply interested in his subject than the man who has attended lectures. And that is a matter of great importance in every form of instruction.

Begin at the beginning. You should not think that because you are a teacher, and an expert in other branches of knowledge you should not descend to children's books or to the various science-made-easy forms of tuition that recommend themselves to small boys. You should first take the books which deal with the subject in the simplest and the plainest way, no matter if it is in language suited to children. There will be little difficulty in discovering such books. The ordinary reading of the newspapers and other general periodical literature will generally lead you to distinguish between the science-made-easy and science-made-nonsense books. The little book should be gone through with thoroughly until you are quite sure that you have mastered the foundation-facts of the science which it treats of. Every experiment and every proof referred to in it should be tried as far as possible. This will prepare you for a successful treatment of the subject when the time comes for you to appear in the classroom.

There will be a difficulty here. It is easy enough to say, try

experiments, but in India it is not so easy to do it. There is hardly a town in India where scientific apparatus can be procured at reasonable prices, except perhaps the presidency towns, and there are many where it cannot be procured at all. This difficulty need not trouble you very much. Scientific apparatus may be divided into two kinds for your purpose, viz., (1) the apparatus which must be bought, and (2) the apparatus which may be made by yourself. You will find, if you have any ingenuity whatever, that the sum necessary for what is included under the first head need not be very large. Many science books give lists of the apparatus necessary for illustrating the work. You should take one of these lists or a scientific instrument maker's catalogue; go carefully over it and see what things are indispensable for illustrating your little book. Things of the same kind are given in the lists over and over again in connection with other pieces of apparatus, pieces of tubing for instance. Ask yourself whether it would not be possible to make one piece serve different purposes. Two, or three at most, ought to be sufficient.

I have mentioned *glass tubing*. This is essential in the practical study of several branches of natural science, but it is not at all expensive. A catalogue lying near me as I write (J. J. Griffin and Sons, Covent Garden, London) says: "One pound of any kind of glass tube of any size at 1s. 4d., or twenty pounds assorted, at 1s. 2d." I should advise getting the latter at once, or, if you can, get a larger quantity when there will be a proportionate reduction in the price. Care should be taken not to order them in too great lengths. They ought not to be longer than three feet, unless required for a special purpose. Now if you will look over your list and the illustrations in your book, you will see how frequently glass tubing turns up in different shapes. It need not be bought in these shapes, in fact it is better for package and carriage that it should not be, but in the ordinary straight form. You can bend the tubes as you like after you have got them. Only if you want to bend them, you should take care in ordering to say "soft glass," or state the purpose for which it is required.

In these "Notes" I can only give general hints; but a few remarks on the bending of glass-tubes will perhaps be helpful. The tube to be bent should be clean and dry. It must be held gently but firmly with the hands on either side of the place where you want to bend it. It should be put into the flame gradually and the tube should be turned the while between the finger and thumb so as to prevent unequal heating. Very little pressure is needed to bend it when once the glass begins to melt. It will be well to practise with a few odds and ends of tubes before you attempt to make any apparatus. Never throw a bit of tubing away, it is sure to come useful at some time.

If the tube is required to resist a high temperature, you should order the German hard glass, which is free from lead, the decomposition of the oxide of which in the soft glass renders it so easily fusible. For the bending of this you will want a blowpipe lamp. Ordinarily the spirit lamp is sufficient. That is, a lamp in which alcohol, or spirits of wine is burnt and is covered with a tightly fitting cap to prevent the evaporation of the liquid when the lamp is not burning.

It will be well to have a mouth-blowpipe, an instrument which will be useful in fitting up a variety of apparatus. The mode of using it will be found described in nearly all books on chemistry. This, though simple in theory, is often found difficult in practice. Try it. Put the mouthpiece in your mouth, fill your cheeks with air breathed in at the nostrils, and keep them full. The rest is a matter of handling. You will find the blowpipe same useful where a great heat is required, not only in chemical experiments but also in other branches of practical science.

If I were writing for the students of any particular science, I should be able to say at once what things it is absolutely necessary to procure from England. Chemistry and the sciences included under the head *physics*, are those for the study of which costly apparatus is generally thought to be needed. The facts in the other natural sciences may as a rule be proved in "taking our walks abroad," observing the natural phenomena and the objects which the sciences classify and explain, or may be illustrated by collections of specimens.

If an expensive scientific instrument is mentioned in your list, see if it would not be possible to make something much cheaper answer the same purpose and illustrate the same facts; or see if you could not make the same instrument yourself. It would be rough no doubt, but after it is made you will like it ten times better than the polished mahogany, brass and glass affair, stamped with the name of great London makers; and the very difficulty of making it will teach you a lesson in science that will be invaluable. It is not likely that you can, like Faraday, make an excellent electric machine out of a three-legged stool and a large bottle. If you have not much inventive genius, you had better order that; but you might make a good galvanic battery. I have known natives make very respectable ones that might be used for demonstrating almost any of the experiments given in the ordinary school science books where a battery is required. And if you cannot make the things yourself, there is always some ingenious man, some carpenter or smith, in the town or village, who could easily make them from your directions. Every teacher situated in the circumstances to which I have referred will find a certain amount of adaptativeness extremely useful. A wash-hand basin can be very well adapted to a pneumatic trough. Bottles can be made to serve all sorts of purposes with a tolerable variety of good corks and a fair assortment of glass tubes. This is a hint which might be carried out to almost any extent. Do not go in for "Cabinets of Scientific Instruments." It seems a very convenient thing to get all the apparatus required, packed into one box, in exactly the forms that you want them; but you will miss the practical knowledge which is gained in making your own apparatus. My experience has been entirely in favour of ordering each article separately.

While the necessary apparatus is coming from England, you must do what you can without it, leaving the experiments for which that is indispensable till the box arrives. In this way, go through your little book. When that is finished take a more advanced one. Try every experiment, observe every natural fact, prove every thing though you may be going over the same ground twice or twenty

times. Do it all in that reverent spirit which the true study of Nature ought always to engender and the teacher ought always to possess, and you may begin to form your science class.

## CHAPTER II. THE READING LESSON.

The formation of the science class requires some care. Opinions differ as to the stage of education at which a boy should be introduced to the study of natural science. It is, no doubt, possible to graduate the study down to the lowest intelligence and to the beginning of the school course. In Ceylon and Indian schools, however, where for the most part the science will be read in a foreign language, it will, I think, be wise not to begin too early even with the simplest science books. A good acquaintance with elementary arithmetic should certainly precede the study of physical science, and no boys should be admitted into a science class who have not passed a satisfactory examination in arithmetic. Decimals they should certainly know. Entrance into the science class might be made the reward of a good examination in arithmetic and other subjects taught in lower classes. This will ensure a fair class to begin with as well as a proper appreciation of the study.

I know that the great objection with most teachers will be that the formation of a new class or new classes will not pay, as they deal with subjects not in the Government code. The answer to this has been hinted at already in the introduction. But I feel sure that it would pay even in the ordinary grant examination, if the examination is a test of the power of knowledge gained, and not a test of the power of the boys' memory.

In reading an English book of science there are collateral advantages to be gained and other purposes to be served beside that of becoming acquainted with the science, and here I may as well discuss one of the best ways in which the elementary school teacher can instruct his class in the subjects we are dealing with. Let him make it a reading lesson. Science teaching in reading lessons has many advantages. The main objects of the ordinary reading lesson are served by it. It is a mode of instruction with which the boys are familiar. While it serves the purpose of the reading lesson it, will also serve a far higher purpose. It will be a good thinking lesson. Studies that will induce the constant and correct exercise of thought are of all subjects the most necessary to our native boys. Reading lessons and memory lessons are carried on to perfection, while thinking lessons are neglected. Nobody can be present for half an hour at a reading lesson in the lower classes of our native schools without seeing that such a lesson does not usually serve the purpose of teaching the children to think. They serve other purposes well enough, the acquirement of language for instance, but not that. It is a question with me too whether the great variety of subjects and the fragmentary character of the extracts in the ordinary reading books tend to make the reading lesson adapted for the cultivation of the powers of thought or the formation of correct thinking habits.

This, then, is one great advantage of the Science Reader. When adapted to the intelligence of the class, it compels, or rather attracts thought.

It can also be made the subject of great and continued interest, and this, as all teachers know, is not by any means an unimportant matter. You will get very little real, thoughtful work out of a boy if you cannot awaken his interest. No natural science can be taught without bringing your class into contact with things that must be for ever coming under their observation. Every page of the reading-book will offer some explanation of common natural phenomena and so fasten the attention of the reader.

When I say that such subjects treated in the way of reading lessons will induce thought, I also mean to include *observation* or the application of the thinking powers to life and the changes of nature. It gives boys the means of fixing their thoughts, and any course of reading or instruction which may accomplish this will have attained to what ought to be one of the greatest objects of any educational system.

Let me illustrate. We will say that the science studied is Physical Geography. In the course of reading the boys learn how the rivers carry the mountains down into the sea, how the valleys are scooped out and new lands formed at the river's mouth by what it deposits there. He is told that he can find on the nearest hill a miniature of it all, and he sees the delta rising where the hill stream flows into the big pool at the bottom and the whole round of Nature is brought home to his very door. He is furnished with satisfactory proofs of the truth of his reading lessons. It has all come under his own observation, and his reading book as well as the ordinary events of life become invested with a higher value and interest. Teachers know very well how interested and even excited boys get, when you can point out to them anything in their ordinary life or any common sight in the neighbourhood corresponding to what is described in the Reader. A science reading lesson has this advantage. It is calculated to induce observation, without which a deep, abiding interest cannot be created.

The reading lesson plan for teaching science is, perhaps, better adapted than the lecture, for the lower classes. The teacher will find it less difficult. But this should be no excuse for neglect of preparation. The ordinary reading lesson of the school is too frequently looked upon as something which can be got through without previous preparation. This is a great mistake at all times; it would be especially so in reading a science text-book.

The teacher should go over the chapter carefully himself, beforehand, and mark the points that he wishes especially to dwell on in the class. Elaborate experiments will not be necessary for this; but such simple ones as he can try, should all be tried previously, and the apparatus and materials necessary laid on the teacher's table. He should be ready with his illustrations and with local references, and I need hardly say that there should be nothing in the chapter, or in the book, which he does not understand perfectly himself.

So much for the teacher's preparation for the reading lesson. The boys should be made to commit to memory the most important passages. These will include, of course, the laws on which the science is founded, and these memory lines should receive particular attention in class. Besides learning such passages by heart, the boys should read the chapter carefully, and should be expected to

explain the more difficult words in it. These words would be pointed out previously by the teacher as a part of the home-work. The explanation of scientific words with their derivation might be made a very interesting feature of the reading-lesson.

Books prepared for beginners, Science Primers, will be found generally to be well adapted for the purpose I have described. It must be understood that I do not recommend this as a substitute for the ordinary School Reader, but that it should be used with it in elementary schools, and in the lower classes of our more advanced schools. It would prepare the boys for the lectures in the higher classes. It is a familiar and easy method of teaching, and would in my opinion, if universally carried out, be laying a good foundation for general science instruction. If teachers would take it up in this way, I am quite sure that the Government would not be slow to reward them. It would be easy to insert another column in the Grant-in-Aid Report slip for "Science Reading," and the examination might be conducted in a way similar to that which comes under the head of "Reading." It would pay in every way.

(To be continued.)

#### UNIVERSITY EDUCATION IN MADRAS AND CALCUTTA.

Mr. ADAM, the new Governor of Madras, before he started from England, received the usual deputations from those who are specially interested in missionary enterprise, professedly asking for help in promoting the education of the masses, but covertly aiming a blow at the higher English education as now favoured by Government. Mr. Adam, in England, was, however, like Lord Ripon in India, wise in his generation, or rather in expressing his present ignorance on the subject, together with his strong desire to do all he could to remove that ignorance at the earliest possible date. He stated in reply:—"Of course I speak here in much ignorance of what the state of education may be in the Madras Presidency. I should not pledge myself in any way to any course of action until I have been in that Presidency for some time, and been able to make myself acquainted with the whole system of education there, and, therefore, while I express, as I do, my hearty sympathy with what you have said, you must understand I can make no promise except that the matter shall have my most careful and attentive consideration." With a view of helping in some small measure to remove the shroud which veils the benighted presidency from Mr. Adam and others equally ignorant, though equally interested, we have obtained a copy of the Madras University Calendar for 1880-81, in order to obtain some insight as to the comparative status of higher education in Madras and in Calcutta; and caused the Madras Calendar to be rigidly compared with the Calcutta Calendar by experts in whose judgment we can confidently rely, with a view to ascertaining the relative difficulty of the two University courses of instruction, as laid down by the respective Universities for purposes of examination and assigning degrees.

With regard to the English Literature Courses, we are informed:—"There are three different examinations to be passed to obtain the B. A. degree, and the Madras question-papers in English Litera-

ture in each case are superior to the corresponding question-papers in Calcutta. The Madras entrance questions are far less crabbed than those at Calcutta, and are really a much better test. The First Arts question-papers are more severe at Madras than at Calcutta, partly owing to the difference between the two courses, the Madras English Literature course being more difficult and far better selected than the English Literature course at Calcutta. But the questions themselves are also intrinsically better at Madras and more carefully drawn up. At Madras, however, great encouragement is given to 'paraphrasing,' which is a decided mistake, and it is rightly discouraged at Calcutta. The subjects selected for English Literature at the B. A. degree are so far superior at Madras to those selected at Calcutta, that it is difficult to form a fair comparison between the two sets of examination questions. So far as the subjects permit, the Calcutta papers are usually not bad, though following each other from year to year too much in a groove, but they do not include the same extent of subjects as those at Madras, the Calcutta subjects being more archaic than those at Madras, where modern English is better represented. With regard to the examination for Honours, no fair comparison is possible, as the Honour degree at Calcutta is taken upon one language as chosen by the candidate, for example, the English language; whereas at Madras two languages must be taken up, one of which being compulsory, the English language. Hence the Calcutta range is necessarily more extensive than the Madras, and the examination more rigid." This being the case, it seems clear that the Calcutta University has a good deal to learn from the Madras University in the way of improving and better regulating the various examinations in English Literature, excepting, of course, the Honour Examination, which is allowed universally to be a severe test and excellent standard.

With regard to Natural and Physical Sciences, our information is as follows:—"The course in Physical Science prescribed for Arts degrees in the Madras University resembles in some ways the Science course in the University more than the Calcutta 'B' course in Arts. For example, the matriculation candidates in Madras are expected to have some knowledge of the elements of Physics (including Dynamics), while in Calcutta nothing is expected in this line until the F. A. Examination. The requirements of the Madras University are so very meagre, however, that the inclusion of Physics in the Entrance course does not perceptibly increase its difficulty. The F. A. Examination in Madras is almost entirely literary and mathematical. The only science subject required is Elementary Physiology, and the questions set in this subject are very easy. In Calcutta the examination includes Dynamics and Elementary Chemistry. The Madras B. A. Examination differs from that of Calcutta in that no option is allowed to those who take up Physical Science. In Calcutta a candidate may take up, together with Chemistry and Physical Geography, either Physics or Botany, or Zoology or Geology; in Madras all alike must pass in Chemistry, Physics, and Botany. The consequence is, that the knowledge the Madras students acquire loses in depth even more than it gains in breadth when compared with Calcutta. The examination papers in Chemistry, Physics, and Botany are all easy, compared with those set at Calcutta. One point in which Madras is immensely in advance of Calcutta is the institution of a

practical examination in Chemistry, which ought to be of the greatest value in making students acquire some real knowledge of this subject. No one has yet been found courageous enough to try the M. A. Examination in Physical Science at Madras. It is possibly harder than that of Calcutta, since it includes a new group of subjects, Geology and Palæontology, along with Chemistry and Physics. One cannot say for certain, however, until one sees the sort of questions that may be set. On the whole, then, we may conclude that Calcutta is decidedly ahead of Madras in the matter of Natural and Physical Sciences.

Our information on the subject of Mathematics is as follows:—

"In the mathematical part of the First Arts Examination the University of Madras sets three papers, that of Calcutta only two. Moreover, Statics, which is one of the subjects in which the latter examines, is omitted by the former. Madras is thus enabled to test far more fully and satisfactorily the mathematical attainments of her under-graduates in Arithmetic, Algebra, Geometry, and Trigonometry. In the B. A. Examination in Madras, Mathematics is one of the optional subjects, and four papers are set. The University of Calcutta also sets four papers, but two are compulsory for all the candidates, viz., those on (1) Dynamics and Astronomy, (2) Hydrostatics. A good deal of attention is paid by the latter University to the higher parts of Algebra and Trigonometry. These are ignored by Madras, and a general paper of difficult questions on Elementary Pure Mathematics is set instead. Statics and Optics are subjects which are omitted in the corresponding examination in Calcutta and are combined with Dynamics and Astronomy, respectively. There is a very marked difference in the treatment of Dynamics by the Universities. This important subject is taught in a much more satisfactory and complete manner at Madras than is possible in colleges affiliated to the University of Calcutta. The Syndicate of the latter University require nothing more from B. A. candidates than a few obvious deductions from the first and second laws of motion. They are sometimes called upon to enumerate the third law of motion, but any mathematical investigation of its effects on matter is considered quite superfluous. In the Madras papers, on the other hand, we notice questions on impact, parabolic, and circular motion, the oscillations of pendulums, &c. Hence in Mathematics also Calcutta may learn something from the sister University.

"With regard to languages, the Calcutta University makes a classical language compulsory for all under-graduates after the Entrance Examination, whereas the Madras University permits candidates the option of taking up a vernacular language instead, both for the F. A. and the B. A. Which may be the better plan, is too large a question to enter upon here. Where Calcutta has Deductive Logic and Psychology or Chemistry in the F. A. Examination, Madras has Human Physiology. The wretched text-book, Taylor's Ancient History as taught at Calcutta is very wisely rejected at Madras, where a far better book, Freeman's General Sketch of European History, is taken up instead, together with a short selected portion of Ancient History. There is also in Madras at the F. A. Examination a third paper in English containing questions on passages not taken from the text-books. This is a decided improvement, and is a most valuable addition to the test in English. In the B. A. Exami-

nation also the Madras scheme has a wise addition, viz., that in the question-papers on Mental Philosophy the examination is not to be confined to the stated text-books. The same reservation is also made with the optional subjects, Logic and Moral Philosophy; and the Madras University sets four papers in the English language, in the place of only two as set at Calcutta,—two of which only bear exclusively upon the authors selected for examination. The third paper consists of general questions on the English language in relation to its history, grammar, idiom, and structure. The fourth paper is devoted to testing the candidate's ability in original prose composition. The superiority of this to the narrow Calcutta system is too obvious to require any comment.

A comparison might also be drawn between the two Universities in various other details, such as the number of marks assigned to each subject,—the number of marks required to be obtained by a candidate in each separate subject,—the aggregate minimum on the whole qualifying for the 3rd, 2nd, and 1st classes respectively,—and so forth. But we trust enough has been produced to show that each University may with profit study the higher educational course of its sister and rival.—*Pioneer*.

#### NATIONAL INDIAN ASSOCIATION.

THE November number of the *Journal of the National Indian Association* is a very interesting one. The first paper in it is entitled "Indian Students and English Universities" contributed by Mr. Saththianadhan, a son of, we believe, the Rev. W. T. Saththianadhan, of the Church Mission Society of Madras, now in Cambridge. The writer gives much interesting information about the University of Cambridge and of the different colleges belonging to it. According to him, Cambridge "is better suited for the Indian student than Oxford, because more mathematics is studied there. Moreover, the entrance on the previous examination has been made very much easier for natives of India since last year. At Cambridge, the highest degree which has hitherto been taken by a native of India, is that of 17th wrangler. Indian students who have belonged to the Indian University, have done just as well as the Cambridge ones. All the degrees, whether in Law, Arts, Medicine or Science which the University can confer, have been taken by them." We have in the paper many particulars of the different examinations that students pass at Cambridge, the length of the different terms, the list of the seventeen colleges affiliated to the University and the expenses of a student who makes up his mind to pass his three years' course and goes up for his degree. College expenses are divided into three heads, namely, fees, cost of living and extras. Under the first head, a student will have to pay £200 for his course, including the fees of a private tutor; the actual lodging expenses in college in a year come to £64-10; or in lodging £80-10. There are a good many other expenses which have to be paid, so that £270 will be the cost of lodging in the college for the whole term and £240 in lodgings. It is stated that the entire cost of a college student's three years' stay will be something like £700. The editor of the *Journal* is of opinion that the calculations have been carefully reckoned, but

that it is necessary to allow a larger margin for extras. The information given by Mr. Sathianadhan is specially intended for Indian students and will, we trust, be the means of giving well-to-do parents the experience needed to enable them to send their sons to Cambridge. The paper on the Cambridge University is followed by some Zenana proverbs and an account of the Lungar procession at Hyderabad, with which readers in Southern India must be familiar. A few particulars are given of the new Oxford Indian Institute which has been started by Professor Monier Williams for the benefit of Indian students. The institute will particularly "aim at promoting the welfare of students from India, some of whom are already at Oxford and will afford opportunities to Englishmen and natives of India for better acquaintance with one another." Twelve honorary fellowships are to be conferred by the council on the most distinguished Oriental scholars of all countries; scholarships will be conferred upon deserving persons elected by the council. A member of the Indian Civil Service has intimated a wish to found an annual prize for an essay on an Indian subject. Large sums of money have been subscribed in India and in England in aid of the funds of the Institute and more money is wanted. Professor Williams solicits further subscriptions. The letter on the "love of ornaments among Bengali ladies" is well written. The writer disputes some of the statements made in a previous letter on the same subject and says that Bengali ladies do not love ornaments much, but that the custom and usages of the country compel them to wear ornaments on different occasions. The love of ornamentation and jewelry among the members of the other sex is well known. Large sums of money are spent on ornaments, and the natives of India are now taking to the manufacture of *mock* jewelry, while gold and silver were all the rage a few years ago. Short notices appear of the proceedings of the meetings of the Association in Calcutta. The Association has lost one of its most prominent vice-presidents in the person of Sir William Merewether, K.C.S.I., who, for some years, occupied a seat in the India council. The Madras board of management of the Association will have to appoint a successor to Lady Mary Grenville who, as its president, evinced great interest in its welfare. In the month of November many Indian students arrived in England to prosecute their studies for the legal and medical professions.

#### PETER CATOR PRIZES.

##### LOWER GRADE EXAMINATION.

3rd Friday in October 1881.

##### PRIZES.

Nine Money Prizes of Rupees 50, 40, 30, 30, 20, 20, 15, 10, and 5, respectively, will be awarded to the nine highest Candidates, and Certificates of Merit to all who obtain half the total number of marks.

##### SUBJECTS.

OLD TESTAMENT.....Genesis xxxvii-L.  
Exodus i. to xx. and xxxii. and xxxiv. \*

JAN. 1881.]

\*PETER CATOR PRIZES.

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NEW TESTAMENT.....Gospel of St. Luke.  
MEMORITER.....Psalm ciii.  
Ecclesiastes xiii.  
Isaiah lv.  
John x. 1-18.  
1 Corinthians x. 1-13.  
2 Peter iii. 1-14.

##### CANDIDATES.

Candidates must not be below *fourteen* nor above *nineteen* at the time of examination.

Matriculated Students, Students in Theological Colleges, and persons who have already obtained Cator Prizes are not admissible as Candidates.

The names of Candidates duly filled up in the printed blank form of application, which can be had at the Church Mission Office, Egmore, Madras, must be sent in on or before the 31st of August, with the entrance fee of eight annas. Applications made after that date can only be received on payment of a double entrance fee till the 15th of September. A printed form of acknowledgment will be forwarded to each on the receipt of the entrance fee, and this printed form will have to be produced at the time of examination.

##### HIGHER GRADE EXAMINATION.

3rd Friday in October 1881.

##### PRIZES.

There will be four Money Prizes of Rs. 120, 80, 50, and 30, respectively, and Certificates of Merit to all who obtain half the total number of marks.

##### SUBJECTS.

OLD TESTAMENT.....History of the Jews from the beginning of Jehu's reign until the carrying away into Babylon.  
The Prophecy of Amos.  
NEW TESTAMENT.....The Gospel of St. Mark.  
The Epistle to the Galatians.  
CHRISTIAN EVIDENCE.....Bunyan's Pilgrim's Progress, Part I.  
MEMORITER.....Genesis iii.  
Exodus xx. 1-17.  
Psalm viii.  
Isaiah lv.  
John x. 1-18.  
1 Corinthians xiii.

##### HIGHER GRADE EXAMINATION.

3rd Friday in October 1882.

Prizes same amounts as in 1881.

OLD TESTAMENT.....The History of the Israelites from the death of Joseph to the death of Moses (Not including a minute acquaintance with the minor details of the Mosaic legislation).  
NEW TESTAMENT.....Gospel of St. Luke.  
Epistle to the Ephesians.

- CHRISTIAN EVIDENCES..... Letters to Indian Youth by the Rev. J. Murray Mitchell, LL.D. Letters ii—x (inclusive).  
 Appendices A, B, C.  
 MEMORITER..... Psalm lxxviii. 1—8, xc.  
 Isaiah i. 10—31.  
 Jeremiah xxxi. 31—34.  
 John iv. 13—26, vi. 27—37.  
 Romans viii. 1—17.

## CANDIDATES.

The Examination is open to all persons between the age of sixteen and twenty-six except Ministers and Catechists.

The names of Candidates duly filled up in the printed blank form of application, which can be had at the Church Mission Office, Madras, must be sent in on or before the 31st of August, with the entrance fee of one Rupee. Applications made after that date can only be received on payment of a double entrance fee till the 15th of September. A printed form of acknowledgment will be forwarded to each on the receipt of the entrance fee, and this printed form will have to be produced at the time of examination.

## CALCUTTA UNIVERSITY.

ENTRANCE EXAMINATION, 1880.

November 29th.

ENGLISH.

Afternoon.

N.B.—The figures in the margin indicate full marks.

1. (a.) Define a Noun. Distinguish between Abstract and Concrete nouns. 5.

(b.) Abstract nouns are derived from (1) Adjectives, (2) Verbs. Give three examples of each.

(c.) Give three abstract nouns, that change their meaning, when in the plural number; and write three sentences to illustrate the exact meaning of the plurals.

2. The place of a noun may be taken by (1) a pronoun, (2) an adjective, (3) the infinitive of a verb, (4) an adverb, (5) a noun clause. 3.

Write a sentence to illustrate each.

3. (a.) Define a Preposition. Some words are both prepositions and adverbs, others both prepositions and conjunctions. Write a sentence to illustrate each. 8.

(b.) Write sentences to show that you understand the change in the meaning of the verbs, do, make, call, take, give, fall, when any one of the prepositions in, to, with, upon, up, for, is suffixed.

4. (a.) Define the terms voice, mood, tense. Define an auxiliary verb. How are auxiliary verbs used in the formation of voices, moods, and tenses? 6.

Are auxiliary verbs used finitely? Give three examples.

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(b.) State the mood of the italicised words in the following:—

"If you *would* but throw me into the water," said the gudgeon to the fisherman; "I *should* soon grow fatter and bigger, and then, whenever you wanted me, I *would* come and be caught." "If I *could* feel sure of that," replied the fisherman, "perhaps I *might* let you go."

5. (a.) Give the exact force of the following prefixes and suffixes:—*Thoroughfare*, *forbid*, *forenoon*, *gainsay*, *withdraw*, *bisect*, *counteract*, *retrograde*, *vice-chairman*, *proconsul*, *castle*, *maiden*, *blacken*, *clarify*, *lower*, *otherwise*.

(b.) Break the following compound words into their component parts, and show in what relation these parts stand to each other in the several words:—

Steam engine, table cover, man servant, lamp black, counterpoise, paper-cutter.

6. Write sentences to illustrate the literal and one figurative meaning of the following substantives:—

Dress, dawn, cradle, scourge, morning, sea.

7. Express the following idiomatically, as simple sentences:—

(1) If you will think a little on the matter, you will find out where you are wrong.

(2) When you have some leisure, tell me, what people are saying in the town.

(3) The last time you and I met was in May, and this is December; eight months have passed.

(4) When a man lays out his plans for the future, he cannot tell how they will turn out.

8. Put the following together, as tersely as you can, in a narrative style:—

Compound Sentence. { A husbandman sowed some corn in his fields. He had only recently done so. Cranes came to eat the corn. The husbandman fixed a net in his fields to catch these cranes.

Compound Sentence. { The husbandman examined these nets. He did so to see what cranes he had taken. He found a stork among the number.

Direct Narration. { The stork begged to be let go. He said he was no crane. He said he had eaten none of the husbandman's corn. He begged the husbandman to oblige that he was a poor innocent stork, the most pious and dutiful of birds. He said, he honored and succoured his father and mother. And that he

The husbandman cut the stork short.

Direct Narration. { The husbandman ventured to say, that the words of the stork might be true enough, all he knew was this—that he had caught the stork. The stork was with those, who were destroying his crops. The cranes would suffer. The stork must suffer too. The stork had been taken in the company of the cranes. The stork must suffer with that company.

November 30th.

TRANSLATION.

Afternoon.

N.B.—The figures in the margin indicate full marks.

Translate the following idiomatically into an Indian vernacular:—

(a) An accident which took place on Tuesday night was 25. eminently one of the "preventable" class; yet similar casualties are constantly being reported, notwithstanding the lessons taught by experience. A platform which had been erected in the National school-room on the occasion of a concert was occupied by about 150 children. This platform suddenly gave way with a loud crash, and all the children fell with it to the floor. There was of course a frightful scene of excitement, and it is a wonder that the consequences were not even more serious, for directly it was known outside that the platform had fallen there was a general rush to the room, creating of course additional panic and confusion. Happily, it turned out that none of the children were killed, but one or two of them had sustained fractured limbs and a large number were severely shaken. As there were no fatal results there will be no inquiry into the matter, but there is none the less need for a searching investigation of the circumstances under which the children were allowed to occupy the platform, which was evidently in an unsafe condition. Structures of this nature require careful testing by competent persons before they are used, yet their erection is too often left entirely in the hands of some village carpenter.

(b.) They are an athletic and by no means bad looking race, 25. with brown complexion, flat noses, and high cheek bones. They are brave and warlike, treacherous and vindictive. Their dress consists of a dark blue or black kilt, ornamented with rows of cowrie shells, and a thick cloth of home manufacture thrown over the shoulders. As ear ornaments, they wear tusks of wild boar; but the most coveted decoration is a neck collar of goat's hair dyed red, and fringed with the long scalps of slain enemies. Above the elbow are worn armlets either of ivory or plaited cane, prettily worked, in red and yellow. Between the calf and the knee are bound pieces of finely cut cane dyed black, the calves being encased in leggings of cane similar to the armlets. The hair is, generally, cut square in front, and tied into a knot behind, with a plume of eagle or toucan feathers. The national weapons are a spear, a shield, and a *dao* or bill-hook. In recent years, many have succeeded in obtaining guns or muskets, and the possession of fire-arms is the supreme desire of every Naga.

December 1st.

GENERAL AND PHYSICAL GEOGRAPHY.

Afternoon.

N.B.—The figures in the margin indicate full marks.

1. Explain by examples what is meant by *observation* and *experiment*. Describe experiments showing "the formation of dew," "the cause of winds," and "the phenomena of day and night." 4.
2. Distinguish between *spring* and *neap* tides, indicating by means of diagrams the positions of the sun, earth, and moon at each of these. Why does the tidal wave originate in the Southern ocean? 5.
3. Contrast the causes of *floods* on the Mahanadi and Indus rivers. Why does the former not dry up after the rains are over? What evil consequences attend the construction of *bunds* to restrict the channels of rivers flowing through plains? 4.
4. Give a brief account of the Monsoons. What is their effect on the currents of the Bay of Bengal? In the month of December, why will a ship sail faster from Calcutta to Ceylon than from Ceylon to Calcutta? 5.
5. (a.) P and Q are at opposite ends of a telegraph line. P despatches a telegram at noon, it reaches Q at 10h. 30m. A.M. Is Q east or west of P, and how many degrees? 3.
- (b.) A and B are on the equator in 60° and 90° east longitude respectively. Each travels 60° of longitude directly North. Are they any nearer each other? What will happen when they each travel another 30° North? 3.
6. (a.) What lands are joined by the isthmuses of Suez, Corinth, Perekop, Panama and Krau, respectively? 5.
- (b.) What waters are connected by the following straits:—Ormuz, Gibraltar, Dover, Malacca, Bosphorus? 5.
7. Name one large city, giving some interesting fact about it, on each of the following rivers:—Seine, Irrawaddy, Mississippi, Rhone, Tiber, Clyde, Jumna, Nile, Tagus, Rhine. 5.
8. Tell the localities of the following places, giving some historical event in connexion with each: Seringapatam, Buzworth, Dunbar, Meerut, Hastings, Waterloo, Quebec, Sobraon, Thaneswar, Vittoria. 5.
9. Describe, as fully as you can, an imaginary voyage along the coast of India from Karachi to Calcutta. 5.
10. On the basis of the following construction draw an outline map of South America, and insert in it the names of the different countries, with their capitals, the rivers, mountains, and capes:— 6.

*Construction.*—Draw the length required for the map, the vertical line AB, A being the North point. Bisect AB in C, and bisect AC in D. Through D draw a horizontal line FDE, from West to East, such that DE = AC, and DF = one-third DE. Join AF, FC, BE, EA.

Afternoon.

8. Draw an accurate plan, and find, in acres, rods, and poles, the area of a field from the following notes in which the lengths are given in links :

9. A small object is floating on a tank; show how to find its distance from a given point on the edge of the tank, the ground about the tank being smooth and on a level with the surface of the water.

Morning.

(b.) Of what sum of money will 325 be 13%?

(c.) Extract the square root of 7.0225.

3. Divide 127l. 8s. among 2 men 3 women, and 7 boys, giving each of the boys one-third of what a woman receives, and each of the men twice as much as a woman.

4. A leaky cistern is filled in 5 hours with 30 pails of 3 gallons each, but in 3 hours with 20 pails of 4 gallons each, the pails being poured in at intervals. Find how much the cistern holds, and in what time the water would waste away.

5. A race-course is half a mile long: A and B run a race, and A wins by 10 yards; C and D run over the same course and C wins by 30 yards; B and D run over it and B wins by 20 yards; if A and C run over it, which should win, and by how much?

6. A tradesman puts two prices on his goods: one for ready money, the other for 6 months credit, interest being calculated at  $12\frac{1}{2}$  per cent. per annum. If the credit price of an article be Rs. 26 annas 9, what is its cash price?

7. Simplify—

$$\left\{ \frac{x}{a} + \frac{2x^2}{a(b-x)} \right\} : \left\{ \frac{a}{x} - \frac{2ax}{x(b+x)} \right\}$$

8. Find the highest common factor and the least common multiple of—

$$3x^3 - 10ax^2 + 7a^2 \text{ and } x^3 - 5ax^2 + 7a^2x - 3a^3$$

9. Solve the equations—

$$(a.) 15 + \sqrt{x+7} = 19.$$

$$(b.) 4x - \frac{x-1}{2} = x + \frac{2x-2}{5} + 24.$$

$$(c.) \left\{ \begin{array}{l} \frac{7+x}{5} - \frac{2x-y}{4} = 3y-5. \\ \frac{5y-7}{2} + \frac{4x-3}{6} = 18-5x. \end{array} \right\}$$

10. If  $a : b :: c : d$ , shew that—

$$ma + nc : mb + nd :: (a^2 + c^2) : (b^2 + d^2)$$

11. Extract the square root of—

$$x^8 - 2a^{\frac{1}{2}}x^{\frac{7}{2}} + 2a^2x^3 + a^{-\frac{1}{2}}x^{\frac{5}{2}} - 2a^{\frac{1}{2}}x^{\frac{3}{2}} + a^{\frac{1}{4}}$$

12. A boat goes up stream 30 miles and down stream 40 miles in 10 hours: it also goes up stream 40 miles and down stream 5 miles in 13 hours. Find the rate of the stream and of the boat.

## INSTRUCTION WITHOUT BOOKS.

Four years ago the town of Quincy, in the State of Massachusetts practically resolved to abolish text-books from its primary schools. Elsewhere in the States it has been acknowledged that the children of a primary class poorly taught are so seriously crippled in all their future attempts at learning that teaching, however good, in higher grades can never overcome these earlier defects; but it is only in the Quincy schools that the teachers are advised that they are themselves to be the text-books for their scholars, and that the dull pupils need the most care. The object of the Quincy school teachers is not to cram, but to cultivate the intellect of a child by oral instruction. The teachers may use books in preparing for their duties, the pupils may also use books at home as they advance in their studies, but in school the rule is to let the spoken word, either from pupil or teacher, do the work. The school regulations expressly forbid any "keeping in," and "writing over" is only allowed in cases where the child shows habitual or intentional carelessness. The discipline is altogether in the direction of kindness; the gentle hint is found to have more effect than the harsh word, and the correction of a stupid blunder is made not by punishment, but by quiet explanation. To this general statement it need only be added that the teachers are women.

This system of learning without books is so managed that a child becomes able to read, write, and cipher so gradually and naturally that he is not conscious of any effort in the acquisition of these elements of instruction. By the same process he is taught to speak and write with correctness and fluency, he gains some knowledge of geography and history, and gets as mattering of science teaching at the same time. All the while the pupils are unconsciously helping each other, the spirit of emulation pervading the whole class and brightening up the dullards until they, too, reach a stage when they cease to give their teachers any special concern. How all this is brought about cannot be made as plain on paper as it can be by observation, but the process will be to a large extent understood from a condensation of the notes made by a newspaper correspondent during a forenoon's inspection of the work done in one of the schools. The children in nearly all the American schools march into their places, two and two, to a musical accompaniment. They keep time generally—right, left—to a rub-a-dub performance on a kettledrum, played by one of the boys at a point where he can be within sound, if not within sight, of all the scholars. In Quincy the music is that of the piano, a simple march being played and continued long enough to allow every child to reach his place. Two of the children have been previously round the desks with buckets of water, moistening the slate sponges of the scholars, and the rule doubtless prevails at Quincy, as elsewhere in the United States, of deputing three or four of the scholars in turn to quietly hang up the hats and caps of the pupils as they pass in, and to as quietly return these articles of dress when the hour of recess or dismissal arrives. These Quincy schools are not absolutely secular. There are religious "exercises" to open with—in the first place, the recitation in unison, in subdued tones, of "The Lord is my Shepherd,"

then with reverent voices, the Lord's Prayer is said; and following this a hymn is sung, and then one of the school songs which American children sing so heartily. Next comes what may either be called a lesson in conversation or in observation—either term is suitable—and it is apparent from the correspondent's narrative that this exercise is so conducted as to be decidedly instructive. There was no signal for beginning on this particular morning. As soon as the song was sung, a boy held out his hand, was recognised, and springing to his feet, said—"On my way to school I saw two men digging. What do you suppose it was for?" Instantly, the correspondent says, there was a volley of suggestions, not in discord, but very much as if on the playground, each child rising, however, to give its opinion. The original boy, however, had to tell them that it was a hole for a flannel, and where it was. Then another boy had seen something else, and another, each little speech beginning, "I saw yesterday," or "last week," or "last summer," and occasionally there was a "long bow" drawn by a fanciful child. But, mostly, the talk was of the village matters. One boy had information that two vessels out in the bay, two "big steamships," were to be knocked to pieces for their old iron. "They are Government vessels," put in another boy, "and they are going to burn them. They are all rotten, too rotten to go to sea." "Little worms," contributed another, "they're all full of little worms in their hulls." "They're going to burn 'em. Won't it be fun seeing the fire?" "Will the iron burn?" asked the teacher. "No; don't you see," explains a young philosopher, "the wood all turns, and the iron falls right into the water and cools off." It was about a ten minutes' talk in all, the children entirely alert and at their ease, a correction only put in now and then, but entirely in a suggestive way, by the teacher.

The royal road to spelling which the little folks follow at these Quincy schools has grammar and composition as resting-places. The work is done by the teacher writing on the blackboard and the children copying from the board on their slates, as in this manner: Teacher—"Clean slates. I am thinking of a nice holiday"—spelling it out on the board—"one of the nicest we have. What is it?" Some voices went up for the 4th of July, but the majority held it to be Christmas. "It's somebody's birthday." Then it was Christmas—decidedly by acclamation. "Christ's birthday mass," writing it out. "Do we write it that way? No! Why not?" The answer is because the style is too round-about. Then the teacher again—"Ever so many holidays make a —?" "Vacation." "My next word is among those berries on the table," pointing to a vase of bitter-sweet berries, orange and red. Chorus is "nice," "elegant," "delicious." "Well—that is to taste. I don't mean to taste," writing on the board, however, all the suggested words. "Splendid," "pretty." "Yes, that's it. Give me another name for "pretty." "Handsome," "beautiful." "You don't sound the *d* in handsome," remarked a youth, holding up his hand as that word was written down. "You don't sound the *t* in vacation, either," remarked another critic, looking at the blackboard, and reminded of silent letters. Here a pencil fell. "What was that word?" "Dropped." "Here's the next word," breaking the piece of chalk in half. "Break." "Here's the next," stepping out. "Stepped." All hands,

meanwhile, writing very fast, to keep up with the class suggestions and the teacher's action. "If a child came to school after nine o'clock we should say he was—" "Tardy," in a chorus.

The mode of teaching geography was still more interesting, and was witnessed in one of the upper primary classes. The subject was North America. On a blue board, about a yard square, which had a ledge around it, and was set on table feet, about a dozen children were gathered. In the centre of the board, and heaped up into the rude outline of the continent, was a quantity of earth—iron-moulders' earth—which was brought out in strong relief by the light blue background. "Come, Bertie, put in the Rocky Mountains," and a girl began energetically to pinch up a mountain range into peaks like so many small coconut cakes. "Jerry, where's Alaska?" Boy points to it. "Now, go on from there and name me all the land projections around to Florida, noting the indentations."

But after Prince of Wales' Point and Point Barrow, Jerry did not know his points very well, and another boy was called up, who traced them out with small earthy fingers and great enjoyment. It was a new kind of circumnavigation, with the advantage that the navigator, if the class thought a certain point not quite bold enough, was directed to make it more so; and in the course of the voyage naming all the points of the Atlantic coast to Florida, there was considerable pulling and pushing up the outline to suit the exacting critics. The "mountain range girl" was all the time building up the several backbones of the Western Continent, and another at work on the table-land of Mexico. "What's the matter with the eastern part of this continent?" said the teacher, after the bays and gulfs had been successfully visited by another little finger, with the name given at each blue water (blackboard) stopping place. "What is the matter here?" "No mountains," was the chorus, and Jerry—another Jerry—gets to work on the Alleghanies. The table is soon complete. "What little range ought to be here?" "Wahsatch Coast Range." "Where is the lowest land along here?" "Girl points to Mississippi river. "Why doesn't it wash out over here?" "Levees keep it out." "Why don't all the rivers run out into the Gulf of Mexico? Here are some going over to the Atlantic. What's the trouble up here?" pointing to the St. Lawrence. "Why doesn't this run down like the Mississippi?" "It couldn't run up a mountain; it has to go east." "Why?" "Because of the height of the land." "What's that?" Child points out and puts up a height of land, making the Mississippi basin still more a hollow by contrast. Indeed, the little hands took great engineering delight out of the Mississippi valley. Their heads were clear enough on that point. "Why is the St. Lawrence called so?" "It's named after the day the first people sailed up it, on St. Lawrence's Day." Pointing to Hudson's Bay, "Is that named after a day, too?" "No," in chorus; "after a man, Hendrick Hudson, the man that sailed into it." "How do you know, if you didn't see it, if you only saw a flat map, that there must be a height of land here?" teacher going back by a quick diversion to his former base of operations. "There must be." "Why?" "Because the rivers run north, and if you travelled up them you would notice that." "But here's the Mississippi; that goes south." "Well, it flows that way because it *must* slope south; rivers don't run up hill." "I don't see any rivers going east along

here," still in the valley of the Ohio. "Oh, *they've* got to go west; they can't get out to sea because of the Alleghanies."

In another room the children were at work tracing out the voyages of Columbus, and history and geography went together. The islands Columbus sighted were put in as he was supposed to come up to them, the track of each of his voyages being drawn across an outline map on the blackboard. This, we are told, was after England and Spain had been put in for the Genoese voyager, and after Queen Isabella had sold her jewels, to the approval of the class. "A priest thought considerable of Columbus, and he got a part of the money for him, and the Queen gave the other part." Palos is located and the date of first voyage written there. "Then he sees the Canary Islands." "I don't see them," said the teacher, so they are dotted into place. "What was Columbus doing when he stopped there?" "Repairing his ships." "What date do we want along here?" So the sailor took her to San Salvador, and writes October; takes her from there, goes to Hayti—"Did he call it Hayti?" "No; Hispaniola;" and the boy brings him back to Spain by a chalk sail. "What year?" "Early in 1493." Columbus gets his reception in Spain, Indians and all, and is taken out again to San Domingo, while the class discovers Jamaica, and the chalk voyager marks it in place and dates it. "Stays about here till 1496." On his third voyage the Cape Verde Islands are discovered in the track of the chalk pencil. "Why Verde?" What *ver* have we in our names?" "Vermont." By this time a party of earthworks are putting in the islands on the earth map, following the instructions from the little leader at the board.

The whole work of the schools is done in the same way. Books are read—sometimes newspapers—when the children are able to recognise and pronounce words. The reading is not always continuous. The teacher will ask a pupil to explain what is meant by certain expressions, or put in other words for those in the book. For instance, the word "locality" occurs. Teacher: "Put in another word having the same meaning." The child promptly answers "place," and goes on with the remainder of the sentence. A boy mispronounces a word. He says, "instid." Then comes a very kind way of correction. The teacher quietly writes "instead" on the board, and asks the whole class how the word is pronounced. In the general answer the delinquent joins. Throughout all the reading lessons in these schools, what is suggested as well as what is directly meant, is brought out, by leading questions sometimes, but very seldom by direct statements from the teacher. The object is to get the child not to keep silent but to talk—to ask and to answer questions, to be so interested in the absorption of the instruction which the teacher is ready to give as to have but little desire in school hours to talk to his neighbours. By this means the drudgery of learning is avoided. The Quincy school children go home every day conscious that something has been added to their little stock of knowledge, and they are as fresh in mind and body at the close of the hours of tuition as they were when the day's lessons began.—*Needs Mercury.*

## THE LECTURE SYSTEM

### AS APPLIED TO SCHOOL TEACHING.

THIS method of teaching has to so great an extent superseded the methods formerly in use in girls' schools, that it is thought desirable to discuss the subject, and in this short introductory paper the various modes in which it is carried out will be indicated, and the question raised as to whether it may be possible to eliminate some of the defects which many teachers have observed in its practical working.

There is little doubt that the introduction of this system has infused a greater amount of life and spirit into school teaching. The pupils are more interested in their work than they were when school work consisted mainly in learning lessons and repeating them.

On the other hand, the large amount of writing and re-writing required of pupils under this system is a serious drawback. It is felt to be so by many intelligent parents, and is, I think, regretted by many teachers—upon whom it entails so serious an amount of work in the way of correction, as to sensibly curtail the time they should devote to rest. I fear, also, that it renders it impossible, in some cases, for them to keep up the habit of reading which has so important a bearing on their teaching, imparting to it a vigour and reality which is lacking in the teacher who has barely time to get up her lessons, or who falls back on courses of lessons previously given, which she repeats without variation.

My remarks on this system will principally refer to the literary subjects taught in schools, such as History, English Grammar, and Literature. It would occupy too long a time to consider its bearing on every subject taught in schools, and I think, for reasons into which I need not fully enter here, that the teaching of such subjects as I have mentioned is more affected by this system than (for instance) science teaching, in which reference to diagrams, &c., and various kinds of practical demonstration would naturally oblige the teacher to vary the mode of presenting the subject to the class. I am referring, mainly, to ordinary class teaching, and not to courses of lectures given by outsiders.

The plan very generally adopted in the higher classes is for the teacher to lecture, while the pupils take down rapid notes. In this way of course a large amount of information is given by the teacher, and roughly transferred to paper by the pupils. Some portion of the lesson no doubt is taken into the memory of the pupils, and is in part assimilated with the knowledge of the subject already possessed by them, but I fear that they too often feel that all is right so long as the notes are on paper for future use, (as for example in getting up subjects for examination) and that their minds are not as much exercised on the theme of the lecture as they ought to be, during its delivery.

I have heard excellent lectures an hour long given by very able teachers, which were only broken by one or two questions—answered with a hesitancy which clearly showed that they were felt to be rather an unexpected break in the note-taking.

Now it may be desirable that before the older pupils leave the

school they should have some little practice in this method of note-taking to enable them to embrace the full advantage of the courses of lectures on various subjects given in our large towns, but I do not think this is the best mode of lecture-teaching for general use in our large schools.

Perhaps the following modification of the note-taking plan, which has been tried in some schools, would be found to be more productive of good results in the long run, though the ground covered would be less in a given time. After careful individual questioning on the last lesson, the teacher gives a short lesson in the lecture form, first requiring the girls to sit leaning back in a comfortable position and to lay their pencils and pens on the desk before them, while giving their whole attention to the teacher. Their interest should be kept up by frequent questioning, by which the new information given should be linked on to what they had received in former lessons. An inattentive pupil might be suddenly arrested by being asked to reproduce a statement just given. The mental activity of the pupils should be encouraged as much as possible. They should be expected to draw conclusions from a series of given facts or to furnish illustrations of some general principle alluded to.

It seems to me that the minds of the pupils can thus be more easily concentrated on the subject in hand than when they are partially diverted by the mechanical difficulty of writing rapidly during the giving of the lesson. This questioning should be so arranged as to bring out the chief points that have been put before them, in their proper order, and should thus form a basis for the short notes which the pupils should be required to write down. These short notes may be expanded and carefully written out afterwards, but I should discourage their being written out much in detail.

Teachers sometimes plead that the writing of copious notes is valuable as an exercise in composition—but I should be inclined, in a History class, for instance, to require very short abstracts to be written for the weekly lessons; while occasionally, on coming to the close of a marked period, I would require an account of an historical personage whose life had a bearing on the events of that period, or an intelligent account of the causes which led to certain results, and in this case the notes would be criticised both as a test of memory and of power in expression.

In classes of younger pupils I should be inclined to give a few questions on the lesson, and when these had been verbally answered, dictate them to the girls, and require short, concise answers to be written, later, from memory.

I think an intelligent teacher, fully alive to the importance of diminishing the amount of writing in school work, might easily choose means for accomplishing her object. I venture to suggest the following plan, for instance, with an advanced class:—

The teacher, after giving the lesson, might divide the subject of it into three or four sections, according to the size of the class—which should be divided into a corresponding number of sections. She would then tell them that each girl in a section should be prepared at the following lesson to give a clear, full, verbal statement of the portion of the lesson assigned to her section. The teacher might require additional information to be read up from books on that part of the subject assigned to them, and if convenient, the

girls in the same section might be allowed to prepare their work together. Before the next lesson begins, the teacher should warn the pupils that at the end of the lesson a short series of questions will be given, and that the girls in each section will be required to write answers from memory on the part of the lesson not assigned to their own section. This will keep up the interest of the whole class in the verbal accounts given. The teacher then calls upon a girl in the first section to begin the verbal statement. She might then call upon another girl in the same section to continue it till she has satisfied herself as to the way in which the girls have got up their work, and apportion their marks accordingly. The second and third sections might then be taken up in the same way.

The power of giving a clear, accurate verbal statement of a subject is, I think, a valuable acquisition in an educational point of view, and more might be done in this way in our schools. The reserve and timidity of some pupils will raise difficulties in the way of carrying out such plans, at first; still somewhat similar plans are successfully adopted in German schools.

It is an important question for teachers, whether the Lecture system as it is generally practised in schools does not tend to check rather than encourage the formation of that habit of intelligent reading and enquiry which is hardly likely to be formed in after life if it has not been acquired during school days, and which is so important an element in that culture of the mental powers which we all desire to see our pupils carrying on when their School life is over.

MARY E. PORTER.

#### APPENDIX.

The foregoing paper having been read and discussed at meetings of the London Association of Schoolmistresses, held on March 19th, May 14th, and June 25th, 1879, the following conclusions were arrived at.

Lecturing, in the sense of unbroken discourses delivered by a teacher while the pupils take notes, is not suitable for ordinary school teaching. The objections may be thus stated:

The pupils, being accustomed to learn only from the living voice, fail to acquire the habit of learning from books and thus become fatally dependent on the teacher. A great limitation of the vocabulary follows. The Lecturer is careful to use words which she knows the pupils will understand, and they learn no others; or on the other hand, words are used which are not understood or explained. The substitution of Lectures for books also limits opportunities of acquiring familiarity with good style.

The Lecturer is tempted to confine herself to the more advanced and intelligent portion of the class, or in guarding against this danger, she falls into that of the excessive reiteration of the same idea in different forms, deemed necessary for the sake of the slower pupils. Thus, either the dull and backward part of the class is left behind, or the quicker and brighter pupils are wandering away from the subject, and forming a habit of inattention.

Under the Lecture-system, the pupils habitually receive all that they are considered able to take in, directly from the teacher,

and no effectual encouragement is given to anything like a habit of research.

Both the writing of notes and the after use of them are objectionable. The after use of notes is objectionable on the ground that they are often incorrect, and supposing that they are corrected by the teacher and afterwards read over by the pupils, time is spent in practically learning by heart what is, after all an inferior piece of composition. In deprecating the taking and the use of notes, it is not, however, intended to condemn the practice of making short memoranda which may be useful for subsequent reference.

It is considered that occasional Lectures, or courses of Lectures, supplementary to school lessons, by an external teacher of superior intellect and culture, may be of great use, as stimulating and enlarging the mind. A Lecture at the close of a course of lessons may also be given with advantage by the regular teacher.

Probably the great prevalence recently obtained by the Lecture-system may be largely due to a mistaken impression that the plan of teaching by books has become antiquated, and has been superseded by a more advanced method. The aspiration after this more advanced method is supposed to be met by an unintelligent system of Lecturing, which is accordingly adopted by inexperienced teachers as if equivalent to good oral instruction. The name also being indiscriminately applied to all sorts of lessons other than such as are simply repetition by heart. Lecturing has acquired a reputation for excellence, which is far from being deserved by the system as defined for present consideration.

#### APPOINTMENTS.

*Appointments made by the Director of Public Instruction, between the 16th December 1880 and 15th January 1881.*

P. Narayana Row Naidu, B.A., (trained) to be Assistant Master, Bellary College, on Rs. 40 per mensem.

M. Venkataratnam, B.A., to be 3rd Assistant, *substantive pro tem*, Cuddalore College, vice Ramachendria, B.A., on other duty.

S. Venkatanarayana, 3rd Assistant Master, Chittoor High School, to be Head-master, *substantive pro tem*, Middle School, Bimlipatam, on Rs. 40.

Mr. E. H. Elliot, B.A., Head-master, Cuddalore College, to be Head-master, Madura College, (new scale) *vice* Mr. Thomas resigned.

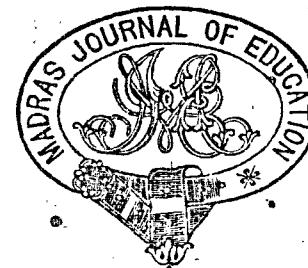
Mr. T. R. Scott, B.A., 1st Assistant, Bellary College, to be Head-master, Cuddalore College, but to continue to do duty at Berhampore, during the absence of Mr. Sconce on other duty.

N. Raghunatha Chariar, B.A., 5th Assistant, Combaconum College, and Acting Head-master, Madura College, to be 1st Assistant Bellary College, and to be Head-master, *substantive pro tem*, Cuddalore College.

V. Ramamaja Charry, B.A., 6th Assistant, Combaconum College, to be 5th Assistant, but to continue to do duty at Bellary.

R. Chakravathy Iyengar, B.A., Head-master, Middle School, Trivadi, and 8th Assistant, *substantive pro tem*, Combaconum College, to be 6th Assistant Combaconum College, and to be 5th Assistant, *substantive pro tem*.

M. V. Subramanya Iyer, B.A., (trained) Acting Assistant Master, Calicut College, to be Head-master, Middle School, Trivadi.



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#### THE MONTH.

The results of the Matriculation Examination this year may be looked upon as satisfactory with both teachers and students. One thousand three hundred and sixty-seven candidates out of three thousand five hundred odd that appeared have succeeded in passing, a result that will compare favourably with the three previous years. As over a third have pulled through, it may be safely concluded that quite as many have passed as were fit to do so.

In the first class, only ninety-one names are found, and the largest number passed in this class by any school is eight passed by the Presidency College High School. Mangalore Government High School passes seven, the Kumbakonam Town High School five, while the Trichinopoly S. P. G. School, the Madras Christian College School, and the Coimbatore College School pass four each in the first class.

The results of the recent Bachelor of Arts examination are also to hand. The Presidency College heads the list with twenty-seven successful candidates, but the Christian College and the Kumbakonam College are not far behind with twenty-five and twenty-three respectively. There is no first class this year, which is not surprising, when we remember the extraordinary nature of the papers in one of the Optional subjects. The papers on the History and

Theory of Morals were such as to warn students from taking up the Logic branch, and to compel them to prefer either of the other optional courses of study. We subjoin a table of the positions occupied by the several Colleges in the list:—

| Names of Institution.            | First Class. | Second Class. | Third Class. | Total. |
|----------------------------------|--------------|---------------|--------------|--------|
| Presidency College .....         | ...          | 14            | 13           | 27     |
| Christian College .....          | ...          | 13            | 12           | 25     |
| Kumbakonam College .....         | ...          | 16            | 7            | 23     |
| Trevandram Maharajah's Col. .... | ...          | 6             | 6            | 12     |
| Central College, Bangalore.....  | ...          | 3             | 4            | 7      |
| Rajahmundry College.....         | ...          | 2             | 1            | 3      |
| St. Joseph's Col., Negapatam..   | ...          | 1             | 1            | 2      |
| Private study.....               | ...          | 4             | 10           | 14     |
| Total ...                        | ...          | 59            | 54           | 113    |

The list of failures in the B.A. examination is also to hand. Two candidates who do not fail in any specific branch are deficient in total marks. "English is the subject which shows the largest number of failures," and the Optional Language that which shows the largest number of passes, no fewer than fifty-five having failed in the former, while only three come to grief in the latter. This is what might, *a priori*, be expected, and is a result calculated to inspire confidence in the University. It is rather more difficult to account for the fact that no fewer than forty-six candidates failed in Mental Science. The subject is compulsory, and one in which Indian students might be expected to distinguish themselves, if they were the born metaphysicians they are sometimes represented to be. We rather suspect that it indicates a weak point in the University curriculum. If the whole round of the Mental Sciences were separated into a group, and a new optional course of Logic, Metaphysics and Morals constituted, it seems reasonable to expect that a deeper appreciation of Mental Science would result. As things now are, the student is obliged to take up the questions of Metaphysics and Psychology without being fairly abreast of the subject.

The number of failures in History is, considering the notorious unpopularity of the subject with Indian Students, comparatively small. It is remarkable that results so very much more favourable should be attained by an examination on so wide and difficult a subject as the History of the

English Institutions and people. Our natural supposition is not lessened when we consider that the special period studied this year was so unmanageable and so important as the age of Louis XV. must have been. The following table gives an analysis of the failures.

Total number of failures..... 85

Failures in one subject only..... 31

" two "..... 25

" three "..... 19

" four "..... 1

" five "..... 2

Number of absentees..... 3

Number of failures in each subject.

English..... 55

Mental science..... 46

Optional subject..... 33

History..... 16

Optional language..... 3

THE season of School and College anniversaries is upon us, and all educational Madras is groaning under the multiplicity of such gatherings at which one "must put in an appearance." The unfortunate Governor has been at it again and again, and if he does not escape to Ooty soon, he will have a bad time. It is surely too much to expect a man fresh from the engrossing pursuits of English political life to stand up day after day before what is substantially the same audience and air his reflections on Indian education, when perhaps he has really no knowledge of the matter in hand. Like a canny Scot possessed of a good deal of *savoir faire*, His Excellency has confined himself hitherto to polite generalities, which never fail to "create a good impression."

On the most important occasion of the kind to which he has yet been invited, the Governor unfortunately failed from indisposition to be present. The anniversary of the Madras Christian College had to come off without Mr. Adam. He was evidently expected, for the audience was even more full and fashionable than usual, many having to stand all the time. The chair was taken by Sir Charles Turner, K.C.I.E., one of the Council of the College, who made an excellent speech, on the never-failing subject of the reduction of the Christian College grant. The Chief Secretary to Government, the Hon'ble R. Davidson, C.S.I., was present, and Sir

Chief called his attention to what he considered the facts of the case in a very plain way. Mr. Davidson seems to have been bound to accept the challenge, and accordingly at the distribution of prizes to the pupils of St. Andrew's Sessional School next week, he adverted to the 'strong language' of Sir Charles Turner. We hope the Chief Secretary has other and weightier things to produce at some other time, for it seems hardly an argument to allege that since St. Andrew's School has no grant at all, the Christian College must have quite enough. We would not do the Madras Government the injustice of supposing that the Chief Secretary presents their whole case. There must be something behind.

If Mr. Adam is to be congratulated on the skilful way in which he can preside at prize distributions, the grace and sweetness of Mrs. Adam in discharging the same duty are beyond all praise. She presided in the Doveton College Hall, on the evening before she left for Ootacamund at the Doveton Girls' School distribution, and we have never seen any lady discharge more perfectly what is pre-eminently a lady's function. Miss Keely, the excellent Head of the School deserves congratulation on the admirable way in which her arrangements were carried out, and on the really good appearance of the school generally. There is a heartiness and wholesome enthusiasm about the whole concern which are decided proofs of success. As for the fair 'chairwoman,' it is fortunate for her that she escaped to Ooty so soon after, for all the Girls' Schools in Madras and the neighbourhood would most inevitably have persecuted her to do to them as she did to the Doveton Girls' School.

A LIST of the new Fellows whom the Governor has been pleased to appoint to the University Senate will be found in another column. We should be somewhat sorry to hold His Excellency responsible for the omissions and commissions of this remarkable list. A new comer, however exalted his position, must like other people submit to see things at first not with his own eyes, but with eyes kindly placed at his disposal by others. The first name on the list is that of the eloquent merchant, the Hon'ble P. Macfadyen, whose speeches in the Chamber of Commerce have evidently marked him out for academical honours. If a man shows himself the cleverest trader and the neatest speech-maker in the town, there can be little doubt as to his fitness for

managing the affairs of a University. Mr. Macfadyen enjoys the reputation of a really able man with the power of seeing through mere 'bunkum.' We sincerely sympathise with him if he sees through his own appointment.

The only two representatives of aided education that find a place in the list are Dr. Colgan of Madras and Dr. Jean of Negapatam. These appointments are about the best in the batch. The pity is, that a few other practical men of long experience in education were not added, to strengthen a body at present notoriously weak in enlightened non-official members. And surely a native gentleman or two, besides Mr. Seshagiri Sastri of the Presidency College might have found a place. It is to be hoped that the Governor will be seeing with his own eyes before next year.

Now that the Convocation is coming on, we would call the attention of our readers to what is really a great grievance to poor students of the University. No degrees are conferred in absence, and any student who wishes to have a right to the mystic letters at the end of his name must put in an appearance at the Senate House. The gathering at Convocation doubtless serves a useful purpose, and helps to bring home to the graduate's mind the fact that he is a member of a great corporation, a fact which his undergraduate life is scarcely calculated to teach him. But too heavy a price may have to be paid even for this. Every student must not only be there, but he must wear a gown, a very serious consideration to a man with a light purse. The rates charged in Madras for these ornaments seem to us little short of prohibitive, perhaps even a stronger word might be applied to them. But of course the tradesmen know best themselves at what rates they can afford to rig out a graduate, and far be it from us to intrude with irreverence into the mysteries of their craft. In some poor Universities, with which we are acquainted, a harmless device is hit upon to get over the financial difficulty. A gown, cap and hood can be hired for the great day, for an extremely modest sum, and there is an end of the matter. But in Madras, such a plan is well-nigh impossible, for no one would undertake the speculation, so long as the colour of the B. A. robe is of such a fading and delicate character. It is very pretty, but it won't stand, and so our poor young graduates, who have just reached the goal with an exhausted purse, are obliged, before they can enter on the enjoyment of their honours, to get into debt. Is the colour

essential to the prosperity of the University, and might it not be exchanged for a less expensive and a less fleeting hue?

**MAHOMEDAN NORMAL SCHOOL.**—An Elementary Normal School for Mahomedans will be opened on the 1st March next in Triplicane. Its object will be the instruction and training of teachers of Primary Schools, more especially schools working on the results system, whether Local Fund, Municipal, or Private. The scheme of study will qualify the teachers to teach boys up to the Fourth Results Standard.

Musulman Candidates, intending to become teachers, only, are eligible for admission, but preference, with due consideration of age, physical fitness, and good character, will be given (1) to present teachers, (2) to sons or others relatives of the same.

Candidates will be subjected to an entrance examination, and those admitted will be awarded a monthly Scholarship of Rupees 5 each, tenable for any period up to two years, till the holder is pronounced qualified. Candidates will be on probation for one month, and any not giving fair promise will be requested to withdraw. If a sufficient number of candidates qualify, sixteen Scholarships will be awarded.

A school for boys will be attached to the Normal School, the fees in which will be from half-an-anna to two annas a-month.

Applications should be made to the Head-master of the Madrasa-i-Azam not later than the 20th February, in the following form, which should be signed by the Candidate:

Name.

Father's name.

Candidate's age.

Address.

Previous and present employment.

**PHYSICS AND METAPHYSICS.**—"The passage from the physics of the brain to the corresponding facts of consciousness is unthinkable. Granted that a definite thought and a definite molecular action in the brain occur simultaneously; we do not possess the intellectual organ, nor apparently any rudiment of the organ, which would enable us to pass by a process of reasoning from the one to the other. They appear together, but we do not know why. Were our mind and senses so expanded as to see and feel the very molecules of the brain; were we capable of following all their motions, all their groupings, all their electric discharges, if such there be; and were we intimately acquainted with the corresponding state of thought and feeling,—we should be as far as ever from the solution of the problem, 'How are these physical processes connected with the facts of consciousness?' The chasm between the two classes of phenomena would remain intellectually impassable."—TYNDALL.

# P. A. EXAMINATION.

The following table brings together for the chief Institutions the results for the past seven years:—

| Rank. | Names of Institutions.             | NUMBER PASSED IN |       |       |       |       |       | Total. |
|-------|------------------------------------|------------------|-------|-------|-------|-------|-------|--------|
|       |                                    | 1874.            | 1875. | 1876. | 1877. | 1878. | 1880. |        |
| 1     | Kumbhakonura College .....         | 22               | 33    | 29    | 40    | 30    | 71    | 224    |
| 2     | Madras Christian College .....     | 24               | 28    | 27    | 30    | 24    | 31    | 164    |
| 3     | Presidency College .....           | 27               | 21    | 20    | 18    | 14    | 26    | 140    |
| 4     | Trevandrum Maharajah's Col. ...    | 17               | 22    | 11    | 13    | 17    | 22    | 113    |
| 5     | Rajahmundry College .....          | 3                | 7     | 6     | 16    | 12    | 15    | 63     |
| 6     | Calicut Government College .....   | 9                | 12    | 2     | 12    | 6     | 7     | 53     |
| 7     | Central College, Bangalore .....   | 9                | 6     | 1     | 9     | 12    | 8     | 50     |
| 8     | Tanjore, S. P. G. College .....    | 8                | 9     | 5     | 9     | 5     | 8     | 47     |
| 9     | Mangalore Government College ..    | 8                | 4     | 4     | 6     | 9     | 10    | 41     |
| 10    | Trichinopoly, S.P.G. College ..... | 4                | 7     | 4     | 2     | 4     | 15    | 43     |
| 11    | Ernakulum College .....            | ...              | 4     | 7     | 10    | 6     | 2     | 29     |
| 12    | Negapatam St. Joseph's College.    | 5                | ...   | 1     | 5     | 3     | 10    | 27     |
| 13    | Calicut Kerala Vidyasala .....     | ...              | ...   | ...   | ...   | 13    | 11    | 24     |
| 14    | Masulipatam Noble College .....    | 2                | 5     | 3     | 3     | 1     | 5     | 32     |
| 15    | Doretton Protestant College .....  | 5                | 7     | 2     | 1     | ...   | 2     | 21     |
| 16    | Mysore Maharajah's College .....   | 5                | 2     | ...   | 3     | 2     | 3     | 20     |
| 17    | Bellary Government College .....   | 1                | 7     | 5     | ...   | 3     | 2     | 19     |
| 18    | Bishop Cotton's Col., Bangalore.   | ...              | 3     | 2     | 2     | 2     | 4     | 18     |
| 19    | Coimbatore College .....           | ...              | ...   | 4     | 3     | 11    | ...   | 18     |
| 20    | Vizianagaram Maharajah's Col. ...  | ...              | ...   | ...   | ...   | 6     | 2     | 8      |
| 21    | Berhampore Government College ..   | ...              | ...   | ...   | ...   | 3     | 4     | 7      |
| 22    | Tinnevely C. M. S. College .....   | ...              | ...   | 2     | 2     | 2     | ...   | 6      |
| 23    | Cuddalore Government College ..    | ...              | ...   | ...   | ...   | ...   | 4     | 4      |
| 24    | Vizagapatam Hindu College .....    | ...              | ...   | ...   | ...   | ...   | 4     | 4      |
| 25    | Shimoga Government College ..      | ...              | ...   | ...   | 1     | 1     | 1     | 3      |
| 26    | Tinnevely Hindu College .....      | ...              | ...   | ...   | ...   | 2     | 1     | 3      |
| 27    | Salem Government College .....     | ...              | ...   | ...   | ...   | ...   | 2     | 2      |

We are glad to see that an enterprising native firm have got out a small consignment of Chemical Apparatus. For particulars, we refer our readers to our advertising columns. Schools that are not yet supplied with Apparatus will be glad of an opportunity of procuring what they want without the delay involved in sending to England.

## EXAMINATION PAPERS.

We reprint the First Arts' English papers of the Calcutta and Madras Universities for the past year, with the hope that the comparison may be instructive to our South Indian Examiners. The contrast is most eloquent.

ED. M. J. OF E.

## UNIVERSITY OF CALCUTTA.

First Examination in Arts—1880.

November, 29th.

## ENGLISH POETRY.

Morning.

N.B.—The figures in the margin indicate full marks.

I. Give a description of Satan as he is represented in the 5.  
First Book of Paradise Lost.

II. How does Milton illustrate the statement that Mam- 4.  
mon was "the least erected spirit that fell from Heaven?"

III. Explain the following passages:—

(a.) He, his wonted pride 2½.

Soon recollecting, with high words, that bore  
Semblance of worth, not substance; gently raised  
Their fainting courage, and dispelled their fears.

(b.) Up they sprung 2½.

Upon the wing; as when men went to watch  
On duty, sleeping found by whom they dread,  
Rouse and bestir themselves ere well awake.

(c.) My bow of yew to a hazel wand, 1½.

Thou'lt make them work upon the Border

(d.) Scarce rued the boy his present plight, 1½.

So much he longed to see the fight.

(e.) He seem'd to seek in every eye, 1½.

If they approved his minstrelsy.

IV. What do we learn from the Lay of the Last Minstrel 4.  
respecting the social and political condition of the border  
country between England and Scotland at the period to which  
it refers?

V. State in simple language the purport of the last Canto 4.  
of the poem.

VI. What does the poet say on the subject of patriotism 4.  
in the first two stanzas of this Canto?

VII. Narrate the part taken by William of Deloraine in the 4.  
poem.

VIII. Explain the allusions in the following extracts:—

(a.) The moon whose orb 1½.  
Through optic glass the Tuscan artist views.

(b.) The Red Sea Coast, whose waves o'erthrew 1½.  
Busiris and his Memphian chivalry.

(c.) A leper once he lost, and gained a king 1½.

(d.) When Charlemain with all his peerage fell 1½.

By Fontarabbia

IX. Give the purport of the following stanzas:—

(a.) Few, few shall part, where many meet; 2½.

The snow shall be their winding sheet;  
And every turf beneath their feet  
Shall be a soldier's sepulchre.

(b.) We buried him darkly at dead of night, 2.

The sods with our bayonets turning;  
By the struggling moonbeam's misty light,  
And the lantern dimly burning.

(c.) And everybody praised the Duke 2½.

Who such a fight did win.

"But what good came of it at last?"

Quoth little Peterkin.

"Why that I cannot tell," said he.

"But 'twas a famous victory."

(d.) State the metres of stanzas a and b, and scan 2.  
the lines.

November, 29th.

## ENGLISH PROSE.

Afternoon.

N.B.—The figures in the margin indicate full marks.

I. Give some account of the abuses and difficulties which 6.  
Clive had to encounter on his return to India in 1765, and of the  
measures which he found it necessary to adopt.

II. How does Macaulay sum up Clive's character? 4.

III. Relate briefly the story of Nuncomar, and give the pith 6.  
of Macaulay's reflections on the behaviour of Hastings and of  
Impey in that case.

IV. Describe Hastings's treatment of Cheynte Sing. 4.

V. Mention the more important of the expeditions under- 3.  
taken by Raleigh in person, or prompted by him. What was the  
political purpose which urged him forward in all these under-  
takings? 1.

VI. How came Raleigh to be suspected of plotting against 2.  
James? Describe briefly the course of his trial. What had 2.  
Spain to do with his death? 2.

VII. Explain the following passages:—

(a.) "The corruption of death began to ferment into new 2.  
forms of life."

(b.) "Society began to exhibit all the symptoms of the South 1.  
Sea year."

(c.) "They found the little finger of the Company thicker 1.  
than the loins of Surajah Dowlah."

(d.) "The Dilettante sneered at their want of taste. The 2.  
Maccaroni black-balled them as vulgar fellows."

- (e.) "To this day they are regarded as the best of all sepoys at the cold steel." 1.
- (f.) "It had already collected round itself an army of the worst part of the native population, informers and false witnesses, and common barrators, and agents of chicane, and above all, a banditti of bailiff's followers, compared with whom the retainers of the worst English sponging-houses in the worst times, might be considered as upright and tender-hearted." 3.
- (g.) "Burke had in his vortex whirled away Windham." 1.
- VIII. Explain the allusions in the following passages :—
- (a.) "But the devotion of the little band to its chief surpassed anything that is related of the Tenth Legion of Cæsar or of the Old Guard of Napoleon." 2.
- (b.) "Not even the story which Ugolino told in the sea of everlasting ice," &c. 2.
- (c.) "There was still a Nabob, who stood to the British authorities in the same relation in which the last drivelling Chilperics and Childerics stood to their able and vigorous Mayors of the Palace, to Charles Martel and to Pepin." 2.
- (d.) "In that part of the world a very little encouragement from power will call forth, in a week, more Oateses and Bedloes and Dangerfields, than Westminster Hall sees in a century." 1.
- (e.) "Now and then a white-bearded old Sepoy may be found who loves to talk of Porto Novo and Pollilore." 1.
- (f.) "And there the ladies, whose lips, more persuasive than those of Fox himself, had carried the Westminster election against palace and treasury, shone round Georgiana Duchess of Devonshire." 1.

### UNIVERSITY OF MADRAS.

First Examination in Arts—1880.

Thursday, 16th December, 10 A.M. to 1 P.M.

Examiner :—Rev. G. Warlow, M.A.

#### GENERAL ENGLISH.

##### I. Paraphrase the following :—

Groves of my childhood ! sunny fields that gleam  
With pensive lustre round me even now !  
Rivers, whose unforgotten waters stream  
Bright, pure as ever from the rifted brow  
Of hills whose fadeless beauty, like a dream,  
Bursts back upon my weeping memory,—how  
Hath time increased your loveliness, and given  
To earth and earth's a radiance caught from heaven !

My soul is glad in floating up the tide  
Of years ; in counting o'er the withered leaves  
That Time hath strewed upon the path of Pride :  
Yes, glad, most glad ;—and yet the feeling grieves,  
With peace and pain mysteriously allied,  
That sway and swell my breast like ocean's stilly heaves.

[Care should be taken to make the Paraphrase in clear perspicuous prose. All metaphors and poetical phrases should be simplified, but diffuseness will be considered a grave fault.]

##### II. Rewrite in modern Prose :—

"To speak now of the reformation and reglement of usury, how the discommodities of it may be best avoided, and the commodities retained. It appears by the balance of commodities and discommodities of usury, two things are to be reconciled ; the one that the tooth of usury be grinded, that it bite not too much ; the other that there be left open a means to invite monied men to lend to the merchants, for the continuing and quickening of trade. This cannot be done except you introduce two sorts of usury, a less and a greater ; for if you reduce usury to one low rate, it will ease the common borrower, but the merchant will be to seek for money ; and it is to be noted, that the trade of merchandise, being the most lucrative, may bear usury at a good rate : other contracts not so."

III. (i) Rewrite the following in a condensed form, using brief equivalents for the italicised passages, and substituting one word for those in brackets :—

"The development of the bodily powers of the rising generation is a matter of great simplicity, so much so that there is a risk of its not being attended to without great (steadfastness of purpose) and unremitting action on the part of those to whom the early training of our young is entrusted. It consists in thorough and unimpeded ventilation, a diet (free from highly seasoned or dainty dishes). Sufficient practice for the various muscles of the body, and a dress carefully adapted to the several seasons of the year. The first requisite has the greatest bearing on the subject in hand and is by far the one most frequently (lost sight of). All the people who came to an untimely end in the middle ages by the criminal or accidental use of noxious drugs are not so many as those who fall unknowing victims to the deleterious influences of a vitiated and unwholesome atmosphere within (the limits of twelve short months)."

(ii) Expand the following into clear intelligible prose, avoiding unnecessary verbiage :—

"Left Oxford late at night,—bad roads,—pitch dark,—restive horses. Could make nothing of the fingerposts,—not a soul to enquire of,—not a cottage in sight. Drove on in desperation. Usual result,—deep ruts,—piles of stones,—upset, and general crash. Not killed, but badly bruised. Carriage a ruin,—one horse lamed, other bolted. Village inn,—country doctor,—pills and plaster,—gruel and slops,—laid by indefinitely. All to save six hours !—more haste less speed."

IV. (i) Analyse each of the following passages into its component sentences, and describe each :—

(a.) "The man, whom you speak of, when he left the house, told me that the King had fled."

- (b.) "As he was one day walking in the street, he saw a spacious building, which all were, by the open doors, invited to enter. He followed the stream of people, and found it a hall or school of declamation, in which professors read lectures to their auditory. He fixed his eye upon a sage raised above the rest, who discoursed with great energy on the government of the passions."

(ii) Parse the italicised words:—

- (a.) He was all *but* dead.  
 (b.) Such *as* go down to the sea in ships.  
 (c.) He went *up* the hill.  
 (d.) The houses consist of one or two cells, leading *one* into the other.  
 (e.) They were pearls in silver *set*.  
 (f.) Thou dost not bite *so* high,  
       *As* benefits *forget*.  
 (g.) In *right* good earnest.  
 (h.) *Dark* lowered the tempest *overhead*.

V. (i) Explain what is meant by each of the following: Give an illustration of each.

- (1) Aposiopesis, (2) Allegory, (3) Metonymy, (4) Synecdoche, (5) Euphemism, (6) Climax, (7) Antithesis, (8) Anacoluthon.

(ii) Define and give an example of

- (1) An Iambic line, (2) A Trochaic, (3) An Anapaestic, (4) A Hexameter, (5) A Pentameter, (6) The Caesural pause.

VI. (i) Correct or justify the following:—

- (1) The history of the past is *instructive*.  
 (2) Like the butterfly, our *life is short*.  
 (3) He was very *wrath* on me.  
 (4) The Court opposed, which was anticipated.  
 (5) I called yesterday, and intended to have submitted my manuscript to him.  
 (6) If he were sincere, he will not join them.

(ii) Explain the meaning of the following:—

- (1) The hundred foot were sent forward.  
 (2) The Hundredth Foot were sent forward.  
 (3) He was simply a mining Captain.  
 (4) The subject was temporarily tabooed.  
 (5) They spent half the morning in beating the cover, but there was no find.  
 (6) The respective merits of fresco, oils, and mosaic were freely discussed.  
 (7) There was great cry and little wool.  
 (8) After this discovery, he caught a Tartar, and was sent to Coventry.  
 (9) Because I acted the part of a good Samaritan, they thought I would join in their Shibboleth.  
 (10) The young artist studied in the life school.  
 (11) His whole fortune was in coconuts.  
 (12) At the close of the debate the House divided.

VII. (i) Explain and apply the following proverbs or sayings:—

- (1) Extremes meet.  
 (2) Do not look a gift horse in the mouth.  
 (3) Better a dinner of herbs where love is, than a stalled ox with hatred therewith.  
 (4) There is a lion in the path.

(ii) Give in your own words,—

- (1) The fable of the Belly and the Members.  
 (2) The story of the old man and his ass.  
 And give the moral or application of each.

First Examination in Arts—1880.

Wednesday, 15th December, 2 to 5 P.M.

Examiner:—John Bradshaw, M.A., LL.D.

ENGLISH PROSE.

MISS AUSTEN'S PRIDE AND PREJUDICE AND  
 MACAULAY'S BARERE.

I. (a) Of Miss Austen's Novels it has been observed:—

- (1) Her moral lessons are *not forced on the readers*.  
 (2) She has introduced letters *with effect*.  
 (3) She says as little as possible *in her own person*.  
 (4) She succeeds in giving *individuality* to her weaker characters.

Briefly illustrate the justice of the above criticism; bring out the point intended in each of the italicised expressions.

- (b) Miss Thackeray (in *Toilers and Spinners*) writes "It must have been at Steventon that Mr. Collins made many of his profoundest observations, among others, (1) that *regarding Resignation*; and (2) his celebrated theory about *the usual practice of elegant females*."

What are these?

- (c) From internal evidence we may gather that *Pride and Prejudice* belongs to the Eighteenth Century; in proof of this give an instance of:—

- (1) Antiquated phraseology;  
 (2) 'half a day's journey';  
 (3) a custom now obsolete;  
 (4) the accomplishments of young ladies;  
 (5) absence of reference to the use of 19th century inventions.

II. (a) Macaulay observes that "grievances as heavy have often been endured, and doctrines as bold have often been propounded, without producing a revolution."

To what, then, does he, (in *three lines*) attribute the French Revolution?

- (b) In summing up his estimate of the part the Girondists played, Macaulay concludes by stating that "History owes to them an honorable testimony."

What (in two lines) is this?

- (c) Macaulay, "condemning the severity of the Jacobin Administration, says—'Such has never been the energy of truly great rulers.'

What three does he instance? and what were the odds, he tells us, against which they each 'held their own.'

- (d) What, according to Macaulay, are the characteristics of the real statesman.—

- (1) 'in troubled times;'
- (2) 'when great pecuniary resources are needed.'

- (e) Macaulay enumerates at length the consequences that would have ensued if the decree of the convention to grant no quarter had been put in force.

Mention three of the effects that would be produced if this custom were to be recognised by nations at war.

- (f) What three reasons does he assign why the decree "cannot with justice be considered as a blemish on the fame of the French nation?"

III. Refer to the original source of each of the italicised expressions in the following:—

[Example:—'It was *sour grapes* to him.

Ans.—From the fable of the 'Fox and the Grapes.']

- (1) What credit can we give to his account of things done in corners?
- (2) The absurdity of this self-denying ordinance had been proved.
- (3) They were only spurning out of the way the *daysman* who strives to take his stand between them and to lay his hands upon them both.
- (4) (a) A *deep and broad gulf* separated the representative body.
- (b) There seemed a *gulf impassible* between Darcy and Elizabeth.
- (5) He was a *Gascon* of the Gascons.
- (6) The Guillotine had cut a diplomatic *knot* which it might have been difficult to untie.
- (7) His name had been a *household word*.
- (8) In the lowest depths of shame he found *lower deeps*.
- (9) Barere stood idle in the market place.
- (10) He robbed him of his *borrowed feathers*.
- (11) An *olive branch*,—as an emblem of peace.
- (12) *Olive branches*—applied to children.

IV. (a) Explain the allusions in the following:—

- (1) They resolved, like our *Blake*, to pay the man for their country.
- (2) It was idle to think of doing what *our ancestors did* in 1638 and in what the French Deputies did in 1830.
- (3) An oration on the *Fourth of July*.
- (4) The pass of *Thermopylae*.
- (5) The events of the *13th August* sprang up inevitably from the *league of Pilsnitz*.
- (6) The worst statesman of the Monarchy.
- (7) Even in his best writings there are traces of *Fingal*.

- (8) The English were victorious in the action of the 1st of June.

- (9) Grenadiers singed by the smoke of *Pleurus*.

- (b) Briefly state who were—Anacreon, Borgia, Caligula, Racine, Barry O'Meara, Scævola, Tyrtæus, Thistlewood, Thiers and Sheridan.

- (c) With what object does Macaulay introduce the name of the Governor-General of India at the date of his writing this Review?

V. (a) Give the *Part of Speech* and the construction of the italicised words in:

- (1) It is to be imputed to my getting *wet through* yesterday.
- (2) In his breast there was a *tolerable* powerful feeling towards her, which soon procured *her* pardon.
- (3) They then entered with no other delay than his *pointing* out the neatness of the approach.
- (4) Her mother, with manners so far from right *herself*, was insensible to the evil.
- (5) I should like to go too of *all things*.
- (6) She had exhibited an affection to disgust and weary.
- (7) It must deter him from such misconduct as I have suffered *by*.
- (8) Would to Heaven that anything could be done! Oh that I knew how it was!
- (10) The jails were filled as *close as* the hold of a slave ship.

- (b) Note anything peculiar or incorrect in the grammar or construction of the following:—

- (1) They talked on till they were joined by Mr. Collins, who entered hurriedly, and on perceiving whom she said, &c.
- (2) There is not one of his tenants or servants but what will give him a good name.
- (3) After making every possible enquiry on that side, the Colonel came on into Herts anxiously renewing them.
- (4) Mrs. Bennet's reception of Bingley was too civil when contrasted with the cold and ceremonious politeness of her curtsy and address of Darcy.

VI. (a) Explain by brief paraphrase:—

- (1) He would have thought himself honoured by a glance from the daughter of so many Cæsars.
  - (2) The real navigator is formed on the waves.
  - (3) The impulse was as irresistible as that which drives the swallow towards the sun.
  - (4) Self though it would intrude could not engross her.
- (c) Distinguish between the following pairs of phrases:—
- (1) 'To cast lots' and 'to cast in one's lot.'
  - (2) 'He rallied his spirits,' and 'he rallied him on his spirits.'
  - (3) 'To take to heart' and 'to have at heart.'
  - (4) 'To take his life in his hand' and 'to take his life with his hand.'

- (5) 'The worst Caesar' and 'the worst of the Caesars.'  
 (6) 'To afford countenance' and 'to keep one's countenance.'  
 (7) 'They think themselves before any one' and 'they think of themselves before any one.'  
 (8) 'To improve an acquaintance' and 'to improve on acquaintance.'

VII. (a) Combine & press like that of London with a Government like that of St. Petersburg.

As an equivalent for each of the italicised expressions write down one word—(a different one for each.)

- (b) Macaulay uses the words *spokesman* and *organ* in *Barere*, and also a synonym for each.

Give the two Synonyms.

- (c) Define:—

Unseaworthy; underhand; a red-cap; a red-coat, a horsewoman; regimentals; and watering place.

- (d) Give the root or root-meaning of:—chestnut; miniature; palliation; disgust; pedantic; apothecary; laconic; phaeton; affable; etiquette; economy; curtesy; retaliate; verdure; connivance; petrify; hecatomb; oligarchy; investigate; ephemeral; and fanaticism.

[In answering (c) and (d), put the words in a column.]

First Examination in Arts—1880.

Wednesday, 15th December 10 A.M. to 1 P.M.

Examiner:—Rev. A. Alexander, M.A.

#### ENGLISH POETRY.

I. (1) Mark the scansion of the following lines, explaining any irregularity, and pointing out any change in pronunciation which the rhythm shows to have taken place since the time of Shakspeare.

- (a) It stands as an edict in destiny.  
 (b) Of great revenue and she hath no child.  
 (c) That rheumatick diseases do abound.  
 (d) And with her personage, her tall personage.  
 (e) I know a bank where the wild thyme blows.  
 (f) The squirrel's hoard, and fetch thee new nuts.

(2) Enumerate the metres used by Shakspeare in this play.

(3) On what principle does he vary the metre and sometimes discard metre altogether?

II. (1) Of what mythological sources does Shakspeare avail himself in the construction of this drama?

(2) Point out any incongruity arising from the intermixture of legends from different sources.

(3) Explain briefly what popular superstitions are referred to in:—

- (a) Are not you he  
 That frights the maidens of the villagery  
 Skim milk, and sometimes labour in the quern,  
 And bootless make the breathless housewife  
 churn?  
 (b) Damned spirits all  
 That in crossways and floods have burial  
 Already to their wormy beds are gone  
 For fear lest day should look their shame upon.  
 (c) No doubt they rose up early to observe  
 The rite of May.

III. (1) What does Bottom allude to when he says—

- (a) Good Master Cobweb, if I cut my finger I shall make bold with you.  
 (b) I have a reasonable good ear in music; let's have the tongs and the bones.  
 (c) Methinks I have a great desire to a bottle of hay.  
 (d) But man is but a patched fool if he will offer to say what methought I had.

(2) Explain by paraphrasing:

- (a) When the false Trojan under sail was seen.  
 (b) Like two coats in heraldry,  
 Due but to one, and crowned with one crest.  
 (c) Dian's bud o'er Cupid's flower  
 Hath such force and blessed power.  
 (d) The lover all as frantic  
 Sees Helen's beauty in a brow of Egypt.

IV. (1) For of in each of the following extracts substitute an equivalent preposition or prepositional phrase:

- (a) There sleeps Titania sometime of the night.  
 (b) Speak an if you hear,  
 Speak, of all loves.  
 (c) But she being mortal of that boy did die.  
 (d) I think if I come hither as a lion, it were pity of my life.

(2) Note the peculiarities of construction in the following:

- (a) That he awaking when the other do,  
 May all to Athens back again repair.  
 (b) Look, when I vow I weep, and fows so made,  
 In their nativity all truth appears.  
 (c) Are not you he  
 That frights the maidens in the villagery  
 Skim milk?  
 (d) He hath simply the best wit of any handicraft man in Athens.

(3) The following words occur either in Shakspeare or in Milton with a peculiar meaning. What is the peculiarity, and how is the ordinary modern meaning related to it?

- (a) unspeakable, (b) artificial, (c) preposterously,  
 (d) devoted, (e) privilege.

- V. (1) State briefly in your own words the substance of  
(a) Adam's explanation of dreaming.  
(b) Satan's view of the origin of angelic beings.

N.B.—Verbatim quotations will not be accepted.

- (2) What are the three points regarding which, according to the 'argument,' Raphael was sent to warn Adam?  
(3) Quote the lines in which Milton refers to  
(a) the telescope, (b) the judgment of Paris, (c) the philosopher's stone.

VI. (1) Paraphrase without annotating, but so as to bring out the full sense:

- (a) To all the fowls he seems  
A phoenix, gazed by all, as that sole bird  
When to enshrine his relics in the Sun's  
Bright temple to Egyptian Thebes he flies.  
(b) So down they sat,  
And to their viands fall, nor seemingly  
The angel, nor in mist, the common gloss  
Of theologians, but with keen despatch  
Of real hunger.

- (c) Nor jealousy  
Was understood, the injured lover's hell.

(2) Write a short note explanatory of each of the italicised expressions below:

- (a) Lest, wilfully transgressing, he *pretend* surprisal.  
(b) Time may come when men  
With angels may participate, and find  
No *inconvenient* diet.  
(c) He together calls  
Or several one by one, the *regent* powers  
Under him *regent*.

VII. (1) Point out any peculiarities of construction in the following quotations:

- (a) From hence, no cloud or to obstruct his sight,  
Star interposed, however small, he sees  
\* \* \* Earth and the garden of God.  
(b) Worth thy sight, behold  
Eastward among those trees what glorious  
shape  
Comes this way moving: seems another morn  
Risen on midnoon.  
(c) Who \* \* can introduce  
Law and edict on us who without law  
Err not? Much less for this to be our Lord.  
(d) Then who created thee lamenting learn  
When who can uncreate thee thou shalt know.

(2) What would be the effect upon the meaning and construction of removing the comma after *small* in (a).

VIII. (1) Give in your own words the substance of the argument by which Averill fixes the charge of idolatry upon Sir Aylmer and his wife.

(2) What reference does Averill make, in the course of this sermon, to the French Revolution, and for what purpose?

- (3) Quote two passages in which Tennyson personifies external nature, and attributes to it sympathy with human moods.

(4) What changes in rural scenery does Tennyson use to mark at once the sort of locality to which the story of Aylmer's Field must be assigned, and the flight of the seasons.

IX. (1) Aylmer's Field is a poem that deals with English social life. Explain briefly the social peculiarities referred to in these extracts:—

- (a) But he who marries her, marries her name.  
(b) Not sowing hedgerow texts and passing by.  
(c) These old pheasant-lords,  
These partridge breeders of a thousand years.  
(d) Many \* \* left.  
Their own grey tower or plain-faced tabernacle.  
To hear him.

(2) Explain the following figures, pointing out what each is used to illustrate in the text:—

- (a) Pale as the Jephtha's daughter, a rough piece,  
Of early rigid colour.  
(b) And then ensued  
A Martin's summer of his faded love.  
Or ordeal by kindness.  
(c) Not passing thro' the fire  
Bodies, but souls.  
(d) Shone like a mystic star between the less  
And greater glory, varying to and fro.

X. (1) In what unusual meanings does Tennyson use—(a) parcel, (b) bounceously, (c) costly, (d) wealthy?

(2) Parse and construe the italicized expressions below:

- (a) A splendid *presence* flattering the poor roofs  
Revered as theirs, but kinder than themselves.  
(b) His pride  
Lay deeper than to wear it as his ring.  
(c) Lingered Averill  
His face magnetic to the hand from which  
Livid he plucked it forth.  
(d) Or else he forged  
But that was later, boyish histories.

## CROMLECHS.

"Large group of cromlechs on a rising knoll on left bank of the Krishna, in limits of the village of Gudinetta, 8 miles almost due west of Nandigama (Nandigama Taluk, Kistna) apparently untouched."

(B.)

(Signature)

## INSCRIPTION.

"On west face of pillar on right-hand side of porch of the Siva Temple in Bapatla village (Bapatla Taluk, Kistna), an old inscription in clear character, but of form not known to the present inhabitants; (or 'an inscription undated, but apparently of about the tenth century; or an inscription dated Saka 1016, fifteenth year of the reign of Virā Chola Deva, surnamed Tribhuvana Malla, name and date clear')."

## INSCRIPTION.

(Signature)

"Copper plate grant now in possession of an old Brahman named residing in Somasamudram village, 6 miles north of Bellary Cantonment. He says it was found ten years ago in digging a foundation for a wall of his house. He is willing to have it taken away for examination, but will not part with it. It apparently was a grant by one of the Vijayanagar Kings, (or 'a grant by dated Saka

(Signature)

If you will grant me your assistance in preparing these lists, I need hardly say how grateful I shall be to you for your kindness."

I am, Sir,

Yours faithfully,

R. SEWELL,

On Special Duty.

## MEMORANDUM.

GOVERNMENT having entrusted me with the duty of paying the way for a systematic Archaeological Survey of Southern India by drawing up lists of all objects which appear to require examination, I am anxious to procure as complete a list as possible of all the Antiquarian Remains in each district.

As this is to be compiled for the whole Presidency, and it is impossible for me, in the limited time allowed, to do more than tabulate results, aid is earnestly solicited from those gentlemen, whether private or public, who will best be able to obtain information on the subject.

The whole compilation is intended by Government to prepare the way for a thoroughly searching and systematic examination into the history, arts, and architecture, of the races of Southern India.

It is of the greatest importance to note all the numerous ancient inscriptions that lie scattered throughout the country, as by their aid (and probably only by their aid) the history of the country can be satisfactorily elucidated.

The Antiquities group themselves thus:—

- A. Remains of "pre-historic" date, "cromlechs," "dolmens," sepulchral circles formed of large boulders, stone implements and weapons, funeral urns of pottery, with iron implements found associated with them, &c.

These are the relics, so far as is at present known, of the earliest inhabitants of the country, and particulars are much wanted concerning them, as it seems probable that, by and by, it will be discovered that different tribes, with different degrees of civilisation, can be traced as having resided in different parts of the country.

B. Buddhist and Jaina remains.

Buddhism and Jainism prevailed very largely at one time as the religions of Southern India; and more particulars concerning them, the principal localities where they obtained, and the several dates when they gave way to Brahmanism, are much wanted.

If any remains exist of the Brahmanical age that preceded Buddhism and Jainism,—that is, the age characterised by worship more akin to Vedic principles,—they should be noted. Though it is hardly to be expected that any will be traced, since their buildings were probably all formed of perishable materials.

C. Remains of Brahmanical temples deserted.

Many of these probably exist, and in many may be found very valuable inscriptions which should be noted.

D. \*Brahmanical temples in present use.

Mr. Fergusson, in his "*Indian and Eastern Architecture*" states that in the south of India "their number is so great, their extent so vast, and their variety so perplexing that it is extremely difficult to formulate any distinct ideas regarding them"; and he writes with great enthusiasm on their grandeur and the excellent sculpture they contain.

It is hoped that one result of the Archaeological Survey will be to create order out of the present chaos, and bring more than before into prominence the magnificence of these Southern temples.

All should be noted, from the simplest village shrine (of any antiquity) to the grandest of temples; so that the gradual progress of the style may be easily traced.

As far as possible the dates of their erection should be given, and very shortly what is known of them, the tradition regarding their origin, &c.

In connection with this subject come—

E. The local "*Sthala Puranas*" and "*Mahatmyas*" where known to exist, noting in whose custody they can be found.

These local traditionary records often throw very valuable light on the past.

F. Any historical works, such as are to be found in the Palace Library at Tanjore, and sometimes in the hands of the principal families in villages, &c.

G. *Mahomedan* remains, mosques, tombs, and the like, with the inscriptions on them, and the traditions regarding them.

H. Any old forts or palaces of the *Rajds*, *Chiefs* or *Poligars* with their traditions and inscriptions.

Some of these are very fine, with massive architecture, showing traces of considerable power and magnificence in the nobles who erected them.

I. *Inscription* (i) on stone;

(ii) on copper plate:

(i) It is of the highest importance that these should be noted and examined; and therefore the fullest possible information available should be given. In some districts the stone inscriptions are very

## ARCHAEOLOGICAL RESEARCH.

THE following letter and memorandum has been received, and is being generally circulated. As many of our readers may be in a position to give valuable assistance to the gentleman who has been selected by Government to pursue these archaeological enquiries, we reprint them in the Journal and would respectfully urge all who possess any information on the subject to communicate it without delay.

Ed. M. J. or E.

EGMORE, MADRAS,  
March 14; 1881.

From

ROBERT SEWELL, Esq., *Madras Civil Service,*

*On Special Duty.*

To

SIR,—I have been entrusted by Government with the duty of preparing the way for a complete scientific survey of the numerous monuments and inscriptions of archaeological interest in this Presidency; and I write to ask you kindly to give me such assistance as lies in your power.

My duty being to ascertain, as far as possible, all that there is in the Presidency which requires examination, and to note its exact locality, it is quite clear that I must enlist the services of every one who will help me in preparing the lists of remains for publication.

I find that the information to be derived from books and Government papers is of a very meagre description, as only a few of the more important monuments are as yet known to the Public. While it is conceded that the South of India possesses a large number of remains of great archaeological value, little has as yet been done to furnish any detailed information on the subject. In relics of the age of sepulchral cromlechs, dolmens, and stone circles we are especially rich, but hardly anything is known about them. Inscriptions, many of great historical value, lie, unnoticed and unread, in almost every village in the Presidency. Most of these are on stones and on pillars of temples and gateways; but there are also in private hands a large number of copperplate grants of dynasties long since extinct and almost forgotten. It is hoped that by careful study of these inscriptions most of the ancient history of the country will be elucidated. Remains exist in great numbers throwing light on popular religious cults, and traditions of "prehistoric" ages. Buddhist and Jaina monuments, which may help to throw great light on the ancient religious beliefs of Southern India, are not infrequent; while in sculptured temples and shrines of the Brahmanical faith, we in the Madras Presidency possess richer and grander examples, perhaps, than any other portion of British India. A large number of tombs, palaces, and mosques exist of the period of Mahomedan occupation, though naturally not in such profusion or such magnificence as in the North. Very interesting also are the hill-forts and palaces of the Reddi Chiefs and Poligars of the South, illustrating the progress of history down to the days of the early British Settlements; and there is strong reason to suppose that traces exist of the presence of Christian churches and congregations from very early times. As inquiry proceeds in this direction its

scope naturally enlarges and overlaps the domains of Ethnology and Philology, in which, owing to the existence in the present day of remnants of very early, if not aboriginal, tribes, the South of India is especially deserving of study. Here, too, we must look for traces of intercourse between the East and the West in very remote ages, in the trade that was carried on with the Indian Peninsula from Egypt and Assyria down the Red Sea and Persian Gulf, as well as with the Greeks and Romans.

There being, thus, a very large field for archaeological research, it is my mission to try and collect such information on the whereabouts of the remains as will enable the Surveyor to commence at once a systematic scrutiny of them.

After careful thought, I have determined to adopt the present means of collecting information as the only one likely to yield any good result, *viz.*, by circulating an appeal for help to gentlemen all over the Presidency, both Native and European. The time of the District Officers is so taken up with current work that it is hardly to be expected that they can send me in any very complete lists.

If you would be so kind as to send me (as soon as possible, as my time is limited to a few months) as complete a list as you can draw up of the remains known to exist in your district, and afterwards send me slips of paper containing, from time to time, notes of further remains that you may happen to hear of, I should be able before long to compile very extensive lists of the monuments and inscriptions requiring examination in the Presidency. They should be addressed as noted at the head of this letter. *Please do not trouble to write a letter,—a legible Note on a slip of paper, signed, will be all that is required;* and the more often these can be sent in, the better will it be for the work. The lists cannot be too exhaustive, and I would request you not to refrain from mentioning a temple or monument of any antiquity, because you think others in the district would be likely to mention it. If a hundred people send me notices of the same place, it will give me very little trouble; whereas if they were all to refrain from noticing it, each on the ground that some other would probably do so, I might after all never hear of it.

In mentioning localities, please state the village, taluk, and district, and in the case of a small village not well known, please state its distance and direction from any more important place. If, besides the bare detail, you could afford me any information on the subject, and especially any reference to previous writings or publications, I should be greatly obliged.

Please do not hesitate to send me Notes of Antiquities, because they are incomplete, or because you are anxious to prepare a fuller list. As your Notes come in, they will be utilised, and you can always send further Notes at a subsequent period.

The following forms of Notes on (A) Monuments, (B) Inscriptions, are sent as examples:—

(A.)

TEMPLE (Siva's Chandra Sekhara Swami).

"At Perur near Coimbatūr is a temple with beautiful sculptures, supposed to be of about the fifteenth or sixteenth century (see Fergusson's Indian and Eastern Architecture, page 371)."  
(Add any further information available). (Signature)

numerous, numbering thousands, but very little is known regarding them. They are passed by daily, unnoticed and unread, though any one of them may throw great light on the past history of Southern India. It is principally from them that we expect to gather the materials from which the lost history can be at last compiled. And from them, too, we shall probably gather a very large amount of information, otherwise unobtainable, on the political and social condition of the people in past ages.

In sending in the lists, therefore, it is especially desirable to give as full particulars as possible on—

- (a) the character of the alphabet used;
- (b) whether in good preservation and legible, or the contrary;
- (c) the date, so far as can be made out;
- (d) the name of the sovereign mentioned, if any. If no sovereign's name is mentioned, the grantor (for these inscriptions mostly record deeds of gift) may be classed as "private person";
- (e) (very shortly) the nature of the grant; as "grant of land to in the village of";
- (f) (and this is important the position of the inscription, giving always the distance and direction from any well-known place, if the locality is not well-known, as—  
"On a rock on the west side of a hill called  
4 miles south-west of the village of  
taluk district

(N.B.—Village, Taluk, and District must always be given.)

(ii) Copper-plates are often in private hands; they are often of old date and record grants of villages in India by sovereigns and chieftains. They are of the highest importance.

Information must be given as to the possessor, and his village, taluk, and district; whether he will part with it permanently, or whether he will lend it temporarily for examination.

They are generally of no present value to the possessors; often they have merely been found in the earth when digging; often they are valued merely as so much metal; and often they find their way to the melting pot.

The inscriptions on copper-plates are those which have been found to have yielded most information on the extinct dynasties of India, and it is of the greatest importance permanently to secure all that can be procured for safe custody in such a place as the Government General Museum, Madras.

Any information as to the whereabouts of inscriptions is better than none; and therefore the merest note that an inscription is known to exist in a particular village (taluk and district being given), will be of value, if more detailed information is not procurable.

If the inscription is one which has been already made public, reference should be made to the publication, with page, &c., given.

K. Notes on the extinct dynasties of the south will be very valuable if reference is made to known reliable authorities, but more traditional stories are useless.

We are greatly wanting in reliable information regarding the Chola dynasty of the South-East.

L. Notes on any peculiar rude tribes, or supposed aboriginal races, or colonies of foreigners, or immigrants from other

parts of India, with particulars so far as can be obtained concerning them, will be of great use, but these should be brief.

- M. Notes on any peculiarities in religious worship, (i) ancient, as deduced from ancient monuments or records; (ii) modern, as seen in peculiar local cults or superstitions, such as the Bhuta-worship of the South, the snake-worship and tree-worship of many localities, the worship of village goddesses or demons, *Sakti* figures, *Ayyanārs*, &c.
- N. Coins. Specimens may be sent for examination (and return, if so desired.)
- O. Carved stones in honour of heroes (*Vira-kal*, *Vira-rayi*), with figures of warriors; figures of village-goddesses, &c., seen often under trees near villages; figures of serpents (*Nagakal*, *Naga-rayi*), where old; with any inscriptions they may bear.
- P. Ancient Christian Remains.

There is reason to suppose that traces exist in Southern India of very early Christian settlements. St. Thomas' Mount, Cochin, Kottayam, testify to Christian missions of considerable antiquity.

- Q. Traces of early settlements or trade from Egypt, Arabia, Chaldaea, Assyria, Phoenicia; and in the East, China and the Malay Archipelago, &c.; as well as from Greece and Rome.

All this implies that there is a great deal to be done, and it must be remembered that the object of the present call for information is not to elicit all that is known on each subject, but only to find out what there is to be studied and where it is. Scanty notes are therefore better than none.

Probably the lists will, even at the end, be very far from complete, but that is no reason for withholding incomplete lists.

Whatever is prepared up to the end of April might be sent in then, and further information could be sent in as it comes to hand.

I shall be extremely obliged if ready help is given me in carrying out the duty Government has entrusted to me; for without the aid of district Officers I can do very little in the limited time allowed.

I shall be greatly assisted if general instructions may be given to all subordinates to send direct to me on slips of paper, addressed as below, without any formalities of letter-writing, any notes of fresh remains they may come across in their journeys. There will be no need to classify them in any way, as above. The classification will all be done by myself. All I need is, for instance, such a paper as the following:—

"On the right-hand side of the cart-track from to about three miles south-west of is a large circle of rough boulders on a piece of waste land." (Signature)

"Inscription in Grantha character on west side of pillar, on the north of the mandapam in front of temple, village taluk district, unread." (Signature)

As this information gradually arrives, it will be tabulated in its place, and thus I shall in time be able to turn out fairly complete lists.

ROBERT SEWELL,  
Partheon Road, Egmore, Madras. On Special duty.

## THE INDIRECT INFLUENCE OF THE TEACHER.

EVERY recorded case of individual experience of school and school treatment is of value to the student of the science of education. Had teachers been more industrious in the registration of their impressions of character and the results of their mode of dealing with the various varieties which daily please and vex them, and of their methods of teaching, there would have been ample materials from which to generalise, and no one, however clever, would be able now superciliously to ask, "Is there a Science of Education?" We have for years urged upon teachers the desirability of recording their experiences, and so taking further part in that most thankless, but most useful, of all labour—the labour for the good of those who come after. There is, however, one branch of the subject upon which the experiences and utterances of the pupil are of more value than those of his teacher. We refer to the indirect teaching of the school and its surroundings, the influence exerted by the looks, demeanour, words, and actions of the master and his assistants—in a word, to the tone of the place. Such indirect education is often of more value, more powerful, and more lasting in its results than the set and formal lesson. "We know of no part of the work of teachers, which should more impress them with the idea of the responsibility of their position and the necessity for continual striving after perfection than a consideration of the immense influence exerted by them, apart altogether from the routine of the school. We therefore feel grateful to Mr. Ruskin for giving us an insight into the impressions left upon his mind by one incident of his school life. It were easy to picture the noisy boy, shrewd and self-reliant—former work begetting present confidence—yet somewhat nervous at his strange position, and the half playful but thoughtless words of "the deservedly honoured clergyman" and schoolmaster, lasting beyond his life, exposed in all the nakedness of their unintentionally evil influence, and branded now with the terrible word—"blasphemy" by his illustrious pupil. John Ruskin, in the *Nineteenth Century*, explaining blasphemy as used by Plato, says:—"I have elsewhere mentioned that I was a home-bred boy, and that as my mother diligently and scrupulously taught me my Bible and Latin Grammar, so my father fondly and devotedly taught me my Scott, my Pope, and my Byron. The Latin Grammar out of which my mother taught me was that one edited by Adams (Edinburgh: Bell and Bradfute, 1823). I would not give it for an illuminated missal. I find under its article on Prosody some things extremely useful to me which I have been hunting for in vain through Zumpt and Matthiæ. In all rational respects I believe it to be the best Latin Grammar that has yet been written. When my mother had carried me through it as far as the Syntax, it was thought desirable that I should be put under a master, and the master chosen was a deeply and deservedly honoured clergyman, the Rev. Thomas Dale—the Rev. Thomas Dale mentioned in Mr. Hoblach's article 'The New Fiction' (*Contemporary Review*, February, 1880), together with Mr. Melville, who was our pastor after Mr. Dale went to St. Pancras. On the first day that I went to take my seat in Mr. Dale's school-room I carried my old grammar to him

with a modest pride, expecting some encouragement and honour for the accuracy with which I could repeat on demand some 160 closely printed pages of it. But Mr. Dale threw it back to me with a fierce bang upon his desk, saying (with accent and look of seven-times-heated scorn), 'That's a Scotch thing.' Now, my father being Scotch, and an Edinburgh High School boy, and my mother having laboured in that book with me since I could read, and all my happiest holiday time being spent on the north mountains of Perth, these four words, with the action accompanying them, contained as much insult, pain, and losing of my respect for my parents, love of my father's country, and honour for its worthies as it was possible to compress into four syllables and an ill-mannered gesture, which were, therefore, pure double-edged and point-envenomed blasphemy. 'For to make a boy despise his mother's care is the straightest way to make him also despise his Redeemer's voice; and to make him scorn his father and his father's house the straightest way to make him deny his God and his God's heaven.' I speak, observe, in this instance, only of the actual words and their effect, not of the feeling in the speaker's mind, which was almost playful, though his words, tainted with the extremity of pride, were such light ones as men shall give account of at the Day of Judgment"—*The Schoolmaster*.

## OBJECTIONS TO INSTRUCTION IN COOKERY.

THE prizes were distributed to the girls and boys of the Allahabad City Free School on the 21st instant, and the chair was taken by Sir George Couper the Lieutenant-Governor. In the course of his remarks His Honour said:—

"There can be no doubt that this school, which was established for the education of European and Eurasian children of the poorest class, was much needed; and I am glad to find that those who have, most to do with it say that it is a most interesting and promising institution and remark on its good discipline, and on the teachableness and progress made by the children. This being the case, it is doubtless not the fault of the poor children themselves, but the fault of their parents, that the boys are taught to look down upon handicrafts, and the girls to regard it as derogatory to their position (Heaven save the mark!) to learn how to cook. I confess, when I think on this state of things, it fairly passes my patience. Here are parents, some of whom have done no sort of duty by their children who have conferred no benefit on them except the very questionable benefit of bringing them into the world, and then allowing them to grow up as helpless as they came into it—here are parents, I say, whose children in many instances are indebted to private charity for the very clothes they stand in—and yet they will not allow their boys to learn a useful trade, or their girls to learn how to make themselves useful in their future homes. It cannot be too earnestly impressed on these people by those kind and disinterested persons who make it their duty to move among them, that in other and more advanced countries, handicraft is no disgrace, but on the contrary, is held in high estimation; and honourable women, so far from thinking it beneath them to be able to order their households and to cook, take a pride in it

wife, I believe, is not unknown now to people of these provinces and especially to the people of Allahabad, and I presume it will be admitted that she would not be likely to do anything unbecoming a lady, and yet hardly a day passes that she does not devise with her own hands some dainty dish or other for the delectation of her household; and yet when she offers a prize for cookery these wretched children are taught to believe that it would demean them to learn this the most useful and valuable of all the multifarious duties which devolve upon a woman and especially on a woman in that station of life which in all probability they will be called upon to fill. As long as this state of opinion exists among the class from which these children spring, there is really no hope of their rising in the social scale, or any chance, as far as I can see of bettering their condition, however disheartening the contemplation of such a state of things must be to any sympathetic mind; and those who can arouse them from their lethargy and elevate them to a higher sphere of thought an action will deserve well of these ill-advised and unfortunate creatures themselves, and of the country which holds them."

It fell to Mr. Justice Straight to propose a vote of thanks to the Lieutenant-Governor for presiding on the occasion. Mr. Straight said as follows:—

"His Honour has addressed you in severe and earnest language; and if at the first impression some of his remarks may seem unpalatable, depend upon it you will appreciate, on reflection, that they were founded upon the soundest principles of political economy and were made with a sincere desire for the good of yourselves and of your children."—*Pioneer*.

### THE ELECTRIC LIGHT.

THE terrible accident which caused the death of a sailor on board the *Livadia* has made a good many people feel a little afraid of the electric light as an illuminating agent for ordinary use. There is really not the faintest reason for fear if the simple principle on which the lights are worked is only understood. Before giving an easy description of the ordinary "electric candle," we must remove one misconception. It is commonly believed that the electric burner is entirely heatless, and one brilliant person actually proposed lately that it should be used in mines. That is a dangerously wrong conception. The heat is not radiated beyond an exceedingly short distance, but the flaming arc itself is intensely hot. A strip of iron held across the arc would be reduced to vapour in a very short time. But despite this intense incandescence there is no danger of fire from any electric lamp that is not positively applied to dry and very inflammable substances. And now regarding the accident to the poor fellow whose ignorance brought him his death. It must be understood that an electric current is set up in any wire when it is moved past a magnet. Now if a coil of wire revolves between the poles of a horse-shoe magnet, the currents of electricity can be picked up, as it were, by a piece of the apparatus called a "commutator" and sent along a wire which may extend for any distance. The current passes round the wire and returns to the coil again.

and one  
Now suppose the wire to be cut at any point in the circuit, piece.  
end fastened to one piece of gas carbon and another to another.  
If the two pieces of carbon be kept touching, then the current will go on its journey. If they be moved far apart the current will be interrupted; but if they are only moved a very little distance apart, the current will overleap the gap, and at the point of separation a brilliant light will be produced. In the *Jablochkoff* candle (the kind of light which the unfortunate sailor was handling) the two pencils of carbon are laid side by side, with a piece of China clay between them. The wire which we have supposed to be cut has one end secured to one carbon, and the other end to the neighbouring piece. When the big coil of wire is sent round in between the ends of the great magnet, then the current is caught by the commutator, goes along the wire, runs up one strip of carbon, jumps across the little interval, and goes down the other strip. The clay and the carbons burn away together. But suppose you were to take away the "candle" altogether, catch hold of the one end of the wire with the right hand, and touch the other with your left, while the current was passing, then the current must pass through your body, and you would go through a brief, a very brief period of astonishment. Supposing, too, that the carbons were wide apart and that you touched both wires, then the current would of course seize on the passage, and since your body will not allow it to pass easily the same fate would meet you. That is what happened to the sailor. He had hold of one wire, and he put his hand on the polished brass knob through which the other wire passed. The carbons were not fitted at the time; the current was diverted through his body and completely disintegrated his tissues. His sad fortune illustrates the only danger that can possibly arise from the electric light. That is, the resisting medium of your body must not be introduced to the circuit while an electric current is passing. You might with impunity handle the wires on the *Embankment* while the light is shining, but if you cut both of the wires that run up any given lamp-post and hold them in your hand you would immediately be forced to exhibit surprise. We have explained this new danger without technical terms, and we do not think that anyone need go in terror.—*Vanity Fair*.

### BELL AND LANCASTER.

It may not be known to all our Readers that the famous Monitorial or Pupil-teacher system now so universal at home was suggested by the Pail schools of Madras in which the Monitor or *STUDENT* aids the Master in teaching the younger scholars. Dr. Bell a Madras Chaplain introduced the system first into the Military Male Orphan Asylum of this city and afterwards into schools in England. We extract a short but interesting account of this and the parallel system of Lancaster, from a paper written by Mr. John Paige:—

A great advance in education was made by the introduction into England of the Monitorial system of Dr. Bell and Joseph Lancaster. It is difficult for us to conceive the excitement and contention caused by this system in the educational world. That the more

forward—children should be used in a school to assist in teaching the backward ones seems to us such a simple and natural course that we can scarcely believe the stir it made in the land about the year 1800—less than ninety years ago.

Dr. Bell was a Chaplain at Madras, where he took great interest in the Military Male Orphan Asylum. There he first introduced the plan of dividing the scholars into classes, and putting over each class older scholars who acted under him. The system became known as "The Madras Method of Education." Dr. Bell published a pamphlet on the subject, entitled, "An Experiment in Education, made at the Male Asylum, Madras, suggesting a system by which a school or family may teach itself under the superintendence of the master or parent." It was considered that Dr. Bell had discovered the royal road to learning. High authorities in Church and State considered the great discovery, and Dr. Bell was regarded as one of the greatest benefactors of the human race. He, with others who became associated with him, established the National Society in 1810. In all the schools of this society the Madras methods of teaching were adopted.

In 1832 Dr. Bell died, at Cheltenham, and was thought to have done such great public service that he was buried in Westminster Abbey.

Dr. Bell had a rival in Joseph Lancaster, a member of the Society of Friends. In 1798, just after the publication of Dr. Bell's report, though, as he maintained, in complete independence of it, Lancaster opened a school, nearly opposite the present Borough Road Schools. Here he first tried the Monitorial system, which, among his partisans, was afterwards called the Lancasterian system. It differed in no respect from that of Dr. Bell, except in religious matters. Bell insisted (in his schools) upon religious teaching based strictly on the principles of the Church of England, whereas Lancaster desired that the Bible only should serve as a standard for religious instruction. From this it was natural that the Nonconformists should take up Lancaster, as the Church party took up Dr. Bell.

Lancaster was an enthusiast in favour of his plans. His efforts led to the establishment of the Royal Lancasterian Institution, afterwards called the British and Foreign School Society, which was founded in the year 1809—one year before that of its rival, the National Society.

Lancaster was rash in the extreme. He was of a most sanguine temperament, and this led him into extravagances. He advocated that a school of one thousand children might, under the Monitorial system, be efficiently conducted by one master, and maintained that a school of three hundred children could be carried on at a rate of seven shillings per annum for each child. He insisted that reading-sheets, printed in large type, and pasted on the walls of a school-room, did away with the necessity of a reading-book for each child. He also suggested a plan whereby a class of five hundred children might be taught simultaneously by one monitor.

From 1867 to 1810 Lancaster conducted the Borough Road School, and travelled about delivering lectures and establishing schools. In 1808 he travelled some 1,028 miles, started 22 schools, and in 1809, 1,324 miles and started 15 schools. In 1811 he visited Ireland, but this does not seem to have led to any result.

It is sad to state that the closing part of this remarkable man's career was somewhat clouded. He had thrown himself with ardour in his educational schemes, and had incurred heavy expenses. He became involved in great pecuniary difficulties, and if it had not been for the intervention of a wealthy friend he would have been cast into a debtor's prison.

Poor Lancaster was deprived of the leading position in the British and Foreign School Society, and this led to his resigning the charge of the Borough Road School. Four years afterwards he sailed to America, never to return. There he died from a street accident.

The rivalry between Bell and Lancaster was after their deaths transferred to the two societies which they had founded, the National and the British and Foreign School Societies, and these became the great organisations by which the education of the people was carried on.

#### SOME INTERESTING ETYMOLOGIES.

By THOMAS PAGE.

I must warn my readers at the outset against expecting any learned philological investigations in this article. These I leave to the eminent men who are now doing good service in patiently exploring the sources and growth of modern languages, and opening up such a rich field of mental culture and historical research. Ancient times are not more clearly revealed to the eye in the Pompeian excavations than to the mind in the curious associations and analogies to be found in words.

Lessons on words are very interesting to children. By no other means can their attention be more fully maintained, and their interest in their reading lessons more easily awakened, than by showing them that the words they meet with are not mere arbitrary signs, but that they have a history of their own, and that they are often connected with each other in a most remarkable and singular manner. "Only try your pupils," says the Archbishop of Dublin, "and mark the kindling of the eye, the lighting up of the countenance, the revival of the flagging attention, with which the humblest lecture upon words, and on the words especially which they are daily using, which are familiar to them in their play or at their church, will be welcomed by them."

The derivations referred to in this article are some which I have selected from a large number which might have been given as interesting in themselves, and well adapted for being pointed out as they occur in reading lessons, for the purpose of creating an interest in this most entertaining and instructive branch of study. Probably most of them are already known to the majority of my readers, but a list of this kind may nevertheless be acceptable to some teachers, and in that case my object will have been accomplished.

Most children who think about the word "quicksilver" probably suppose it to be so called from the fact of its moving about quickly. It really means "living silver" (*argentum vivum*), "quick" being here used in the sense in which the Creed uses it in speaking of the "quick and the dead." The Saxon word *civic* signifies "alive." Compare with "quicklime" and "quick-set hedge," and see Num. xvi. 30.

The syllable "tail," performs a somewhat important office in the formation of English words. Thus we have tailor, curtail, entail, detail, retail. It is not, however, connected with the "tail" of an animal, as would appear at first sight. Thus, those ingenious etymologists are wrong who

say that a tailor is so called because he makes "tails" to his coats; so also are those who plausibly explain "curtail" as signifying cutting the tail from a cur. This group of words is derived from the French *tailleur*, to cut. Thus, a tailor is literally a "cutter," and to "curtail" is to cut short (Fr. *court*).

Most children would be pleased to be shown the similarity of "month" to "moon," both being derived from the Saxon *mona*, the moon. A month is properly the period of the moon's revolution.

"But" is connected with *bite* (Sax. *bitan*). Thus a "bit" of anything is properly a small piece, bitten off. The adjective "bitter" probably comes from the same root, and means, properly, having a biting taste. The bit placed in a horse's mouth may be from the same root, but some etymologists give a different derivation.

The word "sneak" is well known to boys. English lads have a wholesome dislike to the character it signifies, and the teacher would do well to encourage this feeling. He could not do this better than by showing them that "sneak" is only another form of "snake" (Saxon *snaca*). The Saxon word *snaca* is to creep, so that a snake is the creeping animal, and therefore allied to "serpent," which is derived from the Latin *serpens*, I creep. Our word "snail" is probably also derived from the same original root.

"Sneeze" is probably allied to "nose;" compare "naze."

It is curious to notice the words used in different languages for the sky. "Heaven" is that which is *heaved* up; compare our word "heavy." The Greek and Latin terms mean that which is *hollow*. The Hebrew word translated "firmament" means properly an *expanse*.

A "companion" (Lat. *cum*, with; *panis*, bread) is properly one who *eats bread with another*.

So "rivals" are properly those who dwell by the same *stream* (Lit. *rivus*), and whose interests (fishing and otherwise) therefore interfere with each other.

"Kennel" is a dog's house (Lat. *canis*, a dog), and connected in derivation and sound with "canine."

"Peculiar" is that which belongs to any one as his own property. The root is Lat. *pecus*, cattle; since property formerly consisted chiefly in cattle. The Latin word *pecunia* (money), and our own word *pecuniary* are derived from the same root, and are connected with it as distinctive of property.

Our words "conceal," and "cell," and "cellar," are connected with each other, both in sound and meaning, being derived from the Latin *celo*. I hide. A cell and a cellar are, properly, hidden places. Similarly the crypt of a church (from the Greek *krupto*, I hide,) is the hidden part of it.

"Eliminate" is from the Lat. *e*, out of; *limen*, a threshold; hence it means to put outside the threshold; to "kick out of doors," as I once heard it explained by a popular lecturer; or, more politely, to "show the door" to.

"Pantry" is properly a place where bread is kept (Lat. *panis*, bread.)

The derivation of our word "style," is curious. The root is the Greek *stulos*, a pillar, column. Hence, we have the word *peristyle*, a range of columns surrounding any place, as a court. Hence also the saint who earned his title to sanctity by remaining perched for years on the top of a pillar was called "St. Simeon Stylites." In Latin, the word *stylus* meant (1) a column, (2) a stem, stalk, or any similar round article, (3) a stylus, or round-pointed instrument for writing on wax tablets. Then the word got to mean the writing itself, and lastly the manner or style of writing. We have adopted the last meaning in a wide sense. We speak not only of a style of writing, but a style of dress, a style of walking, a style of living, and in fact, a style of almost everything that can be done.

The words "heathen" and "Pagan" may be compared. The latter meant originally, a *villager* (Lat. *pagus*, a village). The former seems to be connected with "heath," and so to mean a dweller in the wilds. Hence, as explained by their roots, they both seem to have had reference originally to outlandish, uncivilised persons, who dwell remote from towns. As a contrast to these, we have the words "civil" (*civis*, a citizen), "urbane" (*urbis*, a city), and "courteous," all employed to designate those who have been brought under the refining and humanising influences of cities and courts.

The derivation of "florin" may be unknown to some of my readers. It was originally made at Florence, and was named from the flower (Lat. *flora*), a lily, which was stamped on one of its sides. This coin is referred to by Dante in the 30th canto of the "Inferno."

The word "coward" is in French *coward* and in Italian *codardo*. The latter leads to the supposition that it is derived from the Latin *coda* (= canda), a tail, and that it means, properly, one who "turns tail." Admirers of our present educational arrangements will be glad to hear that the word "code" is from another root. That interesting word is derived from Latin *codex*, a stamp or stock.

Some of our names of flowers are curious. "Primrose" is the *first* (or early) *rose* (Lat. *primus*); "daisy" is the *day's eye*; "pansy" is *thought*; "dandelion" is the *lion's tooth* (*dent-de-lion*); "gladiolus" is the *little sword*, a dagger.

"Line" is from *linum*, flax, and so means properly a string (of flax). Hence it is connected with "linen," "lint," and "linseed."

"Bad" seems to be derived from a root meaning to *push* or *thrust*, and to be connected with the "butting" of a bull, with "button," and with the "but-end" of anything.

"Salary" is derived from the Latin *sal*, salt. *Salarium* was an allowance made for salt to the Roman soldiers and public officers. We still say, "You will never be worth your salt."

"Rotate" is from Latin *rota*, a wheel (from which we get rotation, &c.) To learn by "rote" is to learn by frequent repetition, compared to the successive revolutions of a wheel.

"Jovial" is from Latin *Jovis*, and means properly "fit for Jove."

The similarity between "yard" and "garden" will readily be perceived by children. They are both connected with the Saxon *geard*, an inclosure. Compare "vineyard."

"Infant" is from the Latin *fari*, *fans*, to speak, and means *not speaking*.

It is well known that "dentist" comes from the Latin *dens*, a tooth. The latter is supposed to be a shortened form of *edens*, eating, the present participle of *edo* (the root of *edible*).

"Comrade" is properly one living in the same room (Lat. *camera*; French, *chambre*) as another.

"Aisle" is a form of the Latin *ala*, a wing, meaning the side. So we speak of the right or left wing of an army.

A "cemetery" is a *sleeping-place* (Gr., *Koimeterion*).

To "supplant," from Latin *planta*, the sole of the foot, is to trip any one up by placing the hands under his feet.

"Sincere" is said to be derived from Latin *sine*, without, and *cera*, wax: being applied originally to honey that was quite pure, and contained no wax.

"Gas" is the Saxon *gast*, breath, air, spirit. Hence it is allied to "ghost," "ghastly," and "aghost."

"Exorbitant" is that which goes outside the circle (orb, Lat. *orbis*), which has been assigned as its proper limits.

"Flute" is the instrument which is *blown*; Latin, *fluo*, *flatum*. I blow. Compare inflate, &c.

"Virtue" is properly the qualities which distinguished a man; Latin, *virtus*.

"Eager" is the French *aigre*, and Latin *acer*, sharp, sour. So "vinegar" is sharp, sour wine.

"Naughty" is, of course, properly *good for naught*, or nothing. The word is used in its proper sense in Jer. xxiv. 2: "The other basket had very naughty figs."

#### MADRAS DEBATING SOCIETY.

THE first meeting of this Society for the year, was held yesterday, at 5-30 p.m., at the Christian College. The inaugural address was delivered by Mr. Miller. He had a comparatively large audience, consisting of the Professors of the College, as well as Messrs. H. B. Grigg, George Duncan, Dr. Elder, Parthasarathy Ayengar, Anantha Charlu, &c. Mr. Grigg took the chair, and Mr. Miller then began his address, the subject of which was, "Some objections to Debating Societies." He first of all said, that he hoped that no one would think that he had any evil intention against the Society. But, on the principle, that "something might be learned even from an enemy," he hoped that what he was going to say would be beneficial to the members, and so the view he was going to take was that of a "grave, mature, outsider." The first objection against a Debating Society, was the idea, that the youth at College, never bring forward anything original. This objection, Mr. Miller said, was more ideal, than real, for the boys come to the Debating Society not to argue simply, but also to mould their opinions; and by getting up the opinions which have been passed on the subject twenty times before, they derive a great deal of good. It is no objection to a man's walking, that other people have walked before. The second objection was that students are apt to become conceited. When a member frames his opinions for the coming meeting, he thinks, he has done a good deal, and forms a very high opinion of himself. But this evil is accompanied by still greater good. For half-an-hour's sharp debate will show him, that he had overlooked some of the chief points of the subject; and most probably he comes out a humbler and a truer man. The third objection was that boys think that Debating Societies take up a good deal of time, which could be utilized by reading for the examinations, to pass which is their chief aim. This is the case especially in India. But they must remember that they are becoming men, and are passing into the wide field of life, and that it is necessary for them to bear in mind Bacon's saying: "*oportet discendum credere, oportet edoctum judicare*." No man can all of a sudden pass from the one to the other. Although it is true that Debating Societies take up perhaps a couple of hours a week, still that time spent in debate, seasons their knowledge, and gives them that true understanding of themselves which Socrates says, is true wisdom. Mr. Miller then wound up his address by saying that the good over-balanced the evil; and wished the members as much good, as his Society had done him during his student life, in that far northern clime. The lecturer sat down amid the cheers of the audience.

Mr. Grigg, the Director of Public Instruction, then addressed the assembly, and said, that they must thank their Principal for his

eloquent defence of Debating Societies. He was glad of the opportunity that they had given him for stating more or less publicly the pleasure he took in Societies like that constituted in the College; and the strong desire he had for their success. The reasons which actuated his feelings were briefly, that these Societies promoted the spirit of freedom on the part of the youth of this country—a spirit of enquiry, and also a spirit of freedom. In speaking of the spirit of freedom he need not state that on it the best interests and the future of this world depended. Those who are not free cannot do anything noble. If they did not seek to attain that freedom, whether it was social, political, or moral, they could never expect to rise to any moral excellence or civil worth. They must try in all their work, in school, and out of school, to attain it. A member of a Debating Society thinks he has found something of more than ordinary value, and a man requires more than ordinary courage to bring it before others, and to stand by it. And when he has carried his position, or it may be, failed in carrying his point, he comes out of the room, a wiser, and a truer man. He regarded these Societies as most excellent means of promoting the education of youth, and improving the condition of a country, in that they created a love of knowledge and enquiry. If one wanted to attain any excellence, one must ask the why and the wherefore of everything within and without. If they did not ask, if they did not enquire, if they did not put questions to themselves, they could not expect to attain the freedom and the knowledge which were so much prized. Victory is only gained by toilsome experiences. He did not believe that Societies like these engendered in this country a rebellious, a disloyal, and a bumptious spirit, on the other hand such Societies were the good and powerful means for acquiring a reverential spirit. In England, in the public schools, there were other means, which did not exist in this country of teaching a bumptious boy. In India, where they came from their grandmothers and their aunts who petted them, it was difficult for them to find their level. In a Boarding School a boy would soon learn to respect the opinions of his fellows, whether it be in the cricket field, in classics, or in mathematics. Here a debating Society supplied this want. And he would ask them to maintain at their meetings courteous behaviour. A bumptious and discourteous spirit does not show independence. It was said about a great man, the liberator of the Jews, and the lawgiver, that he was meek and innocent—that he was a gentleman. Manners make men, and if they bore this in mind at their meetings, they would become freer, nobler, wiser and more reverential youths. (Cheers). After the usual presentation of garlands the chairman was thanked for his kindness in presiding, and the meeting closed.

MADRAS CHRISTIAN COLLEGE.—At the Anniversary recently held the Chief Justice, Sir C. A. Turner, K.C.J.E., in the absence of the Governor presided. There was a crowded audience both of natives and Europeans. The Rev. W. Miller read the report of which the following are some of the salient features. After speaking of the constitution of the college and its relation to the various Missionary bodies, he went on to say;

The numbers in attendance show that the Institution commands

some considerable confidence from those also whom it seeks to benefit. There is indeed no great change in this respect, for nearly all the classes have been as full for many years as it is at all desirable that they should be. In 1880 the average number on the rolls of the College department was 233 as against 197 in the year before, and on the rolls of the school 825 as against 832. It was explained last year that there had then been some diminution in the numbers in the College in consequence of the unprecedented severity of the preceding Matriculation Examination. The examination for entrance to the first college class of last year was of the ordinary kind, and the numbers accordingly returned to, and indeed rose slightly above, their former level.

The only important change in the staff was that the assistant-professorship left vacant at the end of 1879 was not filled up. The diminution of the Government grant rendered measures of the severest economy indispensable. This was one of them. These measures have proved effectual for the time. The income and expenditure for 1880 almost exactly balance. Excluding special outlay, such as that for the better furnishing of the Laboratory, the current expenditure on the entire Institution,—college and school together,—may be stated in round figures as Rs. 52,000. Of this a little less than Rs. 22,000 was met by fees. Rs. 7,200 came from Government, and the remaining Rs. 23,000, or thereabout, was supplied mainly by the Home Committee, though with a little help from private friends. Thus the Government grant scarcely comes up to 14 per cent. even on the diminished outlay. The loss of one from a barely sufficient staff has proved a heavy strain; but we are thankful to be able to add that it has been borne, certainly with no diminution of efficiency, and so far as yet appears, with no permanent injury to health. Mr. Patterson, however, was compelled to take furlough in September, three months before he would have been relieved in any case by Mr. Cooper, who arrived in December. Mr. Patterson is expected to return in the course of the present year. The three months vacancy was filled by the Rev. W. Stevenson, Secretary of the Free Church of Scotland Mission, for whose valuable services the Council would now return their very grateful thanks.

It may be mentioned at this point that Persian was added last year to the languages taught in the College. There was no other change in the course of instruction, except in unimportant details. The ordinary course is well known, and so full an account of the Scripture studies was given in the Report for last year that it is unnecessary to repeat it now. The study of Physical Science has more than maintained its popularity. No fewer than 29 out of the 43 members of last year's third, or junior B. A., class chose it as their optional subject.

During the year under review, the attendance has been as steady and regular as usual. The percentage of absentees for the year is 6.7 for the Institution as a whole, slightly less than the 7 per cent. reported last year. In the last quarter the average of absentees fell as usual a little lower, namely to 6 per cent., the same figure that was reported last year. An average attendance of from 93 to 94 per cent. of the total number is probably as good as can be looked for while ceremonies of all kinds are so numerous as they are. We

believe it is decidedly better than most schools attain either in this part of India or in any other.

Pupils were sent up for the first time in 1880 for the Middle School Examination. When the examination was instituted in 1879, the notice given was so extremely short and the subjects prescribed were so largely different from those taught in the Institution, that we did not disarrange our classes on account of it. Even in 1880 it was necessary that boys going up for it should in some of the subjects do two years' work in one. When this is taken into account, it is creditable that so many as 33 were successful. The number is not, however, so large as ought to pass if once the subjects of examination and our curriculum are so modified as to fit into one another.

At the University Examinations, the College maintained its place. We have always regarded steadiness in results as more valuable than brilliant success alternating with great failure. This year our desire in this respect has been gratified. Of those sent up to the Matriculation Examination, 54 were successful as against 53 last year; while 31 passed the F. A. Examination,—precisely the same number as in the year before. The last number is not quite satisfactory in itself, but it is gratifying that this College should have kept its place in a year when, through severity of examination, others fell off, and some of them very greatly. There were 25 successful in the B. A. Examination as against 21 last year, besides some others who are really our students though they did not go up directly from the class. One of our students has also after two years of private study taken the degree of M. A. in the language branch,—a somewhat rare distinction. The Arni gold medal for Physical Science has again been won by one of our candidates for the B. A. degree. Thus at all examinations the College has been decidedly successful. Its managers have always protested and still protest against the too common habit of regarding passing examinations as the one proof of educational success. They hold that the instilling of principles, the formation of character, the moulding of thought and feeling along the lines of divine realities, are the true aims of education, and that these objects may be largely gained when success at examinations is by no means great. This does not, however, prevent them from being glad when their students pass creditably, or win distinction for themselves and for their college.

The Council believes that the use made by the students of the Library, and especially of the consulting portion of it, helps them not a little to the place they hold in the University lists. Nothing has been said on this subject for several years, and it may be briefly referred to now. The Library is almost the only thing connected with the College that is pretty sufficiently provided for. It is supported partly by the interest on a sum of Ten Thousand Rupees invested for its benefit by a friend to whom our thanks were given ten years ago, and partly by a fee of one Rupee which is levied from all candidates for the College and Upper School, in addition to the ordinary admission fee. Together, these sources of income produce from Rs. 600 to Rs. 700 yearly. One hundred Rupees per annum is paid to the Librarian, so that a respectable sum remains for binding, and for regularly increasing the stock of books in the year under

review, a Government grant of Rs. 200 was also sanctioned by the Director of Public Instruction, which we desire gratefully to acknowledge.

The Library is divided into two parts. The ordinary lending Library consists almost entirely of books useful for purposes of general culture, not of those that bear directly upon class-work. It contains now 2,163 volumes. It is accessible daily to all the College students, to the pupils in the Matriculation class and to a few in still lower classes who specially apply and are recommended by their immediate teachers. Last year books were read from it by the students 1,595 times; or at least so many books were taken home, kept for the proper time, and then returned. It is probable enough that little real use was made of some of them; but so many volumes of this description would not be taken out unless a good many of the boys had got some higher idea of education than that of mere cramming for examinations.

The most directly useful part of the Library is what is known as the Consulting Room. In it there are 674 volumes, all of such a kind as to help pretty directly in preparation for class-work:—Commentaries on Scripture, Dictionaries of all kinds, Atlases, Encyclopædias and the like. These books are not taken home but are available within the room for all college students, on ordinary class-days from 9 A.M. to 6 P.M., and also on Saturday afternoons. There is a man constantly in charge who gives out books at once to any student who applies for them. This institution has been found of the utmost value. It encourages students to master difficulties for themselves and makes them familiar with a far wider range of information and of thought than they could possibly obtain from professors and text-books alone. Now that they have learned to appreciate its value, there is probably nothing about the College that our students would miss so much if they were to lose it. The chief hindrance to its usefulness is the small size of the room. For this there is no remedy unless the College become rich enough to extend its premises, of which we fear there is little immediate hope.

The whole arrangement has been so useful here that we regret to think that this is almost if not quite the only college in India that has a fully arranged and equipped Consulting Room as a distinct section of its Library. Managers are perhaps deterred by fear of the books being lost; but to this fear our experience lends no support. South Indian students are indeed almost inconceivably careless; but this evil may be met by a proper system, strictly carried out. When under healthy influence, they are very far from deliberately dishonest. Among the 1,595 books taken out last year from the lending library only two were lost, and the loss of both has been sufficiently accounted for. From the Consulting Room, in all the twelve years of its existence, though 60 or 70 is probable a very low average of the number of daily references, it is believed that not a book has ever disappeared.

There is one subject more, somewhat akin to what has been last referred to, that the Council can report on with great though not yet with perfect satisfaction. Few complaints are more universal with Managers of schools, and few things more distressing to friends of education, than the way in which members of classes about to go up for the University examinations drop silently away

before the session ends and evade payment of the fees that are due for one or more of the months of October, November or December. It is understood that in some schools such classes disappear wholly in October or November, and that all their fees disappear along with them. It may be remembered that an investigation was made last year as to how far this particular evil existed here. It was then found that in 1879 there were 236 in the classes going up for one or other of the three University Examinations, and that out of these 14 had acted dishonestly. In 1880 there were 221 in the corresponding classes. Of these too many, though not a very large proportion of the whole, had left their fee for December still unpaid when the books for that month were closed. But at the date of this Report the state of matters stands as follows. One fee is unpaid in the Matriculation Class for October and one for December, while two for December are unpaid in the second college class. In other words only 4 have this year failed in duty as regards this important point. No new pressure was brought to bear, save the warning that the matter would again be referred to publicly. It is gratifying to find that whether from personal principle or from regard for the honour of their college or their class,—at all events from some motive that was not a bad one—our students and pupils should have made so rapid an improvement. And it is gratifying to find proof so clear that the effort to raise their thoughts above self, and to make their hearts susceptible to religious and moral impressions, has not been wholly wasted. Perhaps it is vain to expect that the evil in question will quite disappear here while so bad an example is set—not indeed every where but so very commonly—in the city and the country round us. Still, we shall not be content until we report, as we hope to be able to do some day, that not a single pupil or student of this Institution has even attempted to evade the payment of what is justly due.

The Council has now run through the chief points of interest in the work of last year. Those acquainted with education will of course understand that difficulties have occurred occasionally, as they naturally will in all colleges and schools. But there have been no troubles that call for even the most casual allusion here. The conduct of the boys has upon the whole been admirable, and the teachers have done their duty with a zeal and faithfulness that merit the Council's open thanks.

The report concluded with some reference to the Missionary aim of the college.

Sir Charles Turner then distributed the medals and prizes, and made remarks to the following effect:

All felt their disappointment at the inability of the Governor to take the chair. His Excellency had written to him that morning to say that his inability to be present caused him the greatest regret, as he was anxious to show his appreciation of the good work done by the College. The members of the College Council had hoped that His Excellency would be present at the Anniversary of an institution of which every Scotsman in Madras might be justly proud. The College owed its success to all that was excellent in the Scottish character. The determined earnestness of that character had been shown by the men who amidst difficulty had toiled on till they accomplished their great

object, the establishment of a school from which religion was not banished and that was capable of educating its students to the same standard as the most important Colleges. After the full Report that had been read but few remarks were needed. He belonged to the Council of the institution but would say that the ordinary work of the Council was of the lightest. The interior economy of the College was in the hands of the Senatus, and since he joined the Council there had been no instance of its having more to do than confirm the recommendations of the Senatus. The Council had, however, one duty to discharge in which he would ask the audience to give their aid, and that was to return grateful thanks to those by whom the work of the institution was carried on. The Rev. William Miller was known to every one only to be loved. He brought to his work the first element of success,--self-sacrifice; and he had succeeded as men do who devote themselves to a pursuit from sheer affection and a high sense of duty. Similar thanks were due to the very efficient staff of highly trained and conscientious Professors.

The institution had attained the usual success in examinations. The Report had truly stated that the institution never had mere success at examinations over-much at heart. Of course it desired and desired heartily that its students should satisfy the University Examiners and obtain good places on the honour list, but its main object was something far higher. Nevertheless even in regard to examinations the College had held its own with any College in Southern India.

With regard to the finances of the institution, the statement made in the Report was worthy of the most careful attention. He believed he was right in saying this was the largest, in any case one of the largest, schools in India. The great educational despatch had for its main principle that encouragement should be given as far as possible to aided schools. It desired by encouraging subscriptions from those interested in education and by insisting on payments from those who were deriving benefits from education, to lighten the charge on the public funds. The Christian College was an important example of the success that such principles were fitted to achieve. It had demonstrated that a great and efficient public school may be maintained at very much less cost to the public than Government Institutions. It did not give education gratuitously, for it drew from its pupils about £2,000 a year. But the grant from Government was very small. The success of the College placed it in the predicament of not being able to appeal to the pity of Government. Government had a multitude of claims upon it and the Christian College was found to be so prosperous that the rulers thought it might spare something from its just due. The grant was only 14 per cent. of the total expenses of the College. This he did not think quite fair. The College was entitled to a great deal more under the existing rules. If an institution was to be put into a less favourable class in proportion to its success, there did not appear to be any encouragement to success; but on the other hand encouragement to imprudent expenditure. The reduction of the grant had crippled the teaching power. There was need too to give to the Masters less work and more leisure and to deal with them more liberally in respect of salary. He trusted that on reconsideration the Government would see its way to greater liberality.

Amongst the successes of the year it had been mentioned that a student of this College had obtained for the second time the great prize of the year for Physical Science,--the Arni Gold Medal. It had been sometimes said that the education given was of a mistaken kind as only fitting men for some little post in a Government office or to practice as Vakils in the Courts of law. No doubt at first means were small and the curriculum limited; but now that Physical science was added to the curriculum of the University there was reason to hope that this side of things would be largely developed, and that men would be prepared for all stations in life, for that of the merchant, the artisan, mechanic, manufacturer. In India there was, as he had often said before, a great gold mine, consisting of its cheap and multitudinous labour. To exploit this, as the French would say, the best thing was to educate the youth of the country in the natural sciences.

He then concluded with a few words on the religious character of the Institution, and sat down amid applause. Colonel S. H. E. Chanier proposed a vote of thanks to the chairman, which was seconded in a few sentences by the Principal, and the meeting broke up.

#### MADRAS PHYSICAL TRAINING AND FIELD GAMES ASSOCIATION.

A LARGE large and influential public meeting, representing both the European and Native community, was held at the Office of the Director of Public Instruction, Holloway's Gardens. There were present, Sir Charles Turner, M. H. B. Grigg, the Very Rev. J. Colgan, the Revs. Messrs. Atkinson, Cooling, Stevenson, Miller, Rae, Rajah, the Hon'ble Mr. D. Sinclair, the Hon'ble T. Muthusawmy Iyer, the Hon'ble J. G. Coleman, the Hon'ble Mir Humayoon Jah Bahadoor, the Hon'ble C. Ranganadha Sastri, Dr. King, Colonel Shaw Stewart, Messrs. George Duncan, L. Melver, A. T. Arundel, M. Atkinson, M. Smith, J. Cook, A. M. Saunders, Ambrose, D. Duncan, H. Wedderburn, J. Handley, R. B. Mitchell, Dr. Oppert, B. Lovett, R. Balajee Row, Beligiry Iyengar, Dr. Danakoti Rajah, S. Gopalacherry, R. Strenivasaragava Iyengar, V. Ragurcharry, T. Rama Row, and many others. The object of the meeting was, firstly, to consider detailed resolutions for the constitution, management, and working of an Association, having for its object the improved physical education of the youth of the Presidency of Madras, and for encouraging and developing a taste for manly exercises; secondly, to discuss the adoption of the scheme, proposed by Mr. H. B. Grigg and commended by a preliminary meeting, as a basis for the working of such an Association; thirdly, to enrol members, and elect a President and Committee.

The proceedings were opened by the Hon'ble Humayoon Jah Bahadoor proposing, and the Hon'ble J. G. Coleman seconding, that Sir Charles Turner take the chair. The proposition was carried unanimously. On Sir Charles Turner taking the chair, he explained that the present meeting had been called together in accordance with a resolution passed at a preliminary meeting of gentlemen representing all classes of Madras society, to consider

the scheme of founding an institution for the encouragement of physical training in the Presidency. He said, "The large attendance this evening, convinces me, that I need not take up your time with any preparatory remarks, it remains for me only to press on you the importance of the subject, and the necessity of manliness. I would say, that physical exercise and field games conduce not only to health, but to those mental qualities, which are encouraged by the possession of good health. It is in this, that those brought up under an eastern sun, are wanting. I am quite certain that an impartial observer, regarding the effects of English education in India, will come to the conclusion that the sons of European parents and others, educated in India, show a great aptitude for our education. We have obtained some admirable results, but up to the present time it is obvious that we have not introduced a system of physical education, as well as a system of mental training. We have to consider this evening in what manner this branch of education may be introduced in India. I will ask you to consider the different proposals which will be made to you this evening." (Hear, hear.)

The Hon'ble Mithusawmy Iyer, proposed, "That an Association to be called the 'Madras Physical Training and Field Games Association' be formed, having for its object the improved physical education of the youth of this Presidency, and the encouragement of a taste for manly exercises." Mr. Geo. Duncan in seconding the proposal said that the name of the Association was chosen with some deliberation, after a little discussion, and that he could recommend it to the approval of the meeting. On the motion being put to the meeting, it was carried unanimously. The Very Rev. J. Colgan then proposed, whilst the Hon'ble Mir Humayoon Jah Bahadoor seconded the motion, "that His Excellency the Governor, the Commander-in-Chief, the Chief Justice, the Members of Council, and the Maharajahs of Mysore and Travancore, and Native noblemen, be invited to be Patrons of the Association." An amendment was proposed by Mr. H. Wedderburn and seconded by Mr. Ramasawmy Naidu: "that the Maharajah of Vizianagram's name be added on the list." Dr. Oppert begged to move leave to propose an amendment "that all Maharajahs be included," as he thought it would be highly desirable on all accounts (laughter.) The amendment was seconded by Mr. Grigg. Haji Abdulla Pacha proposed and Mr. McIver seconded the amendment "that the Prince of Arcot be included in the list of patrons." The three amendments and original proposition were put to the meeting and carried *nem. con.*

Mr. A. T. Arundel said:—"I have been asked to propose, 'that the scheme commended by the preliminary meeting be adopted as the basis for the working of the Association.' I think that so far as you have gone, the singular exhibition of unanimity which reigns among you, allows of a hope that the Society will be founded on a firm basis. My feeling is, that there are two advantages to be derived from it. First, physical education for youths, and I think all will agree with me, that if more attention were paid to their physical education, they would be better adapted to fulfil the duties of life, and would be more active and serviceable men. My own experience in different parts of the country, leads me to feel, that

if such an institution were introduced in Government Offices, it would be conducive to the stimulation of energy and activity for its employes going through the districts. Another advantage, it seems to me, to be derived, is that schools would have a bond of union between them. I sometimes think that boys at school and the youths at the colleges here, seem simply to be a collection of units, and that when the day's study is done and books thrown aside, no cohesion exists amongst them. (Hear, hear.) If, by this Association, we can unite and make them cohere together by the benefits of athletics and physical training in their own schools, as well as by the distribution of prizes for competitions, I think a great advantage will have been gained. We may find students of the Free Church School competing with the students of the Madras College, and I think if this is done, there is no doubt that there will be a greater cohesion between schools, and that they will become more connected with Madras." (Cheers.)

Mr. B. Ramasawmy Chetty seconded the resolution. Mr. Arundel then read the method proposed to facilitate the carrying out of the scheme.

Mr. Ramachendriar: "I believe that in Government schools, the boys are dismissed at 4 o'clock, but not till 5 o'clock in the private schools, and that if some modification is not made in the hours, this scheme will never work properly." Mr. Grigg in reply to the preceding speaker said: "The scheme is a large one, but I think it better to map out for ourselves a large scheme than to begin with a small one, and then extend it. If results are to be taken, upon which we can form a judgment, and from what my experience teaches me, Government schools have, with a few brilliant exceptions, obtained a far greater success than have private schools. I believe that in all schools throughout the country, Saturday is kept as a holiday, and that seems to be a most suitable and fitting day for schools to gather at the new gymnasium at the People's Park, and there carry out the portion of work that may be assigned to them during the week. Perhaps it is not generally known that gymnastics is adopted in the Government curriculum, and I am quite certain if this movement receives the support it is likely to receive, private establishments will soon follow in the steps of Government, and accord gymnastic training a proper place in their curriculum. I would only add that it seems to me that it is impossible to expect high success in this Presidency until those most interested in the scheme come forward and insist that their boys do not work like slaves from morn till night at books; but require them to take such suitable relaxation and exercise as may enable them to grow up, not only into clever men, but into strong, healthy and well-balanced men (cheers). You will remember the saying that 'all work and no play, makes Jack a dull boy.' By dull I do not mean stupid, but one whose mind is not open to receive fresh impressions, who must be a dull and a more or less useless member of that society to which he belongs." (Applause.)

Mr. Cook wished to know whether each institution would have its own gymnasium and special instructor, or have one in common with other schools. Mr. W. Miller thought that Mr. Cook's remark was to the point, and that as regards a general gymnasium, most schools would be unable to send their pupils there on Saturday, and

it is only then that the general central establishment could be taken advantage of. Distances are so great in Madras, that it would be impossible for nine-tenths of the schools to send their pupils there. "We may have to do things imperfectly for a time, but if each school had an apparatus and instructor of its own, this difficulty would be overcome. In working out a scheme of this sort there are many difficulties, and I think one of the things to be done for the future and rising generation, by means of this Association, is to shorten the hours. (Hear, hear). So long as parents and guardians wish to get promotion in class for their pupils, there will be a strong temptation to make all the hours too long. I do not wish to say that parents should be taught to care less for the improvement of their son's minds, but I do wish to say that they ought to care for other things besides promotion from class to class." (Hear, hear).

Mr. Jagga Rao thought that it would be difficult to impress on parents, and youths themselves, the necessity of physical training, and he was inclined to think that the best course to be adopted would be to compel boys to profit by the opportunities offered them. "Physical education has a store of benefit in itself, but it requires some discrimination to understand that benefit. The fact is, that physical education will give more than health, it will make life, enjoyment, but parents will not see this." He then proceeded to say, that if the boy's and parents' opinions were consulted, little would be done. He felt certain that unless it was made worth while for the boys to devote time to physical education, and unless some such measure was resorted to as giving marks, the scheme would not prevail in the fullest measure. Mr. Oppert remarked that these were only matters of detail, and with respect to school hours he thought there was time enough for boys in leisure hours, to go any day from 5 o'clock to 6 P.M.

Mr. Cooper thought that it could not be insisted on by the head of a school, that every boy should attend the gymnastic training, for some are too weak to undergo the exertion. Mr. Arundel explained, that in his experience at home the weak ones were chosen out by the instructor, and put through a regular course to develop them, and he further enumerated the advantages of physical education. Mr. Coleman remarked that these were all matters of detail.

Sir Charles Turner: "There must be certain time devoted to physical exercises, and all school-masters will be glad to devote some time to them. When one hears that a person is 'the stroke of a University boat, one is desirous of attaching oneself as near as possible to that individual, (hear, hear) and a person who is a proficient in any feat is sure to get the respect of his neighbours. (Hear, hear). I am quite certain that employers of labour will prefer to employ a man who has energy and decision, than a man who is wanting in those qualities. (Hear, hear). I am quite sure that parents will find it to their own interests to do what Mr. Miller has suggested, to encourage their boys to physical education. The scheme has already been read to you, and no doubt when it is put into operation, it will be found necessary in certain respects to modify it, and in other respects to extend it."

The scheme was adopted unanimously. Mr. Murray said that it was encouraging to see that the meeting was so large and that the

thing had been somewhat looked into and difficulties and objections more or less handled. As regarded the selection of the Committee the choice should not be confined to a particular class and he observed that "no doubt it is for the young of the rising generation that we seek to establish this Association, and no doubt those connected with it must have an important share in the practical arrangement of the Committee, but it would be a great misfortune if this Association should degenerate into anything like a mere education club, (hear, hear), under the entire management of educationalists. It is necessary that all classes of the community, those who are not directly connected with education, should give their help, encouragement, and sympathy, and take a practical, living, interest, in the working out of the whole matter." Mr. Murray then read out the list which contained the following names:

President, the Hon'ble P. Macfadyen; Committee, the Hon'ble Mr. Himmayson Jai Bahadoor, the Hon'ble Mr. Muthusawmy Iyer, the Hon'ble J. G. Coleman, the Very Rev. J. Colgan, Mr. J. T. Fowler, Mr. E. Thompson, Captain H. D. Love, Mr. Secudram Sastri, Dr. King, Col. Chamier, Mr. A. T. Arundel, Mr. A. M. Saunders, Mr. Krishnama Gharria, Mr. Vijiarungum Moodelliar, Mr. Mahomed Khan Bahadoor, the Hon'ble G. N. Gajapathi Row, Mr. Rungana, thum Moodelliar, Mr. Ranganatha Row, the Rev. A. W. Atkinson, Mr. John Cypok, Mr. Kalyanasoondram Chetty, Col. Shaw Stewart, Mr. D. Sinclair, Mr. L. Melver, the Hon'ble Mr. Ranganatha Sastri, Mr. Galloway, the Rev. W. Miller, Mr. H. F. Grigg, and others, Mr. Geo. Duncan and Mr. H. G. Wedderburn to be Honorary Secretaries, and Mr. Chigtsul Row, Treasurer.

Mr. Murray then proposed, and Mr. Coleman seconded that the list be adopted. The resolution was unanimously adopted.

The Hon'ble Ranganatha Sastri, said he, had been asked to thank his Lordship for the trouble he had taken to be President on the occasion. (Hear, hear). After some further remarks he said that Railways, Schools and other institutions are looked upon as levelling existing distinctions. "It was mentioned that but little union and cohesion existed in schools but I think if attention is paid to physical training, this will supply greater cohesion, so that those institutions brought up properly, will be great blessings to the community at large. (Hear, hear). When I was young, used to go to a Musalman school, and now I can take plenty of exercise. (Hear, hear). I passed eight years in the Body Guard, I passed an certificate of a 'rough rider' (laughter, cheers). I may also mention that during a long course of life I was seldom sick, and then my dumb-bells were not abandoned." Quoting a proverb from a Sanskrit author, he said that "bodily exercises should be cared for before charity was possible, and that a worn out and decrepid person was not one to support anybody (cheers). Sir Walter Scott says: 'His limbs were cast in manly mould,' where it is also said that man must be physically strong, and that all his intellectual powers will be engrafted on these physical powers, and that from will come to the highest power, when the body is properly developed. I may mention that I long lived on 'Bengal' gram (laughter), and this was because my physical forces were able to help me through these things." He concluded by saying that the best course possi-

ble would be to begin the work as soon as possible. (Cheers). Mr. Saunders in seconding the proposal said that he thought the meeting excessively fortunate in having commenced under the auspices of the Chief Justice, and that the Association ought to be congratulated on his advocacy and energetic support.

The Chief Justice said that the proudest of his memories was that he had twice rowed only second to the University sculls, and that he had been trained in a wrestling school of Devonshire, though he could boast at no time as a "rough rider" (laughter). He continued to say—"I have to accept the kindness you have shown me, in accepting the proposition you have proposed, and I may only ask that you will take the advice of the gentlemen who proposed the scheme, by becoming yourselves subscribers." (Cheers, hear, hear).

A subscription list was immediately opened and the opportunity was availed of by many persons, to put down their names as subscribers. The meeting was then brought to a close.—*Madras Mail*.

### MADRAS UNIVERSITY.

#### MEETING OF THE SENATE.

We learn that the Senate met on Friday evening last to consider certain recommendations of the Syndicate, to add to and modify the rules and bye-laws relating to the admission of candidates to the Degree examinations; to elect a new Registrar, Mr. Evans, the present Registrar, having served now for two years; and to prescribe the exact branches of science and the mode of conducting the Examinations in them in the B or Science course of the B.A. Degree examination, as well as the elements of science required for the A course.

The Vice-Chancellor, Mr. Justice Innes, Mr. Justice Kindersley, the members of the Syndicate, and some twenty other fellows of the Senate were present.

The first question considered was an application of Mr. Fred. Rowlandson, B.A., LL.B., of Dublin University, for permission to appear for the M.L. Degree examination of the Madras University, he having been no student of any affiliated institution of this University, and therefore being unable to produce the certificate of having attended one for a certain period and completed the course of instruction prescribed in the Bye-laws for the M.L. examination. The question involved was whether, under the University Charter, the certificate could be dispensed with in the case of a graduate of other than an Indian University; and there was a prolonged discussion on this question, as well as on another application from a Mr. Lennon for permission to appear without a certificate for the M.D. Degree examination in July next, he having passed the analogous examination of the Madras Medical College formerly, and practised the medical profession for twenty years. This question depending on the construction to be placed on Section XII of the University Charter and the bye-laws, and requiring an exemption from the production of certain certificates, was decided in favor of Mr. Lennon, his future practice in Mauritius as a Physician or Surgeon having been questioned in the law courts there for want of a diploma or the certificate of an assistant apothecary. But the

Senate deferred till the next meeting, the further consideration of the question as regards Mr. Fred. Rowlandson, more than an hour having been spent on the points of law involved.

The next subject was the election of a Registrar for two years from 1st April next, and Dr. David Duncan, whose nomination was proposed by Mr. Justice Innes, was unanimously elected the Registrar for the next two years; no other candidate having been proposed.

The Senate was then called on by the Rev. Mr. Miller to add a new rule to the rules of affiliation, to the effect that students of institutions affiliated to any other of the Indian Universities shall, as far as regards admission to examinations, have the same privileges as students of institutions affiliated to the University of Madras. Again there was a long debate as to whether the candidates from other Universities should be thus easily admitted when the students of the Madras University are not similarly recognised by the former, nor allowed similar privileges. Mr. Miller deprecated such artificial hindrances in the way of the Indian Universities being connected with each other, and that each University should welcome the candidates from the sister Universities. This view was not accepted generally, and at length the Senate resolved to postpone the consideration of this question.

The last subject considered was a recommendation of the Syndicate to charge a fee of three rupees for all certificates issued on applications made after the 1st of May succeeding the Examination. This was regarded rather as a fine, and not a fee, only to expedite applications for certificates, and was agreed to by a majority.

The next question set down in the Agenda paper related to the Science course in the B.A. examination, but it was then so late in the evening that the meeting was adjourned till Friday next.

#### LIST OF NEW UNIVERSITY FELLOWS.

MACADYEN, the Honorable Mr. P., Additional Member of Council for making Laws and Regulations only.

Sankey, Colonel R. H., C.B., R.E., Secretary to Government, Public Works Department.

Colgan, the Very Rev. J., Vicar-General, Madras.

Beddome, Colonel R. H., Madras Staff Corps, Conservator of Forests.

Logan, Esq., W., Collector and Magistrate of Malabar.

Jean, the Rev. A., D.D., Rector of St. Joseph's College, Negapatam.

Maclean, Esq., C. D., Mus. Dec., M.A., Under-Secretary to Government.

Hauley, Esq., J. W., M.A., Barrister-at-Law, Government Pleader.

Shepherd, Esq., H. B., M.A., Barrister-at-Law, Professor of Law, Presidency College.

Michell, Esq., R. B., M.A., Barrister-at-Law.

Macrae, Surgeon-Major W., Indian Medical Department, M.B., M.C., M.A., Examiner, Medical Fund Accounts.

Rogers, Surgeon T. K., Indian Medical Department, M.B., F.R.C.S., L.R.C.P.L., M.A.C.S., Chemical Examiner, and Professor of Chemistry, Medical College.

Love, Lieutenant H. D., B.E., Principal, Civil Engineering College.  
Seshagiri Sastrulu Garu, M.R.Ry. M., M.A., Superintendent of  
Vernacular Literature, Presidency College.

### DEDUCTIONS FROM EUCLID.

- (1) In a triangle whose angles are as the Nos., 1, 2, 3, the least side is half the greatest; and thrice the square on the least side is equal to the square on the remaining side.
- (2) In a triangle whose angles are as the Nos., 1, 3, 4, the square on the difference of the two smallest sides equals twice the square on the smallest side; also, the rectangle under the sum and difference of these two sides equals twice their rectangle.
- (3) In a triangle whose angles are as the Nos., 1, 4, 5, the square on the difference of the greatest and least sides is five times the square on the least side.
- (4) In a triangle whose angles are as the Nos., 1, 5, 6, half the greatest side is a mean proportional between the other sides.
- (5) In a triangle whose angles are as the Nos., 1, 9, 10, the square on the difference of the two smallest sides is a mean proportional between five times the square on the least and four times that on the middle side.

S.

### APPOINTMENTS.

*Appointments made by the Director of Public Instruction, between the  
16th January and 15th February 1881.*

\* Mahomed Abdur Raiman Sahib, Head-master of the Mahomedan School, Vellore, to be Head-master of the Elementary Normal School for Mahomedans, Madras.

Mr. T. B. Scott, B.A., 1st Assistant Master, Bellary College, to be Head-master, Madara College, (old scale), but to continue to be Head-master, substantive *pro tem*, Berhampore College, during the absence of Mr. Scouce or until further orders.

U. Raghunatha Charriar, B.A., 1st Assistant Master, Bellary College, and Head-master, substantive *pro tem*, Cuddalore College, to be Head-master, substantive *pro tem*, Madara College, during Mr. Scott's absence on other duty or until further orders.

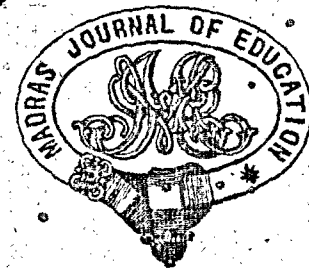
The appointment of Mr. E. H. Elliot, to be Head-master, Madara College, (new scale), and that of Mr. T. B. Scott, to be Head-master, Cuddalore College, are hereby cancelled.

S. Ramnunjah Naik, 4th Master, Middle School, Arcot, to be Head-master of the Girls' School, Walajapet, substantive *pro tem*.

W. Durmalunga Madaly, Head-master of the Girls' School, Walajapet, to be 1st Assistant Master.

Triscilla, to be Sewing Mistress, Walajapet.

Syed Abdug Razzak, to be Head-master of the Mahomedan School, Vellore, substantive *pro tem*, on probation for one year.



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### THE MONTH.

#### MR. MONRO'S REPORT ON THE MATRICULATION LATIN.

MR. MONRO, like many more, seems to have a hard battle with the "cram" system of this part of the world. Fain would he "cut at the root of cram," but there being no minimum prescribed for knowledge of Latin Grammar, and Bohn's translations being largely imported into Madras, he is powerless. We most thoroughly agree with Mr. Monro as to the great importance of Latin prose composition, as a test of knowledge of Latin; and most decidedly think that, if a knowledge of Latin is of any value whatever, a boy ought not to be allowed to pass unless he is able to parse nearly correctly such a simple sentence as that prescribed. But we are quite as strongly of opinion that the candidates have their grievance, and that it is no less serious. We think in the first place that the amount of Latin prescribed by the syndicate to be read for matriculation is more than what it ought to be and that, as in London University only one author should be prescribed for each year. What the portion of Latin is to be, the syndicate publish only about 18 months before the examination and the translation has all to be gone over in a year on an average. The boys have hard work to get through it in the

time; and the niceties of Latin syntax, as illustrated in consecutive narrative, are so many that it takes years to get at all familiar with them.

The addition of a long piece of prose translation from some author not prescribed, such as we find Mr. Monro gave last year, indicates an error of judgment on the part of the examiner as to what the candidates should be able to do. And when we find further a long piece of English prose to be converted into Latin without dictionary or vocabulary hints of any kind, we think it cannot be characterised as less than absurd for any examiner to expect boys of 16 to translate right off a piece of English as long as a 'Melvin's version,' to which at the same age we should have been allowed a couple of hours. Turning to the Latin Grammar paper, we would remark that the rules of *oratio obliqua* are but imperfectly discerned by matriculation candidates, and should be reserved to the First Arts paper. We find also no less than nine sentences in this paper for translation into Latin. The questions and the papers as a whole are in themselves very good, but above the heads of the candidates.

This is no mere opinion of our own. It is backed by the standard of Latin expected by other universities: notably London University, the great mother of all purely examining bodies such as are our Indian Universities.

Turning to the latest London University Calendar in our hands, that for 1878, we find that the Latin Test in June 1877 was as follows:—

(1) TRANSLATION PAPER. (2 hours).

Question I. Translate into English.

A. 22 lines from Hor. Odes III. 16 (17-38).

B. 24 lines from do. IV. 8. (1-24).

Question II. 10 short questions on Roman History and Geography.

Question III. (Translation from books not previously mentioned.) Four short sentences of simple Latin prose.

(2) GRAMMAR AND COMPOSITION PAPER. (2 hours).

Questions 7-9. Very simple grammatical questions of gender, conjugation, declension, and comparison.

Question 10. Derive 8 easy words.

Question 11. Correct 6 easy sentences given (ranging from 3 to 8 words each).

Question 12. Translate into Latin any 6 of 10 simple English sentences given.

We give, on p. 231 of this *Journal*, our Latin Matriculation Papers of last year and leave any one competent to speak on the subject to compare with the London University Matriculation standard, that which has to be passed by our Anglo-Indian pupils ere they dare enter the portals of our University.

THE REPORT ON THE DOVETON COLLEGE.

This represents the prospects of the Institution to be somewhat brighter educationally in the College Department. The Principal's report has been looked upon by the local press as a sort of reply on the science question to the attack of the Head-master of Bishop Corrie's Grammar School. One editorial gives the Principal a hint that he "might have made the present status of the College look brighter and more promising if a little more rhetoric had been employed." The chairman's address was not particularly brilliant in its rhetoric any more than the report; but what he said, if unadorned, was to the point and expressed his interest in the institution.

TWENTY-FIFTH REPORT OF THE SYNDICATE OF THE  
MADRAS UNIVERSITY.

The following changes with respect to University Examinations are given in the report:—

*Matriculation.* For Geikies Physical Geography Primer is substituted Roscoe's Chemistry Primer Arts. 1-52. [Questions of an Arithmetical character are, as far as possible, to be excluded from the papers on Chemistry and Physics.]

The re-distribution of marks, necessitated by this change, is

*General Geography* (2 hours paper)—30 marks.

*Physics*—25 marks  
and *Chemistry*—25 marks } 3 hours test—50 marks.

These changes come into operation next December.

Certificates of passing the Matriculation or First Arts test must be applied for by the 1st May succeeding the examination; a fee of Rupees 3 will be charged, for all certificates issued on later application.

*First Arts Examination.*

Physiology has had 70 marks assigned to it, instead of 50, and the total number of marks for the First Arts is in consequence raised to 560.

This came into operation from last December.

*M. B. and C. M. Examinations.*

Latin has been removed from its place in these Examinations.

We subjoin a condensed tabular statement of the Results of the University Examinations for 1880-81.

|                             | Registered. | Examined. | PASSED.    |            |            | Total passed per cent. |
|-----------------------------|-------------|-----------|------------|------------|------------|------------------------|
|                             |             |           | 1st Class. | 2nd Class. | 3rd Class. |                        |
| Matriculation.....          | 3578        | 3519      | 95         | 1276       | ...        | 39                     |
| First Arts.....             | 489         | 478       | 34         | 133        | ...        | 34.9                   |
| B. A. Degree.....           | 198         | 195       | ...        | 59         | 54         | 57.9                   |
| M. A. Degree.....           | 9           | 9         | ...        | 3          | 2          | 55.5                   |
| M. L. Degree.....           | 2           | 2         | ...        | ...        | 2          | 100                    |
| B. L. Degree.....           | 46          | 44        | ...        | ...        | 7          | 15.9                   |
| Preliminary Scientific..... | 5           | 5         | 5          | ...        | ...        | 100                    |
| First M. B. and C. M.....   | 1           | 1         | ...        | ...        | ...        | ...                    |
| First L. M. S. ....         | 6           | 6         | ...        | 3          | ...        | 50                     |
| Second L. M. S. ....        | 8           | 8         | 1          | 7          | ...        | 100                    |
| B. C. E. Degree .....       | 2           | 2         | ...        | 1          | ...        | 50                     |

The total percentages of passes from the different classes of the population are as follows in the Matriculation, First Arts, and B. A. Examinations :—

|                            | Matric. | F. A. | B. A.   |
|----------------------------|---------|-------|---------|
| Brahmins.....              | 41.9    | 33.3  | 60.1    |
| Hindus (not Brahmins)..... | 32.5    | 29.2  | 52.7    |
| Europeans.....             | 53.5    | 72.7  | 100     |
| East Indians.....          | 39.5    | 70    | ...     |
| Native Christians.....     | 34      | 41.2  | 66.6    |
| Muhammadans.....           | 54.2    | 55.5  | No cand |

The percentages of passes in the different Optional languages for the same three examinations are :—

|                | Matric. | F. A. | B. A. |
|----------------|---------|-------|-------|
| Sanskrit ..... | 88.4    | 88    | 83.8  |
| Arabic.....    | 100     | ...   | ...   |
| Latin.....     | 63.1    | 79.2  | 100   |
| Persian.....   | 95.6    | 100   | ...   |
| Tamil.....     | 78.7    | 100   | 98.8  |
| Telugu.....    | 91.05   | 100   | 100   |
| Kanarese.....  | 85.7    | 97.2  | 100   |
| Malayalam..... | 84.3    | 92.3  | 100   |
| Urdu.....      | 87.5    | 100   | ...   |
| Uriya.....     | 100     | ...   | ...   |
| Greek.....     | ...     | 100   | ...   |

From the table giving the number of Matriculation passes for the different institutions, we extract the names of the 20 who come highest in total numbers :—

| Rank. | Name of Institution.              | NUMBER PASSED. |               |        |
|-------|-----------------------------------|----------------|---------------|--------|
|       |                                   | First Class.   | Second Class. | Total. |
| 1     | Kumbakonam Native High Sch.       | 3              | 54            | 57     |
| 2     | Madras Christian College.....     | 4              | 50            | 54     |
| 3     | Pacheappah's College.....         | 5              | 46            | 51     |
| 4     | Trichinopoly S.P.G. College ..... | 4              | 47            | 51     |
| 5     | Kumbakonam College.....           | 4              | 42            | 46     |
| 6     | Tiruvandrum Maharajah's Col.....  | 2              | 43            | 45     |
| 7     | Presidency College.....           | 8              | 34            | 42     |
| 8     | Coimbatore College .....          | 4              | 37            | 41     |
| 9     | Rajahmundry College .....         | 2              | 35            | 37     |
| 10    | Kumbakonam Town H. School.        | 5              | 32            | 37     |
| 11    | Calicut Govt. College .....       | 2              | 35            | 37     |
| 12    | Mangalore Govt. College.....      | 7              | 28            | 35     |
| 13    | Tanjore S.P.G. College .....      | 1              | 29            | 30     |
| 14    | Tinnevely Hindu College .....     | 1              | 26            | 27     |
| 15    | Madura Government College. ....   | 1              | 25            | 26     |
| 16    | Calicut Kerala Vidyasala.....     | 3              | 20            | 23     |
| 17    | Palghat Govt. High School .....   | ...            | 22            | 22     |
| 18    | Negapatam St. Joseph's College.   | 1              | 19            | 20     |
| 19    | Vizianagaram Maharajah's Col..    | 2              | 17            | 19     |
| 20    | Bangalore L. M. H. School .....   | 1              | 18            | 19     |

The highest percentage of Matriculation passes (net reckoning Trincomallee with its solitary candidate) falls to Malgaware (56.00 per cent). Besides this Station Vizagapatam, Hyderabad, and Coimbatore have each 50 per cent., or over, of passes. Madras figures rather low with 35.5 per cent. The worst is Jaffna with 13.3 per cent. A list of the Matriculation passes is included this year in the Syndicate's report, we believe, to relieve the University Calendar which was getting rather unwieldy.

Three institutions were affiliated during the year to the University up to the F.A. Standard, viz., Hyderabad College, Government College, Madura, and Central School, Jaffna.

The Latin Examiner, Mr. Monro, has little good to say of the Latin results of the Matriculation and First Arts. He sees, in the Matriculation Latin papers, only evidence of *crumbling* the translation, ignorance of the elements of etymology and of the simple rules of Syntax, utter inability to parse a simple Latin sentence, and complete ignorance of Prose composition. We give the Syndicate's Extracts for his report elsewhere.

The Extracts given by the Syndicate from Dr. John Bradshaw's report on the English of the F.A. Candidates are so noteworthy that we also give them in full elsewhere in this number of the Journal.

The following Candidates have passed the M.A. Degree Examination held in January 1881:—

BRANCH I.—ENGLISH AND SANSKRIT.

Second Class.

1. Narayana Chariyar, Patlangi, Private Study.
2. Ramaswami Chariyar, Kilamli, Private Study.

BRANCH IV.—BIOLOGY.

Third Class.

Chester, Benjamin Henry, B.A., Private Study.

BRANCH V.—MENTAL PHILOSOPHY AND SOCIOLOGY.

Second Class.

Vaidyanathan, N., B.A., Private Study.

Third Class.

Sankararaman, K., B.A., Private Study.

[The Norton prize and Cobden Club Medal have been awarded to N. Vaidyanathan.]

The following Candidates have passed the B.L. Degree Examination held in January 1881:—

THIRD CLASS.

Rank. Register No.

- |   |    |                                                         |
|---|----|---------------------------------------------------------|
| 1 | 27 | Sadasiva Aiyar, T. B.A., Presidency College.            |
| 2 | 32 | Srinivasa Rau, Dodd, B.A., Presidency College.          |
| 3 | 4  | Fernandes, Victor Manuel, B.A., Presidency College.     |
| 4 | 37 | Swaminatha Aiyar, Venkatarama Aiyar, B.A., Do.          |
| 5 | 34 | Subbarau Nayudu, Mukarla V., B.A., Presidency Col.      |
| 6 | 15 | Mahadeva Aiyar, Cuddalore, B.A., Presidency College.    |
| 7 | 29 | Sankara Menon, Krishnat Puthenvittil, B.A., Presi. Col. |

The following Candidate has passed the recent B.C.E. Degree Examination held in January 1881:—

SECOND CLASS.

Saldanha, Sylvester Xavier, Madras Civil Engineering College.

REMARKS BY DR. BRADSHAW ON THE ENGLISH PAPERS OF THE F. A. EXAMINATION, 1880.

EXAMINERS' REPORTS.

Dr. Bradshaw, one of the Examiners in English remarks—"What struck me in the perusal of the papers may be distributed under the following three heads:—

- (a) Want of care, precision and accuracy.
- (b) Apparent cramming up in points likely to be asked.
- (c) The number of candidates whose English—(spelling, diction and grammar)—was so bad that it seemed strange how they matriculated.

(a) Very many even of the best candidates do not take the trouble to see what it is exactly that is required in the question; if they find a passage or allusion on the paper which has formed the subject of a question at a school examination they apparently do not take time to consider what is now asked, but reproduce what they had been told on the subject in class or what might be a reply to another question on the same point." \* \* \* "About 400 were able to give the source of the expression 'cut the diplomatic knot, &c.,' but not ten spelt Gordian correctly—giving such forms as 'Gorgian,' 'Guardian,' 'Gardian.'"

Very many misspelled Barere (as Barcare and Barrere) and Elizabeth, and several other important proper names in their Text.

(b) A large number had apparently pointed out to them striking passages to be committed to memory, and were thus able to cite the passages required in my second question, but the majority so inaccurately as to show they did not understand what they had learned or with several mistakes in spelling:—

"Dispotism and liscence engendered that mighty revolution in which the linements of both parents were strangely blended." \* \*

\* \* \* Again if the form of an idiom was varied from that in the Text many of those who answered the one they had met correctly wrote nonsense or showed great ignorance in replying to the variation. Thus; "to rally him on his spirits;" "to join him on his drink;" and another (who has passed) "he talked in jest of the drinking to excess of him;" and "he reproached the liquors of him." \* \* \*

Some candidates very well prepared in their Text wrote down great nonsense, as if they had not digested or thoroughly understood what they had committed to memory. \* \* \* When a metaphorical passage is given for paraphrase the candidates cannot divest it of its connexion in their Text.

Dr. Bradshaw gives 'specimens—from papers of candidates who have otherwise done well—of ignorance of important historical allusions, or a confused mixture of names and events due to the students being introduced for the first time to a large number of personages belonging to ancient and modern history and to the mode in which history is studied through the medium of 'compendiums' consisting merely of lists of names, events, battles and dates, &c.' Thus one (who

has passed) writes "Thermopyloe—a pass in Athens through which Wellington and Blücher entered France after the battle of Waterloo."

'Having examined on various occasions for the F.A. Examination since 1869 my impression is that in the last three years the answering in English shows a worse knowledge of the language on the part of the candidates than in former years.'

#### REPORT OF MR. MONRO, ON THE LATIN RESULTS OF THE MATRICULATION AND F. A. EXAMINATIONS.

Mr. MONRO, Examiner in Latin, in his report says,—'A fair proportion of the translation papers were good, but in the case of a considerable number of candidates I detected undoubted evidence of "cram." These candidates seem to have got up their books, solely with the aid of translations, with the view, apparently of qualifying in the translation paper alone. They had not taken the trouble to master even the ordinary elements of *Etymology* and were quite ignorant of the simplest rules of Syntax. This deplorable neglect of grammar, I animadverted on in my last year's report, and I think that this year's candidates, so far from showing any signs of improvement, are if anything, worse than those of last year. In proof of this, I might cite several examples, but I need only refer you to one passage by way of illustration. The passage from Cæsar, "*Frumenti quod inventum est in publicum conferunt*," set for parsing and translation, was parsed correctly by only one candidate. Several candidates, whilst translating the passage quite correctly, parsed "*frumenti*" as the "nominative case to conferunt," others as the "genitive case governed by *inventum est*," others as the "dative case," and so forth. The minds of such candidates as these must be a mere blank, as regards any real knowledge of the language. Their success in translation is doubtless due to a free use of the versions of a well known German publisher. The rules of the University do not require any proportion of the marks qualifying for a pass, to be in grammar. The consequence is that a candidate may pass in translation alone, though absolutely ignorant of the grammar and structure of the language. A measure requiring a portion of the marks entitling a candidate to a pass to be in grammar might, to some extent, cut at the root of "cram." Not a single readable specimen of Latin Prose was sent up, though a larger number of candidates attempted the piece.

It is to be regretted that more attention is not paid to this subject. To say that Latin Prose is invaluable, not only as conducing to a sound knowledge of the language, and as cultivating accuracy and clearness of expression, but as an improving mental exercise, is an educational truism, which it is hardly necessary to repeat. It is one of the best tests of scholarship, because success in it is not attainable by "cram."

Mr. Monro, on the F.A. Latin, remarks, "Most of the translations were fair, and some of them distinctly good. Seven candidates attempted the piece set for Latin Prose, but only one with any success. Most of the pieces showed an imperfect acquaintance with the use of the Ablative absolute. For example, such a sentence as the following occurred in several of the papers "*Tullia audiente quod factum erat, curram ascendit*."—From the Syndicate's Report.

#### RESULTS OF THE UPPER PRIMARY SCHOOL EXAMINATION OF DEC. 1880 FOR THE TOWN OF MADRAS.

##### NOTE.

- a. First Language, Reading and Writing (English or Vernacular).
- b. Arithmetic.
- c. Geography.
- d. First Language, Poetry and Grammar (English or Vernacular).
- e. Second Language, Reading, Constructing, Dictation, and oral Translation, (English for Natives, and Vernacular for English speaking children).
- f. History (i. Indian, e. English).
- g. Hygiene.

##### I. BOYS' SCHOOLS.

| No.               | Name of Institution.               | Branches in which passed. | Number passed. |
|-------------------|------------------------------------|---------------------------|----------------|
| 1                 | Doveton Protestant College.....    | a, b, c, d, f.            | 15             |
| 2                 | Madras Christian College.....      | a, b, c, d, e.            | 59             |
| 3                 | Government Normal School.....      | a, b, c, d, e.            | 18             |
| 4                 | Bishop Corrie's Grammar School...  | a, b, c, d, f.            | 30             |
| 5                 | S.P.G. High School.....            | a, b, c, d, e.            | 56             |
| 6                 | St. Mary's Seminary .....          | a, b, c, d, f.            | 8              |
| 7                 | Mary's Orphanage .....             | a, b, c, d, f.            | 11             |
| 8                 | London Mis. Central Institution... | a, b, c, d, e.            | 50             |
| 9                 | St. Thomé Seminary .....           | a, b, c, d, e.            | 28             |
| 10                | Harris' School .....               | a, b, c, d, f.            | 11             |
| 11                | Anglo-Vernacular Sch., Triplicane. | a, b, c, d, e.            | 33             |
| 12                | Madrasa-i-Azam .....               | a, b, c, d, f.            | 24             |
| 13                | Govt. Middle School, Mylapore ...  | a, b, c, d, f.            | 8              |
| 14                | Govindoo Naidoo's Primary .....    | a, b, c, d, e.            | 56             |
| 15                | Luth. Mis. Mid Sch., Fursewakum.   | a, b, c, d, e.            | 7              |
| 16                | St. Francis Xavier's Boys' School. | a, b, c, d, f.            | 8              |
| 17                | Civil Orphan Male Asylum .....     | a, b, c, d, f.            | 9              |
| 18                | Davidson Street Boys' School.....  | a, b, c, d, f.            | 17             |
| 19                | Perambore Day School.....          | a, b, c, d, f.            | 1              |
| 20                | St. Andrew's School, Madras.....   | a, b, c, d, f.            | 1              |
| 21                | St. Peter's Roman Catholic Sch.... | a, b, c, d, f.            | 12             |
| 22                | Wes. Mis. Anglo-Vernacular Sch.... | a, b, c, d, e.            | 36             |
| 23                | Church of Scot. Mission School ... | a, b, c, d, e.            | 25             |
| 24                | Ang. Vernacular Sch., Muthialpet.  | a, b, c, d, e.            | 18             |
| Total Not passed. |                                    |                           | 541            |

## II. 'GIRLS' SCHOOLS.

| No.               | Name of Institution.                 | Branches in which passed. | Number passed. |
|-------------------|--------------------------------------|---------------------------|----------------|
| 1                 | Govt. Female Normal School .....     | a, b, c, d, f (i).        | 10             |
| 2                 | Military Female Orphan Asylum..      | a, b, c, d, f (e).        | 17             |
| 3                 | Civil Orphan Female Asylum .....     | a, b, c, d, f (i).        | 12             |
| 4                 | Presentation Convent Orphan Sch.     | a, b, c, d, f (i).        | 9              |
| 5                 | Dowton Girls' School.....            | a, b, c, d, e.            | 9              |
| 6                 | Zenana Female School .....           | a, b, c, d, e.            | 2              |
| 7                 | Wesleyan Mission Girls' School ...   | a, b, c, d, f (e).        | 8              |
| 8                 | Davidson Street School.....          | a, b, c, d, f (i).        | 17             |
| 9                 | Perambore Day School .....           | a, b, c, d, f (e).        | 1              |
| 10                | Methodist Seminary .....             | a, b, c, d, f (e).        | 10             |
| 11                | Presentation Convent Special Sch..   | a, b, c, d, f (i).        | 7              |
| 12                | Lon. Mis. Girls' Boarding School..   | a, b, c, d, e.            | 7              |
| 13                | Union School.....                    | a, b, e, d, f (e).        | 2              |
| 14                | F.C.M. Girls' Day School.....        | a, b, c, d, f (i).        | 26             |
| 15                | St. Francis Xavier's Girls' School.. | a, b, c, d, f (e).        | 6              |
| 16                | F.C.M. Boarding School .....         | a, b, c, d, e.            | 9              |
| 17                | Emmanuel Church Girls' School ...    | a, b, c, d, f (e).        | 2              |
| 18                | St. Mathias' Girls' School.....      | a, b, c, d, f (e).        | 2              |
| 19                | F.C.M. Black Town Girls' School..    | a, b, c, d, f (i).        | 22             |
| 20                | R. C. Girls' School .....            | a, b, c, d, f (i).        | 6              |
| 21                | London Mis. Hindu Girls' School..    | a, b, c, d, g.            | 9              |
| 22                | F.C.M. Chetti Girls' School .....    | a, b, c, d, f (i).        | 7              |
| 23                | St. Thomas' Girls' School.....       | a, b, c, d, f (e).        | 5              |
| 24                | F.C.M. Balika Patasala .....         | a, b, c, d, f (i).        | 6              |
| 25                | Christ Church Girls' School.....     | a, b, c, d, f (e).        | 13             |
| Total No. passed. |                                      |                           | 224            |

### PROPOSED CHANGES IN THE MADRAS UNIVERSITY B.A. CURRICULUM.

The following Memorandum, issued by the Registrar to members of the Arts Faculty will show the progress made with the revision of the B.A. curriculum to the end of the month.

ED. M. J. OF E.

#### MEMORANDUM.

In conformity with the resolution of the Senate passed at a meeting held on 25th March last, by which the revision of the Arts curriculum was referred to the Faculty of Arts for consideration and report, the Faculty have held three meetings, namely, on the 8th and 20th April and on the 3rd May.

2. As there will be no further meetings until the month of July, the present is deemed a favourable opportunity to note the progress that has been made and the point at which the deliberations of the Faculty have arrived. Members may be able, in the interval between

the present date and next meeting, to think over and perhaps make up their minds upon several of the questions that remain to be discussed.

3. The meeting of the 8th April was occupied in laying down the general principle, that for the B.A. Degree Examination the compulsory subjects should be few and the optional subjects numerous and varied. At the meeting of the 20th April it was agreed that English and a second language should be compulsory subjects for the B.A. Degree Examination, and the claims of Elementary Logic and of History to be compulsory were brought before the meeting. The consideration of these claims formed the business of the meeting of 3rd May, when it was decided that neither Logic nor History should be compulsory for the B.A. Examination, but that provision should be made in the F.A. curriculum for an examination in Formal Logic.

4. The Faculty having thus decided that the only compulsory subjects for the B.A. Degree Examination shall be English and a second language, the matters that will next fall for consideration will be the different optional branches for the Degree Examination, and the changes which the resolutions specified above may appear to render desirable in the Matriculation and F.A. Examinations. The President of the Faculty will be happy to receive suggestions from members who live at too great a distance to be able to attend the meetings.

D. DUNCAN, M.A., D. SC.,  
Registrar.

SENATE HOUSE.

18th May 1881.

### SUBJECTS FOR THE UNIVERSITY EXAMINATIONS.

The following list of subjects for the Matriculation, F.A., and B.A., and M.A. Examinations is published for general information:—

#### MATRICULATION—1882.

Selections to be published by the University.

##### Sanskrit.

Rāmāyaṇa—Bālakanda, Sargams 1—10 (Bombay Edition).  
Panchatantram. I—Pages 37 to 91 (Calcutta Edition).

##### Greek.

Euripides—Alcestis.  
Xenophon—Anabasis, Lib. I and II.

##### Latin.

Vergil—Æneid, Lib. III.  
Nepos—Miltiades, Themistocles, Agesilaus, Epaminondas, Hannibal.

##### Arabic.

Ma'dan-ul-Fawā'id—pp. 37 to 84.  
'Aja'ib-ul-Ujāb—25 Letters.

##### Persian.

Rūz Nāmāh-i-Safar-i-Fāringistān—England to Italy inclusive.  
Aḥlāk-i-Muhammadi—Chapters 5, 6, 7 and 8.  
Lāli-i-Munzumāh—Selections from Sa'di.

## Tamil.

- Bhārata Venba—100 Stanzas, from 456 to 555.  
Eladi—From 51st Stanza to the end.  
Panchatantram—3rd and 4th Books.

## Telugu.

- Harischandropakhyanam—Canto 4.  
Bartruhari—Nitisatakam, First 50 Verses.  
• Nitichandrika—Mitralabham (by Chinmaya Suri).

## Kanarese.

- Karnata Bharatasangraha by Siddhanta Subrahmanya Sastri.  
Kathasangraha—From page 475 to 545.

## Malayalam.

- Nalacharita Manipravalam—5th and 6th Sargams.  
Harischandrapurana—From the 21st page to the end.

## Urdu.

- Gulistan—Expurgated Edition (School Book Society).  
Masnavi-i-Hasan—Expurgated Edition.

## Uriya.

- Kabitabali—By Babus Madhusudan Rau and Radhanath Rai (B. N. De's Utkal Press, Balasore).

- History of Orissa—By Babu Pizari Mohan Acharyya (Cuttack Printing Company's Press), from 2nd Chapter to end.

## FIRST EXAMINATION IN ARTS—1883.

## English.

- Green—Readings from English History, Part I.  
Stephens—English Men of Letters: Johnson.  
Milton—Paradise Lost, Book IV.  
Tennyson—Elaine.  
Scott—Lay of the Last Minstrel.

## Sanskrit.

- Sukraniti—Two first Adhyayas (Madras Edition).  
Sakuntala.

## Greek.

- Sophocles—Œdipus Coloneus.  
Herodotus—Lib. I and II.

## Latin.

- Vergil—Æneid, Lib. X.  
—Odes, Lib. III (Omitting, 6<sup>th</sup>, 10, 5, 26), and Arts Poetica.  
—Pro Milone.  
—Lib. XXII.

## Arabic.

- Akhwan-us-Safa—First half.  
'Ajab-ul-'Ujāb—Second half.

## Persian.

- Nigar-i-Danish.  
Gulshan-i-Sa'adat—15 Letters.  
Devan-i-Hafiz.—Radif-i-Dal only.

## Tamil.

- Bharatam—Sabbaparyam, Rajasuya Yagasargam, 160 Stanzas.  
• Naladiyar—Chapters 21 to 30.  
• Periyapuranam—Mummaiyazhakaranda Sarukkam, Vambaravarivanad Sarukkam, Tirumaladevar Puranam, Varkonda Sarukkam, and Poiyadimaiyillatha Palavar Sarukkam.

## Telugu.

- Parijatapaharanam—Cantos 3 and 4.  
Bharatam—First Book, 6th Canto.  
Vigrahams—by K. Viresalingam, Part II.

## Kanarese.

- Prakkavyamalike—From 353 to 388.  
Vrishabhendravijaya—Canto 4.  
• Kalavathiparinaya—From page 200 to 312.

## Malayalam.

- Nalacharitham—Kathakali—2nd and 3rd days.  
Ramayanam—Balakandam.

## Urdu.

- Surush-i-Sukkun.  
Dewan-i-Saba.

## Uriya.

- Charupatha—Part II. (By Beechund Patnaick).  
Raghu Vansa—do.  
Sutton's History of Orissa—Part II.

## B.A. DEGREE EXAMINATION—1884.

## English.

- Shakespeare—Othello.  
Selections from the Golden Treasury, viz., the Poems follows:—23, 59, 66, 107, 109, 116, 126, 147, 155, 157, 166, 226, 287.

- Chaucer—The Clerkes Tale.

- The Man of Lawes Tale.

- Symonds—English Men of Letters: Shelley.  
Sir H. Taylor—The Statesman, Vol. IV.  
Carlyle—Rectorial Address.

## Sanskrit.

- Kadambari—Pages 198 to 432 (Calcutta Edition).  
Mudrarakshasa—The whole.

## Greek.

- Aeschylus—Promethens Vincetus.  
Thucydides—Lib. I.

## Latin.

- Vergil—Georgics, Lib. I and II.  
Plautus—Trinummus.  
Cicero—De Finibus, Lib. I, II and III.  
Tacitus—Historiae, Lib. III and IV.

## Arabic.

- Nafhat-ul-Yaman—Chapters 1, 2 and 3.  
Alf-Laila—40 Nights.

## Persian.

- Waqaya-i-Ni'amat Khan-i-'Ali.  
Qasa, id-i-Badr-i-Chach—15 Qasidabs.  
Masnavi-i-Maulana Rumi—2nd Daftar.

## Tamil.

- Ramayanam—Ayodhya Kandam, First Five Padalams (Madras School Book Society).  
Kural—From Chapters 95 to 108, with Commentary.  
Tiruvilaiyadal Puranam—Vathavundikalukku Upatthosha Padalam.  
• Naripariyakkiya Padalam and Parinariyakkiya Padalam.

## Telugu.

*Samanamobhiraujana*—Canto 4.  
*Yayati Charitra*—Cantos 2 and 3.  
*Mahabharata*—Anusasuka Parvam, 2nd Canto.

## Kannarese.

*Rajasekharavilasa*—Chapter II.  
*Jaiminibharata*—*Sandhis* 22, 23 and 24.  
*Mudrananjusha*—From 256 to 385.

## Malayalam.

*Bharatam*—Udyogaparvam.  
*Dakshayugam*—Kathakali.  
*Ramayana*—Saudrakandam.

## Urdu.

*Dewan-i-Wazir*.  
*Sarur-i-Sultani*.  
*Shah Nama-i-Urdu*—First half.  
*Jami'ul-Akhlaq*.

## Uriya.

*Mahabharat*—(Calcutta School Book Society's Edition).  
*Batris Singhasan*.  
*Sutton's History of Orissa*—Part III.

## M.A. DEGREE EXAMINATION—1881.

## English.

Shakespeare—Merchant of Venice, Henry VIII, Julius Caesar.  
 Ben Jonson—Volpone.  
 Massinger—The Virgin Martyr.  
 Spenser—Faerie Queene, B. II.  
 Milton—Lycidas, Comus and Sonnets.  
 Carlyle—Past and Present.  
 Dr. Johnson—Lives of Milton, Addison, Savage and Prior.  
 Coleridge—Biog. Lit. Ch. XIV to end Notes on Shakespeare.  
 DeQuincy—Confessions of an English Opium Eater and Flight of the Kalmuck Tartars.  
 Wordsworth—White Doe of Rylstone and Miscellaneous Sonnets.

## Sanskrit.

*Rig-Veda*, First Mandala, Hymns XXXVII to XLVIII inclusive (according to the Pada or Samhita Text published by Prof. Max Müller in 1873) with Sayana's Commentary.

Manu, Books II, VII, VIII.

Dasaki—*Varita*.

Sudr—*Arichchhakatika*.

Ka—*Sakuntala*.

Bhavabhuti—*Viracharita*.

Kalidasa—*Meghaduta*.

Vedantasara of Sadananda.

## Greek.

Æschylus—Prometheus Vinctus.

—Agamemnon.

Homer—Iliad, Lib. XXII—XXIV.

Thucydides—Lib. I, II, and III.

Aristophanes—Nubes.

—Aves.

Demosthenes—Olynth., I and II.

Plato—Phædo.

—Gorgias.

Aristotle—Eth., Lib. I, II, and III.

## Latin.

Vergil—Georg., Lib. IV.

Horace—Epistolæ.

Plantus—Miles Gloriosus.

—Aulularia.

Juvenal—Satires, I, III, and X.

Terence—Adelphi.

—Andria.

Cicero—Epistolæ.

Livy—Lib. XXI—XXX inclusive.

Tacitus—Annal. Lib. I.

Pliny—Epistolæ, Lib. VIII, IX, X.

## HISTORY.

F.A., 1883.

Rise of the Macedonian Empire.

B.A., 1884.

England during the reign of Edward III.

M.A., 1884.

Constitutional History of England, from the Conquest to the accession of Henry VII.

The History of Egypt, from the earliest times to its conquest by Cambyzes.

## ETHICS.

M.A., 1884.

Epicureanism in Ancient Greece and Rome.

Sidgwick's Methods of Ethics.

# TWENTY-SIXTH ANNIVERSARY OF THE DOVETON PROTESTANT COLLEGE.

The annual distribution of medals, prizes and certificates to the students attending the above institution took place on the evening of the 12th April. The Hon'ble P. O'Sullivan Advocate-General, a gentleman who, since he came to Madras, has taken a deep interest in the welfare of the College, presided, and there was a large attendance of the parents of the students, and of the friends and supporters of the institution generally.

The following is the Report for the past year as read by the Principal:—

1. COLLEGE DEPARTMENT.—After the publication of the results of the University Examinations for 1879, we had on our College Register last year 7 Senior F.A. and 10 Junior F.A. students; in all 17. Of the former 3 were Hindu students, who had already failed for the Examination; and one of these, who was but half-hearted in his renewed attempt, shortly left us to take up another pursuit. The other two continued with us, and ought to have succeeded in passing. Had they done so, we should then have had the good fortune of passing all our candidates. As it is, we may be pleased to have passed 4 out of 6, seeing that only one-third of the candidates throughout the Presidency have passed. It was gratifying that one of our students H. J. D. Wilkinson passed high, 4th in the 1st Class. Another E. T. Bernard, was high in the second class; he might easily have been in the First Class too, had he done the Mathematical papers with his usual success. What was still more gratifying

to me was that our students were comparatively young and that so far from having felt their F.A. studies a weariness to the flesh, they one and all urged me to resume the B.A. teaching this year. Of course 4 is not a large B.A. Class, and the teaching involves practically the same amount of work on the part of those who teach as the teaching of three times the number would do. Still, as I had spoken in previous reports of its importance, if our institution were not to finally quit the field of the Higher Collegiate Education, and as it was more than the number of B.A. students that, just ten years ago, my predecessor inaugurated the B.A. teaching with, I represented the matter to our Committee, stating that our students all expressly wished to take up Physical Science as their optional study for the degree, and that the selection of an additional professor would for the present at least have to be influenced by this. The Committee at once sanctioned the re-opening of the B.A. Classes; and have been fortunate in securing as additional professor Mr. B. H. Chester, an old Dovetonian, who has just distinguished himself by taking his M.A. degree in Biological Science. In this connexion I am glad to state that our Committee, aided by Government have provided me with the necessary funds for the purchase of Scientific Apparatus, Physical, Chemical, and Physiological, and that we have now the nucleus of what I hope may some day develop into a well-equipped laboratory. Though I have no intention of entering at length or what has been for years the *questio vexata* of European Education—scientific *versus* classical teaching—I wish to say just a sentence or two on the subject. I hold that the utilitarian bearings of our College and School curricula cannot be overlooked, and that what is usually said as to the non-humanising influence of a Scientific education is simple verbiage. Hailing as I do from a University where Latin and Greek have been for centuries reckoned as of first rate importance, I am not prepared to admit, though many are, that a classical training is waste of time, but I frankly admit that I have often had occasion to regret that my university linguistic training did not also include the more utilitarian, and I should say equally humanising, French and German; and I am prepared to claim for any Scientific Education I have had an equally important Educational value with any linguistic. It is on purely utilitarian grounds that one of the European twins—Latin and Greek—has long ago been discarded from English schools in this country, and I consider that it is only matter of regret on the same grounds, that some modern Indian language such as the valuable Hindustani, has not taken the place of the discarded Greek, as French and German now have done in many grammar schools in England. Well it is on this same utilitarian, non-Socratic view of Education, that attempts are now being made to improve the position of the Useful-Knowledge-Education in our Colleges and Schools. So far as an institution like this is concerned, I think we have only to glance at the probable future in life of the great mass of our pupils to see that they should benefit by the success of the attempts now being made. What the advocates of improved Scientific or Useful-Knowledge-Education in England have all along had to contend with is the extraordinary complacency with which their opponents postulate that a man may adjudicate all the better on the merits of the case, if unhampered by any knowledge of scientific subjects himself.

Our Junior F.A. Class of last year, which numbered 10 at first, was as usual thinned at the opening of the Medical College session: so that 6 only remained with us; and our Senior F.A. Class in consequence numbers only 7 this year. Our Junior F.A. Class of this year also numbers 10. Still it will be seen that we have now 21 College students in all this year, and are thus showing signs of greater collegiate vitality than we have done for some years. For the Higher Grade of the Cator Scripture Examination 6 went up, with the result that 4 certificates were gained. The idea that there was some uncertainty connected with the examination of last year, had, I think, some thing to do with our students not having done quite so well as I expected, I am glad to see that the Prizes have been advertised for two years more, and I hope we shall do better at the coming Examination. It is but due to our students to say that their behaviour in College throughout the year has been uniformly excellent; and that if some of them have not come up to our wishes in their performance at our examinations from time to time, they have been at all events free from the examination fever which is sometimes epidemic in such institutions.

II. SCHOOL DEPARTMENT.—There were, in the School Department, 115 on the roll at the end of the 1st quarter of 1880, and 120 at the end of the 4th quarter, giving an average of 117 for the year. The average numbers on the roll of each class were very steady throughout the session, being as follows: class VI. 21: class V. 16: class IV. 22: class III. 21: class II. 22: and class I. 15. During the year there were 23 withdrawals and 32 admissions. Of the withdrawals, 16 were on account of removal from Madras; 2 were on account of non-promotion; 3 were struck off for irregularity of attendance or of payment of fees: 1 left to enter an office, and 1 to study privately. The frequent change of residence of parents in this country is a difficulty with which an institution like the Doveton will always have to contend, I fear. Such changes are unfortunate for the educational progress of pupils, but they are of course beyond control. Withdrawals on account of non-promotion and of irregularity it is for the parents or guardians to prevent. I would just remark with regard to withdrawals for non-promotion that parents can do their children no greater injury than by changing them from one School to another. The least satisfactory pupils we have are those who have gone the round of three or four institutions. The proverb that "a rolling stone gathers no moss" is emphatically true of School-rolling stones. For the results of our year's work I have simply to report those of the various public Examinations now prescribed for us by the Education Department. In the Lower Primary Class 18 were examined by me, and 11 passed: of the 7 failures, 6 were boys who joined the class late in the session and who had no chance of passing. In the Upper Primary Class 24 were examined by Mr. Bower and myself and 15 passed: Of the 9 failures 4 only had been with us all the session; the others but a small fraction of it. The dux of the Upper Primary Class, Francis W. S. Cusley, who gains the Silver Medal, is remarkably good in every subject and worthy of special mention. For the Middle School Examination we sent up 18 out of a class of 21, and passed just 3—not one in the 1st class. Six more had gained over 180 marks, the gross minimum for a pass, but had failed to obtain the minimum in Arithmetic. Having publicly protested

against the Arithmetic test at the time, I think I am quite justified in claiming that we have really passed altogether 9 out of 18 sent up. Some Heads of Schools appear to be perfectly satisfied with this proportion of passes, and others seem to have placidly accepted a pass of  $\frac{1}{2}$  or  $\frac{2}{3}$  of their class as fairly satisfactory. I have not yet had the pleasure of a visit of an Inspector of Schools who, finding in a class of 21 boys that 1 only gained over 50 per cent of marks on the whole, and that 9 others gained over 33 per cent, but less than 50 per cent, while no fewer than 11 out of the 21 failed to gain 33 per cent of the total marks, would send a glowing report on the results of his inspection. Yet this is exactly a picture of the results of the Middle School Examination of this year throughout the presidency. We learn from the report of the Commissioner for the U. C. S. Examinations that out of 3869 Fourth class Pupils examined only 181 obtained a First class, and 1630 a Second class, over the whole Presidency. We are not alone in having fared even worse than this bad average; for Anglo-Indian schools have almost without exception come to lamentable grief, and chiefly I understand in the subject of Arithmetic. The results, exactly bear out the view taken by me in my protest against the test at the time. We did much better last year, with but 2 months' notice of the examination and an inferior class; and I consider it my duty to make these remarks in defence of our pupils and masters who worked well, and from no desire to be gratuitously polemical. The Commissioner seems to be fully satisfied that the present scheme of examination requires important modifications, and I have no doubt that if it is possible to work the Middle School Examination we could not be in better hands than in those of the present Commissioner and his secretary. The Silver Medal which was promised to the boy who passed the Middle School Examination in the 1st Class, is awarded to Chester though he only passed in the 2nd Class, as I consider that he is worthy of it and ought to have been in the 1st Class. Our Matriculation results this year have been of a piece with the general results for the presidency. For the Examination 19 appeared; I did not expect more than 9 to pass; only 7 however were successful. Of course those who have no chance of passing are plainly told so by me; but, if parents can afford to pay the examination fee, they are at perfect liberty to do so, and it satisfies parents and pupils as to the correctness of our school tests to send them up. Some hold very strong views on the subject of reckoning the passes by the number in the class and not by the number recommended to appear by the Headmaster: and maintain that no boy should be in the class who has no chance of passing the test. This is all very well in theory, and we might approximate to it in practice, if we could depromote our boys whenever we were satisfied that they had fallen below the level of the Class Standard. But we have got to satisfy parents and pupils on this score as well as ourselves; and this is no easy task: for, if we attempt it without such persuasion, we are simply met by the withdrawal of the pupil. It is worthy of mention here that of all our Matriculation passes this year; the three who stood highest in order of merit were our 3 youngest, and that the highest, of the three, Hudson, who passed 4th in the 1st class and who as the Dax of the High School gains the Colleman Gold Medal, is the youngest of all. Our Tamil classes and Drawing classes have been continued during the year, the average numbers on the roll of the Tamil classes being 52,

and on the roll of the Drawing classes 32. I regret that through the illness during the past two months of our Drawing master, we have no fair specimens to exhibit to-day of the results of Mr. De Closet's handling of the class for the last half of the year. I may add one sentence here to state that after the publication of the Middle School results, which represented us so unfavourably and I consider unfairly, many of our boys were withdrawn from these extra classes: as if the reason of our Middle School failures had been the additional strain of these. This is so far from being the case, that each of our boys who passed had either Tamil or Drawing in addition to his other work. Whereas those who had none of these extras did not specially distinguish themselves. The chief difficulty connected with these extra optional classes is the matter of regular attendance. Of course if they are to be of any value parents must see to sending their boys off to school in time, and not allow a single lesson to be broken unless for some more satisfactory reason than that "breakfast was late." I only wish more time could be given to these extra subjects than we give; but working up as we do to so many Examinations, we cannot afford care unfortunately, though their value is unquestionable. In the Junior Cator Scripture Examination we were not so successful as last year: we gained in all 11 certificates and of these only 1 fell to the Pre-Matriculation Class. This is not so favourable as last year when the 5th class gained no fewer than 6 certificates; but I trust and expect we shall do better this year. The Inspector of Schools examined classes I to V in August last, three months earlier than usual. His report of the first three classes was more favourable than of the 4th and 5th—a common feature of Anglo-Indian Schools and not peculiar to the Doveton. He reported favorably of the tone and discipline of the School, and I would only add for the benefit of lynx-eyed critics that so far as conduct in School is concerned I could not wish a better set of boys about the Doveton than we have at present. I must publicly thank the Doveton Dramatic and Choral Society for their efforts during the past year to keep up the *Espoir de corps* of the Institution, and for a substantial contribution of Rs. 100 on behalf of the Library. I cannot close without expressing my thanks to all the masters, for their regularity and conscientious discharge of their duty during the year.

After the reading of the report, the medals, Prizes, and certificates were distributed. No less than 4 medals, 2 gold and 2 silver, were awarded to the duxes of the different divisions of the College and School; and in addition to the ordinary class Prizes, were awarded a large number of Extra Prizes for Tamil, Freehand drawing, and map-drawing.

The Hon'ble Chairman then delivered a short address. He said that it must be very gratifying to all who took an interest in the Doveton College to find, as they found, from the report that had been read by the Principal that the institution had so well maintained its reputation and position during the year. This College was founded over a quarter of a century ago to meet a want then much felt, and, since that time, it had proved very useful without in any way losing its prestige. Such a large number of colleges and schools and educational establishments had since that time sprung up, yet, in reputation and in point of numbers, the Doveton had been able to hold its own with the best of such institutions. The Doveton College had

hitherto all along prospered and maintained its reputation; there was every reason to hope for improvement in the future, while there was no fear of any retrogression. Mr. O'Sullivan observed that he would not take up the time of the meeting by discussing the question of education which was referred to in the report of the Principal. He would not offer any remarks as to whether education was to be pursued for the advantages to be gained by it or whether for the solace and knowledge to be derived therefrom. It was however, a fact that this was an age of examinations and of payment by results, and that it behoved the managers of all schools to keep up to the growing requirements of the time. Mr. Cook, there was no doubt, had shown that he was fully alive to all that was needed to maintain the reputation of the College. He had introduced every possible improvement in the institution. While the school offered a good and solid education to most of the boys, there were classes for a higher course which was carried to a degree equal to that pursued in any other College in Madras.—*From the Madras Times.*

#### DR. RICHARDSON AND KINDERGARTEN.

To what school of metaphysics Dr. Richardson belongs, or whether he belongs to any, we cannot tell. It is quite obvious, however, that in one sense he is an idealist. He deals in ideas, and, like most men of this type, he has an enthusiastic appreciation of that in which he deals. Such men are very valuable members of society. This world is sufficiently prosy and commonplace as it is. What it would be without the heaven of romance which men like Dr. Richardson are continually supplying to it no man can imagine. The world has been long more or less acquainted with the Doctor's ideas on sanitary questions. That city of Hygeia remains intact in the very position in which it was reared by the Doctor's imagination, as much a thing of beauty as on the first day of its creation. Like another city of transcendent glory, the holy Jerusalem, it may be seen in vision descending out of heaven by those who are capable of being carried away in the spirit to a great and high mountain. To those who possess this capability, Dr. Richardson is the man to be their personal conductor. The Doctor's connection with the School Board for London seems to have given his genius a start in a new direction, or at least to have given occasion for the publication of his ideas concerning education. Of the speculations on the subject of education itself, contained in his article just published in the *Gentleman's Magazine*, we only say now, we hope they will be widely read, and thoughtfully read. We hope that they will be so read especially by practical teachers, most especially by young teachers. There are in this article signs that the writer is apt to look at things from the top of "a great and high mountain." It is only thus that we can account for the suggestion that the tops of London houses could be utilised for the purposes of Kindergarten, or, as the Doctor would prefer to express it, child's gardens, or garden schools. Space, whether an objective entity or a subjective condition of thought, is a great idea. It is infinite, at least in the sense that the human mind cannot conceive of it as limited. It is therefore somewhat

annoying to find that while, as the Orientalist said about time, we have all that there is of it, we should still be "cabinéd, cribbéd, and confined" by what practically we find to be its limitations. Dr. Richardson is like all winged creatures, impatient of such limitations. In all directions but one he finds, like the rest of us, that he is hemmed in by unsurpassable limits. In one direction, however, there is, as Mr. Carlyle would say, one of the immensities. There is ample room for us all to grow and to move, if we only grow and move upward. But here, like Archimedes, we must have a *pona sto* (a where to stand). Dr. Richardson tells us that we may have this *pona sto* on the roofs of our houses. But it is just here that the Doctor seems to show his obliviousness of the actual conditions and circumstance in which we poor mortals exist. The Doctor must have the roof of the houses of Hygeia in his eye and in his mind, and not those of any city which exists in England, least of all those of London. The fact is that the erections in which the great bulk of the children attending public elementary schools dwell can hardly be said to have roof at all, as their wretched inhabitants find by a very unpleasant experience after snowfall or heavy rain, such as that with which we were visited lately. It has been frequently suggested that the roofs of Board Schools might be utilised as playgrounds, and the proposal was once seriously made by the Works Committee. But when looked at from a practical point of view, it was felt to be a very questionable one. It is quite true, as remarked by the *Daily Telegraph*, in an article on what it calls Dr. Richardson's "amiable crotchet," that "it would be necessary to enclose the flat surface with a breast high fence—a low parapet would not suffice—to guard against the archies tumbling headlong into the street beneath; and, next, it would be expedient to devise some means for preventing the chimneys in the neighbourhood from continually emitting volumes of Stygian smoke. . . . It would be likewise as well to remember that flat roofs are usually covered with lead or slate, both substances apt to become hot when the sun shines fiercely." Besides all this there would be the difficulty and the danger of getting some hundreds of infants up and down, to and from, such a height; and finally, the inevitable expense, which would be found to be not less than what would be required to provide a playground of equal dimensions on *terra firma*, expensive as that is. No, there is no getting away for the present in any direction from the material conditions of our position. At the same time, we have no doubt that a wise employment of the discoveries of science would enable us to make better houses, and houses with roofs which could be so used as to add immensely to the convenience, comfort, and culture of those who occupy them. Such houses are not likely to be erected by the present race of jerry builders, into whose hands the task of providing houses for this generation has somehow fallen. Among the many organisations to which this nineteenth century has given birth there is one, we believe, which takes its name from the period, the aim of which is to abolish the jerry builder. This, it must be confessed, is a very formidable undertaking. The company or association by which it is taken up will need resources; but if it honestly and energetically endeavours to accomplish this object it will deserve, and we hope will receive, the confidence and support of the British public.—*The Educational Chronicle.*

*The Historical Geography of Europe.* By E. A. Freeman, D. C. L. Vol. I., *The Text.* Vol. II., *The Maps.* London: Longmans, Green & Co.

THIS book is simply an account, with illustrative maps, of the political changes of the world. The text may be considered as simply explanatory of the maps, which may be briefly characterised as Spruner simplified. When one considers, however, the vast range of history covered by these maps, it will be understood that, although Dr. Freeman modestly calls his book a "very humble one," it is one which hardly any living English writer except himself could have undertaken. He is not, he says, writing history; he is merely considering events with reference to their effect on the map of Europe. In accordance with this view, Dr. Freeman disclaims any comparison with the elaborate collection of Spruner, because, while Spruner's maps are intended to illustrate history, his own are only intended to illustrate "changes of border." That is, of course, true in a sense, but it will not prevent Dr. Freeman's maps from being considered as companions of history; nor, considering the great price of Spruner, will it prevent his maps from being used in the study of history by those who cannot afford the German collection.

It is, doubtless, a discredit to this country that such a work has not been done long ago, and not only for Europe, but also for the whole of the world. It is notorious that we, whose ships are in every port, and whose language is spoken over a quarter of the habitable globe, are, of all people, perhaps the most ignorant of geography. We do not understand what our empire means; its possibilities, its dangers, its responsibilities. Our newspapers, our speeches in Parliament, our leading articles and essays, all illustrate alike the low standard of our geographical knowledge, whether political, historical, physical, or commercial. The men who know geography are a small band of historical students, headed by Dr. Freeman, a few professional teachers of geography, and one or two men in London, known only by their brother experts. It is, moreover, difficult to get these men to speak, write, teach, and be perpetually instructing those who lead so great a nation, and who talk of looking at a "big map" by way of concealing their own incapacity to understand the full meaning of a map. Why! a map shows the inexorable fate which guides the destinies of nations. Where would have been the westward waves of invasion save for the great central plain of Russia? Who can estimate the part in history which has been played by the Rhine or the Danube? What would have been the Roman Empire itself, save for that vast internal sea, round which it could spread, and along whose shores its ships could sail?

We owe, therefore, the most grateful thanks to Dr. Freeman, for the present instalment of a work which, we hope, will prove to have been only commenced by him. We unhesitatingly affirm that such a book ought to be in every school library. A study of the maps alone will do more to make a boy understand history, than any number of dry narratives; while, if he will only spend a few holidays with this volume of maps and the author's *General Sketch*, he will be fairly started in the road of history, in such a way as would have been impossible before the appearance of this book; for, as we said before, the German collection is too expensive, and too little known, to be readily accessible.

We anticipate with some confidence that the subject of Historical and Political Geography will, now that it can be so well studied in such books as these, be introduced into the curriculum required by the Oxford and Cambridge 'Local' and the various other systems of examinations. Meantime, we must premise that the "text" of Volume One is not of an elementary kind; it pre-supposes a great deal of knowledge, which may however be arrived at, as we said before, by the study of the *General Sketch*. Dr. Freeman, who has spent a good deal of his life in setting people's ideas right on the subject of the Roman Empire in all times, has now left them with little excuse for going wrong. His seventh map gives Italy during the growth of the Roman power. Greeks are planted along the shores of Calabria and Sicily; the Phœnicians occupy settlements in Africa and Sicily; the Etruscans have their compact kingdom north of Rome; the Italian tribes are scattered about the peninsula; the Gauls and Ligurians are in the north. At the beginning of the Second Punic War, the Carthaginians have occupied Spain, and spread along the African coast as far as the Straits and beyond; the power of Rome has spread over the whole of southern Italy, with Sicily, Corsica, and Sardinia. At the end of the Mithridatic War, Rome has all the countries north of the Mediterranean; at the death of Augustus, the Roman Empire has extended round the whole Mediterranean, and includes Gaul, Rhoetia, Noricum, and Mœsia; under Trajan, it has covered Britain on the north, Dacia beyond the Danube, and the whole of Asia Minor, including Armenia, Mesopotamia, and Syria. Turn, again, to Map XIII., which draws Europe in A.D. 500. There is the kingdom of the West Goths, the East Goths, the Franks, and the Vandals; the Roman Empire has shrunk to the comparatively narrow limits of Thrace, Greece, Asia Minor, Syria, and Egypt. In the time of Justinian, its borders are again enlarged, in the year 695, we find another great change, with Saracens, Slaves and Letts, and Turanians on the field; and so on, whither we have no space to follow. There are sixty-five maps in all, and on each map volumes have been written. As we have no space here for volumes, we lay down the book with regret, and invite our readers to lose no time in getting it for themselves.—From the *Educational Times*.

#### RECENT ADVANCES IN APPLIED ELECTRICITY.

EVER since the discovery of the dynamo-electric principle, which by the transformation of mechanical into electric energy rendered the production of powerful currents both simple and inexpensive, the future utilisation of this mysterious form of energy has been assured. Few, however, could have supposed that electricity would in so short a time have found so many useful applications. The rapidity of progress is due in no small degree to the high efficiency so soon attained by dynamo-electric machines, the best of these, such as those of Gramme and Siemens, giving back in available electric current nearly 90 per cent. of the energy imparted to them in the form of motive power. Further advance in the matter of electric generating machines being scarcely probable, the attention of electricians has lately been directed to the question of the storage of electricity. Could energy in this form be bottled up and given out as required,

like gas from a gasometer, it is felt that the way to the full utilisation of electricity would be greatly smoothed. Secondary batteries have long been recognised as a means, however imperfect, of electric storage. These receive the current from another battery, or from a dynamo machine, and lock it up in the form of chemical work done in the cell, this chemical work, when the cell comes to be used as a battery, being capable of re-transformation into electric current. Planté's well-known secondary battery, formed of sheets of lead immersed in acidulated water, has hitherto been the most efficient instrument of the kind. Recently, however, M. Faure, by coating the electrodes with layers of red lead, has greatly added to the capacity of Planté's battery. It was a battery of this description weighing 75 lb., and enclosed in a box measuring not more than a cubic foot, which was recently brought from Paris to Sir Wm. Thomson's laboratory in Glasgow, and which was said to have stored in it a million foot-pounds of energy. This "marvellous box of electricity" has been subjected during the last three weeks to a variety of tests, the result of which has convinced Sir Wm. Thomson of the great practical value of Faure's battery as a means of storing electric energy. The weak point in the electric light as at present used undoubtedly lies in its flickering, and in its occasional temporary extinction, due to fluctuations in the current—the result of such apparently unavoidable causes as slight variation in the speed of the engine. A remedy for this evil is probably to be found in the use of secondary batteries, which would, as Sir W. Thomson points out, do for the electric current what a cistern does for the domestic supply of water. That Faure's batteries may even prove sufficient for the supply of electric energy to dwelling-houses where they may be left charged, and removed when exhausted, is possible. One of these, weighing about 200 lb., can, it is said, store electricity sufficient to perform one horse power of work for an hour, while the production, storage, and delivery to a distance of not more than three miles of this amount of energy will, it is calculated, cost only three halfpence. If this be correct, the electric light might thus be supplied for domestic purposes at a less cost than gas. A French company has accordingly been formed to supply all and sundry with stored electricity, which they can transform for use either into light, heat, or motor power.

Light is the transformation which has hitherto received the chief attention, with the result that in certain situations electric lighting, by reason of its superior efficiency and economy, is gradually superseding all other forms of illumination. It is now used in a large number of lighthouses, in many of the principal railway stations, dockyards, and piers, in picture galleries, in the British and South Kensington Museums, in many of our large factories, and in all our ironclads. It has recently been introduced into the Sorting-Room at the General Post Office, where sixteen Brush lights have superseded 400 gas jets, and nowhere has the advantage of the change been more conspicuous. Under gas-light the temperature of the room, in which over 400 persons are employed, was not less than 87 deg. Fahr., while the vitiation of the atmosphere was correspondingly great. Now there is practically continued daylight, while the temperature has been reduced by 20 deg., to the manifest benefit of the employees' health. A similar improvement has followed the introduction of the electric light into the Glasgow Post Office. There

are those who believe that at no distant date powerful currents of electricity will be generated by enormous engines from a few central stations, and that these will be conveyed by wires through our streets, and tapped into every house. No perceptible advance, however, in the direction of sub-dividing the electric light so as to enable it to compete successfully with gas for domestic illumination can be chronicled; indeed, there are experienced electricians, as Mr. Preece, who regard such sub-division as altogether chimerical.

The electric current may also be utilised as heat, and of late considerable attention has been paid to its application in this direction. Professor Perry, at a recent lecture, exhibited an electric fire; passing a current of electricity through a number of little bits of carbon, bright spots of light were seen stealing from point to point; these then fixed themselves in definite points, and around them the carbons got red-hot, so that in about two minutes "the most perfect form of fire for heating a room or boiling a kettle" was to be seen in operation. It is also announced that at the forthcoming Paris Electrical Exhibition cooking by electricity will prove a special feature. Dr. Siemens, in a recent lecture at Glasgow, showed how electricity might be made available as a heating agent in metallurgical operations. Making use of a plumbago crucible, surrounded by a metallic jacket, and with the intervening space filled with a non-conducting substance, he is able, by means of a current of electricity strong enough to afford a light of 12,000 candles, to raise the crucible—8 inches in depth—to a white heat in fifteen minutes, and in fifteen minutes more to fuse four pounds of steel, succeeding fusions being effected in still less time. It is yet to be seen whether an electric furnace can be worked cheaply enough to make its use on a large scale practicable; there is no doubt, however, that in the laboratory of the chemist and metallurgist, when intense heat, combined with immunity from disturbing chemical influences, is frequently required, the electric furnace will prove a valuable instrument of research.

The electric current can still further be transformed into motor power, and in no direction does it promise more useful results. If the current generated in one dynamo machine be pressed into another, the armature of the latter will be made to rotate, when its motion may be communicated in the usual way to other machinery. As the two dynamo machines need not be together, an important means has thus been obtained for the transmission of power to a distance. The wasted energy of waterfalls, of streams, and even of the tides may thus be utilised, by being transformed, through the action of a dynamo machine, into electricity, and the current conveyed by wire for miles, to be used at the far end as light or motor power. This is what is now actually being done in many instances. Sir Wm. Armstrong has the energy of a waterfall situated three-fourths of a mile from his house brought thither by wire, when during daylight it is employed in working a saw-bench, and at night is converted into light by means of "Swan" lamps. The possibilities of electricity, however, as a motor power are best seen on the electric railway near Berlin, which has been in successful operation since May 12. It is  $1\frac{1}{2}$  mile in length, the permanent way exactly resembling an ordinary railway. The carriages, which look like ordinary tramcars, are seated for twenty persons, and were at first only allowed to go at the rate of ten miles an hour; greater

peed, however, is now permitted, sometimes as much as twenty-five miles an hour being made, and so satisfactorily has it worked that it has now been decided to extend the line as far as Potsdam. The only accidents that have occurred have been with horses at the crossings, those animals occasionally contriving to get one foot on each of the rails, and thus bringing upon themselves a sharp electric shock. The difficulty is now being obviated by a special arrangement at the crossings. The source of power in the Berlin electric railway is, a large stationary steam engine, which drives a dynamo machine, the current from which is conveyed by cable between the rails to a second dynamo machine placed underneath the carriage, the motion thus given to it being communicated by steel springs to the carriage wheels. In the transmission of power electrically, there is, unfortunately, a large amount of loss, so much so that of the power expended upon the primary dynamo machine—the electric generator—less than half is obtained from the secondary machine in the form of motor power. By the use of large stationary engines, however, there is great economy of fuel, as compared with small engines, and Mr. A. Siemens states in a recent paper that, in spite of waste through transmission, one horse power can be got from the secondary dynamo machine for every five pounds of coal consumed—an expenditure of fuel not greater than is usual for the production of the same amount of power in small engines. Of still less importance is this consideration when the initial energy is obtained by the utilisation of the Niagaras and other waste forces of nature. That electricity should ever supersede steam on our railroads is in the highest degree unlikely; there are certain situations, however, such as underground railways, mountain tunnels, and crowded streets, the exceptional circumstances of which might be best met by such an exceptional means of locomotion, and experiments are at present being made with a view to running trains by electricity through the St. Gothard tunnel. Electricity has also lately been applied in Paris to the driving of velocipedes, M. Trouve having recently had a tricycle driven by a current stored in one of Planté's secondary batteries. It attained the speed of an ordinary cab; but M. Trouve is at present constructing a motor for velocipedes by which he hopes to attain a speed of 12 to 15 miles an hour. The same electrician is now well known as the inventor of certain electro-surgical instruments—the electric probe and polyscope. The latter is an instrument employed for illuminating the inaccessible cavities of the body by means of an incandescent spiral of platinum, and its efficacy was lately demonstrated at a physiological lecture in Paris, the interior of a fish swimming in a glass tank having been lit up by inserting a polyscope in its stomach.—From the "Scotsman."

#### LIBRARY WORK OF THE UNITED STATES NATIONAL BUREAU OF EDUCATION.

In his report of 1878 the Commissioner of Education refers briefly to the pressing needs of the library of his office. In view of the general interest now manifested in all library work, and the endeavour to bring libraries into active co-operation with public-school administration, this division of the bureau deserves more than passing notice on the part of the educators of the country.

No more interesting or important matter is now in progress in the office than that of arranging and classifying the library, comprising already, according to General Eaton's estimate, "10,000 books and 25,000 pamphlets (besides many duplicates)," which numbers are being daily augmented. Seven rooms are occupied by the collection. The first contains encyclopedias, books of reference, and the general literature of education; the second, periodicals; the third, State, city, and county reports; the fourth, pamphlets, reports, viz., reports of universities, colleges, special schools and societies, all filed in uniform cases, to each of which is affixed an index-card; the fifth and sixth rooms are assigned to the foreign collection; the seventh is a small room for text-books.

As the books now stand upon the shelves they present a scientific classification, which was the first step toward making the library practically available for the student of pedagogics; the arrangement also indicates very plainly the direction in which the library abounds, and that in which it is in want. In reports, the collection is believed to be the most complete of any in the world, a circumstance which is partially owing to the fact that the United States is emphatically the country of reports; and, further, to the persistent efforts made to obtain the reports of foreign systems and institutions. Complete sets of reports of the London School Board, of the Japanese Board, and of the French official reports, have already been secured, and partial sets from Italy, Switzerland, Holland, Belgium, and Canada. Institutions and societies in the countries named have also presented valuable material. There is still marked deficiency in the reports of Austria and the German States of the great German Universities: the University of Bonn is the only one satisfactorily represented. Much is still required to make the collection of periodicals complete, but the chief want of the library is in the general literature of education, many important treatises and standard works being absent from its shelves. It is well supplied with encyclopedias and current educational journals, receiving regularly forty-two American and thirty foreign publications of this class.

As an illustration of the care with which the work preliminary to cataloguing has been prosecuted, we note the quarto circular of inquiry with reference to school journals, comprising a "list of volumes and parts of volumes of educational periodicals wanted to complete files." The list is arranged by States, and presents, in tabular form, the name of the periodical and of the editor or publisher, if known, the place of publication, volume and parts of volume wanted, and a column for remarks, which is used either for inquiry or statement. Thus, what was intended as a means of obtaining information has developed into a systematised representation of the chronological history of the journals named, which by a slight extension could be made to include all publications of the class, forming a table of reference, simple, convenient, and complete.

The catalogue is now in process of preparation, a work against which *finis* can never be written, as the collection of material must ever increase. The card system is employed, and, while in details the principles and rules well known to library experts are observed, the plan is necessarily original, as there is no existing analytical classified catalogue of pedagogical literature. If facilities are afforded for continuing the work in the spirit in which the office has

commenced it, the catalogue may serve both as precedent and model; a possibility which is not presumptuous to contemplate in view of the frequent reference made to our National Bureau by foreign officials. Thus when Mr. Bardoux introduced in the French Chambers the project to establish a central bureau of education at Paris, he said, "In my *exposé* accompanying the budget for 1878. I expressed my regret that France does not possess anything analogous to the National Bureau of Education at Washington. Gentlemen, it is just such a bureau that I now desire to establish, and for which I solicit a favorable vote of the French Assembly." The Bill submitted by Mr. Bardoux passed the Chambers, and in the organisation of the bureau at Paris the great importance of its library interests has been fully recognised.

Of all places a library is that in which no man can afford to be self-dependent; fortunately both the English and foreign divisions of the library of our National Bureau of Education are in charge of men whose comprehensive and intimate knowledge of books and the history, methods, and literature of education, enables them to direct the search of the inquirer with the least possible waste of time and thought. The catalogue can never be a substitute for this personal assistance; how much it is needed as an auxiliary will be realised when it is considered that the bureau is charged with the duty of collecting and diffusing information, and that the demands for such information by direct correspondence on the part of teachers and educators necessitates as much work as the preparation of the current reports of the office.—*Boston National Journal of Education.*

#### A COLOSSAL DICTIONARY ENTERPRISE.

WE (*Birmingham Weekly Post*) called attention some months ago to the Great English Dictionary which is now being undertaken by the Philological Society, under the able editorship of Dr. Murray. Some of our readers will be glad to learn what progress has been made, and we therefore give a few notes from the recently-published annual address of the President, Dr. J. A. Murray, delivered to the Philological Society last May. "You remember," he says, "that the arrangements had been finally concluded on the 1st March, 1878, that three years from that day were to be devoted to completing and arranging the materials, after which the delivery of copy to the printer should begin, to be continued at such a rate as to aim at the completion of the whole in the ensuing ten years." It is satisfactory to add that good progress had been made, and that the anticipations formed have in most respects been more than realised. It will be remembered that the aim of the work is to give not only the derivation and meaning of every word in the English language, but also the history of it, illustrated by quotations from the whole range of English written speech, exhibiting the use of each word in each distinctive sense, showing the earliest, and, in the case of obsolete words, the latest use of each. During the past year the number of readers has risen to 754, some of whom have read for the work as many as twelve books. Altogether 1,568 have been undertaken, of which 924 have been finished; and many others are in a forward state. As many as 625,035 printed slips have been issued, and of

these 361,670 quotations have been returned. Among those who have contributed the largest number of quotations are Mr. Thomas Austin, junior, who has furnished 11,000 slips; and Dr. Bushfield, of Working, who has supplied 10,350 slips. We notice one local contributor, Miss Foxall, of Edgbaston, who has sent in 4,500. Dr. Murray notes with satisfaction the interest taken in the work in the United States. "I do not hesitate to say," he remarks, "that I find in Americans an ideal love for the English language as a glorious heritage, and a pride in being intimate with its grand memories, such as one does find sometimes in a classical scholar in regard to Greek, but which is rare indeed in Englishmen towards their own tongue; and from this I draw the most certain inferences as to the lead which Americans must, at no distant date, take in English scholarship." He alludes with special warmth to the pains which Dr. March, of Lafayette College, Easton, Pa., has taken in recommending the work to the attention of his countrymen. Several Americans have offered their services as sub-editors, "but," writes Dr. Murray, "considering the perils of two voyages across the Atlantic and the calamity of a loss which no insurance could cover, I have not felt at liberty to accept their help in this department."

Several gentlemen, who had stores of original material, the laborious collection of years of research, have handed them over to the Dictionary. Dr. Murray gives some interesting and amusing illustrations of the way in which dictionaries and encyclopedias copy from one another, handing down errors through generations. Thus, a misprint in an edition of Bacon led Johnson to give the word *Adventine*, which has been, with guileless innocence, copied into nearly all more recent dictionaries. "We shall introduce errors of our own, no doubt," says the learned editor; "in hundreds of thousands of references there must be some incorrect, but they will be our own errors, and not a perpetuation of those of others."

About 160 pages of the first part have been accomplished, and Dr. Murray hoped at the time of delivering his address that he would reach the end of it during the year. We do not know how far this hope has been realised, but we sincerely trust that it was not a too sanguine estimate, for the work is one of something more than national importance. It affects the English-speaking portion of the globe—England, the United States, Canada, the West Indies, large portions of South America, and of South Africa, Australia, Tasmania, New Zealand, India, and other regions where English has become, or is rapidly becoming, the medium of intercourse between different nationalities. The high ability and the untiring energy of the editor, on whom the general superintendence has devolved, give us assurance that it will be carried to its completion with no needless delay, and with something approximating as nearly as is possible in mundane affairs to perfection.—*Educational Chronicle.*

#### COLOUR-BLINDNESS.

THE subject of Colour-Blindness has recently attracted a very considerable degree of attention, particularly in Sweden and America, where it has been most carefully investigated by Professor Frithiof Holmgren, of the University of Upsala, and Dr. Joy Jeffries, of

Harvard University. The existence of persons who could not distinguish one colour from another, or at most do so very imperfectly, has been long known; but the subject did not attract much attention amongst scientific observers until the illustrious *savant* John Dalton, the founder of modern chemical philosophy, discovered his own defect, when he found that other observers who were not colour-blind did not agree with him in regarding red sealing wax as a correct match for the front of a laurel leaf, nor red wafers of a slightly different shade as precisely corresponding in tint with the back of the same leaf. The subject then began to be studied, and the defect received the name of Daltonism, which it still retains in France. The observations made upon it elicited numerous striking examples, many of which were ludicrous in the extreme. One well-known English *savant* is reported to have had a somewhat serious misunderstanding with a lady, because he persisted in handing her balls of green worsted to continue some scarlet work on which she was engaged. Another gentleman regarded cucumbers and boiled lobsters as identical in colour, and thought a leek in full luxuriance of growth was more like a stick of red sealing wax than anything else with which he could compare it. The most amusing instance of this defect, however, occurred in John Dalton himself. The degree of Doctor of Civil Law was conferred on him at Oxford, in recognition of his high scientific attainments. The robe which is worn by any one holding that honour is, unfortunately, scarlet—a colour highly objectionable to the Society of Friends, to which Dalton belonged; in fact, scarlet, from its military associations no less than its brilliancy, may be regarded as being strictly forbidden to Quakers. The difficulty was extreme. It was known that Dalton could not take part in the ceremonies of the University without wearing his robe, and it was equally well-known that his convictions would forbid him to wear it. Fortunately, it was remembered that he was afflicted with colour-blindness—that cherries and cherry leaves were the same to him in colour, differing only in form. The scarlet robe was provided, and this most modest and simple minded of men wore the scarlet gown day after day in Oxford, utterly unconscious of the colour, or of the innocent deceit of which he had been made the victim.

The cases we have mentioned are extreme, but in many persons colour-blindness exists in a greater or less degree, varying also in the colours which are not perceived. The most intense is the red-blindness, of which Dalton's was a very complete example. Other persons are green-blind, and a third set violet-blind.

Like all scientific-researches which have no immediate practical application, the investigation of colour-blindness has been scoffed at by the vulgar as being merely learned trifling; but the extension of scientific knowledge is always capable of being turned to the advantage of mankind. It is now known that colour-blindness, which prevents railway drivers and signalmen, as well as pilots and sailors, from distinguishing between differently coloured lights, flags, and other signals, is in these persons a serious defect—one which is fraught with danger to the community, and which has, in fact, caused very severe and disastrous accidents, amongst others the fatal collision that occurred at Ardsley Junction, on the Great Northern Railway.

It is therefore, of the utmost importance that its existence should be ascertained by some simple means; for if it is, strange to say, very

frequently unknown to the persons themselves. Practically, the best method of detecting it is by the employment of differently coloured skeins of Berlin wool. These should be of very numerous and varying shades of green, blue, purple, red, drab, brown, and yellow. To detect the colour-blind, three test skeins are taken; these are respectively scarlet, pale green, and pale violet purple. No names are to be given to any of the colours, either those used for testing or the numerous shades composing the bulk of the skeins; but, the test skeins being laid down one after another, the person whose vision is under examination is requested to match them from the heap. The most singular mistakes are made, varying as the examinee is afflicted with one kind of colour-blindness or the other.

The result of the extended examinations that have been made are singular. In England upwards of 18,000 persons have been examined by the members of the Ophthalmological Society and their friends. Amongst the metropolitan police and persons of the same rank of life, it is found that nearly four out of every hundred are completely colour-blind—a very inconvenient state of things in a police officer, who has to swear to the identity of a person who is to be distinguished only by the colour of his or her clothes. In the better-trained classes—as medical students, sons of medical men, and Eton boys—colour-blindness only prevails to the extent of two and a half instead of four per cent. Amongst Quakers nearly five persons in every hundred are colour-blind, and amongst Jews a still higher proportion, the prevalence of the defect being attributed to the evil of close intermarriage between blood relations. One singular fact remains, which it is perhaps difficult to account for: amongst females the proportion of colour-blind is only one-tenth as numerous as amongst males. Is it that the eyes of women are more exercised upon colours, and that the eye is educated up to its proper use? The answer is uncertain, but the fact is undoubted.

\* Still the defect does exist in some women, and the remarkable peculiarities of dress that are occasionally met with may be charitably attributed to the colour-blindness of the lady making herself prominent by the incongruity of the hues of her garment. Another fact still remains: this defect is hereditary, and there can be no doubt that many of the worst cases are inherited from defective parents, the tendency to reproduce the evil being intensified by the intermarriage of relatives.

It is not improbable, from recent researches of Sir John Lubbock, that some of the lower animals see colours that we have no knowledge of, and that all mankind are colour-blind to colours that the ants know and appreciate, in the same way as we are unable to hear exceedingly high notes that are perfectly appreciated by many animals, or to perceive odours that are patent to them. We fondly imagine that we are superior in all points to the lower animals; but, be that as it may, there is not one perceptive faculty in which we are not surpassed by them.—*The Queen.*

## AMERICAN PUBLIC INTEREST IN EDUCATION.

ONE great weakness in the educational system of America, particularly of New England, is the almost total lack of general intelligent interest in the work of the schools. In Germany, which confessedly leads the world in the effectiveness of her common-school system, the business men, professional and official men, all acquaint themselves with all the details of the educational system. To be ignorant of the school system of the city in which one lives is to be behind the age. Here it is quite the reverse. A man must know of political movements, of business tendencies and ventures, of railroad projects, of the fastest trotting—time, of the best oarsmen and batsmen, of the latest casualty and murder; but it is never for a moment to be supposed that he knows aught of the educational tendencies. The daily papers have editorials upon every shade of politics; of every new railroad, insurance, or financial scheme; of every trifling event in England, Ireland, or Turkey; of every unimportant demonstration and religious movement; but rarely does the average daily hint editorially at the great school interest, and its local reference is usually confined to the announcement that some faithful teacher has chastised a rebellious boy. No other department of public life has such just cause to interest the public as the schools. About one-third of the public money raised by taxation, for the current expenses of the cities and towns, is applied to the schools; nearly every household is, for a period ranging from ten to thirty years, interlinked in its daily association with the school; every man and woman in the community received the foundation of his capital of intellectual culture in the public schools; the very root idea of the permanency of the American government is in the public schools. Why, then, should not our business men, our professional men—our homes know what is going on in the educational world—give some time and thought to the drift of things in the public schools? The teachers' journals discuss all these questions, but their articles are written and read almost wholly by teachers, and however valuable the work, it does not tend to arouse the public thought as it should be aroused upon this question. But there is, of late, a manifest awakening, and we think the time is at hand when the average business man will feel called upon to read of these subjects understandingly, giving to the most vital phase of our life his best thoughts.—*Boston Traveller*.

## LONDON UNIVERSITY TEACHERS' DIPLOMA.

THE Committee of the Senate of the University of London, appointed to consider the propriety of instituting an examination of teachers in the art and science of education, has recommended the Senate to hold an annual examination in the art, theory, and history of education, and that a special certificate, to be called the "Teacher's Diploma," be awarded to the successful candidates. No candidate is to be admitted to the examination who shall not have previously fulfilled one of three conditions:—(1) Graduated in the University of London; (2) passed the first examination for the degree of Bachelor of Arts or Bachelor of Science; (3) passed in Honours at

the Matriculation Examination. The examination will be a written one, with, in addition, a practical test in teaching ability. The subjects of examination are as follow:—First, questions in Mental and Moral science regarded in relation to the work of Teaching. This department will be sub-divided into such subjects as Observation, Training of the Senses, Association, Memory, Reasoning, Imagination, the Will and how to train it, Habit and Character, Authority and Discipline, Rewards and Punishments, and the Conduct of the Understanding. The second department will be the Methods of Teaching and School Management; the third will be the History of Education, the Lives and Work of Eminent Teachers, and the Systems of Instruction adopted in foreign countries. The proposed scheme is open to criticism, and may be regarded as but tentative. The great fact remains that it is proposed to establish means by which a teacher may obtain a diploma from a thoroughly competent body, independent of the Education Department. Following the action taken by the University of Cambridge, the scheme, if adopted by the Senate, will do much to raise, in our secondary and higher grade schools, teaching to the dignity of a profession, and may prepare the way for relieving the Department of the uncongenial task of issuing and revising the certificates of elementary teachers.—*The Schoolmaster*.

## FINSBURY TECHNICAL COLLEGE.

ON Tuesday 10th May Prince Leopold laid the foundation-stone of the new College for the Advancement of Technical Education that has been recently established by the City and Guilds of London in Cowper-street, City-road. The building, which is estimated to cost about £25,000, will include ample accommodation for instruction in the application of Physics, Chemistry, and Mechanics to various industries.

The Prince was received by the Lord Chancellor (the Chairman of the Council of the City and Guilds of London Institute), the Lord Mayor, the Sheriffs, and the other members of the Council.

The Lord Chancellor, addressing the Prince, said—I am deputed by the Council of the City and Guilds of London Institute to bid your Royal Highness welcome on this occasion, and to thank you for the gracious interest which you have been so good as to take in their work, and for the proof of it that you give by coming here to-day to inaugurate a not unimportant portion of it. On the Continent efforts have been made, and are making, with great success to provide and improve technical education for the industrious classes. It is so in Switzerland, where, in a poor country like Zurich, for twenty years past a great institution has been established at a very large expense, and is maintained at a large expense, from year to year, with signal success. It is so in many parts of Germany. There is one place in Saxony (Chemnitz) where the organisation is so perfect, and its success so great, that it is intended by our institute to publish an account of it, compiled by a native of Nottingham, for the general instruction of our artisans. The one thing which hitherto our people have wanted to keep abreast or ahead of other nations has been this opportunity of scientific training. The

City and Guilds of London Institute was formed a few years ago by the munificence and liberality of a considerable number of the companies of London, with the view of supplying that want. Through the liberal co-operation of the Royal Commissioners of the Exhibition of 1851 a valuable site has been given at South Kensington, or let at a nominal rent to the Institute for the purpose of erecting upon it a central institution. The object of that central institute is to give the highest kinds of instruction necessary to cultivate persons to become teachers of the industrial arts and their principles all over the country. The necessity for such teachers is only too well understood, and most persons present, I think, can appreciate the advantages for such a purpose of a site in the immediate proximity of the great works of art and of the natural objects which are already, and will be, collected in the neighbouring museum. The work in which we are now engaged is intended especially for the immediate benefit of artisans. It is to give them systematic instruction in the principles of their arts and trades, to make them understand the methods by which they have to work, the nature of the materials they will have to use, and the laws which govern them. This Finsbury College is not meant to give them their trade, or to interfere with the necessary training of the factory and the workshop; but it is meant to give them that knowledge which will enable them to receive that training in the most intelligent and most effectual manner. Perhaps I ought to say a word as to the building of which you are asked to lay the first stone. Twenty thousand pounds has been munificently contributed to meet its expense. It is to contain thirty-two rooms, with a large laboratory, two lecture theatres, suitable class room and rooms for drawing, workshops, and engine-room; and altogether there will be in it ample accommodation for the full development of the work which is to be done. I cannot but think, Sir, that in giving your royal sanction to this work you are helping us to fill a void in the existing educational systems and establishments of the country, and at the same time establishing an advanced post for our industrial and commercial success.

Prince Leopold said—I have the pleasure of laying the foundation-stone of the first Technical College ever erected in London. The report of the City and Guilds of London Institute for the Advancement of Technical Education will inform those interested in this most important undertaking of the magnitude of the work, and the energy and perseverance with which it has hitherto been pursued under some adverse circumstances. The object which the institution has proposed to itself is a truly national and patriotic one. It has proclaimed its determination to enter into a generous rivalry with other countries in those branches of trade and commerce in which one must confess that our native industries have, of late years, not taken the position which we, as Englishmen, would wish them to occupy. The old apprenticeship system, whatever its merits may be, and whatever good work it may have done in the past, is not equal to the exigencies of the present age, and we are beginning to realise that a thorough and liberal system of Technical Education must be placed within the reach of the British artisan, in order to enable him to hold his own against foreign competition, and when this is done, I believe, as I have said on a former occasion, that we need fear no rivalry in the world.

Mr. F. J. Bramwell, F.R.S., Chairman of the City and Guilds of London Institute, having given additional information in regard to the origin and action of that valuable body, proposed a vote of thanks to Prince Leopold.

Mr. Mundella, M.P., seconded the resolution.

The vote having been carried by acclamation,

Prince Leopold, in response, said—I gratefully recognise the cordial reception of the vote of thanks which has been accorded to me, and which ought, I think, to include the Lord Chancellor, who, amid his many duties, has come down here to-day to lend us his valuable aid, and also the other gentlemen who have spoken here. I should not like to go away without offering my most cordial congratulations to those City Livery Companies who have given such timely and generous assistance towards establishing this College. Foremost amongst them are the Drapers', the Clothworkers', and the Goldsmiths' Companies. Indeed, I think it is mainly owing to the splendid donation of the former Company that the Institute has been able to undertake the erection upon this site of so complete an edifice. I have no doubt that other Companies will follow in their footsteps, and, reverting, as it were, to their original traditions, contribute to the establishment of colleges similar to this one, and to the development of the excellent scheme already elaborated by the City and Guilds of London Institute.

The Company then separated.—The Schoolmaster.

### CALCUTTA UNIVERSITY EXAMINATION PAPERS.

#### Entrance Examination—1880.

#### ENGLISH LANGUAGE.

(November 29). Morning.

(Candidates are recommended to pay particular attention to neat writing and correct expression.)

N.B.—The figures in the margin indicate full marks.

1. What do you understand by the title "Lamb's Tales from Shakespeare?" 2.
2. What places are the scenes of the following pieces? 5.  
"The Winter's Tale," "Macbeth," "King Lear," "Romeo and Juliet," "Othello?" What indications of the date of the story, and of prevailing religious beliefs do you find in any of them?
3. Explain the following passages: 9.  
(a.) Choice beauties of Verona who would make him think his swan a crow.  
(b.) Under favour of his making habit, he presumed to take her by the hand.  
(c.) It lifted up its head and addressed itself to motion as if it were about to speak.  
(d.) He was unable to sit out the rest of the play.

- (e.) He would take the ghost's word for a thousand pounds.  
 (f.) Sea Nymphs hourly ring his knell.  
 (g.) He outwent the very heart of kindness, and poured out his bounty as if Plutus ..... had been but his steward.  
 (h.) The poor fool ..... with his merry conceits, strove to outjest misfortune.  
 (i.) Regan was made of the same hollow metal as her sister.  
 (j.) He had often interposed his mediation to make up the quarrel without effect.  
 (k.) A play represented to the life.  
 (l.) If I can catch him on the hip, I will feed *fat* the ancient grudge I bear him.

4. Give a brief account of the following characters : Puck, 5.  
 Hermione, Iago, Petruchio.

5. (a.) Change the following into the indirect form : 6.

He said to her "Give me your hand, Kate. I will go to Venice to buy you fine apparel against our wedding day. Provide the feast, father, and bid the wedding guests. I will be sure to bring rings, fine array, and rich clothes, that my Katharine may be fine : and kiss me, Kate, for we will be married on Sunday."

(b.) Change the following into the direct form :

"The duke pitying the unfortunate father, said, if it were not against the laws, which his oath and dignity did not permit him to alter, he would freely pardon him : yet instead of dooming him to instant death, as the strict letter of the law required, he would give him that day to try if he could beg or borrow the money to pay the fine."

6. In place of the expressions in italics in the following passage, insert other expressions having the same meaning. Underline in your paper the exact words you insert :

"When Lucetta offered the letter to Julia, she *would not receive it, and chid her maid for taking letters from Proteus, and ordered her to leave the room. But she so much wished to see what was written in the letter, that she soon called in her maid again, and when Lucetta returned, she said, 'What o'clock is it?'*" ..... Julia angry that her maid should thus *take the liberty of seeming to know what she really wanted, tore the letter in pieces, and threw it on the floor ordering her maid once more out of the room.*"

7. Analyse the following sentences :

(a.) "Hamlet being come to his mother, she began to *tax him in the roundest way with his actions and behaviour* and she told him that he had given great offence to his father, meaning the king, his uncle, whom, because he had married her, she called Hamlet's father."

(b.) "Full fathom five thy father lies :

Of his bones are corals made :

Those are pearls that were his eyes :

Nothing of him that doth fade, "

But doth suffer a sea change

Into something rich and strange."

8. Give briefly in your own words the story of "The Merchant of Venice." 6.

9. Parse the following words in question 7 : *full, but*. Also 3.  
 the following in question 3 : *about, rest, sister, fat*.

10. Distinguish between : 4.  
 Timid and Cowardly, Distract and Abstract, Unfortunate and Unhappy, Meaningless and Senseless, Strange and Unexpected, Pull and Pluck.

First Examination in Arts-1880.

PSYCHOLOGY. (Optional.)

[Dec. 3.] Morning.

N.B.—The figures in the margin indicate full marks.

[N.B.—Candidates may answer either of the following series of questions.]

Reid's Inquiry.

1. Explain briefly, but distinctly, the general aim of Reid's Inquiry, noticing the function he assigns to common sense. 5.
2. Descartes found something *certain* in thought. Explain this, and refer to any misconceptions of Reid on the point. 5.
3. State clearly the Idealism in Perception of Locke, Berkeley, and Hume, shewing that each view follows inevitably from the preceding. Reid charges these philosophers with an "error personæ." Explain this. 6.
4. Distinguish between sensation and perception, and between the primary and secondary qualities of body. How are the latter related to the former? 6.
5. Explain and illustrate natural and artificial signs. How does Reid make use of these in his doctrine of perception? 5.
6. Analyse Reid's perception by touch. Does he succeed in establishing a doctrine of immediate perception? Give reason. 6.
7. How, according to Reid, is extension perceived? How, in their relation to the real qualities, do the visible appearances of figure and colour differ? Add your own remarks. 6.
8. State Reid's theory regarding our seeing objects erect by inverted images. How does this view differ from Berkeley's? 5.
9. Take memory and imagination, and examine Reid's account of the knowledge and belief involved in these. 6.

Abercrombie's Intellectual Powers.

1. How does Abercrombie meet the argument that the mind is a function of the Brain? On what does he base the belief of the soul's immortality? 5.
2. Explain the process by which, according to Abercrombie, we acquire a knowledge of external things. Can there be any knowledge without attention? 6.
3. Distinguish between the primary and secondary qualities of body. In foggy air objects seem to be further away than they really are. Explain this. 5.

4. What elements are involved in probability? What is credible testimony? How does Abercrombie distinguish between a marvellous event and a miracle? 6.
5. Explain, according to Abercrombie, recollection, conception, reverie, and voluntary suggestion. 5.
6. State clearly the nature of the dispute between nominalism and realism. What is conceptualism? 5.
7. Explain the nature of first truths, and enumerate the chief of them. How does Abercrombie interpret what is called necessity in moral phenomena? 6.
8. Define reason, and explain what constitutes truth, in collecting facts, in tracing causation and in generalisation. What is inventive genius? 6.
9. Note the points of resemblance and of difference between the phenomena of imagination, dreaming, and insanity. The poet does not believe in the actual existence of his own creations. Wherefore? 6.

First Examination in Arts—1880.

LOGIC.

(Dec. 3.) Afternoon.

N.B.—The figures in the margin indicate full marks.

1. Are logic and deductive logic identical? Of what kind of reasoning does the latter treat? Is there any other kind of reasoning, and what is it? What is the use of studying logic? 5.
2. State Fowler's classification of terms, according to the principle of denotation and connotation. Wherein does it differ from that of J. S. Mill and the Schoolmen respectively? Which of the three is the most satisfactory? What kind of terms can be called concrete, and why? 8.
3. Point out and prove by examples the great importance of the syllogistic rules regarding the distribution of terms. 6.
4. What is an "unquantified" proposition? Is it possible to know the distribution of a term in such a proposition? State fully your reasons. 5.
5. Explain the difference between difference, property, and accident, and determine the predicables in the following sentence: "Butler maintains, that prudence is a species of virtue." 6.
7. Given two propositions *E* and *I* to be used as premisses of a syllogism,—enumerate and prove the moods in the four figures that will be legitimate. Mention the mnemonic names of those legitimate moods. 8.
7. Explain the principles of probable reasoning. 6.
8. Examine the following arguments, stating them in logical form (where necessary), assigning their mood and figure, and determining their validity or fallacy: 6.
- (a.) "This native of India is likely to be a Hindu, for most natives of India are Hindus."

- (b.) I cannot believe what you tell me now, for not long ago you gave me a very different account.
- (c.) No one can know the future; for no one can foresee what may happen to-morrow.
- (d.) It is foolish to tell a lie; for honesty is the best policy.

UNIVERSITY OF MADRAS.

Matriculation Examination—1880.

Thursday, 16th December, 10 A.M. to 1 P.M.

Examiner—A. Monro, M.A., B.C.L.

LATIN: GRAMMAR.

- I. Translate, parsing the words in italics.
- (1). *Frumenti* quod inventum est, in publicum conferunt.
- (2). Nemo erat adeo tardus aut fugiens laboris quin statim castris, exeuundum atque occurrendum putaret.
- (3). Præsertim cum non minus esset imperatoris, consilio superare quam gladio.
- (4). Ne quid tuis noceatur, neu quis iuuitus sacramentum dicere cogatur, a Cæsare cavetur.
- (5). Inque meos si non lacrymam demittere posses, Paucæ tamen ficto verba dolore queri?
- (6). At simul intonuit; fugiunt: nec noscitur ulli, Agminibus comitum qui modo cinctus erat.
- (7). Pro Superi, viridesque Dei, quibus aquora curæ!
- II. Translate into Latin.
- (1). Ægina is about twelve miles from Attica.
- (2). He gave a thousand soldiers, seven denarii a piece.
- (3). He died on the 29th of December in the 60th year of his age.
- III. (A) Change into oratio recta.
- Non esse aut ipsis, aut militibus succensendum, quod fidem erga imperatorem suum conservare voluerint, sed satis jam fecisse officio satisque supplicii tulisse. Perpeccos omnium rerum inopiam: nunc vero pæne ut feras circummunitos prohiberi aequi, prohiberi ingressu neque corpore dolorem neque animo ignominiam ferre possent.
- (B) Change into oratio obliqua.
- Ringite me dignum tali nece: non ego solus Hic vehor, immeritos cur mea poena trahit?
- IV. Give the rules for the comparison of adverbs in Latin with examples.
- V. What cases are governed by gratular, supersum, abutor, fretus, tenus, ergo, similis, plenus. Give examples.
- VI. Translate into Latin.
- (1). Who is he? Ask him who he is.
- (2). He came to see, if his father was safe.
- (3). Why was the messenger not believed, when he announced that the king was captured?

- (4). He promised to return to Corinth, as soon as he had accomplished his purpose.  
 (5). He said that he would have come, had he been able.  
 (6). He is unworthy of being called a general.  
 VII. Give (A) the comparatives and superlatives of *magnopere*, *infra*, *providus*, *sequeus*, *novus*, *utilis*.  
 (B) the genders of *crus*, *facinus*, *quercus*, *nix*, *pelagus*, *formido*.  
 VIII. Explain and illustrate by examples the use of the supines in *um* and *u*.  
 IX. (A) Give the principal parts of *pessundo*, *pario*, *fulcio*, *tero*, *mico*, *metior*.  
 (B) Decline *celeber*, *jecur*, *grus*, *fur*, *cratur*, *alius*.  
 X. Describe the state of parties in Italy at the time of the outbreak of the civil war in B.C. 49.  
 XI. *Inspice* die titulum. *Non sum præceptor amoris*;  
*Quas meruit, pœnas jam dedit illud opus.*  
 Explain the allusion in this passage.

Thursday, 16th December, 2 to 5 P.M.

Examiner.—A. Monro, M.A., B.C.L.

#### LATIN TRANSLATION.

##### I. Translate into English.

(1) *Ad ea Caesar respondit* : Nulli omnium has partes vel querimoniae vel miserationis minus convenisse. Reliquos enim omnes officium suum præstitisse : se, qui etiam bona conditione et loco et tempore aequo configere noluerit, ut quam integerrima essent ad pacem omnia; exercitum suum, qui injuria etiam accepta suisque interfectis, quos in sua potestate habuerit, consorvarit et texerit; illius denique exercitus milites, qui per se de concilianda pace egerint; qua in re omnium suorum vitae consulendum putarint. Sic omnium ordinum partes in misericordia constituisse : ipsos duces a pace abhorruisse; eos neque colloqui neque induciarum jura servasse et homines imperitos et per colloquium deceptos, crudelissime interfecisse.

(2) Quibus rebus cognitis Caesar etsi magni interesse arbitrabatur quam primum oppido potiri cohortesque ad se in castra transducere, ne qua aut largitionibus aut avari confirmatione aut falsis tantis commutatio fieret voluntatis, quod saepe in bello parvis momentis magni casus intercederent; tamen veritus, ne militum introitu et nocturni temporis licentia oppidum diriperetur, eos, qui renerant, collaudat, atque in oppidum dimittit, portas, murosque, asservari jubet. Ipse his operibus, quae facere instituerat, milites disponit non certis spatiis intermissis, ut erat superiorum dierum consuetudo, sed perpetuis vigiliis stationibusque, ut contingant inter se atque omnem munitionem expleant; tribunos militum et præfectos circummittit atque hortatur, non solum ab eruptionibus arcant, sed etiam singulorum hominum occultos exitus asservent. Neque vero tam remisso ac languido animo quisquam omnium fuit, qui ea nocte conquieverit.

- (3) Te mea, supposita veluti trabe, fulta ruina est;  
 Sæd quid adhuc ego sum, muneris omne tui est.  
 Tu facis, ut spoliū ne sim, neu nuder ab illis,  
 Naufragii tabulas qui petiere mei  
 Utque rapax, stimulante fame, cupidusque cruoris,  
 Incustoditum captat ovile lupus.  
 Aut ut edax vultur corpus circumspicit, ecquod  
 Sub nulla positum cernere possit humo;  
 Sic mea, nescio quis, rebus male fidus, acerbis  
 In bona venturus si paterere, fuit.  
 Hunc tua per fortes virtus submovit amicos,  
 Nulla quibus reddi gratia digna potest.  
 (4) In caput alta suum labentur ab æquore retro  
 Flumina : conversis solque recurret equis :  
 Terra feret stellas : cælum findetur aratro :  
 Unda dabit flammæ : et dabit ignis aquas.  
 Omnia naturæ præpostera legibus ibunt :  
 Parsque suum mundi nulla tenebit iter.  
 Omnia jam fient, fieri quæ posse negabam :  
 Et nihil est, de quo non sit habenda fides.  
 Hæc ego vaticinor; quia sum deceptus ab illo,  
 Laturum misero quem mihi rebar opem,  
 Tantum te, fallax, copere oblivæ nostri?  
 Afflictumne fuit tantus adige pudor?  
 Ut neque respiceres, nec solarere jacentem,  
 Dure, neque exequias prosequere meas?  
 Illud amicitiae sanctum ac venerabile nomen  
 Re tibi pro vili sub pedibusque jacet?  
 Quid fuit, ingenti prostratum mole sodalem  
 Visero, et alloqui parte levare tui?

(6) (Unprepared translation.) Quod jussi sunt, faciunt ac, subigo, omnibus portis eruptione facta, neque cognoscendi, quid fieret, neque sui colligendi hostibus facultatem relinquunt. Ita commutata fortuna, eos, qui in spem potiundorum castrorum venerant, undique circumventos interficiunt et ex hominum millibus amplius triginta, quem numerum barbarorum ad castra venisse constabat, plus tertia parte interfecta, reliquos perterritos in fugam conjiciunt ac ne in locis quidem superioribus consistere patiuntur. Sic, omnibus hostium copiis fuis armisque exutis, se in castra munitionesque suas recipiunt.

##### II. Translate into Latin.

Hannibal now went into winter quarters at Capua, in expectation of receiving succours from home. Soon after the battle, he had sent off his brother Mago to carry home the tidings of his great success. For three years he had pursued a career of victory unassisted by the Government: Rome was at his feet: he only wanted force enough to crush her. In proof of the greatness of the victory of Cannæ, Mago poured out on the floor of the Senate-house a bushel of golden rings, which had been worn by Roman knights who had fallen on that fatal field. But the jealous Government headed by Hanno, listened coldly to Mago's words: They asked, "Whether one Roman or Latin citizen had joined Hannibal."

SOLUTIONS TO DEDUCTIONS FROM EUCLID GIVEN IN FEB. NO.  
OF THE JOURNAL (p. 96).

I. As the angles are in the proportion of the Nos. 1, 2, 3, they are respectively  $30^\circ$ ,  $60^\circ$ , and  $90^\circ$ , let these be A, B, C respectively in the triangle ABC.

Produce BC to D, make CD = CB, and join AD.

The triangles ADC, ABC are equal in all respects (I. 4)  $\therefore \angle D = 60^\circ$

$\therefore$  the triangle ABC is equilateral.

$\therefore AB = BD = 2BC$  ..... (I)

And,  $AC^2 = AB^2 - BC^2$  (I. 47)  $= 4BC^2 - BC^2 = 3BC^2$  ... (II)

Q. E. D.

II. Let the angles A, B, C, of the triangle ABC be in the ratio 1, 3, 4. Then,  $\angle A = 22^\circ\frac{1}{2}$ ,  $\angle B = 67^\circ\frac{1}{2}$ , and  $\angle C = 90^\circ$ .

At B, make  $\angle ABD = \angle BAD$ .

Then,  $\angle BDC = \angle DAB + \angle ABD = 45^\circ$ ;

and  $\angle BCD = 90^\circ \therefore \angle DBC = 45^\circ$ .

$\therefore AD^2 = DB^2 = BC^2 + CD^2 = 2BC^2$ , for  $BC = CD$  (I. 6).

$\therefore (AC - CD)^2 = 2BC^2 \therefore (AC - BC)^2 = 2BC^2$  ... (I)

$\therefore AC^2 - 2AC \cdot BC + BC^2 = 2BC^2$

$\therefore AC^2 - BC^2 = 2AC \cdot BC$

$\therefore (AC + BC)(AC - BC) = 2AC \cdot BC$  (II. 5. Cor.) ... (II)

Q. E. D.

III. In the triangle ABC let the angles A, B, C be in the ratio 1, 4, 5; then  $\angle BAC = 18^\circ$ ,  $\angle B = 72^\circ$ , and  $\angle C = 90^\circ$ .

Produce BC to D, make CD = CB, join DA.

Then, as the triangles ABC, ADC are equal (I. 4), the angles ABD and ADB are each double of the angle BAD.

Make the angle ABE = BAD; then AE = EB; also, BE = BD.

And, as in Euc. IV. 10, AD is so divided in E that  $AD \cdot DE = AE^2$ ;

i.e.,  $AD (AD - AE) = AE^2$ ;

i.e.,  $AB (AB - BD) = BD^2$

$\therefore AB (AB - 2BC) = 4BC^2$

$\therefore AB^2 - 2AB \cdot BC + BC^2 = 5BC^2$

$\therefore (AB - BC)^2 = 5BC^2$ .

Q. E. D.

IV. Let the angles A, B, C, of the triangle ABC be in the ratio 1, 5, 6; then  $A = 15^\circ$ ,  $B = 75^\circ$ , and  $C = 90^\circ$ .

Make the angle ABD equal to BAD.

Then,  $\angle BDC = 30^\circ$ , and  $\angle DCB = 90^\circ \therefore \angle DBC = 60^\circ$ .

Hence, by the first deduction,  $DC^2 = 3BC^2$ .

But  $DC^2 = AC - AD = AC - DB$

$\therefore (AC - DB)^2 = 3BC^2 \therefore AC^2 - 4AC \cdot DB + DB^2 = 3BC^2$

But  $DB = 2BC$ , by deduction first; hence,  $AC^2 - 4AC \cdot BC + 4BC^2 = 3BC^2$

$$\therefore AC^2 + BC^2 = 4AC \cdot BC$$

$$\therefore AB^2 = 4AC \cdot BC \text{ (I. 47) }$$

$$\therefore (\frac{1}{2}AB)^2 = AC \cdot BC$$

Q. E. D.

V. The angles A, B, C, here, will be  $9^\circ$ ,  $81^\circ$ , and  $90^\circ$  respectively. Make the angle ABD = BAD.

Then,  $\angle BDC = 18^\circ$ , and  $\angle DBC = 72^\circ$ , hence, by deduction third,  $(BD - BC)^2 = 5BC^2$

$$\therefore BD - BC = \sqrt{5} \cdot BC \therefore BD = (1 + \sqrt{5}) BC$$

Now,  $DC^2 = DB^2 - BC^2$  (I. 47)

$$\therefore (AC - AD)^2 = DB^2 - BC^2$$

$$\therefore (AC - DB)^2 = DB^2 - BC^2 \text{ (I. 6) }$$

$$\therefore AC^2 - 2AC \cdot DB = -BC^2$$

$$\therefore AC^2 - 2AC \cdot BC (1 + \sqrt{5}) = -BC^2$$

$$\therefore AC^2 - 2AC \cdot BC + BC^2 = 2\sqrt{5} AC \cdot BC$$

$$\therefore (AC - BC)^2 = \sqrt{5} BC^2 \cdot \sqrt{4AC^2}$$

Q. E. D.

First Examination in Arts—1880.

ALGEBRA AND GEOMETRY

(Questions and Solutions.)

I. Solve the equation;

$$\frac{1}{3x^2 + 11x + 10} + \frac{1}{6x^2 + 19x + 15} = \frac{2x^2 + 9x + 10}{150}$$

$$\frac{1}{(3x+5)(x+2)} + \frac{1}{(3x+5)(2x+3)} = \frac{(2x+5)(x+2)}{150}$$

$$\therefore \frac{2x+3+x+2}{(3x+5)(x+2)(2x+3)} = \frac{(2x+5)(x+2)}{150}$$

$$\therefore \frac{1}{(x+2)(2x+4-1)} = \frac{(2x+4+1)(x+2)}{150}$$

$$\frac{1}{2(x+2)^2 - (x+2)} = \frac{2(x+2)^2 + (x+2)}{150}$$

$$4(x+2)^2 - (x+2) = 150$$

$$(x+2)^2 = \frac{1 \pm \sqrt{1+2400}}{8} = \frac{1 \pm 49}{8}$$

$$(x+2)^2 = \frac{25}{4} \text{ or } -6$$

$$x+2 = \pm \frac{5}{2} \text{ or } \pm \sqrt{-6}$$

$$x = \frac{1}{2} \text{ or } -\frac{9}{2} \text{ or } \pm \sqrt{-6} - 2$$

II. Given a quadratic expression in  $x$ , prove the rule for resolving it into its component factors, and shew that its sign will be constant for all real values of  $x$ , if the binomial factors are either imaginary or identical.

See Arts. 337 and 338, Tod. Alg.

II. The expression  $\frac{1}{(x+1)} + \frac{1}{(3x+1)} - \frac{1}{(x+1)(3x+1)}$  cannot lie between the values of 1 and 4, for any real value of  $x$ .

$$\text{The expression} = \frac{3x+1+x+1-1}{(x+1)(3x+1)}$$

$$\text{Let the expression} \frac{4x+1}{(x+1)(3x+1)} = m$$

$$\therefore 3x^2m + 4xm(m-1) + m-1 = 0$$

$$\therefore x = \frac{4(1-m) \pm \sqrt{16(m-1)^2 - 12m(m-1)}}{2.3m}$$

In order that  $x$  may be real, the radical quantity must be positive,

i.e.,  $4m^2 - 20m + 16$  must be positive

i.e.,  $4(m-1)(m-4)$  must be positive.

Hence  $m$  cannot lie between 1 and 4.

III. Point out the artifice by which a series in G. P. is summed, and employ it to obtain the sum of the following series:

(a)  $a, (a+b)x, (a+2b)x^2, \dots$  to  $n$  terms.

(b)  $x, 2^2x^2, 3^2x^3, \dots$  to  $n$  terms.

(a) Tod: Alg: Art 473.

(b) Key to Alg: Chap: L, Ex. 11.

IV. Find the number of permutations of  $n$  different things taken  $r$  at a time.

See Tod. Alg. Art. 490.

If  $P_r$  denote this number, show that

$$P_1 + \frac{P_2}{2} + \frac{P_3}{3} + \dots + \frac{P_n}{n} = 2^n - 1$$

$$P_1 = {}^nC_1; \frac{P_2}{2} = {}^nC_2; \text{ and so on; hence}$$

$$\text{Sum} = {}^nC_1 + {}^nC_2 + \dots + {}^nC_n = 2^n - 1$$

Art 513.

VI. The angles in the same segment of a circle are equal to one another. Prop. 21, Book III.

A triangle is described on a given base with a constant vertical angle, and either side is produced towards the vertex to a length equal to that of the other, find the locus of the extremity so produced.

The locus is a segment of a circle containing half the vertical angle.

See Wrigley's Problems, No. 118.

VI. Describe a circle about a given triangle, and prove the proposition of Euclid which corresponds to the Trigonometrical formula for the radius of the circumscribing circle.

Prop. 5, Book IV.

Prop. C, Book VI.

If an angle of a triangle be bisected, the centres of the corresponding escribed circle and of the circle inscribed in the triangle are situated on the bisector at equal distances from the circumference of the circle circumscribing the triangle.

See Tod. Trig. Art. 253.

VII. Define 'proportions ex equali' and illustrate them from Euclid.

See props. 4, 22 Book VI.

Describe a rectilineal figure which shall be similar to one and equal to another given rectilineal figure.

Prop. 25, Book VI.

Why does not this enable you to square a circle? Because a circle is not a rectilineal figure.

VIII. If from any external point two tangents and a secant be drawn to a circle, the chord joining the points of contact and the circumference of the circle will cut the secant harmonically.

Let PA, PB be the tangents; PFD the secant cutting the circle in F and D; AB the line joining the points of contact, intersecting the secant in E; R be the middle point of DF, and K be the centre; PK cut AB in M. It is required to prove.

$$PD(PE - PF) = PF(PD - PE) \text{ (Def. of H. P.)}$$

$$\text{or } 2 PF \cdot PD = PE \cdot (PF + PD) \text{ (By transposition)}$$

$$\text{or } 2 PB^2 = 2 \cdot PE \cdot PR = 2 \cdot PK \cdot PM = 2 PB^2.$$

LA SHASTRA.

TO F. A. STUDENTS.

EXAMPLES IN ALGEBRA FOR SOLUTION.

We shall be glad to publish, for the benefit of "a Contributor" and others, any satisfactory solutions of the following that may be sent to us.

Ed. M. J. of E.

$$\left. \begin{array}{l} \text{I. Given that } \frac{1}{x} - x = a \dots\dots (i) \\ \quad \quad \quad \frac{1}{y} - y = b \dots\dots (ii) \\ \quad \quad \quad \text{and } x^2 + y^2 = 1 \dots\dots (iii) \end{array} \right\}$$

Find the numerical value of

$$\frac{(5x - 20x^{\frac{1}{2}} + 16x^{\frac{1}{4}})^2 + (16y^{\frac{1}{2}} - 20y^{\frac{1}{4}} + 5y^{\frac{1}{8}})^2}{(ab)^{\frac{1}{2}} \times (a^{\frac{1}{2}} + b^{\frac{1}{2}})^2}$$

II. Simplify:—

$$\frac{(x + x^2 + a^2 - b^2)^2 + (a + b + 2xb)^2}{(x + x^2 - a^2 + b^2)^2 + (a + b + 2xa)^2}$$

III. Find the highest common measure of

$$2(bx + cx + bc)^2 + x^3(b + c) + b^3(c + x) + c^3(x + b) \text{ and } 2bex(x + b + c)^2 + x^3(b^2 + c^2) + b^3(c^2 + x^2) + c^3(x^2 + b^2).$$

IV. Resolve into elementary factors:—

$$\begin{aligned} \text{(i)} & (x^2 + y^2)^2 + x^2y^2(x^2 + y^2)^2 + x^6y^6 \\ \text{(ii)} & (a^2 - bc)(b^2 - ac)(a - b) + (b^2 - ac)(c^2 - ab)(b - c) \\ & + (c^2 - ab)(a^2 - bc)(c - a). \end{aligned}$$

V. Supposing that  $(2x - a)(2x - b)(2x - c)$  is an exact cube,

then shew that  $(ab + ac + bc) \left\{ \frac{1}{ab} + \frac{1}{bc} + \frac{1}{ac} \right\}$  is an exact square.

VI. Given that

$$\begin{aligned} T &= mx + \sqrt{(1 - m^2)(1 - x^2)} \dots\dots\dots \text{(i)} \\ W &= nx + \sqrt{(1 - n^2)(1 - x^2)} \dots\dots\dots \text{(ii)} \\ Z &= my + \sqrt{(1 - m^2)(1 - y^2)} \dots\dots\dots \text{(iii)} \\ \text{and } Y &= nx + \sqrt{(1 - n^2)(1 - x^2)} \dots\dots\dots \text{(iv)} \end{aligned}$$

To prove that  $T = x$ .

VII. If  $a + b + c = 0$

$$\begin{aligned} \text{Shew that } & \frac{a^5 + b^5 + c^5}{5} - \frac{a^2 + b^2 + c^2}{2} \\ &= \frac{a^3 + b^3 + c^3}{3} - \frac{a^4 + b^4 + c^4}{4} = \frac{a^7 + b^7 + c^7}{7}. \end{aligned}$$

VIII. Solve the following simple equations:—

$$\begin{aligned} \text{(i)} & x + 4\sqrt{x} + 8\sqrt{x+6}\sqrt{x+9} = 52. \\ \text{(ii)} & 4y - \sqrt{x-y} = 32 \dots\dots\dots \text{(i)} \\ & 2\sqrt{y} + \sqrt{x-y} = 8 \dots\dots\dots \text{(ii)} \\ \text{(iii)} & x + y + z = 0 \dots\dots\dots \text{(i)} \\ & x(b+c) + y(a+c) + z(a+b) \dots\dots\dots \text{(ii)} \\ & x^3 + y^3 + z^3 = 3(b-c)(c-a) \dots\dots\dots \text{(iii)} \end{aligned}$$

IX. A starts from Combaconum to Madura a distance of 120 miles, and at the same time B starts from Madura to Combaconum. A reaches Madura 16 hours, and B reaches Combaconum 36 hours, if they have met on the road. Find their rates supposing both to walk uniformly.

## MISCELLANEOUS.

THE UNIVERSITY OF LONDON AND TEXT BOOKS.—We read in the *Athenaeum* that a movement is on foot for petitioning the Senate of the University of London to abolish the habit of setting definite books for the pass examinations, and begging that easy passages may be set which the candidate has not seen, and for which he may be allowed the use of a dictionary. If this reform be granted, it will be a great benefit, as the present practice encourages cramming and a bad style of book-making. If a youth cannot translate, with the help of a dictionary, an easy passage of Latin or Greek prose or verse, he does not know the language he professes to know, and deserves to be rejected. Up to 1869, books were always set for French and German, as well as for Latin and Greek; but, since that date, the practice has been discontinued in the case of the two former languages with the best results; and, as Greek is no longer compulsory, the experiment might well be extended to the one remaining language, Latin.

EDUCATION AT HOME.—The following is a copy, *verbatim et literaliter*, of a census schedule collected by an enumerator at Brightside, near Sheffield:—"George John—, head of the house, farm labourer, age last birthday, 302 years. Wife Margrét—, age last birthday, 206 years. daughter Minney apa—, age last birthday 2 years. brother William—, age last birthday labour to steel works 208 years. George John— born in the parish of quild buckingham Norfolk England. margrét—, born in the Parish of aughtboe queens county ireland. William—, born in the Parth of aughtboe queens county ireland unmarried."

"Mr. President, I rise to get up, and am not backward to come forward in the cause of education; for had it not been for education I should be as ignorant as you are, Mr. President." So said an eloquent advocate of Elementary Education at a public meeting in the town of —.

PHYSICAL EDUCATION.—Is it a fact that the Anglo-Saxon race is in slow process of physical deterioration? Such is the opinion of Mr. Horstall in a letter addressed to the *Manchester Guardian*, arising out of a statement by Dr. Beddoe and Mr. Tuckett that "British heads are smaller than British heads used to be." He points out that the conditions under which the youth of the country are brought up in these days are such as to favour the development of a stunted race. No playgrounds, no public gymnasia, and an enforced resort to early drinking and smoking are the main factors at work, according to this authority, in the production of a general enfeeblement, unknown in the freer and robust times of old. And there is, it must be admitted, considerable truth in the argument. With all our endeavours at improved sanitation, there remains much to be done in the way of physical education, and the Gospel of a healthy body which shall be capable of all the demands made upon it needs to be strenuously preached and acted upon in the interests of the nation. The mode of life of a great number of our urban population is the great evil of civilisation. Deprived of fresh air and healthy exercise, combined with an improper and an inadequate supply of food, and a consequent resort to artificial stimulants, such people are growing up

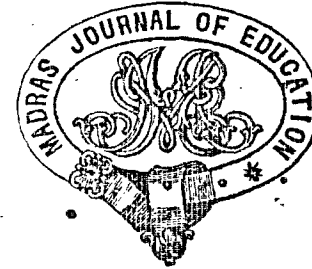
under conditions which can only lead to one result, that of defective development. For our own part we heartily endorse the suggestion made by Mr. Horsfall, that places of open-air recreation and gymnasia should be vastly multiplied, and access to them obtained even on that day of the week termed a "day of rest," but which is too often a day of idleness and dissipation. We sadly want in this matter the exercise of that common sense which has usually been regarded as the peculiar feature of the British character, but which in some matters is kept wholly in the background, and never asserts itself. — *The Lancet*.

THE RESULTS OF THE LAST CAMBRIDGE LOCAL EXAMINATIONS.—From the Report of the Syndicate, it appears that the Examinations were held in December last at 100 centres for boys, and 87 for girls, 12 of these being new centres for boys, and 10 for girls. The total number of candidates entered was 6,770. The annual increase during the last five years is shown by the following table:—1876, 4,681; 1877, 5,876; 1878, 6,435; 1879, 6,738; 1880, 6,770.—*Educational Times*.

#### APPOINTMENTS.

Appointments made by the Director of Public Instruction, between the 16th April and 15th May 1881.

- |                                                                               |                   |
|-------------------------------------------------------------------------------|-------------------|
| T. A. Krishnaswami Iyer, B.A., to be 6th Assistant                            | per sub. pro tem. |
| Madura College, on Rs. 40 per mensem.                                         |                   |
| K. Saminatha Iyer, B.A., to be seventh Assistant                              | pro tem. Madura   |
| College, on Rs. 30 per mensem.                                                |                   |
| S. Venkataswara Iyer, B.A., to be sixth Assistant                             | Assistant sub.    |
| pro tem. Calicut College.                                                     |                   |
| T. J. Venkatachalam Iyer, B.A., to be sixth Assistant                         | pro tem. Calicut  |
| College.                                                                      |                   |
| T. Aiyar Iyer, 2nd Master Arni School, to be Head-master                      | Villapuram        |
| School, but to continue to act as sub. Assistant Master, Salem                |                   |
| College.                                                                      |                   |
| T. R. Stripati Row, sub. pro tem. Second Master Arni School, to be second     |                   |
| Master.                                                                       |                   |
| T. V. Rungasami Iyengar, Head-master Vriddachalam School to be sub.           |                   |
| pro tem. Head-master of Villapuram School.                                    |                   |
| T. J. Venkatachalam Iyer, B.A., 6th Assistant, sub. pro tem. Calicut College, |                   |
| to be 1st Assistant sub. pro tem. High School, Cannanore.                     |                   |
| C. S. Krishna Iyer, B.A., to be sixth Assistant, sub. pro tem. Calicut        |                   |
| College.                                                                      |                   |
| S. Ramadas Iyer, B.A., 2nd Assistant Master, Salem College, to be 1st         |                   |
| Assistant Master, Cuddalore College, vice Mr. L. Dique, deceased.             |                   |
| S. Subba Row, B.A., 1st Assistant Master, High School, Cannanore, to be       |                   |
| 2nd Assistant Master, Salem College, vice Ramadas Aiyar promoted, but         |                   |
| to continue to act as Head-master, High School, Cannanore.                    |                   |
| T. V. Subrama Iyer, B.A., 3rd Assistant Master Salem College, to be 2nd       |                   |
| Assistant sub. pro tem. vice A. Subba Row on other duty.                      |                   |
| C. R. Sivarama Aiyar, B.A., seventh Assistant Master Kumbakonam               |                   |
| College, to be first Assistant Master, High School, Cannanore, vice Subba     |                   |
| Row, but to continue to act as Deputy Inspector of Schools, Dindigul          |                   |
| Circle.                                                                       |                   |



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#### THE MONTH.

##### THE MIDDLE SCHOOL EXAMINATION.

THE most important educational matter for the month is the issue by the Director of Public Instruction of a revised Middle School Examination scheme. That it should be issued in the middle of the Academical year, containing as it does so many changes on the scheme up to which Schools have been working the first half of the year, and yet call forth little or no comment in our daily Press, speaks volumes for the confidence which the educational labourers of this Presidency have for their chief. We thoroughly agree with the Director in thinking that the old scheme was not beyond the pale of improvement. Yet we imagine that the publication of the new scheme—for as such the revised edition of the old one may be regarded—at so awkward a time, bespeaks as much feverish impatience on the part of the "Department," as did the original announcement of the Examination by our former Director only two months before it took place.

Mr. Grigg has taken a good many steps in the right direction. First, there is the complete separation of bona fide Middle School candidates from others. Secondly, there is the requirement that pupils shall remain in their Schools till the close of the year; this will put a stop to the practice (peculiar to this country) of staying away from

School without permission before examinations. Thirdly, there is an important and sensible improvement in the reduction of the demand in Hand-writing to 50 per cent. of the maximum for *bonâ fide* pupils, (while it remains at 60 per cent. for others) for a First Class. Fourthly, there is also a sensible reduction of the demand in Arithmetic (for a 1st Class pass) to 33½ per cent. for pupils, while it remains 50 per cent. for others.

These are, in our opinion, very important and sensible changes.

We cannot, however, congratulate Mr. Grigg on having brought the scheme to absolute perfection. We have somewhat against it still.

The number of marks in English has been increased from 120 to 180 and *cui bono*? To Orthography, 5 more marks have been given—we say good; to English Grammar 10 more marks—we say better; to a *Text-book* paper 55 marks—we should say best, if there were anything like uniformity of text-books. But we do not see how, when there are most likely a dozen different “Readers” in use throughout the Presidency, there can be any *Text-book* examination paper other than one of that mongrel character, called in Matriculation “*General English*.” A paper of this heads-I-win-and-tails-you-lose stamp, is quite unsuitable for Fourth Class boys. Surely in the face of so many splendid English Readers—such as the Royal Reader series, and Chambers’s English Readers—we are not to have our 4th Class English-reading prescribed from year to year by the Director. This would only give rise to the same vicious system of note-writing and cramming which produces the proverbial English results of our University students.

This, if not satisfactory to our mind, is at least intelligible. The same cannot be said for the apparent classing under English of Translation from another Language into English and from English into another language. So far as Latin-learning boys are concerned, at least, this will simply mean losing 50 marks. No Fourth Class boy is able to translate a piece of Latin he has not seen before into English, much less, infinitely less we may say, is he able to turn a piece of English into Latin. This part of the revised scheme is to us incomprehensible.

The number of marks and mode of testing the second or Optional language are worthy of comment. In Sanskrit the value of Hand-writing is reduced by 5 marks, while that

of Grammar remains the same, and *Composition* has been struck out. In *Latin*, the value of Grammar is reduced from 60 marks to 40; while that of the *Text-book* is increased from 30 marks to 50; and the *Composition* test remains the same. What can be the guiding principle here? Does the Director imagine Sanskrit to be more difficult than Latin? Before coming to any such conclusion from any *ex parte* representations he may have had, he might have availed himself of our University Statistics.—During the past 4 years in the Matriculation Examination 691 have been examined in Sanskrit, and 89 per cent. have passed. During the same four years 671 have been examined in Latin, and only 57 per cent. have passed. These facts speak for themselves. Either Latin is more difficult than Sanskrit; or the European teaching of Latin is vastly inferior to the native teaching of Sanskrit. If the latter is the explanation, then the sooner we leave the natives of India to manage the Educational Department the better.

Arithmetic has had 30 more marks assigned to it, but no more time allowed. In fact we think it very unfair that 110 marks, in this all-important subject, should depend on a two hours’ test. We do not think this sufficient to test a boy’s accuracy, expertness, or knowledge of arithmetical processes up to the standard prescribed. We think also there is a serious omission both in the old and in the new scheme, that boys are not supposed to learn the valuable rule of *Practice*, until they have finished Proportion and Decimal Fractions.

Under Geography we find an improvement in that 20 marks are to be given to map-drawing.

*Mathematics* is increased in value from 60 to 90 marks, or by 50 per cent. While the optional branches, chiefly scientific, are increased from 60 to 80 marks. The subject of Agriculture seems such an easy one to the Director that he has cut down Robertson’s Class Book to 45 marks; and added on to it that antiquated compendium of childishly easy matter called “Whately’s Easy Lessons on Money Matters” to which no less than 35 marks are given. The youth who can digest Robertson’s Class Book, will be able to read up Whately’s Money Matters in two hours. On what principle then the marks are assigned we cannot see. Much less can we understand the underrating of Agriculture, and its association with the *verbum et præterea nihil* “Political Economy.”

[The following from the *Schoolmaster* of June 25, we would recommend the Faculty of Arts of our local University to commit to memory by way of preparation for forthcoming debates on the teaching of this new-fangled subject.—Ed. M. J. of E.]

#### A BALLAD OF PHYSIOGRAPHY.

Oh jumble of all 'ologies, Oh mystery intense,  
Oh hodge-podge of the sciences, Oh blunder most immense—  
Gigantic obfuscation of the light we long to see—  
To limbo we devote thee, horrid Physiographie!

Dear Huxley, good professor, by whom Agnostics swear,  
Some people have abused you in a fashion hardly fair;  
I'm not one of the number, but I fear I yet may be,  
Could I feel sure 'twas you who gave us Physiographie.

We deemed ourselves—well, smart enough, till lately; but, alas!  
There now exists a subject in which nobody can pass.  
Why, Aristotle's self might use some saff profanitie,  
Should he attempt this year's "advanced" in Physiographie.

And this will happen some day; I am certain that it will;  
A mummied form at Kensington an honoured niche will fill  
Within the grave museum; and the world will rush to see  
The man who took an honours first in Physiographie.

And at some not so distant date when we have time to spare—  
Some holiday when good folks all can hang around and stare—  
We'll get a jolly bonfire up and burn in effigie  
That other man whose demon brain hatched Physiographie.

God speed the good time coming that shall see an end of cram—  
The time when science teaching shall be something else than sham  
Meanwhile, like Annie's lover, I could "lay me down an' dee,"  
Did I but know we'd heard the last of Physiographie.

#### REVIEWS OF SCHOOL BOOKS.

*A History of India by D. Sinclair, M.A., Fellow of the  
Madras University. Addison & Co. Madras, 1881.*

To the teacher no less than to the scholar, a good class book is a godsend. Typographical arrangement, suitable division into chapters, a summary of sections of the book and such like, are more than half of what goes to make a good class-book. This is true of any subject but specially true of History, which, however the facts may be tacked on to racy or exciting incidents, is still in the main a systematic arrangement of anatomically dry facts and dates which must be mastered. We think that this text-book, Mr. Sinclair's will be a boon to teachers of Indian History

as presenting immense improvements over old text-books in all that aids the teacher and learner.

It is fashionable at the present day to decry the teaching of mere names and dates as no teaching of History at all. In our humble opinion youths cannot be introduced to the philosophy of any History: they must study the skeleton, the names, sizes, and situations, of the separate bones of History, before they come to the study of the ligaments and muscles by which the framework moves. These are absolutely essential to a knowledge of History, and it is only at School, when the brain has all the softness and plasticity of youth that these can be impressed. For the impression of the great facts of Indian History we think Mr. Sinclair has hit the happy mean between too much and too little. If he had added a map, with only such names upon it as are actually referred to in the book, we think he would have made his book still more useful. We doubt not the book will meet with a ready welcome from all concerned in education.

#### MIDDLE SCHOOL EXAMINATION.

##### NOTIFICATION.

Ootacamund, June 29, 1881.

AN Examination styled the *Middle School Examination* shall be held annually at such stations as may be determined from time to time, and shall be open to the following persons:—

I. All pupils [(a) boys, (b) girls] of the Upper Fourth Class of a Government School or of a corresponding Class in an Aided or Private School, whose names were on the rolls on the first July preceding the examination, who were in attendance up to the date of application and who certify their intention of remaining in the school until the end of the calendar year.

II. All other persons [(a) males, (b) females] who, if not already in the Government Service or employed as teachers in a Private School, are under the age of 25 years at the date of the examination. It shall be conducted by the Commissioner for the U.C.S. Examinations, and shall commence on the 1st December, or, should that day fall on a Sunday, on the 2nd December.

2. The fee in the case of all School Pupils of the Upper Fourth Class of a Government School or of a corresponding Class in an Aided or Private School shall be for boys Rupees 3-0-0; for all female Candidates Rupees 2-0-0; and in the case of all other persons Rupees 8.

3. The scheme of Examination will embrace the following Branches:—

- A. First (or Compulsory) Language.
- B. Second (or Optional) Language.

- C. Arithmetic.
- D. Geography and Indian History.
- E. Mathematics.
- F. Physical Geography.
- G. Introduction to Science.
- H. English History.
- J. Physiology.
- K. Political Economy and Agriculture.

4. Every male Candidate must be examined in six, and not more than six Branches, and every female Candidate in five, and not more than five Branches. All male pupils as above defined must bring up Branches A (I or II), B, C, D, and E, and all female pupils Branches A (I or II), C, and D. All male Candidates not being pupils must be examined in Branches A (I or II), C, and D; all female Candidates not being pupils in Branches A (I or II), C, D, and E. The choice of the remaining Branch or Branches is left to the Candidates.

#### 5. BRANCH A.

##### First (or Compulsory) Language.

##### I.—English, 180 Marks.

(a) *Hand-writing*.—Writing out rapidly in a good clear round hand a printed (or lithographed) paper; 20 Marks.

(b) *Orthography*.—Writing from dictation a passage from a book equal in difficulty to Bradshaw's 5th Reader, Sections I—X; 25 Marks.

(c) *Grammar*, with special reference to the subjects treated in the C.V.E. Society's Manual of English Grammar, pages 69—176, or corresponding portions in any similar Grammar; 30 Marks.

(d) *Text-book*.—Bradshaw's 5th Reader or any other class-book authorised for use in the Upper Fourth Class, with especial reference to the following particulars:— 55 Marks.

- (1) Meanings of words and the conjugate forms of words;
- (2) Explanation of passages, sentences, phrases, and idioms; framing simple sentences, to introduce correctly given words, phrases or idioms;
- (3) Brief sketch of the subject-matter of any lesson;
- (4) Supplying ellipses;
- (5) Construing;

(e-1) *Translation (a-1) For Candidates taking up an Optional Vernacular*.—Translating into the Optional Vernacular one or more passages from a book equal in difficulty to Sections I—V of Bradshaw's 5th Reader. 20 Marks;

(b-1) *For Candidates taking up Latin, Sanskrit, or Persian*.—Translating into the Optional Language easy sentences from English; 30 Marks;

(a-2) *For Candidates taking up an Optional Vernacular*.—Translating Vernacular Narrative into English. 30 Marks;

(b-2) *For Candidates taking up Latin, Sanskrit, or Persian*.—Translating passages from Latin, Sanskrit, or Persian into English; 20 Marks.

[Special permission will be granted to male pupils, ignorant of any language but English, to substitute another Branch for Branch B, on the Candidate's application for examination being supported by a recommendatory Certificate from a Government Inspector of Schools, and bearing the countersignature of the Director of Public Instruction. Such Candidate will be required to bring up *Composition* in place of Translation, as follows]:—

(e-2) *Composition (a)* Writing a short letter on a given subject; 15 Marks.

(b) Writing in the Candidate's own words, a short description of a place, an account of some useful natural or artificial product, or the narrative of some recent event; 20 Marks.

(c) Paraphrasing a short passage of poetry not previously studied equal in difficulty to Poetical Selections I—XII in Bradshaw's 5th Reader; 15 Marks.

##### II.—Tamil, Telugu, Malayalam, Kanarese, Uriya, and Hindustani, 180 Marks.

[This Section of Branch A is not open to male pupils as a rule, but special permission will be granted to male pupils ignorant of English to bring up this Section, and also, if desired, another Branch in place of Branch B on the Candidate's application for examination being supported by a recommendatory Certificate from a Government Inspector of Schools, and bearing the countersignature of the Director of Public Instruction]:—

(a) *Hand-writing*.—Writing out in a good clear hand a given printed (or lithographed) paper; 20 Marks.

(b) *Orthography*.—Writing from Dictation a given passage equal in difficulty to a passage from Sections I—X of Bradshaw's 5th Reader translated in a plain and simple style the Reader prescribed in the Government scheme of school studies for the Upper Fourth Class; 20 Marks.

(c) *Grammar*.—As prescribed for the Upper Fourth Class; 35 Marks.

(d) *Text-book*.—The following or such books as may from time to time be prescribed for the Upper Fourth Class with especial reference to these particulars:— 55 Marks.

- (1) Giving the meanings of words and the conjugate forms of words;
- (2) Framing sentences to introduce correctly given words, phrases or idioms;
- (3) Supplying ellipses;
- (4) Altering the construction of easy sentences in a given manner;
- (5) Giving the derivation of common words;
- (6) Explanation of passages, sentences, phrases and idioms;
- (7) Sketch of the subject-matter of any stanza.

Tamil.—Poetical Anthology, No. II.

Telugu.—Nala Chaitram.

*Malayalam*.—Panchatantram, Parts I and II.

*Kanarese*.—Minor Poetical Anthology published by the Basque Mission Press.

*Uriya*.—Ramayana Sundra Kānda.

*Hindustani*.—Majmudahi-Sukhn, Part II, Pages 1—60.

*Persian*.—Gulistan (expurgated edition), Chapters II and III.

Candidates who do not bring up English are required to perform the following exercises in composition.

(e) *Composition*, (a) Writing a letter on a given subject; 15 Marks.

(b) Writing in the Candidate's own words a short description of a place, an account of some useful natural or artificial product, or the narrative of some recent event; 20 Marks.

(c) Paraphrasing a short passage of poetry not previously studied, equal in difficulty to the text-book prescribed for the Upper Fourth Class; 15 Marks.

#### 6. BRANCH B.

##### Second (or Optional) Language.

[In the case of Candidates taking up both Branch A-II and Branch B, the language brought up under Branch B must not be the same as that taken up under Branch A-II.]

I.—Tamil, Telugu, Malayalam, Kanarese, Uriya, and Hindustani, 120 Marks.

15 Marks. (a) *Hand-writing*.—Writing out in a good clear hand a given printed (or lithographed) paper;

(b) *Orthography*.—Writing from dictation a given passage equal in difficulty to a passage from Sections I—X of Bradshaw's 5th Reader translated in a plain and simple style; 20 Marks.

35 Marks. (c) *Grammar*.—As prescribed for the Upper Fourth Class;

50 Marks. (d) *Text-book*.—As prescribed for the Upper Fourth Class. For the particulars required, see para. 5 (d).

II.—Latin, 120 Marks.

40 Marks. (a) *Grammar*.—As contained in the Public School Latin Primer or any similar book;

50 Marks. (b) *Text-book*.—Such book as may from time to time be prescribed;

30 Marks. (c) *Composition*;

III.—Sanskrit, 120 Marks.

15 Marks. (a) *Hand-writing*.—Writing out in a good clear hand a passage printed in the Devanagari character;

20 Marks. (b) *Orthography*.—Writing from dictation in the Devanagari character;

(c) *Grammar*.—The letters; Guna, Vriddhi; Visarga, &c.; declension of regular nouns; conjugation of verbs of the 1st, 4th, 6th, and 10th Classes in the Present (*Lat*), the Optative (*Vidhi*), the Imperative (*Lot*), and Imperfect (*Law*); 40 Marks.

(d) *Text-book*.—Such book as may from time to time be prescribed; 45 Marks.

IV.—Persian, 120 Marks.

15 Marks. (a) *Hand-writing*.—Writing out in a good clear hand a manuscript (or lithographed) paper;

(b) *Orthography*.—Writing from dictation, 20 Marks;

35 Marks. (c) *Grammar*.—As prescribed for the Upper Fourth Class;

50 Marks. (d) *Text-book*.—*Gulistan* (expurgated edition); Chapters II and III.

#### 7. BRANCH C.

Arithmetic, 110 Marks.

The Compound Rules, Reduction, Vulgar and Decimal Fractions, Simple and Compound Proportion.

(English figures must be used, and the Candidate must be acquainted with the principal Indian weights and measures).

#### 8. BRANCH D.

Geography and Indian History, 120 Marks.

(a) The Geography of Asia and Europe as contained in Clyde's Elementary Geography or any similar book; 25 Marks;

(b) The Geography of India as contained in Duncan's Geography of India, paras. 1 to 207, or any similar book, 25 Marks;

(c) Map drawing, 20 Marks;

(d) The History of India to the close of the third Mahratta war in 1805, 50 Marks.

#### 9. BRANCH E.

Mathematics, 90 Marks.

(a) Euclid, Book I, 50 Marks;

(b) Algebra to the end of Fractions, 40 Marks.

#### 10. BRANCH F.

Physical Geography, 80 Marks.

Geikie's Physical Geography (Macmillan's Science Primer), or any similar book.

#### 11. BRANCH G.

Introduction to Science, 80 Marks.

Professor Huxley's Introductory Science Primer (Macmillan's Series).

#### 12. BRANCH H.

English History, 80 Marks.

The History of England to the Accession of Henry VIII Miss Edith Thompson's or any similar book.

## 13. BRANCH J.

Physiology, 80 Marks.

Foster's Physiology (Science Primer) or any similar book.

## 14. BRANCH K.

80 Marks.

(a)—Political Economy, 35 Marks.

Archbishop Whately's Easy Lessons on Money Matters or any similar book.

(b)—Agriculture, 45 Marks.

Robertson's Agricultural Class Book or any similar book.

15. The Examination will be conducted in the order of time and subjects shown below :—

| Day.         | Hour.     | Subject.                                              |
|--------------|-----------|-------------------------------------------------------|
| First.....   | 10 — 12½  | Grammar and Text-book (First or Compulsory Language). |
| " .....      | 12½ — 12½ | Hand-writing (First or Compulsory Language).          |
| " .....      | 2 — 2½    | Dictation (First or Compulsory Language).             |
| " .....      | 2½ — 4½   | Arithmetic.                                           |
| Second ..... | 10 — 12   | Grammar and Text-book (Second or Optional Language).  |
| " .....      | 12½ — 1½  | Translation or Composition.                           |
| " .....      | 2½ — 4½   | Mathematics.                                          |
| Third .....  | 10 — 12½  | Geography, Map Drawing, & Indian History.             |
| " .....      | 12½ — 1½  | Hand-writing (Second or Optional Language).           |
| " .....      | 12½ — 1½  | Latin Composition.                                    |
| " .....      | 2½ — 2½   | Dictation (Second or Optional Language).              |
| " .....      | 3 — 5     | English History.                                      |
| Fourth.....  | 10 — 12   | Physical Geography.                                   |
| " .....      | 2 — 4     | Physiology.                                           |
| Fifth .....  | 10 — 12   | Political Economy and Agriculture.                    |
| " .....      | 2 — 4     | Introduction to Science.                              |

16. Candidates who bring up English must answer the non-language papers in English. Candidates who do not bring up English may answer them in their Vernacular.

17. Candidates who succeed in passing the Examination will be arranged in the following Sections :—

- I. (a) Pupils in Boys' Schools.  
(b) Pupils in Girls' Schools.

- II. Others. (a) Males.  
(b) Females.

Those will be ranked in the order of merit in the First Class in each section who obtain not less than—

- (a) fifty per cent. in Hand-writing in the case of male and female pupils and sixty per cent. in the case of others;  
(b) one-third of the maximum marks in Branch A;  
(c) one-third of the maximum marks in Branch C if pupils, or one-half if others;

- (d) one-fourth of the maximum marks in every other Branch in which the Candidate has been examined;  
(e) one-half of the aggregate number of marks;  
Those will be ranked in the Second Class who obtain not less than—  
(a) one-third of the maximum marks in Hand-writing;  
(b) one-fourth of the maximum marks in Branches A and C;  
(c) one-sixth of the maximum marks in every other Branch in which the Candidate may be examined;  
(d) one-third of the aggregate number of marks.

18. Certificates will be issued by the Commissioner to the passed Candidate, specifying the subjects in which they have been examined and the class in which they have been placed.

19. A First-Class Certificate will render the holder eligible, on attaining the age of eighteen, to appointments under Government of the value of Rs. 20 and upwards, provided that any such appointment requires a knowledge of only the language or languages in which the Candidate has passed; and shall suffice for admission to the Special Tests.

20. It is to be distinctly understood that the Government do not undertake to provide appointments for all persons who may pass the prescribed examinations under these rules. Appointments will, as before, be regulated by the requirements of the public service, and will be made by the same authorities as heretofore. It is likewise to be understood that it will still, as before, be open to Government, and, with their sanction, to the Controlling Courts and Boards, whenever they see necessary to prescribe the period of service which must be passed in one grade of appointment before promotion to a higher grade altogether irrespective of these rules.

21. In the Educational Department a First-Class Certificate will be accepted as equivalent to the general education test for 4th-Grade Schoolmasters and 2nd-Grade Schoolmistresses. In the case, however, of candidates who have passed only in one language, the Certificate will be held only equivalent to the general education test required for an imperfect Certificate. The holder of a 1st-Class Certificate, whether perfect or imperfect, will still be required in the case of males to pass the departmental examination in method and teaching a class, and in the case of females, in method, needle-work, and teaching a class.

22. A certificate will not be granted to a pupil unless the school fee for each of the six months ending December has been paid up. The examination of pupils who have withdrawn from a school without the permission of the Head of that School will be disallowed, but in the case of such pupils as have obtained the necessary permission the examination will be allowed provided the difference between the fee for a pupil and that fixed for "others" is paid into a Government Treasury before the 31st December next after the examination.

23. No person shall be admitted as a pupil into the Upper Department of a Government or Aided High School, or High School under inspection, unless he or she have passed under Section I (a) or (b) or if the Candidate have passed under Section II (a), unless he have passed in Branches B. and E.

24. Candidates must send in their applications for examination on printed forms which may be obtained from all Tahsildars and

Treasury Deputy Collectors. Distinct forms, marked A, B, C and D respectively, will be supplied to Candidates—

- (1) Male pupils of the Upper Fourth Class of a Government School (or of a corresponding class in an Aided or Private School) will be required to make their applications on Form A.
- (2) Female pupils in similar classes on Form B; and
- (3) All other Candidates (who will be designated "Others") on Form C if males, D if females.

25. This Notification supersedes all previous Notifications on the subject.

C. G. MASTER,

Offg. Chief Secretary.

### THE ANNIVERSARY OF THE CIVIL ENGINEERING COLLEGE.

THE anniversary of the Madras Civil Engineering College was celebrated on Monday evening, 30th May at five o'clock. The Hon'ble Sir Charles Turner, C.I.E., Chief Justice, having taken the chair, Lieutenant Love, Principal of the College, read his report from which we take the following:—

*Changes in Establishment.*—In June 1886 Mr. Bradshaw, 1st Assistant Master, was appointed to act as an Inspector of Schools, and Mr. M. Kenny, B.A., Head-master of Berhampore College, took his place at this institution during his absence, which still continues. Consequent on the departure to England of Mr. Hyde, 4th Assistant Master, which was referred to in last year's report, Mr. Hennessy, Master of the Surveying class, was in August appointed to act as 4th Assistant, and Sergeant Edwards joined from the Public Works Department to act for Mr. Hennessy. Sergeant Edwards, however, resigned in November, and since that month, Sergeant Hamilton, Master of the Drawing class, has taken charge of the Survey class in addition to his own duties, an arrangement which the comparatively small numbers in those classes rendered practicable. In April 1887, Mr. McAleese, 2nd Assistant Master, fell ill, and was granted eighteen months' leave to Europe on medical certificate, and Sergeant Hamilton was appointed to act. The session having nearly reached its close, the instruction of the Surveying and Drawing classes was hurried on by the existing staff. An additional master will be temporarily required from August next.

*First Department, Engineer Classes.*—In December last two students were examined for certificates of qualification as Assistant Engineer P. W. D., and both were successful. One Mr. S. X. Saldanha passed with credit, and subsequently took the degree of Bachelor of Civil Engineering, (2nd class) at the University. The other, Mir Sadrud-din Saib, is the first Mussalman student who has ever entered this class. The percentages gained on the total marks were as follows:—S. X. Saldanha 65 per cent., and Mir Sadrud-din 56 per cent. Only one student is at present studying in this class. Several candidates have applied for admission lately, but they have been requested to join at the commencement of the collegiate session in

January next. The chief requirement of this class is better prospect of employment for its passed students. At recent University Convocation addresses, stress has been laid on the desirableness of acquiring knowledge for the sake of knowledge rather than for the sake of securing employment. Remarks of this nature may perhaps apply to general culture, but appear unsuited to purely technical knowledge, such as is acquired in this College. Unless the subsequent employment of passed students is of a nature to admit of their special knowledge being fully utilized, their education has been more or less wasted, and both students and state have suffered loss. Allusion will be made later on to steps which have been taken to evade such loss.

*Second Department, Subordinate Classes.*—In the 1st class of this Department, 17 students have just undergone examination for certificates of qualification as Supervisor and Overseer, P. W. D. The results have on the whole been satisfactory, and would have been still more so had the usual selection of the pupils been practicable. Owing, however, to a resolution of Government that no appointments to the P. W. D. shall be made until the men who were dismissed on the recent reduction of establishment shall have been re-absorbed, the number of candidates for the Second Department has lately been considerably reduced, and to maintain a class of fair size it has been necessary to accept men whose eventual success did not appear altogether certain, and who under ordinary circumstances would have been relegated to the Surveying or Drawing class. I take this opportunity to express my grateful thanks to the gentlemen who have been so good as to serve as Examiners.

Of the 17 candidates, 15 have passed and 2 failed. Sergeant Cherry heads the list with 1,739 marks out of 2,600. He obtains a Supervisor's certificate, the Royal Engineer Officer's prize, the 1st prize in Surveying, the 1st prize in drawing, and the 2nd prize in engineering. C. S. Srinivasa Aiyer stands second, with 1,607 marks. He secures a Supervisor's certificate, the 1st prize in Mathematics, the 1st in engineering, and the 2nd in surveying. The remaining 13 successful students obtain certificates as Overseers. S. Bhavan Row takes the 2nd prize in Mathematics and T. Venkataramanay the 2nd in drawing. The two unsuccessful candidates, one of whom is a Military student, will be permitted to study for another year in the class. Comparing the results with those of the last five years:—In Mathematics improvement is visible, and in engineering the average has been maintained. Considering that less promising materials than usual have been dealt with, these results reflect credit on Messrs. Kenny and Caines. In surveying there has been a slight falling off, and in drawing a decrease of 8 per cent. on the average. The latter is partly due to insufficient time for the paper on estimating.

*Second Department, 2nd class.*—In the annual examination Gunner Richardson stands first with prizes for mathematics, surveying and drawing, Lance Serjeant W. Rule gains the prize for language. Only two scholarships have been awarded to the Civil students owing to the small number studying in the class. The recipients are R. Mohun Singh and A. Terumalay. One student has failed to pass a satisfactory examination, and will remain in the second class.

**Military Students.**—The session commenced with 10 students, 5 in the 1st class and 5 in the 2nd. Of these one was returned to his regiment for misconduct, and at his own request. There are now 4 in the 1st and 4 in the 2nd class. Three men at Bangalore are to be examined in language for entry to the College in July next. Two men have passed the Entrance Examination, and joined the Vernacular class at Bangalore. In January '81 Sub-Conductor Caines was appointed superintendent of Military students at the College vice Sub-Conductor McAleese. In the report for '79-80 it was pointed out that the existing regulations for the examination of the second department in language are defective. It has always been a rule in the College that the examination of Europeans, including the military students, for certificates, should be identical with that for natives. In language the standard required from soldiers for the Public Works Department is, according to the Code, "a fair colloquial knowledge of one vernacular" either Tamil or Telugu, at each pupil's option. As native students generally select their mother tongue, their examination on these lines would be little more than a farce, and attempts have in recent years been made to so adjust the standard as to apply some test to the natives while not rendering the examination too difficult for the capabilities of a European after three years' desultory study. In '80, however, several failures occurred among Europeans and Eurasians, and the Government having called for the papers, decided that the examination was not of the nature which was contemplated for military students. The soldiers who failed were accordingly permitted to continue at the College for three months, when they passed a satisfactory examination and joined the Public Works Department as apprentice Overseers. The same indulgence was not accorded to the civil pupils, as they are at liberty to appear as outsiders at subsequent examinations for certificates. In August last, I recommended among other changes, that in order to place Europeans and natives on a more nearly equal footing in this respect, Tamil should be compulsory for natives of Telugu districts and *vice versa*; such a rule would possess also the additional advantage of tending to break down the barrier of dislike which many natives feel at serving in a district other than that of their birth. The letter containing these proposals was referred to a Committee appointed in September last to report on the best means of extending the scope and increasing the usefulness of the College, and the matters it contained have thus become part of a much larger question which is now before the Government.

**Overseer Apprentices.**—During the year under review, the regulations of the new Public Works Code which affect the College came into operation. Under these rules such of the certificated students of the Second Department as are required by the Public Works Department, instead of being placed at once on the permanent strength of the establishment, are made Overseer Apprentices for one year, and drafted to various stations where extensive works are in progress with the view of their being instructed in practical details of work. At the end of this probationary period, they are to be reported on by their Superintending and Executive Engineers as regards their steadiness, temper, intelligence, industry and practical knowledge, of the descriptions of work in which they have been instructed, and if this report is satisfactory, they will be

appointed permanently to the Public Works Department. Apprentice Overseers 1st grade receive Rs. 80 per mensem, 2nd grade Rs. 60, and 3rd grade Rs. 40; and all Europeans have free quarters provided for them. This system partially supplies a want which has long been felt, the want of practical knowledge of the management of labour and of the details of construction which it is impossible for a College to furnish. It is not, however, all that is required. The College, which was originally established to recruit the subordinate establishment of the Public Works Department, has now a wider sphere, and educates all young men who are desirous of becoming Engineers or Engineering subordinates either in Government or other establishments. Hitherto it has provided only theoretical training. Practical instruction has been subsequently given by the department or establishment which has entertained a passed student. Under the new rules, however, a few students are selected for a course of practical instruction which is supervised by the Public Works Department; and the cost of that training is borne by the College. If the cost were borne by the P. W. D. no objection could be raised; but, as it is, the college provides for the complete training of only a few, and turns out other students, who are admittedly fit to continue their studies, when a very material portion of their education is still wanting. If the cost of practical training is to be charged to the college, it would seem equitable that all students who are fit for it should undergo that training; and that during this period of their education they should receive at most a small subsistence allowance instead of the high rates of pay which are passed to the selected students who are intended for the Upper Subordinate ranks of the P. W. D.

**Surveying Class.**—In the first division 9 students presented themselves for examination for certificates. C. Davaraja Pillai stands first with a second class certificate. Seven others obtain third class certificates, and one fails. The prize is awarded to V. Parthasarathy Mudali, who stands third on the list, the first two men being precluded from receiving it on account of length of residence. In the second division scholarships of eight rupees each are granted to K. A. Krishnama Chari and V. Daivasigamoney Pillai for proficiency. The three remaining scholarships available for this class are not awarded.

**Drawing Class.**—In the first division 14 candidates presented themselves for examination, of whom 12 passed. The remaining two will be permitted to study for another year. Four of the successful candidates, T. Visvanada Mudali, A. Ramasawmy Mudali, V. Omapathy Mudali, and R. Iyasawmy Iyer, gain 2nd class certificates as draftsman and estimator, and the remainder 3rd class certificates.

**Employment.**—I have no precise information regarding the number of passed students who have obtained employment during the year. In the first department Mr. Gopalakrishna Aiyer, who passed first in December '79, was appointed an Assistant Engineer, 3rd grade, in the P. W. D. Mr. H. O'Flaherty, who passed first in '78, became in July last Assistant Engineer to the North Arcot Local Fund Board. In the Second Department the only apprentice overseers yet appointed to the P. W. D. have been military students, owing to the necessity, already alluded to, of re-absorbing the men recently dismissed

on reduction of establishment. In other quarters there has, however, been considerable demand for passed men. With the view of encouraging steady application to work in the College and a recognition of the degree of merit with which the final examination is passed, heads of departments and others requiring the services of Engineers, and Engineering subordinates have been asked to communicate with the Principal, who, whenever possible, recommends the man who stands highest on the unemployed list. The applications received during the past year have been chiefly from Presidents of Local Fund Boards, and numbered:—

|                             |    |
|-----------------------------|----|
| Assistant Engineers.....    | 3  |
| Supervisors.....            | 13 |
| Surveyors.....              | 2  |
| Draftsmen and Estimators... | 4  |

A considerable number of appointments have doubtless followed on the recommendations made, and it is probable that employment has been secured by others who have not communicated with the college.

When affairs have assumed their normal state in the P. W. D., I believe that the demand for Overseers, Surveyors and Draftsmen from the P. W. D. and L. F. Boards will be quite equal to that which obtained in the P. W. D. under the conditions of previous years.

*General.*—The effect of the Standing Orders which were drawn up at the commencement of the session has been to increase the regularity of attendance, and to put a stop to certain unfair practices which formerly resulted from permitting students to convey their plans and drawings to their homes. Teaching in Photography has not been carried on, owing chiefly to the absence of the Instructor, Mr. Hyde, in England. The students of the first and second departments have on several occasions visited buildings in progress and such Irrigation Works as were available in the vicinity of Madras, and they have produced intelligent reports thereon. The time available for theoretical study has thus been slightly curtailed, but there has been gain on the side of practical knowledge of engineering construction. Owing to the comparatively small number of students in the College, it has not been thought proper to utilize this year the whole of the Library and Model allowances. The Library now consists of 1,453 volumes. Two new models of the Godaverí Central Delta Head Sluice have been added to the Model Room. They were well and cheaply constructed by the P. W. Workshop at Dowlaish-waram. The conduct of the students has been highly satisfactory throughout the session.

*Committee.*—Much cannot now be said regarding the labours of the Committee which was appointed in September '80 to consider the question of remodelling the College, as its recommendations are now before the Government. The Committee based their proposals on the ground that a greater portion of the Engineering wants of this Presidency should be met by the College than is now the case, and that such sound education, both theoretical and practical, should be imparted as will render the services of passed students more valuable to quasi-Governmental and private employers, than they are at present. There is ample field for Engineering work outside strictly Government limits, and, provided men are properly trained, I know of no reason why the natives of this country should not become as

able in the profession of engineering as they have shown themselves to be in the professions of law and medicine.

The Reading of the Report was followed by a long and interesting address read by the Honourable the Chairman. —From the Madras Times.

### ANNIVERSARY OF THE MADRAS MEDICAL COLLEGE.

The distribution of prizes to the students of the Madras Medical College took place at the College on the evening of Tuesday 31st, May. There was a large attendance on the occasion—particularly of the medical profession. Among those present were Dr. D. Duncan, Deputy Surgeon-General Stewart, the Rev. W. Leeming, Colonel Weldon, Colonel Swanson, the Rev. W. Miller, the Rev. Mr. Walker, the Professors of the College, and others. The Venerable Archdeacon Warlow was in the chair.

Dr. King, the Principal, read the report of the College for the past year, from which it appeared that the forty-fifth academical year opened on the 4th October 1880 with 196 students on the books. Two were admitted as special cases in December, and two students at the commencement of the summer session. No change took place in the college staff since last report, except that Professor W. R. Browne, M.D. was appointed to the chair of Pathology in place of Professor Sibthorpe, who obtained twenty months' leave. The Senior Department of the college consisted of 26 students, viz., 7 in their first, 5 in their second, 2 in their third, and 2 in their fifth year of professional study; the last two will present themselves next month (July) at the M. B. and C. M. Examination. Five passed the preliminary scientific examination last July, and nine are about to go up for it. Two others will go up for the first B. and C.M. The Junior Section of the same department included 46 students when the year began, viz., 14 in their first, 9 in their second, 20 in their third and 3 in their fourth year of professional study. Of this number one resigned, one died from the result of a lamentable accident, and five left for Europe to complete their medical education. Two appear at the coming University second examination for the License in Medicine and Surgery and for the first examination. Six candidates who went up for the License last year were successful; two passed the examination for this degree. The progress of this class during the year was satisfactory. The principle that the teaching of the senior students should, the Principal said, be primarily and mainly adapted to the requirements of the local University will scarcely be disputed, nor does he anticipate any objection to the first recommendation founded upon it, which he was about to make. In qualifying the students to enter for medical degrees in the University of Madras, the Professors of the College were, of course, bound to provide all the courses of lecture which the University demanded, but the Principal could see no reason for providing any more. He proposed to remove from the compulsory curricula of the senior department all courses not required by the University, thus relieving teachers in some degree from the presence of overcrowded classes, and pupils from superfluous attendance in the lecture rooms. Thus the curriculum for the senior section required two courses of Practical Pharmacy,

the University demands but one, surely sufficient for men who are being trained not to compound but to practice. Again the curriculum requires four courses of dissections. The University demands certificates of having dissected the whole human body for the first M.B. and C. M. examination, and two additional courses of dissections for second examination. The Principal proposed to excise from the senior section curriculum the superfluous courses. In the Junior or L. M. S. section the curriculum requires two courses of Physiology and two of Practical Pharmacy, while the University demands but one course of each. The Principal recommended the omission of the courses which are unnecessary for the university degree. In ordinary circumstances there would be no obstacle to students attending extra courses without fee, or obtaining certificates of attendance on payment of the regulated fees. The Principal next touched on "a more debatable subject," and one on which he did not expect to find unanimity of opinion, viz., what he should plainly call the abuse of the junior section of the senior Department. Some four or five years ago it pleased the University to lower its requirements in medical education by offering a License in Medicine and Surgery to Matriculated students after four years' professional study, of which only three needed to be collegiate. Dr. King had always thought the measure a mistake, and he should have much preferred a revival of the quasi-degree of the Medical College. However, the degree was instituted mainly if not solely for the purpose, as its advocates alleged, of supplying the Presidency with educated Practitioners. How it has fulfilled the object which alone would have justified its existence the following figures show:—56 students have joined the L. M. S. section since its institution. Of these 5 resigned and 1 died, and 9 have graduated, while 19 have gone to England to compete for commissions in the army. Of the 22 remaining on the college books it was notorious that a very large proportion would be classed not with the 9 but with the 19. Such a state of things was not the aim of those who advocated the institution of the License, nor was it in itself desirable. No one could wish less than he (the Principal) to exclude gentlemen of any race from the public services of their country, but he would say plainly, that a standard of general education and culture higher than the Matriculation text of the local University marks, was necessary to Medical Officers, if they were to mix on equal terms, socially and intellectually, with members of the other services. It is more than questionable whether the degree of education represented by Matriculation is a sufficiently firm or wide foundation for the professional superstructure the college strives to build upon, especially since the Senate, in its wisdom, has dispensed with a knowledge of Latin, but there can be no doubt that the average matriculate is not educated up to the level of average members of the classes with whom the Commissioned Medical officers will, or at least should, associate. The Principal proposed, therefore, that the senior department in its junior section be restricted to the duty for which it was instituted, namely, the preparation of students for the University License, and Dr. King recommended that certificates of attendance upon lectures, &c., in this section be issued not to the candidates but to the Registrar of the University on his application. When the year opened there were 80 students in the second department, all but one stipended, and being educated

gratuitously for the service of the State. Of these, 36 (12 Military, 2 Civil and 2 Colonial) were in their final year of study, 29 in their second (12 Military, 16 Civil and 1 Colonial) and 13 Civil and 1 Colonial Hospital Apprentices were in their first year. The third year class appeared before the final Examining Board; 26 passed, besides a private student specially permitted by Government to appear. The opening of the Second Department to private students has been so far a failure. Several applied for admission as private students in this department but not having matriculated they were excluded. Application was made to Government to relax the qualifications so far as to allow candidates to defer matriculation until the December of their pre-collegiate year; the indulgence was refused. Four female students entered on, and three were still pursuing their pre-collegiate course; these last were expected to join the college in October next. Hitherto no fees had been demanded of female students. The Principal was of opinion that this indulgence was no longer necessary, and he recommended that fees on the very moderate scale sanctioned for private students should be paid by ladies henceforward entering on their pre-collegiate course. The Junior Department included 15 students in their first and 31 in their second year of study; of the latter 22 are Madras Government students, 8 Mysore, and one of the Pudukottah States. The Mysore pupils will, it is understood, join the Bangalore Medical School in October next. Of the 15 pupils who entered last October, 8 were from Mysore and 7 private students appeared for examination as Chemists and Druggists and both passed. The Principal made the following further recommendation; "That the college be closed at Easter for the usual Government holidays, instead of 14 days at present allowed. That 4 Demonstrators in Anatomy be appointed from the senior students to assist in the teaching of Practical Anatomy, 2 to attend in the dissecting room from October to December and the others from January to March, each to receive an honorarium of Rs. 30. That an additional Assistant be appointed to aid the Professor of Surgery and Physiology. That the Junior Surgeon sanctioned by Government be appointed to the General Hospital as a further Clinical Teacher before the opening of the winter session. That the Surgery courses be combined into one extending from October to the close of the summer session. That a suitable operating theatre be built at the General Hospital. That the courses in Midwifery and Diseases of Women and Children be similarly amalgamated. That the first two-fifths of the lectures in chemistry be devoted to Clinical Physics, and the last fifth to Elementary Organic Chemistry. That two courses in Medical Jurisprudence be delivered in future, one in the winter session to the students of the senior and second departments, and the other to the junior department students in the summer session. This year the "Johnstone Medal" had been awarded to Mr. Staunton, a fifth year student of the M. B. class. The "Blacklock Medal" for Clinical Surgery to Mr. Frederick St. John Lawrence of the second department, to which it is at present restricted. The "Chipperfield Medal" for Clinical Medicine (unfortunately not yet available for presentation) to Mr. N. Jesudasan Pillay, a fifth year student of the Senior Department. Messrs. Saldanha and Winckler obtained equal number of marks for the "Cornish Clinical Prize" of Rs. 100, which will therefore be divided between them. The

Government gold medal has been awarded to a native pupil of the Auxiliary Medical School, Royapooram. The competitors for this medal this year did not include any student from the college. The cost of the college in 1880-81 amounted to Rs. 69,596-10-7. Rs. 8,744-15-5 were received as fees and from other sources. In concluding his report Dr. King availed himself of this last public opportunity to thank his colleagues and assistants, not merely for efficient aid in performing their common duties, but also for the smoothness and harmony with which their work had been carried on.

The reading of the Report over, the prizes, medals, honorary certificates, and certificates of qualification were presented to the successful candidates.

Professor McNally then delivered the following address;—

VENERABLE SIR, LADIES AND GENTLEMEN,—The report of the Madras Medical College for the past academical year shows that the institution continues to prosper more than at any period since its foundation as a medical school 46 years ago. The presence of 54 private students in the senior department is a most satisfactory feature; but there are two less encouraging points to which I would direct your attention: the absence of female and the paucity of Mahomedan students. In this enlightened assembly there must be some whose views of female emancipation and education are more or less consonant with those upheld by Mill and his school, as well as many who consider the subordination of woman an inviolable law of nature. But, however divergent be speculations as to woman's place in the highest development of civilized society, all must agree in this; that the enforced idleness of native women is a great defect in all present social systems. Unmarried women and childless wives—some mothers too—women often of energy and talent, are too frequently a trial to themselves and a burden to others simply because no career is open to them. Many are the individual lives thus unhappily wasted, and incalculable is the store of potential energy thus irretrievably lost to humanity. But matters are mending. In Europe educational advantages for women have much increased of late years, and, with improved social freedom, many employments have been opened to them. Women are no longer debarred from entering the medical profession. In America lady practitioners of Medicine have, in many instances, met with well-deserved success. For example, of one hundred and eighty-one graduates of the Woman's Medical College of Philadelphia, whose career has been traced, no less than a hundred and fifty-one are in active practice, and several of these have attained high distinction. There are still a good many who doubt the necessity for, or the propriety of, female medical practitioners in European countries; but even they cannot but admit that such practitioners are needed in India. In India, more perhaps than in any other country, there is a field for the labors of well-educated medical ladies. A medical zenana mission might accomplish immeasurable good throughout the length and breadth of the land; and such a mission would assuredly be welcomed everywhere if it were free from any suspicion of religious proselytism. It is an incontestable fact that humanity in general is much more alive to a palpable ill of the flesh than to any metaphysical canker, worm which preys upon the soul, especially when the ghostly canker-worm belongs to a species unrecognised in the theological system

of a revered ancestry. Without in the least degree disparaging the goodness and earnestness of medical missionaries, I do object to the system of combined religious and medical missions, particularly in a country where hospitals exist in every place of importance; I do protest against the use of our profession to further the ends of religious proselytism. I feel sure that the learned and reverend gentleman who does us the honor of presiding here to-day will agree with me in asserting that religion should have no need to shine with borrowed light. If we are to have medical missions, let us have purely medical missionaries, who shall devote their entire energies to healing the sick and disseminating principles conducive to that physical well being, which is the surest guarantee of moral soundness. In Dublin, which city enjoys in the United Kingdom the same unenviable pre-eminence in mortality that distinguishes Madras in India, a "Ladies' Sanitary Association" has lately been established "for improving the condition of the houses of the poor and for the promotion of health reform amongst all classes of Society." It is to be hoped that the members of the association, while, with commendable charity, extracting sanitary straws from the eyes of their poorer neighbours, may not entirely overlook certain not insignificant moles in their own. Let them institute a crusade against some "folly of Fashion" which are not less barbarous than the deforming practices of limping celestials or tattooed savages, and revert a little towards that Greek and natural type of beauty which they profess to admire. However, there is no doubt that such an association has before it a vast field of practical philanthropy among the poor. There is room for many such associations in India, where ladies might do much good sanitary work without actually becoming female medical men. I am sure that all here, while sharing my regret at the absence of a large sprinkling of the softer sex from our benches, will be glad to learn that there is a prospect of at least three female students who have just completed a pre-collegiate year of study, joining the College next session. Hitherto we have had but six female students, of whom four passed the examination for the Apothecary grade; two of these have obtained honorable and lucrative appointments; one is gone to England to engage in further professional studies, and the fourth has devoted herself to other duties. But more than this is required. The portals of the Madras University are open to all, and any fairly well-educated lady of moderate energy and ability may become a graduate in medicine. Any lady who does obtain such guarantee of a sound medical education may be assured that her ministrations to suffering humanity will secure to her not only an honorable competence in any part of India, but that which is of truer value, the esteem of many friends, and that inward satisfaction which is the best reward of merit. With regard to the paucity of Mahomedan students, it is notable that out of 179 students at present on the College roll, but 3 are Mahomedan, and, in the Auxiliary Medical School they number only 4 in a total of 56 students. I am at a loss to fully account for this small proportion. Islam, not only offers no discouragement to medical studies, but the profession of medicine has ever, in Mussalman countries, been the most esteemed and venerated of lay occupations. It is strange, however, that many Mahomedans should still be satisfied with a system of medicine which gains reverence

from its antiquity, and which can scarcely be said to have advanced since the time of Hippocrates. They witness our marvellous practical developments of chemistry, mechanics, optics, electricity, and yet are slow in giving full credit to our advances in the science of medicine, or rather to the elevation of medicine above the rank of an empiric art. Class and religious prejudice is strongly rooted among uneducated Mussalmans—as it is indeed among the ignorant everywhere. A large intercourse with Hindus, Christians, and others, particularly in educational institutions, would remove much unreasonable prejudice, and teach them that all is not darkness outside of Islam. Apathy, poverty, and deficient means of education appear to be other causes which prevent Madras Mahomedans from utilizing the career which is here open to them. Wealthy Mussalmans show too little disposition to assist the education of their poorer co-religionists, and the efforts of the late Lord Hobart in this direction met with more praise than encouragement. Religion too, I fear, is sometimes used as a cloak for very irreligious idleness, and for eating the bread of dependence. I would remind some of our Molese friends of their own oft-quoted and wholesome maxim “Al Kasibs habid Ullah,” and of Sadi’s graceful lines, which convey not only a religious moral:

“Guftam mian-i alim o abid chi fark bud  
Ta Kardi ikhtias as an in farikara  
Guft an gilim-i Khish badar mibarad ze mouj  
O in jahad mikunad ki bagirad qarik ra.”

While labor Devotees themselves to save  
To rescue other Scholars breast the wave.

I shall here allude to the subject of medical education only to observe that one point upon which all are agreed is, that a good general education with some special training in physical and natural science is essential for the successful prosecution of medical studies. An acquaintance with the classic writers of Greece and Rome is doubtless of great value to students of philosophy, literature, philology, religion and history; but, with the exception of some incorrigible classical pedagogues, there are few men who do not believe that classical education has been overdone—largely overdone—to the detriment of modern literary and scientific culture. This is scarcely the place to consider the causes which have led to this undue appreciation of ancient classics. The fact suffices that Universities and schools, all the world over, are beginning to recognise that such classical lore is an artificial growth which cannot fructify in practical modern life; and before long, we may expect to see ancient classics relegated to their proper position—the position assigned to scientific studies some generations ago. One of the signs of the times is the institution of pure science degrees in the newly chartered University of Manchester. The older Universities too, with the one exception of Oxford, are bestirring themselves with much success in the cause of medical and general scientific education. The result of unmixt scientific training, such as is now being initiated at Manchester, remains to be seen. It appears likely, that, unless some such general subjects as history, moral philosophy, or a modern or ancient language and literature, are made compulsory, science degrees will degenerate into mere technical certificates or into diplomas of scientific pedantry.

The scientific pedant is happily not very common, for he is a more obnoxious phenomenon than his classical prototype. In him dogmatic arrogance and a vain display of scientific verbiage may clothe a body of facts and theories; but he lacks the scientific spirit, the spirit of tolerant enquiry and of calm philosophy. One drop of knowledge so intoxicates his reason that he becomes oblivious of the boundless ocean before him. There is good evidence, however, that special scientific studies, when combined with general culture, largely enhance “the poetry of life” and the pleasures of existence, and establish most firmly that first of virtues, the love of truth. The natural philosopher beholds everywhere beautifully mutable expressions of immutable law; for him mountains and valleys disclose records of pre-adamite time; for him organic life has charms infinitely deeper and more varied than superficial harmonies and contrasts of color and form; for him the physical phenomena of our little earth and the vast facts of Astronomy are correlated; for him the bookless literature of nature is an ever present source of study and of gratification. His grand interpretations of universal law are surely incomparably more noble than the conceptions of any ignorant fetish-worshipper or imaginative polytheist, or superstitious preternaturalist. Almost the only objection which has been seriously urged against scientific culture—sometimes with special reference to medicine—is, that it leads to infidelity in religion. This is a valid objection from the standpoint of a few men, who, whatever their errors, are no hypocrites, and deserve respect on account of their sincerity. But such were the persecutors of Galileo. These good people by religion understand an intolerant creed which sees no light, acknowledges no truth, outside of its own narrow and uncharitable circle. Assuredly, it is the herculean mission of modern science to overthrow the last strongholds of Bigotry and of Superstition, children of Ignorance, and to rend the thick mists which shroud the throne of Reason! But, even at the centres of civilization, the higher education of the masses is so little advanced that the higher education of the beneficent masses of India appears nothing short of a utopian fantasy. The great body of the people can be leavened intellectually only through the influence of its social leaders. It is then by the encouragement of liberal education among the influential classes that the practical benefits of such education may be most widely diffused. It would infallibly contribute to a higher cultivation of medical knowledge, and tend to a larger appreciation of its benefits among the people; were Mahomedans and Christians of influential family, and high-caste Hindus, men usually of superior natural and inherited mental qualities and presumably of superior general education, more frequently induced to devote themselves to medicine. Our native medical subordinates are recruited almost exclusively from classes of little or no social influence, and their deficiency in primary mental culture renders it impossible to educate them beyond a very low professional standard—a standard too low for the responsible duties with which they are frequently entrusted. Ladies and gentlemen, I now bring to your notice a few medical questions regarding which legislation appears to be desirable; the wide importance of the subject must be my apology for this further trial of your kind attention. India is not yet ripe for legislation to protect the people from unqualified medical practice; but the Government stamp must

always carry great weight, and I fear that the present Government stamp is too cheap. Ill-qualified men placed in independent charges are of doubtful advantage to the people and are apt to bring scientific medicine into disrepute. A partial remedy for this would be the institution of a minimum qualifying test of a practical nature, without passing which no hospital assistant should be permitted to hold an independent charge; and the L.M.S. standard should be the minimum qualification for Apothecaries and native Surgeons in charge of important stations. The cause of higher medical education in India would be much furthered by the granting of legal status in Great Britain to graduates of the Indian Universities. It is to be hoped that this measure, which has, I believe, been for some time in contemplation, may be no longer delayed. A matter of much concern to the public is the sale of secret medicines under a Government patent stamp, which ignorant people take to be a guarantee of their value. The revenue derived by the British Government from this disgraceful source is considerable; but the larger it is the more extensive is the harm, and were it reckoned by millions, it could not be upheld for a moment on any ground of morality. Let the virtuous legislators who attack the opium traffic of India look nearer home for immorality! The introduction of the metrical system of weights and measures is another question which well deserves attention. It is needless to dwell upon the value in commercial transactions of an international simple and uniform scale. The decimal metric system is admittedly the simplest and the best and it is more widely used than any other. It has been adopted in science throughout the world, and it will no doubt soon replace the highly incongruous system—or want of system—in the British Pharmacopœia. In India, where weights and measures are in a state perhaps even more chaotic than they are in England, the benefits of the metrical system would well repay the difficulties of its installation. Color-blindness is a curious defect to which public attention has of late been prominently directed, and possibly its importance has been exaggerated. Recent statistics in America and Europe prove that about one man in twenty is more or less color blind, though the imperfection is much less frequent among women. The necessity for an accurate discrimination of colors by sailors and railway servants is evident; and the law should insist on public companies discarding color-blind officials for any service when the defect might be dangerous. Many railway companies voluntarily attend to this, and in the French army color-blind soldiers are disqualified for employment in signalling corps. The subject of medico legal evidence concerns the Law as much as it does medicine. All are aware of the unsatisfactory nature of medical evidence in British law courts. It has constantly been satirized by lawyers, and it has even drawn uncomplimentary comments from the judicial bench from men who should be the last to form rash judgments. Learned Counsel and stately Judges scarcely need to be reminded of “the glorious uncertainty of the Law.” It is notorious that learned counsel are not rarely divided in opinion about much less complex affairs than are most medical problems, and reversal of judgments on appeal—last year no less than fifty per cent of English appeals were successful—and want of unanimity among judges of the Law are by no means rare occurrences. I adduce these facts, not as to

quoque arguments, nor with any intention of depreciating the learned and honored profession of the Law, but merely to exemplify the fallibility of human judgment. I remember reading somewhere a witty observation to the effect that a man may be an indifferent cricketer or rider, or chess player, or, in fact, indifferent at almost everything without exciting animosity, but at which he must be perfect. Now angry and unreasoning men sometimes make Medicine the whist of the professions, and sneer at its followers for want of that unanimity which is an attribute of perfection alone—an impossibility which is not expected from engineers, nor lawyers, nor statesmen nor even from ecclesiastics. It is the English system which is at fault; the system of allowing suitors to get up their own medical evidence; and (to quote Dr. Draper) “an entirely conscientious man may be unconsciously biased by having seen only one side of the shield, by having listened to only one version of the story from the party who retains him; and medical witnesses, to the discredit of a noble profession, are set up as partisans for cross-examination.” Several remedies for this state of things have been suggested, such as the selection of an expert by mutual consent, or the Roman custom of summoning an expert as an *amicus curiæ* to interpret medical questions to administrators of the law, or the present German system of official experts who have special training in medical jurisprudence. In these days of German forage caps and epauletts, is it too much to hope that we may borrow this sensible practice? Another medico-legal question is that of privileged communications between a patient and his medical adviser, as between a client and his lawyer. There is an old saying that “a man should have no secrets from his priest, his doctor, or his lawyer.” Statements are frequently made by patients, as it were, *sub sigillo confessionis*, and they should not be liable to violation in law-courts. I shall dismiss Homœopathy with a brief allusion; a full discussion of the subject would be superfluous in this place, and it has lately been exhaustively reviewed in the columns of professional journals. If the ill-judged and ill-informed articles which recently appeared in some English newspapers concerning the relations of Homœopathy to rational Medicine be at all representative of popular opinion, that opinion sadly needs enlightenment. I do not deny that Hahnemannism may delude even clever men—though it cannot boast of a single able adherent—even as clever men have been deluded by such phantoms as witchcraft and magic, or hypnotism and its congeners, mesmerism, spiritualism, and metallosotherapy; but, from the very nature of science, it is plain that there can be no compromise with votaries of an unreasonable delusion or a dishonest assumption. The feeling of the profession on the subject was recently exemplified by the almost unanimous election of Sir W. Jenner to the presidency of the Royal College of Physicians. The Law should take cognisance of the homœopathic treatment of serious disease as it does of the equally rational but more excusable therapeutic method of the Peculiar People. In England there exists a sect of Christians thus named, whose ministrations in sickness consists solely of prayer and the laying on of hands. British Law, however, does not respect earnest faith; and peculiar people are punished for trusting to its therapeutic efficacy. In addition to these and other medical affairs which require legal regulation, there

are many matters concerning Public Health in which the State may wisely interfere. Sanitary reform must necessarily be slow work. People have to be educated to see its value, and of times, the inertia, if not the actual opposition, of religious prejudice, or ancient custom, or "vested interest" has to be overcome. The principal duty of the State at present, with regard to sanitation is, to initiate and to foster the growth of correct public opinion upon hygienic subjects. This may be done effectively, if slowly, by insisting upon practical sanitation and physical education, as well as elementary instruction in the principles of Hygiene, in all schools, and by the influence of well-trained medical practitioners throughout the country. Thus people may be led to understand that disease is always more or less preventable, and that communal, as well as individual Hygiene may do much to promote the longevity, morality, and happiness of the present generation, and to lessen the heritage of disease to generations yet unborn. Even in Medical schools, the science of Health—the highest outcome of modern scientific medicine—is of quite recent growth; and only since a few years has Hygiene been taught as a separate subject. But it has advanced with giant strides, though strides still incommensurate with its endless and universal importance to the human race. It is difficult to limit the hope of sanitary science; "in its broadest sense the study of Hygiene includes the examination of the conditions which affect the generation, development, growth, and decay of individuals, of nations, and of races: being on its scientific side co-extensive with Biology, in its broadest sense, including Sociology, rather than Physiology merely." One of the most important starting points of Hygiene, public and private, is the consideration of the hereditary transmission of inherited or acquired qualities. It is certain that mental and moral qualities are transmitted from parents to offspring, exactly as physical qualities are so transmitted, for mental attributes depend upon the physical constitution of the brain and upon the general physical health. It is also beyond doubt that many diseases and dyscrasæ are similarly transmittable, and that, in truth, the sins of fathers are visited upon their children for generations. Blyth observes: "If every man handed down to his children a chronicle of his ailments, although in many cases it is to be feared it would be a humiliating and painful record, yet it would be of the greatest use to the individual who has inherited the same features, passions, and predispositions." A fault which exists in both parents is apt to be reproduced in an exaggerated form in their offspring, and virtues may likewise be strengthened by double transmission. Careful breeding for a long period has combined the good qualities and eradicated the defects of ancestors in the thoroughbred horse, and our various breed of other domestic animals are the results of selection and education for many generations. Analogy—independently of such direct confirmation as the researches of Galton afford—teaches us that similar care would produce equally valuable results in the improvement of mankind. Hence it may be judged what an important influence each generation has upon its successors, how physical cultivation combined with mental training, may in a few generations elevate a whole race, physically and morally, and how a few generations of luxurious, intemperate, dissolute ancestors may deprave their descendants and precipitate a nation's ruin. History is replete

with examples which testify this truth in unequivocal language. It is unnecessary to cite statistics to show how largely, in England, public sanitation has diminished the mortality from endemic as well as epidemic disease. In India, Calcutta and Bombay afford examples of similar improvement. If the measures already carried out in England—imperfect and incomplete as they are—have, in a few generations, doubled the average expectancy of life, what may we not anticipate from further hygienic advances? Even now, very few people die from the natural decay of old age, and the vast majority are prematurely destroyed by preventable disease. The time is approaching when it will be accepted as the highest duty of a civilized Government to adopt every means for the protection of its citizens from diseases which are public foes, more dangerous because more insidious, and infinitely more destructive, than hostile armies, or marauding bandits, or even the most terrible famines, and when it will be regarded as incumbent upon all good citizens to assist the efforts of the State in bequeathing to posterity the priceless endowment of health. In conclusion I must address a few words of counsel to students now entering this college, as well as to those who are about to leave its guidance and discipline. To beginners I would say: Train your mind exactly as you would your muscle, let your rule of conduct be, daily exercise short of fatigue, and your motto, *mens sana in corpore sano*. Thus you may acquire a store of sound knowledge, without overstraining your powers, and you will avoid the necessity for "cramming," of which the best fruit is a temporary and superficial display of learning, and the frequent consequence is mental breakdown and incapacity. Never forget that examinations and prizes are not the real ends for which you labor, but that they are merely tests and rewards to weed out the incompetent and idle and to encourage the studious. I trust that all who to-day leave us, may prove their own worth and the value of the training which they have undergone by remaining students ever. Let them remember that, whether they labor in the higher or the lower spheres of professional duty, their mission is the noblest mission of humanity in the conscientious execution of which each may find real happiness in life, and write his epitaph on the hearts of many in the words of Christian Scripture, "He went about doing good." Let them, above all, labor to spread enlightened views of social and of individual Hygiene, and find pleasure in contributing, by practice as well as by precept, to diffuse the blessings of knowledge and of health.

"More powerful each, as needful to the rest,  
And, in proportion as it blesses, blest."

The Chairman, the Venerable Archdeacon Warlow, then addressed the meeting as follows:—

Mr. Principal, ladies and gentlemen, I am, sure that I shall be re-echoing the sentiments of all of us here this afternoon, in saying that we are deeply indebted to Professor McNally for his interesting address. He touched on a great many very important points, and I think I may venture to say that there was no point which he touched upon, but which in some way or other he adorned. Referring to the opening part of his address, I cannot help feeling satisfaction in the fact that he has been down in the Mission districts, investigating the efficiency of the Mission dispensaries. He appears unfortunately

to have arrived at the conclusion that they are not altogether a desirable addition. He has not told us the facts on which he bases this conclusion, and I feel bound to say, that the facts that I have at my command run in another direction. I have the honour of being connected with one of our great Missionary Societies which delights to employ all possible means of doing good, and amongst them the means of a Medical Mission. And, so far as our Medical Mission is concerned, the results are very different from those of the Medical Missions with which Doctor McNally appears to be acquainted. Our results are most satisfactory; and I feel sure that if he were to go down to inspect one of our Medical Missions in Tinnevely, he would find that so far from their being bolstered up by medicine, the brilliancy of medicine received an additional lustre from its connection with religion. In the address you have heard, there were some remarks made with reference to scientific education with which I fully concur, and a great deal was said of that with which I cannot quite agree, the decadence of classical learning. I could not help feeling, as the address was being delivered, that if classical learning was relegated to that obscure limbo to which the speaker consigned it, some of the finest quotations, and the most apt phrases in his address, would have been entirely lost to this assembly. But still on the grand subject of scientific education, I am afraid he has been somewhat misled by the remarks of injudicious friends. We are given to understand that a scientific education has been commonly objected to on the grounds that it leads to infidelity. Now, I should like to know the eminent persons who have made that objection. Of course, I know full well that just as among medical practitioners, there are homœopathists, hydropathists and metallotherapeutists, so amongst Christians you will find men of different opinions, and people who will possibly object, in an ignorant way, to scientific education, on the grounds which the lecturer has mentioned. But I can tell him, and assure you all here to day, that no intelligent Christian has ever for one moment raised the merest shadow of an objection to scientific teaching, on such a ground as has been mentioned. Why, look back to the last few generations; who has been the most eminent scientific man in times gone by? Beyond all dispute, Isaac Newton, who was a man of deep religious character, with a mind strongly imbued, saturated, I might say, with religious enthusiasm and devotion. And, looking at the present day, who has been the greatest scientist the world has ever known? Faraday. And yet Faraday was a man of simple and honest piety. So among the philosophers of the present day, you may find men, to be numbered by thousands, who stand, if not in the very foremost place, at any rate amongst the very foremost men of science, and yet who are true and earnest men of piety and practical godliness. And I, as a Christian man, am bound to say, as everyone who sympathises with me will say, that so far from objecting to scientific education, there is nothing we would wish to see more than to behold the marvellous and wondrous works of God elucidated with perfect clearness to the minds of the many. In the latter part of the address a description was given us, and I must say, a very able description and a very graphic one, of a new mode of regenerating the world on the principles of breeding a race-horse. I have no doubt whatever that a great deal might be done by careful physical training so that no corrup-

tions of a physical nature should be handed down from father to son. I do not doubt, though I know nothing about horses myself, that a great deal has been done for the equine race in this way, but I would venture to mention that there is a little flaw in the argument used. It would be very difficult to come up to a race-horse and examine him as to his past moral improvement over his predecessors. I don't think that the winner of the Derby could very well say what would be the result, from a moral point of view, from his intercourse with trainers and lacqueys. The fact is that although practical hygiene and sanitation may do a great deal of good in a variety of ways, there is a point at which it stops; there is a point where we want something to step in, which the race-horse can never get, to teach a man something of higher and nobler things, to elevate his mind above what he eats and drinks, to teach him that his soul is immortal, and that he has divine things to attend to. I must not occupy your time any longer in saying any more about the interesting address you have heard. I should much wish to possess the scientific knowledge which Professor McNally displays, and I should like to see that knowledge spread, not only among professional classes, but also among all. I think it is a very hard case that we unprofessional people should be obliged to go without some knowledge of this interesting and valuable science. Here you see a man who knows every nook and corner of his own house, every square and alley of his own town, who is acquainted with the resources and the geography of his own country, and yet knows nothing whatever of the tenement in which he lives, and which he will carry from the cradle to the grave. He works and over-works his body, and yet knows nothing of its peculiar functions. In any other branch of the world's economy this would not be tolerated, nor in Railway Companies would an engine driver be employed who opened valve and moved lever by mere rule of thumb, when an intelligent being is required to direct such a complicated and perfect piece of mechanism. Yet we find that man is allowed to grow up and pass through his educational course at school, college, and, if he be not a professional man, to emerge as a well educated person without the slightest knowledge of the body which God has given him. I should like very much to see elementary anatomy, physiology, and practical hygiene amongst our regular curriculum of studies in every school and college, for boys, and girls.

#### ADMINISTRATION OF THE EDUCATIONAL DEPARTMENT.

In an Order dated 29th April last, the Right Honorable the Governor in Council reviews the leading features in the administration of the Educational Department for the year 1879-80, as follows:—

The total number of inspected schools in the Presidency rose from 9,274 with 237,838 pupils in the previous year to 10,533 with 268,379 pupils in the year under notice. The increase was due chiefly to the greater development of primary education fostered by the modification of the official rules for Results Grants, and aided by the return of prosperity to the country after the famine. Very probably the increase in uninspected schools has been still larger.

In the Ganjam District there was a decrease of 19 schools but an increase of 422 pupils. In Tanjore there was a decrease of 41 schools and 633 pupils. In all the other districts there was an increase both of schools and pupils, the most marked cases being Madura and Vizagapatam. In Municipalities the pupils rose from 71,275 to 73,304 and in Local Fund Circles from 166,563 to 195,975. On the whole, the number of boys rose from 211,640 to 238,960, and the number of girls from 26,198 to 29,419.

From the point of view of the agency maintaining the schools Government Schools were stationary, and Local Board Schools showed an increase of 346 schools and 10,077 pupils. Aided Schools showed a considerable increase, and would doubtless have shown more but for the difficulties in the way of putting them on the inspection list. The Director is requested to give his serious attention to the matter just mentioned. The Government fear that the arrangements made by the subordinate agency for the inspection of aided schools in the rural tracts are often arbitrary and capricious.

The district which has the least education as compared with area and population is Cuddapah, although there is a great improvement shown in this respect since 1878-79. Excluding Madras and the Nilgiris, which are exceptionally circumstanced, the district which has the most education is Tinnevely, where 1 person in 50 is under instruction.

Looking to race of pupils, Native Christians show the largest proportionate increase since 1878-79. Hindus next, and Mahomedans third. The total increase of girls in the girls' school is very satisfactory.

There was a decrease of Rs. 1,111 in the fees receipts of Government Institutions, which was due to the large failure of the previous year in the Matriculation Examination, the attendance of Colleges having been thereby materially affected. Over all institutions there was an increase of Rs. 43,424. The entire amount collected in fees was Rs. 691,727, out of which Rs. 5,920, belonged to the Medical College. As regards the calculation of an average fee the Government observe that the Director proposes to furnish a corrected statement for 1880-81.

The average cost to Government per pupil was Rs. 235-3-7, in the College Department of Government Arts Colleges against Rs. 183 in the previous year, the amount of fees having fallen. In Aided Colleges there is no marked variation. In Government High Schools attached to Arts Colleges fees have increased and cost has diminished. In the Middle Department of Arts Colleges there has been an increase of 400 per cent, in the cost to Government. Taking the average cost of a pupil in a College including the school departments, the cost in a Government College and Aided College, respectively, was Rs. 61-4-10 and Rs. 12-6-6, against Rs. 56-7-5 and Rs. 12-8-9 in the previous year.

In Government High Schools for boys the average cost has gone up from Rs. 86-2-7 to Rs. 103-15-6; in Aided Schools of the same class the cost has gone down from Rs. 31-14-1 to Rs. 28-4-9. This is excluding the middle and Primary Departments. Including them the cost has gone up from Rs. 21-15-10 to Rs. 23-3-5 in Government Schools, and has gone down from Rs. 11-6-9 to Rs. 9-6-9 in Aided Schools.

Taking Middle Schools proper, there was a slight decrease in the cost to Government of each pupil in the Middle Department, but a heavy increase in this item in the Primary Department in Government Schools. There was a very great decrease in the cost to the State in these departments of Middle Schools under Local Fund and municipal management. In Aided Institutions the cost of pupils in the Middle Department was about the same as last year, but there was an appreciable fall in the cost to Government in the primary branch.

In Primary Schools, whether Government or Local Board there was a marked decrease in the cost to Government of each pupil, whilst in private aided schools there was a very slight increase, probably due to larger payments from Provincial Funds, for grants in results standards above the third, and the increasing charge for elementary education in Madras, which has been thrown on Provincial Funds.

Under the Grant-in-Aid system the Provincial contribution to private schools was Rs. 261,292 out of a total of Rs. 381,693. Local Funds gave Rs. 99,297 and Municipalities gave Rs. 21,104. The grant from Local Funds shows a falling off since last year owing to the alteration of the results rates. The Municipal contribution on the other hand shows an increase.

\* A reduction in the grants of the following schools came into force at the beginning of the year:—

- Free Church Institution, Madras.
- Patchcappah's High School, Madras.
- S. P. G. High School, Vepery, Madras.
- Church of Scotland Mission School, Madras.
- London Mission School, Madras.
- Wesleyan Mission School, Madras.
- Hindu Proprietary School, Madras.
- Govindu Naidu's School.
- Free Church Mission Branch School, Madras.
- Town School, Kumbakonam.
- S. P. G. College, Trichinopoly.
- S. P. G. College, Tanjore.
- Coimbatore College.

Out of the sum saved by the reduction of grants, the salary of an Inspectress of Girls' School was provided. A sum of Rs. 6,000 was reserved for Salary Grants to new girls' schools. The balance was set apart for building grants.

The entire expenditure on education in 1879-80 was Rs. 28,23,473 of which Rs. 10,36,053 came from Provincial Revenues and the Educational Building Fund, Rs. 3,52,783 from Local Funds, Rs. 58,799 from Municipal Funds, and Rs. 13,74,838 from Endowments, Fees, and other sources. The percentage spent on superintendence was 10.55; on primary instruction 15.24; on secondary instruction 21.91; and on superior general instruction 7.66. The remainder was spent on miscellaneous charges special instruction, &c.

In the University, the test in English for the M. A. degree was made more severe by fixing a minimum of marks for a pass. Candidates for the degree of Bachelor of Civil Engineering were required to produce a certificate of having studied eighteen months in an institution affiliated in Civil Engineering to the University, and can-

didates for the degree of Bachelor of Medicine and Master in Surgery, who had not passed the First in Arts Examination, were permitted if they passed, to count the professional courses previously attended by them. For the degree of Master of Arts 8 candidates against 5 last year were registered, and 7 were examined against 4. Two passed, both in the fifth branch. They took up Mental Philosophy and Sociology. For the B.A. degree the number of candidates registered was 181 against 237; the number examined was 175 against 231, and the number passed 85 against 140. For the First Examination in Arts the number registered was 597 against 693; the number examined 582 against 663, and the number passed 295 against 172. The number of First grade Colleges, *viz.*, those providing an education up to the B. A. degree standard, was 6 as in the preceding year. The number of Second grade Colleges, *viz.*, those providing education up to the F. A. standard, rose from 14 to 18. The number of students reading for the B. A. degree rose from 222 to 178. For the degree of Master of Laws 2 candidates appeared against none last year, but both failed. For the degree of Bachelor of Laws 32 were registered against 38, 29 examined against 35 and 4 passed against 23. All 4 were from the Presidency College. In the faculty of Medicine 1 candidate came up for the Preliminary Scientific Examination but failed. Six candidates came up against 2 last year for the First L. M. S. Examination, and all passed. Two candidates came up against 1 last year for the Second L. M. S. Examination and 4 passed. For the First M. B. and C. M. Examination there were 3 candidates against 2 last year and 2 passed. In the Faculty of Engineering and for the degree of B. C. E. there were 8 candidates against 4 and 5 passed. Five students of Civil Engineering College obtained certificates as Assistant Engineers against 3 last year and 4 subsequently took the degree of B. C. E.

As regards secondary education, the number of candidates registered for the Matriculation Examination was 3,357 against 2,648; the number examined 3,309 against 2,597, and the number passed 1,094 against 356. The cause of the high proportion of failure was, as last year, the great severity of the examination. The attendance in English High Schools for boys rose from 4,415 to 4,499. A comparative examination was held of the fifth classes of all Government Schools excepting those attached to First-grade Colleges and to the Practising Department of the Madras Normal School. Altogether nineteen classes were examined and the result was that 327 out of 431 candidates were pronounced fit for promotion into the sixth class. A comparative examination was also held of the upper fourth classes of the same Schools. Out of 649 candidates examined, 429 were found fit for promotion. A Middle School Examination was also held of the upper fourth classes of schools. The number registered for examination was 1,987, the number examined 1,767, and the number passed 1,050, with 196 in the first class. The attendance in English Middle Schools was 13,183 against 12,878. There were 47 girls attending nine English High Schools and 286 attending twenty-two English Middle Schools. For the Teacher's Certificate Examination First grade, 30 candidates were examined against 20 and 20 passed against 16. For the Second grade, 85 were examined against 62, and 48 passed against 20. Of the successful candidates 11 came from up-country schools.

The number of pupils in Primary Schools rose from 218,089 to 247,771, of whom 17,514 were in the Upper Primary Division against 15,187 in the previous year. The number of pupils presented for examination rose from 62,825 to 69,492 and the expenditure on Results Grants from Rs. 174,850 to Rs. 176,760. The number of pupils in Local Fund Schools rose from 22,753 to 26,287, and in Municipal Schools from 4,470 to 5,210. The attendance in Municipal Girls' Schools fell from 409 to 392. In Local Fund Girls' Schools the attendance rose from 224 to 372, the increase having been caused by the establishment of five schools at Narsapur, Punganur, Namakal, Tiruchengod, and Atur. The attendance in English Salary Grant Girls' Schools and in three unaided Schools which furnished returns rose from 2,167 to 2,942; but of these five were Vernacular Schools last year, and one English School became a Vernacular School. Three schools were newly established. At the Teachers' Certificate Examination 63 candidates passed in place of 5 last year. The attendance in Vernacular Salary Grant Girls' Schools fell from 2,829 to 2,046, owing to the transfer stated above. Only 2 passed the Teachers' Certificate Examination. Third grade, in place of 7 last year.

The number of students in Normal Schools for Masters rose from 396 to 533, the increase being due in part to the opening of the Government Normal School at Kurnool and of the Local Fund Normal Schools at Cuddalore, Vellore, Salem, and Betur. The number of Normal Schools was nineteen. For the special examination in Method, 36 candidates, who had previously passed the B.A., F.A., and Matriculation Examinations and had entered the Normal Schools for the purpose of being trained, came up against 40 last year. The whole 36 passed against 39 last year. For the Fourth grade there were 15 candidates against 19, and 10 passed against 14. For the Fifth grade there were 285 against 237 and the number passed was 193 against 160. The Normal Students in the three Female Normal Schools rose from 113 to 129. For the First grade, 10 went up against 9 in the previous year, and 3 passed against 5. For the Second grade 25 went up against 15, and 15 passed against 6. For the Third grade 37 went up against 20, and 27 passed against 15. The general results indicate satisfactory progress.

The Government take this opportunity to record their obligations, to the late Director of Public Instruction, Colonel Macdonald, who retired from office at the close of the year under report.

### GIANT TELESCOPES.

It was a great day for astronomical science when Galileo exhibited to the astonished authorities of Venice the first-known telescope—a modest instrument, magnifying only three times. More powerful telescopes soon followed, and although none of those employed by Galileo magnified more than thirty times, yet he showed their utility for astronomical purposes by discovering, with their aid, spots on the sun, mountains in the moon, the satellites of Jupiter, and a host of otherwise invisible stars. Those early instruments were refracting telescopes, the rays of light from the celestial object passing through a convex lens, and being thereby refracted to a focus. Further, the rays of light being differently bent, as in a prism, produce a rainbow-

tinted image—a *chromatic aberration*, which, though not a serious inconvenience in a telescope of low power, was found to be altogether fatal to the usefulness of highly-magnifying instruments. It took 120 years before the method of forming achromatic lenses was discovered; but meanwhile astronomers, by elongating their telescopes, succeeded to some extent in lessening the evil, it being found that the image could thus be enlarged without correspondingly adding to its confusion. Thus originated a class of gigantic telescopes, some of them over 100 feet in length, in which the object-glass and eye-piece were placed at opposite ends not usually of a tube, but of a long pole or rod supported by more or less elaborate machinery, the whole bearing some resemblance to a huge building crane. The chromatic difficulty also led to the construction of the reflecting telescope—first employed, if not invented, by Sir Isaac Newton—in which the focal image was produced by reflecting from a concave mirror, called the *speculum*, the rays of light coming from the object viewed. At first, the reflecting telescopes were very small—only an inch or two in diameter; gradually, however, they were enlarged, until Sir Wm. Herschel, then a church organist and teacher of music, produced one with an aperture of 2 feet, and a focal length of 20. With this he discovered the planet Uranus. Anxious for more space-penetrating power, he made another reflector of exactly double the size, with which, among other things, he discovered two new satellites of Saturn. The difficulty of working so unwieldy an instrument was, however, enormous; and the smaller one seems to have been that chiefly used by Herschel. The next great advance in the size of reflectors was that made in the construction of Lord Rosse's giant telescope at Parsonstown. This has a polished metal speculum 6 feet in diameter, and weighing four tons; while its tube measures 50 feet in length. It is carried on massive iron mountings, supported by two piles of solid masonry, each nearly 60 feet in height. Although now about forty years old, Lord Rosse's remains the biggest telescope in existence. Astronomers, however, no longer regard it as the most powerful. Its light-gathering power, owing to the unequalled size of its speculum, is very great; thus Mr. Lockyer calculates that—everything being supposed perfect—we should get 120,000 times more light from Lord Rosse's telescope than from our unaided eye. Supposing, however, that, from imperfection in reflecting and other defects, two-thirds of this light is lost, still, by the aid of this huge telescopic eye, stars should be seen so distant that their light would take 60,000 years to reach us, although travelling, as it does, at the rate of 185,000 miles a second. This telescope has been chiefly employed in the observation of lunar scenery and the planets; while the blaze of light which it gathers has given it an undoubted advantage over smaller instruments in the observation of dim nebulae. It is deficient, however, in that defining power which depends on accuracy in the curvature of the surface of the speculum. The next largest telescope is the great Melbourne reflector, with a metal speculum 4 feet in diameter, and remarkable, having regard to its enormous weight, for the ease with which it can be managed. Of late years large reflecting telescopes have been for the most part furnished with mirrors of silvered glass, which has the advantage of reflecting fully 90 per cent. of the light falling upon them, while metal specula only reflect about 63 per

cent. The difficulty of mounting very large silver-on-glass specula, so as to prevent the slightest flexure of the material, has now been fairly overcome; although in the recently erected instrument in the Paris Observatory, which is provided with a glass mirror nearly 4 feet in diameter, total absence of flexure does not appear to have been yet attained. Lately, Mr. Ainslie Common, the astronomer of Ealing, erected a reflecting telescope at his residence, provided with a silvered glass speculum 37½ inches in diameter, and with a focal length of 20 feet. Although not nearly the largest telescope of its kind, it is probably the finest; and Mr. Neison, in a recent paper, concludes, from the manner in which this telescope has stood the tests hitherto applied, that in the Ealing instrument England possesses the most powerful telescope in existence. Whether this be so or not, another reflector is at present being constructed, and is now almost finished, which may be expected to enter the lists as a competitor for the first place among space-penetrating telescopes. For two years past Sir Henry Bessemer has been constructing a reflecting telescope provided with a mirror of silvered glass 4 feet in diameter. This, which is of comparatively thin glass, is said to be mounted on a marble backing, and should this be found sufficient to enable the speculum to retain its proper curvature, future makers of such telescopes should have no difficulty in distancing Lord Rosse in the size of their specula. Sir Henry, it is said, expects to be able, by means of this telescope, placed in his observatory at Denmark Hill, to read a newspaper posted against the side of the Crystal Palace, 3½ miles away. Probably this expected result has been deduced from the same theoretical considerations which led popular astronomers to say that, with Lord Rosse's telescope, a building in the moon as big as Dublin Castle or the Court-house at Cork ought to be visible. A main feature of the new telescope lies in the ingenious devices for enabling the observer to use so huge an instrument—it has an altitude, when vertical, of 45 feet—with comfort and convenience. Thus, according to a recent description, "the observing-room, with its floor, windows, and dome, revolve and keep pace automatically with any and every motion of the telescope, notwithstanding that the latter is wholly detached from the moving parts of the building."

Reflecting telescopes owe their introduction to the inability of opticians at that time to cure the chromatic aberration of the object-glass. Soon after, however, by a combination of crown and flint glass, this difficulty was to a very large extent surmounted; and achromatic refracting telescopes began a career of progressive improvement similar to that of the reflectors. Improvements in the manufacture of glass enabled opticians to obtain larger and larger discs from which to grind their lenses. From an aperture of one or two inches, the refractors have grown and are continuing to grow, by inches. Twenty years ago, the largest, now mounted in Chicago, had a clear aperture of 18 inches; and before it was quite finished, it had become famous by the discovery of the companion of Sirius. In 1870, Mr. Newall, of Gateshead, had one made with an aperture of 23 inches, mounted on a tube nearly 30 feet in length. A little later, the Washington Observatory gained off the palm with an object-glass 26 inches in diameter; and notwithstanding Mr. Neison's dictum, many astronomers regard this as the finest

telescope yet in operation. Even the above writer admits that its definition is "sharp and crisp," and that "it brings every ray of the enormous amount of light which it collects to a sharp focus." The best test of a telescope, as of most other things, is that of work done; and it was with the Washington refractor that the most notable astronomical discovery of recent times—the discovery, namely, of the satellites of Mars—was made. It is the workmanship of Alvan Clark & Sons, who hold the place among New World opticians occupied in the Old World by Mr. Howard Grubb, of Dublin. The latter has just completed a refracting telescope, intended for the new Observatory at Vienna, which exceeds that of Washington by an inch in clear aperture. This Observatory is probably the finest in Europe, the building occupying an area of about 14 acres, and being surmounted by four revolving domes—made also by Mr. Grubb—in the largest of which the new telescope is about to be mounted.

### UNIVERSITY OF MADRAS.

First Examination in Arts—1880.

### TRIGONOMETRY AND EUCLID (xi)

#### Questions and Solutions.

I. The angle lying in the fourth quadrant give the construction necessary to show that:—

$$(1) \operatorname{cosec} A = \operatorname{cosec} (180 - A)$$

$$(2) \tan (-A) = -\tan A$$

$$(3) \sin (180^\circ + A) = -\sin A$$

See Arts 48, 49, 50 Todhunter Trig.

II. The length of the shadow of a vertical stick is to the length of the stick as  $\sqrt{3}:1$ . If the stick be turned about its lower extremity in a vertical plane so that the shadow is always in the same direction, find what will be the inclination of the stick to the horizon, when the length of the shadow is the same as before.

Take a right-angled triangle whose angles are in A.P. Let AC, BC containing the right angle denote the stick and its shadow respectively. In AB take AD = AC; then CD = CA; and CD represents the position of the shadow in the second case. Again  $\angle DBC + \angle DCB$  are each equal to  $30^\circ$ . Hence the inclination of CD to the horizon is  $30^\circ$ .

III. Find an expression for all angles which have a given tangent.

See Art. 68, Tod. Trig.

IV. BAC is an angle of 60 degrees, and is divided into two unequal parts by the line AP. If from P, PB and PC be drawn perpendicular to BA and AC respectively, so that AB measures 3 inches, and AC, 4 inches; find the length of PB.

$$CB^2 = 4^2 + 3^2 - 2 \cdot 4 \cdot 3 \cos 60^\circ$$

$$CB^2 = 13.$$

$$PC^2 + 16 = PB^2 + 9$$

$$PC^2 = PB^2 - 7;$$

$$BC^2 = PC^2 + PB^2 - 2PC \cdot PB \cos 120^\circ$$

$$13 = 2PB^2 - 7 + PC \cdot PB$$

$$(20 - 2PB^2)^2 = (PB^2 - 7)(PB^2)$$

$$400 - 80PB^2 + 4PB^4 = PB^4 - 7PB^2$$

$$3PB^4 - 73PB^2 + 400 = 0$$

$$PB^2 = \frac{73 \pm \sqrt{73^2 - 4800}}{6}$$

$$= \frac{73 \pm 23}{6} = \frac{50}{6} \text{ or } 16$$

$$PB = \pm \frac{5}{\sqrt{3}} \text{ or } \pm 4.$$

V. If  $\sqrt{2} \cos A = \cos B + \cos^3 B$

$$\sqrt{2} \sin A = \sin B - \sin^3 B$$

prove that  $\pm \sin (B - A) = \cos 2B = \frac{1}{3}$

Square the given equations and add

$$2 = \cos^2 B (1 + \cos^2 B)^2 + \sin^2 B (1 - \sin^2 B)^2$$

$$= \cos^2 B (1 + \cos^4 B + 2\cos^2 B + \sin^2 B \cos^2 B)$$

$$= \cos^2 B (1 + 3\cos^2 B)$$

$$\therefore 3\cos^4 B + \cos^2 B - 2 = 0$$

$$\therefore \cos^2 B = \frac{-1 \pm \sqrt{25}}{6} = -1 \text{ or } \frac{1}{3}$$

$$2\cos^2 B - \frac{1}{3} - 1 = \frac{1}{3}$$

$$\cos 2B = \frac{1}{3}$$

$$\text{and } \sin 2B = \pm \frac{2\sqrt{2}}{3}.$$

$$\text{Again, } \sqrt{2} \frac{\cos A}{\cos B} = 1 + \cos^2 B$$

$$\text{also } \sqrt{2} \frac{\sin A}{\sin B} = \cos^2 B; \text{ subtract}$$

$$\therefore \sqrt{2} \left( \frac{\cos A}{\cos B} - \frac{\sin A}{\sin B} \right) = 1$$

$$\therefore \sqrt{2} \frac{\sin (B - A)}{\sin 2B} = 1$$

$$2 \cdot \sqrt{2} \frac{\sin (B - A)}{\pm \frac{2\sqrt{2}}{3}} = 1$$

$$\therefore \pm \sin (B - A) = \frac{1}{3}.$$

VI. Find the value of  $\sin 54^\circ$ , and thence show that  $\sin 139^\circ - \sin 77^\circ + \sin 67^\circ = \sin 149^\circ = \sin 5^\circ$ .

See Tod. Trig. Art 109 for  $\sin 54^\circ$

$$\sin 139^\circ - \sin 149^\circ + \sin 67^\circ - \sin 77^\circ$$

$$= -2\sin 5^\circ \cos 144^\circ - 2\sin 5^\circ \cos 72^\circ$$

$$= -2\sin 5^\circ (\cos 144^\circ + \cos 72^\circ)$$

$$= 4\sin 5^\circ \cos 108^\circ \cos 36^\circ$$

$$= 4\sin 5^\circ \sin 18^\circ \cos 36^\circ$$

$$= 4\sin 5^\circ \frac{\sqrt{5}-1}{4} \cdot \frac{\sqrt{5}+1}{4}$$

$$= \sin 5^\circ$$

VII. If  $x$  be the circular measure of a positive angle less than a right angle,  $\sin x$  is greater than  $x - \frac{x^2}{4}$  and  $\cos x$  is greater than  $1 - \frac{x^2}{2}$ .

See Tod. Trig. Arts 120, 121.

VIII. Two sides of a triangle are in the ratio of 9 to 7, and the included angle is  $64^\circ 12'$  find the other angles, having given  $\log 2 = .3010300$

$$\log \tan 57^\circ 44' = 10.2025253$$

$$\log \tan 11^\circ 16' = 9.2993216$$

$$\log \tan 11^\circ 17' = 9.2999804$$

See Key to Tod. Trig.

Ex. 19, Chap. xiv.

IX. Find the radius of the circle described round a triangle.

If  $p_1, p_2, p_3$  be the perpendiculars from the angles of a triangle upon the opposite sides, show that :-

$$\frac{1}{p_1} + \frac{1}{p_2} + \frac{1}{p_3} = \frac{1}{r} \text{ and }$$

$$\frac{\cos A}{p_1} + \frac{\cos B}{p_2} + \frac{\cos C}{p_3} = \frac{1}{R}$$

where  $r, R$  are respectively the radii of the inscribed and circumscribed circles.

The rider is problem 350 (Wolstenholme)

$$S = \frac{1}{2} p_1 a = \frac{1}{2} p_2 b = \frac{1}{2} p_3 c$$

$$\frac{1}{p_1} + \frac{1}{p_2} + \frac{1}{p_3} = \frac{a+b+c}{2S} = \frac{s}{S} = \frac{1}{r}$$

$$\text{Again, } \frac{\cos A}{p_1} + \frac{\cos B}{p_2} + \frac{\cos C}{p_3}$$

$$= \frac{a \cos A}{2S} + \frac{b \cos B}{2S} + \frac{c \cos C}{2S}$$

$$= \frac{4R \sin A \sin B \sin C}{2S}$$

$$= \frac{4 \cdot \frac{a}{2 \sin A} \sin B \sin C}{2 \cdot \frac{1}{2} ab \sin C}$$

$$= \frac{2 \sin B}{b} = \frac{1}{R}$$

X. If two straight lines be at right angles to the same plane they shall be parallel to one another.

Prop. 6, Bk. xi.

XI. Planes to which the same straight line is perpendicular are parallel to one another.

Prop. 14, Bk. xi.

XII. If each solid angle at the base of a tetrahedron be contained by three plane angles which make up two right angles, the tetrahedron will have all its faces similar and equal.

The hypothesis is insufficient, for take a tetrahedron ABCD whose base is ABC.

Let the angles BAC, BAD, and CAD which make up the solid angle A be respectively 60, 50, 70.

Let the angles ABD, DBC, CAB of the solid angle B be respectively 40, 80, 60.

Also the angles BCD, BCA, ACD of the solid angle C be respectively 30, 60, 90.

It will be seen that although the conditions are satisfied the inference does not follow.

LA SHASTRA.

*Solutions to Examples in Algebra, given p. 237 of the May No. of the Journal (1881).*

1. Expanding the squares in the Numerator, we get

$$25x^2 - 200x^4 + 560x^6 - 640x^8 + 256x^{10} + 25y^2 - 200y^4 + 560y^6 - 640y^8 + 256y^{10}$$

$$= 25(x^2 + y^2)^2 - 200(x^4 + y^4) + 560(x^6 + y^6) - 640(x^8 + y^8) + 256(x^{10} + y^{10}) \dots \dots (N).$$

Now, by (iii)  $x^2 + y^2 = 1 \therefore x^2 + y^2 = 1 - 2x^2y^2 \dots \dots (iv);$  and  $x^8 + y^8 = (1 - 2x^2y^2)^2 - 2x^4y^4 = 1 - 4x^2y^2 + 2x^4y^4 \dots \dots (v);$

$$\text{also, } x^6 + y^6 = (x^2 + y^2)(x^4 - x^2y^2 + y^4) = 1 - 3x^2y^2 \dots \dots (vi),$$

by help of (iii) and (iv);

$$\text{and } x^{10} + y^{10} = (x^2 + y^2)(x^8 - x^6y^2 + x^4y^4 - x^2y^6 + y^8) = (x^8 + y^8) - x^2y^2(x^4 + y^4) + x^4y^4$$

$$= 1 - 4x^2y^2 + 2x^4y^4 - 2x^2y^2(1 - 2x^2y^2) + 2x^4y^4, \text{ by (iv) \& (v),}$$

$$= 1 - 5x^2y^2 + 5x^4y^4 \dots \dots (vii)$$

Thus, by help of equations (iii), (iv), (v), (vi), and (vii), we get  

$$N = 25 - 200(1 - 2x^2y^2) + 560(1 - 3x^2y^2) - 640(1 - 4x^2y^2 + 2x^2y^4) \\ + 256(1 - 5x^2y^2 + 5x^4y^4) = (25 - 200 + 560 - 640 + 256) \\ + x^2y^2(400 - 1680 + 2560 - 1280) - 1280x^4y^4 = 1280x^2y^2 + 1.$$

Again, from (i) and (ii),  $a + b^2 = \left(\frac{1}{x} - x\right)^2 + \left(\frac{1}{y} - y\right)^2$   

$$= \frac{1}{x^2} - 2 + x^2 + \frac{1}{y^2} - 2 + y^2 = \frac{1}{x^2} + \frac{1}{y^2} - 4 + (x^2 + y^2)$$
  

$$= \frac{x^2 + y^2}{x^2y^2} - 4 + 1 = \frac{1}{x^2y^2} - 3, \text{ by (iii), } = \frac{1 - 3x^2y^2}{x^2y^2}$$
  

$$= \frac{x^6 + y^6}{x^2y^2}, \text{ by (vi), } = \frac{x^4}{y^2} + \frac{y^4}{x^2};$$

and,  $ab = \left(\frac{1}{x} - x\right)\left(\frac{1}{y} - y\right) = \frac{1}{xy} - \frac{x}{y} - \frac{y}{x} + xy = \frac{1 + xy}{xy}$   

$$- \frac{x^2 + y^2}{xy} = \frac{1 + x^2y^2}{xy} - \frac{1}{xy}, \text{ by (iii), } = \frac{x^2y^2}{xy} = xy$$
  

$$\therefore a^2 + 2ab + b^2 = \frac{x^4}{y^2} + \frac{y^4}{x^2} + 2xy = \left(\frac{x^2}{y} + \frac{y^2}{x}\right)^2$$

$$\therefore a + b = \frac{x^2}{y} + \frac{y^2}{x}$$

Similarly  $a - b = \frac{x^2}{y} - \frac{y^2}{x} \therefore a = \frac{x^2}{y}$  and  $b = \frac{y^2}{x}$

$\therefore$  Denominator  $= (ab)^{\frac{1}{3}} \left(a^{\frac{2}{3}} + b^{\frac{2}{3}}\right) + a^{\frac{1}{3}}b^{\frac{2}{3}} + b^{\frac{1}{3}}a^{\frac{2}{3}}$

$$\left(\frac{x^{\frac{2}{3}}}{y^{\frac{1}{3}}} \cdot \frac{y^{\frac{2}{3}}}{x^{\frac{1}{3}}} + \frac{y^{\frac{2}{3}}}{x^{\frac{1}{3}}} \cdot \frac{x^{\frac{2}{3}}}{y^{\frac{1}{3}}}\right) = x^2 + y^2 = 1$$

$\therefore$  the value of the fraction is  $\frac{1}{3} = 1$ .

Q. E. F.

II. Denote the given fraction by  $\frac{p}{q}$ ; then  $\frac{p-q}{q} =$

$$\frac{(x^2 + a^2 - b^2)^2 + (a + b + 2xb)^2 - (x + a^2 - b^2 + b^2)^2 - (a + b + 2xa)^2}{(x + a^2 - b^2 + b^2)^2 + (a + b + 2xa)^2}$$
  

$$= \frac{\{ (2x + 2a^2)(2a^2 - b^2) \} + \{ (2a + 2b + 2xb + 2xa)(2xb - 2xa) \}}{(x + a^2 - b^2 + b^2)^2 + (a + b + 2xa)^2}$$
  

$$= \frac{4x(1+x)(a^2 - b^2) + 4(a+b)(a+1) \cdot x(b-a)}{(x + a^2 - b^2 + b^2)^2 + (a + b + 2xa)^2} =$$
  

$$\frac{4x(1+x) \{ (a^2 - b^2) + (b^2 - a^2) \}}{(x + a^2 - b^2 + b^2)^2 + (a + b + 2xa)^2} = 0 \therefore p - q = 0 \therefore \frac{p}{q} = 1.$$

III. Since  $x^3(b + c) + b^3(c + x) + c^3(x + b) = x^3b + b^3c$   
 $+ x^3b + b^3c + c^3x + c^3b = xb(x^2 + b^2) + xc(x^2 + c^2)$   
 $+ bc(b^2 + c^2) = xb(x^2 + b^2 + c^2) - c^2xb$   
 $+ xc(x^2 + c^2 + b^2) - b^2xc + bc(b^2 + c^2 + x^2)$   
 $- x^2bc = (xb + xc + bc)(x^2 + b^2 + c^2)$   
 $- xbc(x + b + c). \text{ Hence, the first expression}$   

$$= (xb + xc + bc) \{ 2(xb + xc + bc) + x^2 + b^2 + c^2 \} - xbc(x + b + c)$$
  

$$= (xb + xc + bc)(x + b + c)^2 - xbc(x + b + c)$$
  

$$= (x + b + c) \{ (xb + xc + bc)(x + b + c) - xbc \}.$$
  
 Again,  $x^3(b^2 + c^2) + b^3(c^2 + x^2) + c^3(x^2 + b^2)$   

$$= x^3b^2 + x^3c^2 + b^3c^2 + b^3x^2 + c^3x^2 + c^3b^2$$
  

$$= x^2b^2(x + b) + x^2c^2(x + c) + b^2c^2(b + c)$$
  

$$= x^2b^2(x + b + c) - x^2b^2c + x^2c^2(x + c + b) - x^2c^2b$$
  

$$+ b^2c^2(x + b + c) - b^2c^2x = (x^2b^2 + x^2c^2 + b^2c^2)(x + b + c)$$
  

$$- xbc(xb + xc + bc). \text{ Hence, the second expression}$$
  

$$= (x + b + c) \{ 2xbc(x + b + c) + x^2b^2 + x^2c^2 + b^2c^2 \}$$
  

$$+ xbc(xb + xc + bc)$$
  

$$= (x + b + c)(xb + xc + bc)^2 - xbc(xb + xc + bc)$$
  

$$= (xb + xc + bc) \{ (xb + xc + bc)(x + b + c) - xbc \}.$$
  
 Hence, the G. C. M. is

$$(xb + xc + bc)(x + b + c) - xbc.$$

Q. E. F.

IV. (i).  $(x^2 + y^2) \{ (x^2 + y^2) + x^2y^2(x^2 + y^2) \} + x^6y^6$   

$$= (x^2 + y^2)(x^2 + y^2 + x^2y^2) + (x^2 + y^2) \cdot x^2y^2$$
  

$$+ x^6y^6 = (x^2 + y^2)(x^2 + y^2 + x^2y^2) + x^2y^2(x^2 + y^2 + x^2y^2)$$
  

$$= (x^2 + y^2 + x^4y^2) + (x^2 + y^2 + x^2y^2).$$

(ii). Taking the first two terms, we have

$$(b^2 - ac) \{ (a^2 - bc)(a - b) + (c^2 - ab)(b - c) \}$$
  

$$= (b^2 - ac) \{ a^3 - abc - a^2b + b^2c + c^2b - ab^2 - c^3 + abc \}$$
  

$$= (b^2 - ac) \{ -(c^3 - a^3) + (c^2b - abc) + (abc - a^2b) + (b^2c - ab^2) \}$$
  

$$= (b^2 - ac)(c - a) \{ -c^2 - ac - a^2 + cb + ab + b^2 \}$$
  

$$= (c - a) \{ (b^2 - ac)(b^2 - a^2 - c^2 + cb + ab - ac) \}$$
  

$$\therefore \text{ whole expression} = (c - a) \{ (b^2 - ac)(b^2 - a^2 - c^2 + cb + ab - ac) \\ + (c^2 - ab)(a^2 - bc) \} \dots \dots \dots \text{(I)}$$

Thus,  $(c - a)$  is a factor of the whole;

Similarly, by taking the first and third terms, and the second and third terms,  $(b - c)$ , and  $(a - b)$  can be shown to be factors of the given expression.

Thus, in the expression I, the quantity in the large brackets must be divisible by  $(b - c)$  and by  $(a - b)$ , i.e. by  $ab - ac - b^2 + bc$ . Removing this factor by division, we shall obtain  $(-a^2 - b^2 - c^2 - 2ab - 2ac - 2bc)$ .

Hence, the factors of the expression given are

$$(a-b)(b-c)(c-a). (a+b+c)^2 \times -1.$$

Q. E. F.

V. Let the given expression be the cube of  $2x - p$ . Then

$$\therefore 8x^3 - 4x^2(a+b+c) + 2x(ab+bc+ca) - abc$$

$$= (2x-p)^3 = 8x^3 - 12x^2p + 6xp^2 - p^3.$$

Hence,  $-4x(a+b+c)$  ought to be equal to  $-12p$ ,

and  $2(ab+bc+ca)$  to  $6p^2$ , and  $-abc$  to  $-p^3$

$\therefore a+b+c = 3p$ ;  $ab+bc+ca = 3p^2$ ; and  $abc = p^3$ .

$$\therefore (ab+ac+bc)\left(\frac{1}{ab} + \frac{1}{ac} + \frac{1}{bc}\right) =$$

$$ab+ac+bc\left(\frac{a+b+c}{abc}\right) = 3p \cdot \frac{3p}{p^3} = 9 = (3)^2.$$

Q. E. F.

VI. From (iii),  $z^2 = m^2y^2 + 2my\sqrt{(1-m^2)(1-y^2)} + (1-m^2)(1-y^2)$

$$= m^2y^2 + 2my\sqrt{(1-m^2)(1-y^2)} + 1 - m^2 - y^2 + m^2y^2$$

$$= 2my\sqrt{(1-m^2)(1-y^2)} + 1 - m^2 - y^2$$

$$\therefore y^2 - 2my = 1 - m^2 - z^2 \quad \therefore y^2 - 2myz + m^2z^2$$

$$= 1 - m^2 - z^2 + m^2z^2$$

$$\therefore y - mz = \sqrt{1 - m^2 - z^2 + m^2z^2} = \sqrt{(1-m^2)(1-z^2)}$$

$$\therefore y = mz + \sqrt{(1-m^2)(1-z^2)} = w, \text{ by equation } \dots\dots\dots (ii).$$

Hence, (i) becomes  $t = my + \sqrt{(1-m^2)(1-y^2)} \dots\dots\dots (v).$

Similarly, from (iv) we may deduce

$$w = ny + \sqrt{(1-n^2)(1-y^2)} \dots\dots\dots (vi).$$

By (v) and (vi)  $x = t$ .

Q. E. D.

VII. Since  $a+b+c=0 \therefore a+b=-c \dots (i) \therefore a^2+2ab+b^2=c^2$

$$\therefore c^2+b^2=c^2-2ab \dots (ii) \therefore a^2+b^2+c^2=2(c^2-ab) \dots (I)$$

And, since  $(a^3+b^3+c^3-3abc) = (a+b+c)(a^2+b^2+c^2-ab-bc-ca) = 0$

$$\therefore a^3+b^3+c^3 = 3abc \dots\dots\dots (II).$$

Square (ii);  $a^4+2a^2b^2+b^4=c^4-4c^2ab+4a^2b^2$

$$\therefore a^4+b^4=c^4-4c^2ab+2a^2b^2 \dots\dots\dots (iii) \therefore a^4+b^4+c^4$$

$$= 2(c^4-2c^2ab+a^2b^2) = 2(c^2-ab)^2 \dots\dots\dots (III).$$

And  $a^5+b^5 = (a+b)(a^4-a^3b+a^2b^2-ab^3+b^4)$

$$= (a+b)\{a^4+b^4-ab(a^2+b^2)+a^2b^2\}$$

$$= -c^5\{c^4-4c^2ab+2a^2b^2-ab^2+2a^2b^2+a^2b^2\}$$

$$\text{by (i), (ii), and (iii)} = -c^5\{c^4-5c^2ab+5a^2b^2\}$$

$$= -c^5\{5c^3ab-5ca^2b^2\}$$

$$\therefore a^5+b^5+c^5 = 5cab(c^2-ab) \dots\dots\dots (IV).$$

Now,  $a^6+b^6 = (a^2+b^2)(a^4-a^2b^2+a^2)$

$$= (a^2+b^2)(a^4-2ab)(c^4-4c^2ab+a^2b^2), \text{ by (ii) and (iii)}$$

$$= c^6-6c^4ab+9c^2a^2b^2-2a^3b^3 \dots\dots\dots (iv)$$

$$\therefore a^7+b^7 = (a+b)(a^6-a^5b+a^4b^2-a^3b^3+a^2b^4-ab^5+b^6)$$

$$= (a+b)\{a^6+b^6-ab(a^5+b^5)+a^2b^2(a^2+b^2)-a^3b^3\}$$

$$= -c\{c^6-6c^4ab+9c^2a^2b^2-2a^3b^3-abc^4+4c^2a^2b^2-2a^3b^3$$

$$+a^2b^2c^2-2a^3b^3-a^3b^3\} \text{ by means of (i), (ii), (iii) \& (iv)}$$

$$= -c\{c^6-7c^4ab+14c^2a^2b^2-7a^3b^3\}$$

$$\therefore a^7+b^7+c^7 = 7c^5ab-2c^3a^2b^2+ca^3b^3$$

$$= 7abc(c^2-ab)^2 \dots\dots\dots (V)$$

$$\therefore \frac{a^7+b^7+c^7}{7} = abc(c^2-ab)^2, \text{ by (V),}$$

$$\text{and } \frac{a^5+b^5+c^5}{5} \cdot \frac{a^2+b^2+c^2}{2} = cab(c^2-ab)(c^2-ab), \text{ by I \& IV;}$$

$$\text{and } \frac{a^3+b^3+c^3}{3} \cdot \frac{a^4+b^4+c^4}{2} = abc(c^2-ab)^2, \text{ by III \& II.}$$

Q. E. D.

N.B.—There is a mistake in the example as given.

VIII. (i). Since  $\sqrt{x+6} + \sqrt{x+9} = \sqrt{x+3}$ , therefore, the equation becomes  $x+4\sqrt{x}+8\sqrt{x}+24=52 \therefore x+12\sqrt{x}=28 \therefore (\sqrt{x}+6)^2=28+36=64 \therefore \sqrt{x}+6=\pm 8 \therefore \sqrt{x}=14 \text{ or } -2 \therefore x=196 \text{ or } 4.$

(ii). Divide the first equation by the second

$$2\sqrt{y} - \sqrt{x-y} = 4; \text{ add this to the second, } \therefore 4\sqrt{y}=12$$

$$\sqrt{y}=3 \text{ and } y=9. \text{ Substitute in the first; } 36 - \sqrt{x-9}$$

$$= 32 \therefore \sqrt{x-9}=4 \therefore x-9=16 \therefore x=25.$$

(iii). As  $x^3+y^3+z^3-3xyz=(x+y+z)(x^2+y^2+z^2-xy-yz-zx)$

$$\therefore x^3+y^3+z^3-3xyz=0, \text{ by (i) } \therefore x^3+y^3+z^3=3xyz$$

$$\therefore xyz=(a-b)(b-c)(c-a) \text{ from (iii).}$$

But, by (i),  $z=-(x+y) \therefore -xy(x+y)=(a-b)(b-c)(c-a) \dots (iv).$

And (i) becomes  $x(b+c)+y(a+c)+(-x^2-y)(a+b)=0$

$$\therefore x(c-a)-y(b-c)=0, \text{ by simplifying.}$$

$$\therefore \frac{y}{x} = \frac{c-a}{b-c} \dots\dots\dots (v).$$

$$\text{Thus (iv) becomes } -x \cdot \frac{c-a}{b-c} \left\{ x + x \cdot \frac{c-a}{b-c} \right\} = (a-b)(b-c)(c-a)$$

$$\therefore -x^3 \cdot \frac{c-a}{b-c} \left(1 + \frac{c-a}{b-c}\right) = (a-b)(b-c)(c-a)$$

$$\therefore x^3 \cdot \frac{(c-a)(a-b)}{(b-c)^2} = (a-b)(b-c)(c-a)$$

$$\therefore x^3 = (b-c)^3 \therefore x = (b-c)$$

$\therefore$  by (v),  $y = c - a$ ; and hence  $z = a - b$ .

IX. Let the time from their starting to their meeting on the road be  $x$  hours.

What A walked over in  $x$  hours. B takes 36 hours to travel;

$\therefore$  What A walks over in 16 hours. B will walk over in  $\frac{16 \times 36}{x}$  hours; but B walked over this distance in  $x$  hours. Hence

$$x = \frac{36 \times 16}{x} \therefore x^2 = 36 \times 16 \therefore x = 6 \times 4 = 24$$

$\therefore x + 16 = 40$  hours time taken by A in walking 120 miles; and  $x + 36 = 60$  hours that taken by B.

$\therefore$  3 miles and 2 miles per hour are the rates of A & B respectively.

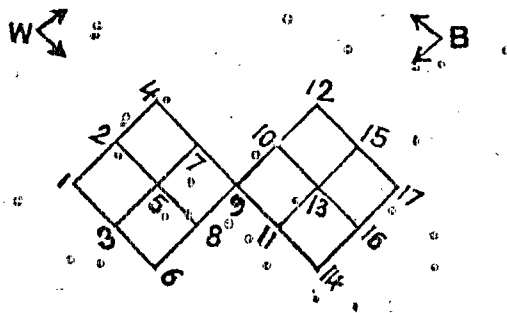
### CORRESPONDENCE.

TO THE EDITOR OF THE MADRAS JOURNAL OF EDUCATION.

DEAR SIR,—I send you two puzzles (the second is merely an extension of the first) which will probably interest your readers. I shall be much obliged to any one who succeeds in solving the first puzzle in less than 46 moves, or the second in less than 126, if he will send me the solution.

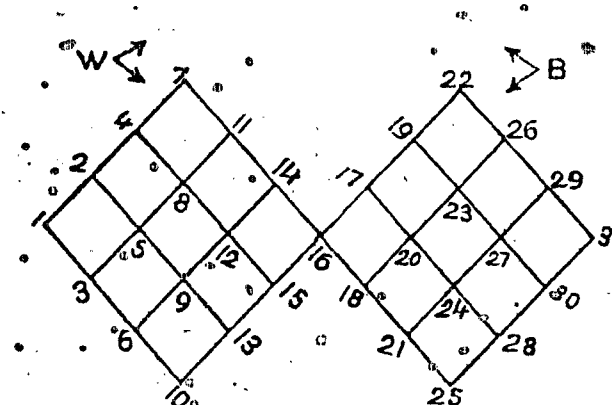
Yours truly  
H. FORTEY.

No. I.



In the above diagram place 8 White counters on the points marked 1 to 8 and 8 Black ones on those marked 10 to 17 leaving the point 9 vacant; it is required to interchange the black and white counters subject to the following conditions. White moves always from left to right through one space at a time, and black similarly in the opposite direction. Also any counter may jump over one of the opposite color—but not over more than one. (Thus supposing a white counter at 4, a black one at 7, and 9 empty, the white may move from 4 to 9.)

No. II.



This is similar to No. I, but in this case 15 counters are placed on each square the white on numbers 1 to 15 and the black on numbers 17 to 31.

DR. RAJENDRALAL MITTRA ON EDUCATION.

We quote from the *Hindoo Patriot* the following part of a long speech delivered by Dr. Rajendralal Mittra at a recent meeting of the Indian Association. The Doctor has been assailed by some of the journals in Calcutta for stating that he gave no importance to the cry of "knowledge for its own sake," which is to be heard over and over again in University addresses:—

The pursuit of knowledge was no doubt an arduous task. Days of anxious study over books and instruments might often appear as removing further and further the object to be attained, which certainly was not at all encouraging; yet the students should persevere; and that in spite of the discouragement which had resulted from a theory getting currency in certain high quarters on the subject of education. For some time it has become the fashion among certain gentlemen of high social standing to preach the doctrine of learning for its own sake—of education, not for gain, but for its own sake—for the sake of learning. It might, perhaps, be considered improper on his part to question the opinion that on this subject had been passed by some of the ruling men of the country; but no man could rise above himself; each must think and judge and decide according to the light that is in him; and relying upon his own

experience and knowledge of things; the speaker felt bound to say that, however taking the theory may be as a piece of sentimentalism, it was exceedingly mischievous in its tendency. If they turned to history for a solution, they would find the theory—"the pursuit of study for its own sake"—to be a mere fancy, a delusion, and not a fact. History loudly protested against such a chimerical idea. Never and nowhere in the history of man was learning pursued for its own sake, in order only to acquire learning, and not for the advantages to be derived therefrom. Learning, the Chairman submitted, was sought both on account of its material as well as its intellectual advantages, and apart from them it offered no incentive. An allusion had been made to the Indian *rishis*. He honored the memory of the *rishis* as of men who had preserved the invaluable heritage of the nation, the oldest literature extant—older than the Mosaic Chronicles; but he regretted that he did not believe a word of what had been said regarding their disinterestedness for it was not a fact that the *rishis* took to learning for its own sake. When the *rishis* took to learning, they were not *rishis*, but boys; and the parents of these boys did not send them to school to learn the letters ka, kha, &c., for the sake of those letters, but for something ulterior—to be made fit and worthy members of the society they lived in, and to acquire wealth and renown and influence; and if they as *rishis* continued to persevere and improve upon what they learnt as boys; it was partly due to habit, partly to the necessity of their situation; but mainly to the mandates of their religion, which required them to keep their scriptures by heart. And what was true of the *rishis* was true also of the European monks of the middle ages. The monks did not pursue learning for the sake of learning, nor did they read Homer, or other ancient work simply and solely for the sake of learning. They had been all more or less educated before they became monks, and they preserved what they had learned, and improved thereon by force of circumstances. The mind, like any other part of the human organization, wanted relief, and that mental or intellectual relief from countless Ave Marias, and ever-recurring rituals was very largely afforded by the libraries of the monasteries. But to say that they pursued literature simply for the sake of literature was misleading. Many monks, who were not as well educated as others took to writing manuscripts, which also afforded them employment and relief. Exercise, either physical or mental, was a law of Nature, and the tiger, even in its five feet cage went round and round in it for exercise. The human mind was a great deal more active, and was, therefore, bound to find something to do; accordingly, if any person devoted his attention for a long time to a particular branch or object of study, the habit would grow so strong in him, that he would be sure to devote some of his time towards his pet subject. Hence it was that idlers like himself who had nothing to do, took to antiquities (laughter). But that did not imply learning for its own sake. Had he not been educated and trained to a particular mode of thinking in his youth, he would have taken to something else than antiquities for his gratification, perhaps, something which would have yielded him a tangible profit (laughter). Doubtless well-educated men in easy circumstances and with particular turns of mind were the principal agents in enlarging the sphere of literature and science, but to say that they pursued learning for the sake of learning would be

wrong, except in very rare, exceptional cases. Anyhow the occupation of grown up idlers did not apply to the learning or education of youths in connexion with which the theory had been propounded. As regards youth it may be boldly and unhesitatingly asserted that no one ever pursued learning for the sake of learning alone, but for the sake of some sort of reward or return. Every father who sends a boy to school, calculates beforehand the good that education would render to his son; he thinks and ponders and calculates, he weighs carefully the intellectual capacity of his son and the prospects before him, before he selects a special line of study for him. If, for example, the meeting took what in England was considered one of the most lucrative professions, the Profession of Law, than which no other profession was more crowded, would they for a moment believe, that it was studied for its own sake? If, they removed the temptation of retainers and refreshers, of frequent fees and fat Judgeships, it would not require a soothsayer to predict in what state the Benches in the different Inns of Court would be. In the Medical profession, and in the department of Physical science, the prizes were not so numerous, and consequently the number of persons who sought employment in those branches was comparatively small. At first sight, religion would appear to offer very good facilities for devotion to disinterested study, yet theological classes were never very largely attended, except by those who could not readily command any thing better, and the bulk of the people looked with horror on waxing "rich on forty pounds a year;" and if there had not been such allurements as canonries and bishoprics and prelaties with wide domains, and large salaries the clerical profession would be less sought after. And what was true in England was true over all Europe. Everywhere education or learning was sought for the sake of material advantages and not for learning solely. The same was and must be the case in India, and the speaker did not regret it. They were the best and most legitimate incentives to learning, and no one did wrong by making them his aim. The most ardent admirer of the sweet and bewitching sentimentalism of learning for its own sake, did not for a moment think of it when deciding about the future career of his own children. The question which the youths of this country had to solve was, therefore, not whether they should learn for learning's sake, or for gain, but what were the branches of learning to which they could devote their time, attention and money with the prospect of the highest return. It may sound too utilitarian, but it would ultimately do much greater good to the cause of learning, than what can be expected from the canting æsthetic uterism of the day. The branch which the students attending that Association had selected was, so far as Bengal was concerned, a new one; the country was a large one, the resources vast,—the mineral and other wealth of the country were abundant, but as yet untapped. The key of science was needed to open the store-house. Let physical science be thoroughly studied, both in theory and practice, and let it be brought to bear upon our mines and minerals, our vegetable productions and our manufactories, and incalculable would be the benefit that would be rendered to the students of science, as well as to the country at large. That the Association may be the instruments for such a blessing was a consummation to which the members should devote their utmost exertion.—From the *Indu Prakash*.

## APPOINTMENTS.

Appointments made by the Director of Public Instruction, between the 16th May and 15th June 1881.

Yesudian Amirthanayagam Pillai, Deputy Inspector of Schools, Salem Circle, to be Deputy Inspector of Schools, North Coimbatore.

Mr. Joseph P. Lewis, Deputy Inspector of Schools, North Coimbatore, to be Deputy Inspector of Schools, Salem.

B. Raghavadr Row, to be 5th Assistant Master, Mangalore College, sub. *pro tem.* on Rs. 40 per mensem vice K. Vishweshwara Row on leave.

N. Vaidyanatha Aiyar, M.A., First Assistant Master, Calicut College, to be 5th Assistant Master, Kumbakonam College, on Rs. 150.

R. Ramanuja Chariar, B.A., 5th Assistant Master, Kumbakonam College, to be 6th Assistant on Rs. 125, but to continue to act as 1st Assistant Master, Bellary College.

K. Sundarama Aiyar, M.A., 1st Assistant, Tellicherry High School, to be 7th Assistant, Kumbakonam College, on Rs. 100 and to be 6th Assistant sub. *pro tem.*, during the employment of R. Ramanuja Chariar on other duty or until further orders.

R. Chakravarti Aiyangar, B.A., to be 7th Assistant, Kumbakonam College, sub. *pro tem.*, vice K. Sundarama Aiyar.

Mr. David Joseph, B.A., 1st Assistant Master, Salem College, to be 1st Assistant Master, Calicut College, vice N. Vaidyanatha Aiyar.

S. Ramadas Aiyar, 1st Assistant Master, Cuddalore College, to be 1st Assistant Master, Salem College.

S. Swami Aiyar, B.A., 1st Assistant Master, High School, Palghat, to be 1st Assistant Master, Cuddalore College.

V. Ramachandra Aiyar, B.A., 3rd Assistant Master, Cuddalore College, to be 1st Assistant Master, Palghat High School.

S. A. Sundaram Aiyar, B.A., 8th Assistant, Kumbakonam College, to be 3rd Assistant Master, Cuddalore College, vice V. Raghavendra Aiyar.

G. Anna Sastriar, to be Sanskrit Pandit, Madura College, on Rs. 25.

S. Mangesha Row, B.A., 2nd Assistant Master, Mangalore College, to act as First Assistant in that College, during the absence of K. S. Rama Row, on other duty, or until further orders.

C. R. Sivarama Aiyar, B.A., 1st Assistant Master, Cannanore High School, to be 3rd Assistant Master, Madura College, vice T. P. Kothundarama Aiyar, B.A., resigned, but to continue to act as Deputy Inspector, Dindigul Circle.

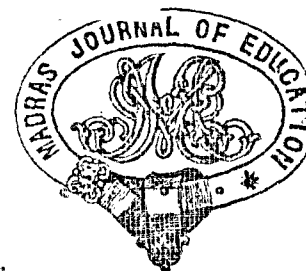
P. Narayana Chariar, M.A., to be 1st Assistant Master, sub. *pro tem.*, Tellicherry High School.

M. Ramaswami Aiyar, B.A., 5th Assistant Master, Cuddalore College, to be 1st Assistant Master, Cannanore High School, but to act as 2nd Assistant Master, Madura College, during the employment of S. Subramania Aiyar, on other duty, or until further orders.

R. Chakravarti Aiyangar, 7th Assistant Master, sub. *pro tem.*, Kumbakonam College, to be 5th Assistant Master, Cuddalore College, but to continue to act at Kumbakonam.

V. R. Venkatarama Aiyar, B.A., to be 5th Assistant Master, sub. *pro tem.*, Cuddalore College, but to act as 3rd Assistant Master, Madura College, during the employment of C. R. Sivarama Aiyar, on other duty, or until further orders.

Jemba Aiyar, Head-master, Local Fund Normal School, Coimbatore, to act as Deputy Inspector of Schools, North Coimbatore Circle, during the absence of Mr. Lewis, on privilege leave or until further orders.



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## THE MONTH.

Much adverse criticism has been evoked, and discontent brought to light, by Sir Charles Turner's statement at the Civil Engineering College that, if Government could find men of ability for the public service in India, they would employ them, and that because they cannot find such men here, they are obliged to import them from elsewhere. Both the partiality complained of, and the discontent at failure to obtain employment, may in a measure, be ascribed to the incompleteness of education in this country, so far as it imparts the power which knowledge is said to be, without developing to the same extent as in Western lands, that higher power, which secures its employment aright. For instance, "Instruction in ethics and moral philosophy is not directly given in India \* \* \* \* \* these subjects ought to have more special attention." Yet when put to the proof, "the native high officials are just as honest and trustworthy as Englishmen." Thus speaks Sir Richard Temple: and Sir Arthur Hobhouse adds that "he never knew a single instance of corruptibility established against a native in high service." Of course it may be said that only the very best men—men of exceptional worth—have been so tried; and their enormous emoluments place them above corruption; their singular

position would make them singularly careful amidst jealous observers; and the very weight of responsibility resting on them would steady them; just as a peon may be trusted with a bag of 500 Rs. more safely than with a few annas. Yet the proof of the pudding is in the eating; and the class who have proved themselves trustworthy ought for the good of the state to be employed more extensively in their own country, *a priori* considerations notwithstanding.

The narrowness complained of is thought to have received an illustration in the report read by Dr. King at the Madras Medical College. He referred regretfully to the fact that many of the students of the college went to England to make their way into the higher ranks of the Indian Medical Service, instead of contentedly working as subordinates. As the general education of the matriculated student did not fit him to move in the higher ranks, Dr. King suggested such arrangements as would render it harder for the Madras Medical student to complete his studies, and compete for a commission, in England. In other schools and colleges the success and elevation in life of their students is a subject of gratulation. Here, where the energy and laudable ambition of their pupils have made known to fame the soundness and excellence of the teaching in this College, the Principal and Professors seem debarred from rejoicing at the most patent proofs of their success. In striking contrast to Dr. King's views are the liberal measures proposed by the General Council of Medical Education and Registration for affording facilities to Indian students in England.

Dr. McNally in his able and brilliant address to the students invited women and Mahomedans to enter the college. He, however, went out of his way to make a lunge at Medical Missions, and at what he calls superstition; but he spoke so as to leave it doubtful whether he meant that any religion should escape the stigma. This is a pity, considering that he spoke as a Professor in a Government College. For unfortunately everywhere in India there has of late years sprung up an uncomfortable feeling that Government teachers have been declining from neutrality in religious matters, and inclining towards hostility to all religion. "This education," says Sir Richard Temple, "has most materially influenced the religion of the upper classes. Most of those classes do not any longer believe in their ancient religions. In justice to them,

however, it ought to be said that the abandonment of their own belief has not made them irreligious. They do not diverge into atheism and materialism, but have a firm belief in the immortality of the soul, in the all seeing judge who will decide immortally regarding the eternal destiny of every one according to his conduct in this life, and in the unchanging principles of right and wrong." Some would be disposed to doubt whether this does not over estimate the residuum of religion in educated Hindus after two decades of Government education; and as Sir Richard says, it is in justice to the Hindu, not to Government Education, that it must be owned that he has any religion left in him. But as that system of education is now being developed, how long will Sir Richard's statement be true to any extent? It is doubtful whether strict neutrality is possible. The saying, "He that is not with me is against me," is true oftener and in more ways than is supposed. The present tendency seems to be to make science, especially physical science, attempt the overthrow of religion, under the name of superstition, in her last strongholds.

Many of the expelled students of the Secbore College have apologized; and their conceit and arrogance have been properly rebuked by the Lieutenant-Governor of Bengal. They forgot, if they ever knew it, that humility is the spirit proper to the earnest learner, of whatever age, in whatever position; and that it is especially good for a man to bear the yoke in his youth. Their conduct is the more remarkable because of the character of the relation which used to exist among Hindus between teacher and taught. In some respects it was like what used to exist between master and apprentice in England. In both cases the position of the latter, or at least, his conduct and bearing, was almost servile. Not Hindu students only, but others in this country, from their ideas as to what is due to them, not from what used to be in vogue in India, nor from what holds in Europe, but from what is allowed them by those who would allure them into new paths. What is vouchsafed to their weakness they assume to be conceded to their dignity.

There are rumours "that the Patna College is threatened with an outbreak similar to that which recently brought the Secbore institution into such unpleasant prominence before the public."

The work of the schoolmaster has been called a thankless one. The saying was common in days when schoolmasters were haunted by a morbid dread of spoiling children by sparing the rod. It is still true, but not by any means to the same extent. Indeed the reverse in some times the case. In contrast to what happened at Seebpore, the farewell entertainment to Mr. P. S. Anachariar, B.A., at St. Joseph's College presents some very pleasing features. It shows not only a grateful recognition of his worth and work as a teacher, but also the kindly feelings entertained towards him by his fellow-labourers and the pupils with whom he came into more immediate contact. It tells well for the attainments of the teaching staff that they read addresses in English and Tamil, in Latin and Sanskrit. It is gratifying to learn that Mr. Anachariar raised the institution higher than it ever stood before, and quite as gratifying to learn that it was to better his prospects that he was leaving it. His speech has a frank and manly tone, equally free from conceit and mock modesty. Some of his remarks, however simple and even trite, are yet so true and important, and so neatly put, that for the benefit of other institutions and workmen of a similar class, we give them a place on another page.

The Directors of the Civil Orphan Asylums after advertising for a Head-master that had passed the F. A. examination, have appointed one who has not done so, but who is only a matriculated student. The government Grant-in-Aid of Rs. 50 will be withheld till such time as the Head-master passes the required examination; and the Directors require that he shall pass it in December next. Other applicants, who in this respect met the requirement of the advertisement, felt disappointed at the election, especially as the person chosen is said to have failed to pass in method at another institution in which he was teaching. Doubtless the directors have substantial reasons for their choice, with which the public are not acquainted. Another matter in connection with these Asylums which awakens regret in some minds in the rumoured intention to lower the standard of instruction in them. This perhaps ought not to be regarded with unmingled apprehension. It is true that the sight of Orphans so well taught and cared for as those in the C. O. Asylums always affords the most lively satisfaction to a visitor. But it is said that Protestant Orphans are sometimes refused admission to these Asylums, and cast

upon the R.C. institutions in Armenian Street, which apparently find it impossible to turn away any destitute Orphans that seek admission there. If, then, the funds of the C. O. Asylums cannot be increased, it may be expedient to partially lower the standard of education, and even of comfort in these institutions, in order to the admission of a greater number. Meantime, such boys and girls as shew unusual aptitude for learning might be sent as day scholars to pursue their studies in the Doveton or other similar schools. Of course, the best thing of all would be that the C. O. Asylums should be more liberally supported by the public.

On the 25th June the enlightened ruler of Travancore in one of his addresses at the distribution of prizes to the students of His Highness's College and High School, said, "While I do not depreciate Logic and Moral Philosophy, I fear they over foster the naturally meditative and theorizing tendency of the Hindu mind. The failure of the candidates in other subjects who took mathematics as their optional subject shows, not their inaptitude for mathematics, but that mathematics abstracts their powers of application from other subjects more than Logic and Moral Philosophy do. And the sooner the training, the better are the men that pass it successfully." But how about the ordinary Hindus who cannot undergo it successfully? whose minds are by the successful study of mathematics unfitted for less abstract, and more practical subjects of study? To turn out a few remarkable men, is it worth while to run the risk of rendering the Education and mental habitude of the majority unpractical? The later sentences that we have here quoted do not seem to harmonize altogether with the first. Other weighty words from the same speech of the Maharaja will be found elsewhere. The evil that he there denounces, is but the legacy of the School of Hindu learning and literature which preceded the era of English Education in the East, when the rule seemed to be, "*sounds, not sense shall win the prize.*" We do not think with the Maharajah that good, simple and correct language will come by a perusal of many well written books: we think it requires greater pains than fine writing. *Summa cers est celare artem.*

In connection with the movement that is being made by the students of the Saidapet Agricultural College to prevail upon Government to establish a chair of Agriculture at the Madras University, it is interesting to note that in a letter

to the two University Commissions now sitting, the Chairman and Secretary of the education committee of the Central Chamber of Agriculture in England "draw the attention of the commission to the advantage of establishing one or more chairs of Agriculture in connexion with the University, or in other ways promoting the welfare of the Agricultural classes." They urge the advantage of regular lectures on Agricultural science at the University.—*Madras Mail*.

The Director of Public Instruction lately brought to the notice of Government that certain native states and landed proprietors and Associations have been supporting thirteen students in the School of Agriculture at Saidapet. He thinks "their conduct might with advantage be made known to all the leading landed proprietors of this Presidency in view to their example being followed;" and he suggests that all Zemindars be informed of "the advantages likely to accrue to their estates by sending pupils to the Agricultural School at Saidapet at their own charges."

In a letter to the Secretary to the Board of Revenue Mr. W. R. Robertson, M.R.A.C., Superintendent of Government farms, Madras, pronounces Bellary to be more healthy than Cuddapah, and therefore better suited to the establishment of an agricultural class, and experimental station. "Bellary," he says, "possesses superior educational advantages, and its High School is much better attended than that of Cuddapah. 'The strength of the Kurnool High School is very small; as regards numbers the Cuddapah High School is even weaker, owing to the unhealthy state of the town.' Bellary and Cuddapah are equally accessible to Madras by rail." The Board agree in thinking that Bellary is preferable for establishing an agricultural class.—*Madras Mail*.

A Normal School for the training of Elementary School Masters is to be opened at Tanjore.

Students who wish to enter the Civil Engineering College will in future be required to produce a certificate of efficiency in drawing from the Superintendent of the Madras School of Arts.

The Governor in Council has approved the proposed changes in the rules for the Middle School Examination; but considers that at present Agriculture and Political Economy should be optional with candidates of Class II for the Public Service. The Commissioner has been requested

to submit suggestions for including these subjects as compulsory in the Special Departmental Tests. We would direct our readers' attention to one remark on the changes aforesaid, that appeared in a letter in the *Madras Mail*.

English, Mathematics, Sanskrit and Elementary Physics have been made compulsory subjects in the course of the First Examination in Arts by University of Calcutta. Logic is made optional. History and Geography will be considered by the Senate. We fear that the inclusion of Sanskrit among the compulsory subjects will render the appearance of Europeans and Eurasians in the lists of the graduates of the University even rarer than it has hitherto been.

The Board of Historical studies at Cambridge have recommended that the grant of £100 from the university chest for the purpose of providing instruction in Indian History and Geography be continued three years longer; and that the Board be empowered to nominate one lecturer in each year (to be appointed by the Senate) who shall give a course of not less than ten lectures open to all members of the University, on subjects connected with Indian History and Geography.

The entire number of books, &c., registered as published in Madras during the third quarter of 1879 is 191. Of these 103 are books, 76 are pamphlets, and twelve are periodicals.

The *Madras Standard* says, "we have been favored by Messrs Addison and Co. with a copy of the Middle School Manual of General English by Mr. R. S. Sheppard, B.A.: Principal of the Hindu College Tinnevely. Mr. Sheppard has supplied a want, and his book will be of great utility both to teacher and pupil. From a cursory perusal of his work we infer that he has consulted many excellent works on English, and he exhibits sound judgment in the portions he has selected as adapted to the requirements of the Middle School Examination. He illustrates the principles of grammar and composition by copious examples, and his chapters on the 'sequence of tenses,' 'direct and indirect speech,' and the 'conversion of sentences' cannot but prove eminently useful to the careful student. His notes on 'shall' and 'will' are also very good. The book might be used with much benefit even by candidates for the Matriculation Examination; and we hope and expect that Mr. Sheppard's Manual will meet with the success that it deserves."

Bishop Corrie's Grammar School has received back its able and successful Head-master, Rev. A. W. Atkinson, M.A., who went home on leave for three months. We trust the fine old school will go on prospering. Under his care it may perhaps develop into a college, as several High schools of but recent origin have been doing.

The degree of M.A. *honoris causa* has been conferred at Oxford on Mr. Thomas Howley, who was once a pupil in Bishop Corrie's Grammar School. There are several persons in Madras who must remember his gaunt frame, his hard hitting at cricket, his loquacity, nervousness and good-nature, his untiring industry at his books, and above all, his honor and integrity, his humility and piety. He was not very brilliant as a school-boy. He was in the highest class, though not the *dux*, of the school when he left it. In those days the vernacular languages used to be taught there, and Howley acquired in the school a very fair knowledge of Telugu, which he improved when, after leaving school, he labored for some years as a lay agent of the C. M. S. at Masulipatam. But the heat of India affecting his health, he was sent to England, and became a teacher of Telugu in London, and an Examiner in that language for the London University. Several members of the Madras Civil Service have a kindly recollection of him as a teacher of Telugu. It is possible that the appointment of the Rev. Mr. Arden, M.A., to be Professor of Telugu at Cambridge, has suggested to Mr. Howley the advisability of entering his name on the rolls of Balliol College, and taking the degree of M.A. Two other teachers of Indian languages had the same degree conferred on them at the same time. Will Mr. Bickle take a hint from this? To those who cannot assay metals, the guinea-stamp and the Hall-mark are of great value.

The Archbishop of Canterbury has, upon the recommendation of the Bishop of Madras, conferred the Degree of Bachelor in Divinity on the Rev. Ed. Sell, Fellow of the University of Madras, and Principal of the Harris School for Mahomedans in Triplicane. Mr. Sell's recent book on Mahomedanism probably gave occasion for the recommendation.

Mr. B. L. Rice, the Director of Public Instruction in the Province of Mysore has, at the request of the Mysore Government, consented to retain his office for the next eighteen months.

The Madras Government have engaged the services of

Mr. Dunning to extend education among the children of Indian Coolies at Port Natal. Mr. Dunning, who is of the Mysore Educational Department, has obtained two years' leave from the Mysore Government, and proceeds to Port Natal.

Mr. R. Sivasankara Pandit Garu, B.A., Assistant Professor at Pateheappah's School, and a good Telugu scholar, has been appointed Telugu Examiner for the F.A. and B.A. Examinations in the room of the late Mr. V. Soondara Rama Aiah, B.A., B.L.

According to a letter received from Suez, the health of Mr. J. T. Margoschis had been, up to the 30th June, improving.

The Madras Physical Training Society are said to have engaged the services of a native, for merely of the Tanjore Acrobatic Troupe, as Instructor. The operations of the Society are conducted in the gymnasium at the People's Park.

The Brotherton Sanskrit Prize at Cambridge, given every three years, and open to all graduates of the University under the standing of M.A., has been awarded to Cecil Bendall, B.A., Fellow of Caius College.

Mr. Henry F. Staunton has passed his final examination for the M.B. degree of the Madras University. At Bishop Cotton's School, Bangalore, he won Sir Richard Meade's gold medal for being the first of the boys of that school in his matriculation examination, and the silver medal for being first of his class at the F.A. examination. At the Medical College, Madras, he won the first prizes in Practical Surgery, Chemistry, Materia Medica, Physiology, Zoology, Hygiene, and Ophthalmology, and the second prize in Medicine, and passed with honor in all these subjects. He closes his connexion with the Medical College on being presented with the Johnstone gold medal of the current year.

Mr. S. Sattianadhan, the son of the C. M. S. Missionary of that name in Madras, has sent a very creditable essay on Indian civilization to the *Journal of the National Indian Association*. His style of language ought to satisfy the Rajah of Travancore.

The appointment of Mr. G. Bickle to an Inspectorship of schools gives umbrage to some Schoolmasters who are graduates of Universities. As a general rule it would not be proper to set a non-graduate in such a position. But every

rule has its exception; and if in any case the exception proves the excellence of the rule, surely it is when a successful teacher of teaching is raised to inspect the work of teachers. It is well known that a graduate of an University is not necessarily a good teacher.

The Rev. A. P. Stanley, Dean of Westminster, is dead. He wrote the life of Dr. Arnold, Head-master of the Rugby Grammar School, who brought about a complete revolution in the management of Grammar Schools in England. The book is still worthy of the attention of Schoolmasters.

The following is the alphabetical list of the students of the Madras Agricultural College, who completed their period of three years study on the 28th June, and who have received their diplomas.

*First Class.*

Bapu Row, S.—Tanjore.  
Bowani Shunker Row.—Mangalore.  
Coomarasawmy Mudaliar, S.—Madras.  
Desai, G. B.—Guzerat.  
Desai, S. M.—Guzerat.  
Padmanabaya.—Mangalore.  
Ramasawmy Iyer.—Tanjore.  
Ramachandra Iyer.—Tanjore.  
Rama, P. D.—Bombay.  
Rungasawmy Iyer.—Tanjore.  
Santaya, B.—Mangalore.  
Vasodeva Iyer.—Tanjore.

*Second Class.*

Centhaya Mudaliar, A.—Jaffna.  
Chateapathy, J. M.—Kattywar.  
Desai, H. K.—Guzerat.  
Irani, J. D.—Bombay.  
Jumbunatha Shastriar.—Tanjore.  
Kistnasawmy Iyer.—Tanjore.  
Ragava Pillay.—Madras.  
Ramanjooloo Naidoo.—Madras.  
Ramen Pillay, T. K.—Travancore.  
Ramen Pillay, R.—Travancore.  
Seth, J. K.—Bombay.

We hear that out of the students who have received first class certificates, Ramasawmy Iyer, who stands first in rank among the Tamil Candidates, and Coomarasawmy Mudaliar,

who is the only student that has passed in Telugu, are to be appointed as Agricultural Instructors in the Districts of Salem and Bellary respectively.—*Madras Mail.*

MIDDLE SCHOOL EXAMINATIONS.—Teachers will no doubt generally approve of the changes made in the requirements for this examination; for they shew clearly that the subjects and their relation to each other in importance have been carefully reviewed, and better adjusted. We commend the action of the English Committee of the Council on Education in bringing their Code revisions into effect, to the notice of our Educational Authorities; for it is very late in the year to make changes; and had they been more extensive, it would have been most vexatious. It might also be pointed out that the text-book in English, the Supplement to the Fourth Book mentioned in last year's notification, should have been continued till the beginning of the next years work; not because it is advisable to keep that book with its antiquated phrasology as a text-book, but for the sake of the examinees, and of systematic procedure which every department ought to cultivate. It was remarkable in last year's notification that arithmetic was relegated to a secondary position among the subjects. The present scheme, by somewhat advancing the proportion of marks, and making mathematics a compulsory subject, gives to the science of numbers a more befitting prominence. One subject, hygiene, is omitted from the present list of subjects, and an "Introduction to Science" substituted. It would be but fair that those schools which are necessitated to make the change thus occasioned, should not have the failing limit of marks applied to them in the examination in this particular branch. The imposition of examination subjects is one thing, and the choice of suitable examiners is another; and it is to be hoped that the most careful discrimination will be employed this year in the selection of qualified persons.—*Desk in the Madras Mail.*

EDUCATION IS MORE THAN TEACHING.—Said Sir Richard Garth the Chief Justice of Bengal to the Young Men's Association of Bhowanipore, "you are stuffed very full of a vast amount of book learning; but you are not educated in other things at least as valuable in the same way that young men in England are at our large Schools and Universities."

Mere teaching is one thing, education is another. Boys go to schools and colleges in England to be made men of; to learn habits of obedience, self control, energy and subordination; to acquire principles of honor and truthfulness; and above all to learn the proper mode of dealing with their fellow-men.

#### THE MAHARAJAH OF TRAVANCORE ON VERBOSITY.

I WOULD point to the besetting evil of our young men—accepting words as the *Ultima Thule* of education and neglecting thoughts and deeds. I do not undervalue words, but I do not hesitate to say that they should be only the handmaid of free and healthy thought and of sustained and vigorous action. A writer in a late member of the *Calcutta Review* says, 'Indian youths are proficient crammers, and they seem to regard words as the created world, instead of what they are, vocal sounds by which *ideas of things* are conveyed to the human mind.' I have had ample experience of this tendency on the part of our educated youth. I have known young men by scores who can travesty Macanlay, or Johnson with wonderful facility. But the robe of Abraham Lincoln, thrown over the ridiculously dwarfish exequimans, would make him only still more ridiculous. Indeed I would discourage our young men from reading too much of authors who have specially laboured at their language, and would direct them to those whose language, while correct, precise and graceful, is simply the outflow of their ever swelling thoughts. I would recommend such writers as Arthur Helps, Smiles, Martin, Morley, Freeman, Ruskin, Kingslake, Kaye, and so forth. There is yet another great name, the study of whose writings would act as a drag to our young men in their dreamy flights into the region of words and nothing more than words—that of the late Thomas Carlyle. If somebody had the curiosity to collect all the essays written by our educated young men, at all bearing upon a modern European civilization, he will find in 90 per cent. of them allusions to the steam engine, the railway, and the electric telegraph—in many cases the writer traversing a whole hemisphere of human affairs to force these into his theme. Now railways and telegraphs are undoubtedly wonderful inventions, and are admirable in their places in the harmonious entirety of modern civilization. But when they are made the stereotyped formula of fine writing, the mantram of pedantry, there is some thing nauseating. It clearly shows that the mind of our educated youth is more occupied with words than thoughts; for why do not the writers cite the humbler but extremely useful inventions which they see almost daily, such as the watch, the argand-lamp, lucifer matches, and a hundred other things? No, these will not suit fine writing, and the thoughts they suggest are thrown away. Now I most earnestly impress upon you the necessity of directing your mind to thought and action. Good and correct language, you can almost intuitively acquire by extensive and well advised reading (?) "Let us not be called the dreaming and voluble Hindu, but be considered thoughtful, practical and industrious."—*Madras Mail*.

#### A HEAD-MASTER'S FAREWELL SPEECH.

At a farewell entertainment at Cuddalore on the 30th June, Mr. P. S. Annachariu, B.A., late Head-master at St. Joseph's Institution, Cuddalore, said, "To receive these testimonies of your love and regard for me is gratifying in two ways, first, because they are unmistakable proofs that you cherish the kindest feelings for your teacher; secondly, because it is a true indication of your intellectual progress that you should thus place on record your recognition of the services that have been rendered you by me. No one can fail to rejoice in this token of progress, in this desire on your part to keep pace with and participate in the movements of the age, which is marked by its tendency to expansion and diffusion. I set the highest value on the praise you have had the kindness to bestow on me, but it is a question to myself, if I am deserving of it, for the success which has attended my labours in this institution is due as much to the students themselves as to the teacher placed over them. The teacher and his pupils act and re-act upon each other; and without joint effort and union of labour, success would hardly be possible. The grand principle of co-operation which plays so important a part in the affairs of human life, is at work even here. With ill-chosen or non-working materials, the best efforts of a teacher must prove futile; while the same fate would attend the labours of the most diligent scholars without a proper guide. If I have been hard working, and all that you say; I have also been lucky to move in a healthy atmosphere, where all have cordially co-operated with me, with a high sense of their duty, and brought credit upon themselves and upon the institution. Again, I repeat, that if I have worked hard on behalf of the students and of the institution, I have but discharged my duty in the way it ought to have been done. Had I been wanting in this respect, I should have done a serious wrong to my conscience, and a manifest injustice to the institution. And nothing gives us greater satisfaction when in after life we make an honest self-examination of our past doings, than the thought that we have done our duty as we ought.

It is supposed by some that your education is completed with the passing of the Matriculation Examination, and that there is little need of it afterwards. No notion could be more erroneous. Gibbon observes that every person has two educations—one which he receives from others, and one more important—which he gives to himself. The instruction imparted in school is of far less value than the knowledge we acquire by self-culture after the close of the scholastic career.

"Equally important with the culture of our intellectual faculties is the development of the moral parts of our nature. Truthfulness, integrity, and self-respect are qualities which ought to be cultivated and improved. And the last but not the least in importance, which I would draw your special attention to, is physical education—a subject which has hitherto been neglected, and the usefulness of which we are just beginning to recognise. Active bodily exercises are the best (subsidiary) means of keeping up the full working power of the mind, as also of securing practical success in life."—*Madras Mail*.

MR. GRANT DUFF ON ENGLISH LEAVEN IN  
THE MASS OF INDIAN LIFE.

You ask whether there is yet any sign that the English leaven is leavening the whole enormous and overwhelming mass of Indian life, and if so, in what special directions.

Yes, there are such signs, and they are sufficiently numerous and satisfactory; but the area over which our influence has to work is so enormous, that as yet it is only the day of very small things.

There seems reason to believe that the infection of incorruptibility is really beginning to extend from the English to the native Magistrate.

A great number of educated natives are getting to think about many philosophical subjects very much as persons in Europe think of them, who have broken with all definite forms of creed. There would be a difference in their way of stating their opinions; their statement would be coloured by the associations of childhood and national history; but, when you came minutely to examine them, the root of differences would not be great.

It seems now quite clear that English is going to become the *lingua franca* of the peninsula. It is surprising to what an extent this already is so. A very intelligent English servant, who travelled with me, told me, that he found it much easier to get on in India than he ever did in any of the numerous countries to which he had accompanied me, from the number of people who spoke just enough English to enable him to make himself understood.

Our schools and universities are extending the idea of the scientific method. Read carefully that extract from Rajah Siya Prasad's book which I quoted in the *Contemporary* for September. That man, at least, has obviously got hold of the scientific view of history.

EDUCATION OF THE MASSES.—You ask me about the chance of Education being set on foot amongst the great masses of the common people. I believe that the most important thing you can do for education in India at present is to throw as much weight as you can into the scientific as against the literary scale. You are in great danger of raising up an educated proletariat, with no ambition except to enter Government offices, become teachers, or write for newspapers. It is infinitely important that you should multiply the as yet altogether trifling number of Natives of India who know anything about the material world by which they are surrounded, and the still smaller number who can turn what knowledge they have of it to practical use. Infuse, I say, into your higher education a very large proportion of scientific, and especially technical knowledge. That seems to me the first thing to do. Spread the net of primary education wider. That seems to me the second thing to do. Extend and improve your higher education. That seems to me the third thing to do. The two last are being done and will be done more and more; I wish I saw more general attention given to the first.—*Contemporary Review*.

A PLEA FOR CLASSICAL TEACHING.—The study of a second or third language affords mental discipline of a kind that is not to be derived from that of mathematics, or of physical science. A dead language has done growing, and is fixed. The Latin language, and,

still more, the Greek language are beautiful, and, by reason of the logical consistency of their structure, are favorable to such discipline. They are copious and plastic, and favourable to the nice and accurate expression of thought, on which account (partly) they are still resorted to for scientific terms conveying ideas that were unknown to the ancients. The Latin and Greek classics are mines of thought on subjects in which the modern world has made little or no advance. With proper selection they are comparatively pure; and more instructive matter—useful for the general culture of youth—may be found in small compass in these languages than in any other. The moderate difficulty of reaching the thought conveyed by them fixes the ideas in the memory, and the elegance of the vehicle makes them pleasing. Classical literature is humanizing, and brings us into sympathy with the scholars of many ages, and with the best modern scholars of the West. Having survived the criticisms and won the admiration of ages, they are standard works.—*Madras Times*.

HARVARD LECTURES ON EDUCATION.

HARVARD, the oldest and most important University in the United States, has established a Lectureship on "Pedagogy." The *New England Journal of Education* has a résumé of the opening lectures of the Course, which may be interesting to some of our readers who may be desirous of seeing how such matters are regarded in that eminently utilitarian country, where few things long find favour which have not a direct bearing on the practical duties of life.

THE KINDERGARTEN.—Kindergartens are more numerous in America than in Germany. Our idea of a Kindergarten is somewhat misconceived. Fröbel believed chiefly in a school of health; and called it a garden, to indicate that a child grew as do the plants, was susceptible to influence as they are, and that he should likewise be kept out-of-doors. We lay too much of stress upon, and devote too much time to, gifts and occupations; the child has no thoughts, only emotions or feelings. These are the sum-total of its psychic life. The only sense educated before birth is touch. The child comes into the world with that sense tolerably well developed, and Fröbel also believed that by touch, caresses, &c., a good deal could be done by way of educating the character and disposition of the child.

After hearing and seeing are developed, an appeal should be made through those senses; and from that time their education should go forward.

The infant is educated by the inflections of "speech music" of the mother long before it understands her words. In fact, the emotional nature of the child is fairly well developed before anything which can be properly called education is begun. The child is a perfect sensorium of all such influences in its environment, as the temper, tones of voice, &c., of its mother or external nature. The foundation of religious culture especially is laid in the earliest infancy. The mother stands *in loco Dei* to the child, and the sentiments of gratitude, reverence and love, if afterward they are experienced toward God, must first be developed toward the mother.

The chief evil to be avoided is the premature development of self-

consciousness in the child. If its attention is called to its personal adornments, or it is in the habit of reciting in public for the applause of strangers, the consequences are of the worst kind. The child comes to look at itself as seen by others, instead of growing up naturally. This is the great vice of Kindergarten education in this country.

The best teacher for the infant is, of course, its mother. If the mother cannot or will not take care of her child, or if there is but one child in the family, and it has consequently no companions of its own age, the kindergarten should be patronised.

Children should be, above all things, kept out-of-doors, and thus habituated to cold and climatic changes. This strengthens the walls of the blood-vessels as nothing else does. The point of next importance is to keep children interested; and that, more than what they are learning, is the thing to be sought by kindergarten training. RELIGIOUS TRAINING.—The foundations of religious training should be laid in the emotions, which are cultivated (1) by the child toward the parent, (2) by curiosity, awe, and other emotions which are excited by direct and immediate contact with Nature. The impressions received from storms, the changing seasons, the heavenly bodies, cultivate those sentiments upon which substantial religious training should rest. Later, say with the beginning of school-life, the child should make its first acquaintance with Christian teaching. Then, as with the Germans, the festival of Christmas and the life of the child Jesus may be used to inculcate positive religion. A few hymns, prayers, selections from psalms, stories from Genesis, the time of Moses, and the judges, patriarchs, &c.; in this order, and supplemented with instruction about the life, and then the teachings, of the child Jesus. The great point is, that these should be arranged in the order adapted to the intelligence of the child. Only at the age of puberty, the most important period with which the educator has to deal, should religious instruction be positive and personal. Then some strong, direct appeal to the youth's sense of moral responsibility and his relations to God and the world at large, should be made, according to the special religious tenets of the parent. Such is the German plan. With them religious instruction is at first very generic, and becomes more and more specific, positive, and personal as the child advances toward maturity; and up to that age the method is doubtless unsurpassed. Soon after that age religious instruction with them ceases. There the Jewish rabbi and the Lutheran priest go into the schools, and take each the children of their creed and train them a certain number of hours a week. In this country, by the "Union Question-Book" system, which ignores denominational differences, we are approximating, though very remotely, this system. It has not occurred to teachers of religions here to devise for the earliest emotional stage a system of religious training so generic that Catholic and Jew shall both coincide with its earliest teachings. The chief fault of religious training here is, that the personal appeal is made to *youth* children. This is so false that the best German teachers, to whom our young theologians are sent, call it positively immoral, if not immodest. There is no objection to a personal appeal to our young men—indeed, a change of heart is then unavoidable. But for a delicate teacher to go from the closet tingling with religious self-consciousness, such as a young

child can in no way appreciate or understand, and to attempt to engraft it upon the child, is wicked.

Because instruction in the Bible is made by teachers who are so callow and untrained both in knowledge and sound religious experience, and because it is insisted that religious training is a conquest, and *not a growth*, do we see the curious spectacle of men and women fearing lest, if their faith in the story of Jonah and the literal six days of creation be lost, their whole religious if *not* moral life would be undermined; and hence the strange fustian to "note" so often heard in religious experience. These, I may add, are the views of the best and most orthodox teachers I have met in Germany.

LANGUAGE AND ITS METHODS OF INSTRUCTION.—Language, we should bear in mind, is not a perfect machine, but one of the clumsiest; and no human mind can properly grasp it without having the natural processes partly interfered with. The learning to read and write must likewise be accomplished by arbitrary processes; hence the great diversity in the methods of teaching it. Of these methods, many and various, we may first mention the *Spelling* method, as described by Quintilian, where spelling and meanings were inculcated by floggings, but no attention was paid to the sound of the letters; hence the great confusion in this latter particular in Roman letters. We then come to the artificial methods, one of which consisted in the twisting of forms of animals, trees, &c., into shapes of letters, as now shown in old missals; another, by taking the initial letter of objects, as A. apple, &c. The next may be called the poetic method; the alphabet being taught by a series of doggerel rhymes. A fourth was by cards, a fifth by colors, another by dolls pasted over with letters. Basedow improved on these by making the letters out of sweet biscuits, till at last the children cried for the alphabet. Still another method was gesticulating with the assistance of a stick the various forms of the letters.

In order to get any light on this matter we must ascertain, first, the way in which a child learns to speak; second, the various supposed origins of speech; third, we must learn from physiology. The infant makes noises, first, spontaneously; second, imitative or passively, the words being reflexes from the ear; and, lastly, consciously, when the child learns its will, and the sign by which he can express it. Following the same idea, there are three great sources from which language is said to be derived. One tells us that it comes from interjectional and exclamatory signs of emotion, differentiated and combined to suit man's varying wants. Another, that it is imitative of the noises of nature, such as cracking, whistling &c. A third, that it is a conscious innovation; that people met together and agreed to say this for this thing, and that for another, &c. Here we have precisely the three stages by which the child learns to speak, and the teaching of reading or writing (which are much the same), if it be philosophical, must be based on the same process. Following these premises, we find ourselves following the methods employed in the best German schools of to-day.

The infant uses his hand with gesture; in like manner let the little child scribble without restraint or copy, and thus educate his eye and train his hand. Then give him a copy, preferably a word, not a letter, and let him copy it in a cursive hand. Let short

sentences follow until the child can write the whole alphabet. Then call his attention to the phonetic sign; let him make it, sing it, and sound it. Training then may be given in other sounds, foreign to our language, for vocal gymnastic exercise. So let the child proceed to composition, the mind advancing synthetically and analytically at the same time. Thus the child first acts spontaneously, then imitates a copy, and lastly sees the way himself.

Of course, no method can be followed but imperfectly, and is open to criticism. "The child will learn to speak or spell many words, of the meaning of which he has no idea. Let him do so. It is his most receptive time. If he does not learn them then, it will be a harder task to acquire them in after-life. Some of our most simple words he cannot possibly understand. But as well say that a child should have blinders on its eyes as that it should be trained to speak only the vocabulary which the teacher prepares for it.—*From the Educational Times.*

### MILTON AND JOHNSON AS SCHOOLMASTERS.

*A paper read by Dr. R. Wormwell before the College of Preceptors.*

MILTON and JOHNSON probably have more points of difference than of resemblance. Both were giants as regards intellect; in both there were features of character that we may well love and venerate; they occupy first places in the first rank of men. Both could be bitter and violent to opponents, and were even ferocious when attacked; but they were as unlike in character and temperament as in countenance and physical appearance.

We all know them well by sight. Milton was of middle height, of fair and delicate complexion, having dark grey eyes and oval face, and auburn hair falling on his shoulders. His gait was erect and manly; and, as one of his biographers has told us, he "lodged a harmonical and ingenuous soul in a beautiful and well-proportioned body."

JOHNSON's life was despaired of in the beginning, and he grew up sickly. His complexion was muddled, his face scarred and roughened with rugosities; he "was blind of one eye and shortsighted with the other;" his form was ungainly, and his movements awkward. He is described, on his introduction to Mrs. Porter, at the age of twenty-seven, as lean and lank, an immense structure of bones, with a face "hideously striking," and hair straight and stiff and parted behind.

They were born at different times, exactly a century apart, and bred in different atmospheres. Milton was born in 1608, at the Spread Eagle in Bread Street, was educated at St. Paul's School, and from the very beginning of the reign of Charles I. was led into sympathy with the most advanced of Charles' opponents.

JOHNSON was born in 1709, at Lichfield, a cathedral town that had little sympathy with the reigning house, and whose preachers in JOHNSON's youth were continually recanting fond recollections of the times of the Stuarts, and labouring to keep green the memory of that famous Archbishop who lost his head for his devotion to his order. The influence of these prejudices gave the tone to JOHNSON's mind, and the image of the solemn aisles of the cathedral seems never to have left his memory.

Hence, MILTON was a Republican, JOHNSON a Tory and a Jacobite; MILTON a Dissenter and a Disestablisher, JOHNSON a High-Churchman. MILTON never hesitated in his advocacy of reform; he made straight for the root of every abuse he thought he detected. JOHNSON never once slipped into liberality, or sanctioned innovation.

Fortune smiled much more constantly on one than on the other. MILTON, favoured by her in the spring, was forsaken in the autumn of life. No one can doubt that his own Samson was the image of himself. The strong warrior became the blind and despised sufferer. The Philistines mocked him and his cause, and piled their grossest indignities upon him, but he never lost faith in the final victory. MILTON was victorious in death, JOHNSON in life.

JOHNSON began in London by proving that a man might live at that time for £30 a year; but he must sleep in a garret, breakfast at a coffee-house for 3d., dine for 6d., drink no wine, but bribe the waiter with the customary penny to ensure civility, and visit his friends on clean-shirt day. He struggled for years at the merest drudgery in the printing-office of Cave, at St. John's Gate. But when prosperity office set in, it seems never to have deserted him. When once it was kindled, renown continued to blaze about his name. He was distinguished by his sovereign, and rewarded by a substantial pension of £300 a year. His circle of acquaintances embraced nearly all the eminent personages of the day—Goldsmith and Burke, Thurlow and Adam Smith, Charles Fox and Sir Joshua Reynolds, Garrick and Peg Woffington, Topham Beauclerc, the scholar and wit, and Boswell, the shrewd and devoted biographer. He took tea and talked with learned women, Mrs. Carter, Hannah More, Fanny Burney, Mrs. Lennox. In the last years of their lives, we find MILTON calmly awaiting and longing for death; JOHNSON morbidly anxious to live.

Both, in the beginning of their careers, were actual schoolmasters. In 1639, after his return from Italy, MILTON took a house in St. Bride's Churchyard, and afterwards one in Aldersgate Street, for the instruction of the children of some of his friends. He must have strained a point to hire a house in such a locality, for Aldersgate Street is described by writers of the time as resembling a street in an Italian city, and containing the residences of several noblemen. Of all his pupils, the names of John and Edward Phillips only have come down to us. They were his sister's children, and younger brethren of that "fair infant whose death by a cough" is commemorated in his first poem. Both these became industrious writers. They were Royalists, and fell into the licentiousness that grew out of the reaction of the Restoration. The last of many books written by Edward Phillips was a biography of his uncle. In it he recurs with affectionate reverence to the education he received in Aldersgate Street. He gives an account of that education, and shows that it embraced every kind of study then possible. He speaks with warmth, and with something of remorse, of the blessings which his school years might have been to him if he had passed them aright.

JOHNSON, too, was at first a schoolmaster. He was sent to Pembroke College, Oxford; but, through his father's bankruptcy, his resources failed, and he was not able to complete his studies. He left college dispirited, mortified, in debt, and without a degree. His father soon after died, and, after the sale of his father's effects,

Johnson had £11 with which to begin an independent career. His feelings at this juncture are recorded in his diary, where he prayed that his faculties might not be impaired by his poverty, and that indigence might not force him into crime. He became a teacher at Market Bosworth, but was not at all happy in this position. He then settled at Birmingham. After his marriage with Mrs. Porter, he set up a school at Edial, near Lichfield; but his pupils were few, and in two years he was compelled to break up his establishment. Probably we should never have heard the name of one of his pupils, but for that memorable journey in which master and pupil found themselves on the same road with faces in the same direction—two needy, hungry, penniless adventurers, but both destined to secure fame. Samuel Johnson, the master, was to become the monarch of literature; David Garrick, the pupil, to become the prince of players. The friendship that existed through life between this dissimilar pair was cemented and sustained more by the memory of that journey than by anything that happened in the schoolroom. Picture them, — the huge awkward man, with clothes ill-made and shabby, rolling with uncertain equilibrium in the saddle on a sorry high-boned nag; and a stripling of short stature, but light and graceful figure, trudging on foot, and striving, with his ringing joke and chirrupy laugh, to dispel the gloom that seemed in danger of settling on the older. They had one horse between them, and at times Johnson was glad to dismount for a while from his hard-trotting back to stretch his stiffened limbs, and Garrick, wearied and footsore, was glad to vary his discomfort by mounting in Johnson's place.

Now, what results have we of the school experiences of these men?

Milton was a true schoolmaster: his work formed a series of experiments, leading him to build up a complete scheme of education—of such a liberal education as would “fit a man to perform justly, skilfully, and magnanimously all the offices, both private and public, of peace and war.” This definition has been so frequently quoted of late that it is almost trite. Milton's scheme, sketched in his letter to Mr. Samuel Hartlib, a German teacher in London, tells us what he learnt, and what we may learn by his school experiments. He never pretended that they worked wonders, he did not even allude to them in his writings; but the scheme described in the letter resembles in all its principles, that which Edward Phillips speaks of. It had reference to actual living boys, whom he had seen and tried to form.

To some extent, his idea of education is Baconian; not that he had Bacon's preference for physical studies, but that he adopted Bacon's method. He provides alike for Scientific Education, and what we have lately called Technical Education, but not to the exclusion of the studies of Language and the Humanities. He considered that the division of educational establishments into classical or literary schools and scientific or mechanical schools—or, as we may call them in these days, gymnasias and real-schools—is unnecessary and artificial; that the knowledge of words is best obtained in union with the knowledge of things; that each is helpful and necessary to the other. He protests against “the preposterous exaction of forcing the empty wits of children to compose themes, verses, and orations,” as a way to obtain a knowledge of language. He does not affect to despise such exercises, as some classical scholars of our

day have done; but he regards them as “the acts of ripest judgment, and the final work of a head filled by long reading and observing, with elegant maxims and copious invention.” He looked upon Language as a means of culture, but at the same time he regarded Language as “but the instrument conveying to us things useful to be known.” He insisted that our youths should acquire an early experimental training before proceeding to more abstract lore; otherwise we shall have to complain that “they grow into a hatred and contempt of learning,” and that, when “poverty of youthful years call them importunately their several ways, they hasten to an ambitious and mercenary or ignorantly zealous divinity,” or to the “mere trade of law,” or to “State affairs with souls so unprincipled in virtue and generous breeding, that court shifts and tyrannous aphorisms appear to them the highest points of wisdom.”

Now, there are several points to notice in this scheme, and the experience that dictated it.

First, Milton's experiments were not carried on for any great length of time. Schoolcraft is not one of those arts that can be learnt in six lessons. Milton's scheme is that of a man who has made bold experiments that are leading him in the right direction, but are not numerous enough to carry him far. We may, if we wish it, find much in his scheme to criticize, and even to ridicule. His own amazing powers of acquisition led him to overrate the powers of boys, and he had not had sufficient experience in teaching to correct the error.

Secondly, we must be prepared to consider the general principles he advocates, without reference to the text-books he recommends. He could refer only to the classical books that his own reading had brought before him. His suggestions are not the less valuable, because we have means of carrying them out that he could not dream of. No one now supposes that Natural Philosophy can be learnt from Seneca, or Agriculture from Cato or Columella.

Thirdly, there is abundant evidence of his thought and observation on school matters, in the arrangement of subjects to be studied at different hours in the day. These subjects are so varied in character that the whole day can be utilised without the pupil being exhausted by fatigue. The severer studies are placed early in the day, the lighter and more conversational towards the evening. Music is recommended, not as a graceful recreation to a few, but as an instrument of making all the pupils “gentle from rustic and distempered passions.”

Fourthly, the scheme includes what we have lately called Technical Education. He would have us conversant with facts and principles, rather than names. He always aims at the useful. Men having practical skill are to be appealed to for aid. The pupils are to have “the helpful experiences of hunters, fowlers, fishermen, shepherds, gardeners, and apothecaries,” to assist them in their natural studies. These studies are to increase their interest in reading. They are to study medicine, and what we now call Animal Physiology or Biology, that they may perhaps “save armies by frugal and expenseless means, and not let the healthy and stout bodies of young men under the theft rot away for want of this discipline.”

Fifthly, from Milton's treatment of his daughters, we know that he must have been unaware of the fact that the principles of educa-

tion he so ably advocates, are as applicable to females as to males. Milton did not comprehend what I may call the identity of the laws of psychological development in men and women. His sonnets and his tracts show that he recognised many good qualities in woman having reference to love, home life, conversation, and piety, but he always makes her inferior in intellect to man. Had he but continued his experiments in education in connection with his own daughters, he might have learnt to adapt the principles of his plan to female education, and have found more comfort in the contemplation of the result of their training. They were condemned, we are told, to read whatever book he wished to hear, no matter what language it might be written in, without any thought on his part of how much they understood of it, or the amount of interest they could have for the subject. They endured the task for a time. The irksomeness of it could not be long concealed, and hence he refers to them, in the end, as his "unkind children."

Now, let us turn to Johnson's criticisms of Milton the Schoolmaster. He was unfair to Milton in respect of his other work. He thought Lycidas, for instance, easy, vulgar, and disgusting. He was blind to all the beauties of the song, and sharp-sighted for its defects. But when he takes up Milton the Schoolmaster, he yields to rancour and ferocity. He himself had been a schoolmaster, and is it not true, as a rule, that the fiercest denunciation of a schoolmaster encounters the unfairest criticism, the most illiberal interpretation of his motives, the most merciless exposure of his peculiarities and eccentricities, are the productions of those who are or have been in the same profession? "Such has been my experience, and I fear it is not singular. The teacher is not without honour, save amongst his own brethren. For instance, Thomas Carlyle for twelve years was engaged more or less in school-keeping or teaching; and every educational periodical that has lately reviewed his life, has apologised to the world for this part of it. It is true, he himself has set the example, but many are the unkind things that have been said by Thomas Carlyle. Amongst them not the least fierce are the unkind things that the eccentric author has said of himself the Schoolmaster. Nevertheless, there are true and apt maxims and aphorisms on education in "Sartor Resartus," and other works, which would never have been created but for the author's experience as a teacher.

But we must return to our heroes. Johnson points out that several of Milton's biographers have shown a desire to shrink from this passage of his life altogether, and have wished to represent his teaching as gratuitous. Johnson ridicules this folly, but sneers at Milton for returning to England because he thought his countrymen were engaged in a struggle for liberty, and then vapouring away his patriotism in a private boarding school. To one not determined to ridicule, it would probably occur that the scheme of the private boarding school was the means of preventing his vapouring away his patriotism, by securing him against the bribes of the court, and making him independent of his pen. Edward Phillips neither speaks of this occupation of Milton as a disgrace, nor hints that he undertook it without remuneration.

Johnson next speaks of the small fruit which proceeded from the "wonder-working academy" in Aldersgate Street. The fruits were

no doubt unripe, and so far unsatisfactory; but, as we have pointed out, Milton never claimed to have done wonders.

Johnson's next objection is based on the comparative worthlessness of the physical sciences. In these days, it is unnecessary to reply to this objection. It is simply barbarous now to attempt to undervalue the importance of the physical sciences.

He next maintains that the formation of a noble and useful character is the true end of education—a proposition that Milton would not have contradicted.

He objects to Milton's scheme, that a knowledge of external nature is not "the great or the frequent business of the human mind," whilst prudence and justice are virtues and excellences in all times and in all places. But this objection is inapplicable to Milton's scheme. Milton agrees with Johnson and with ourselves, that the purpose of education is the formation of brave men and good citizens. The difference is in the means. Is it true, as Johnson would seem to have us believe, that the study of nature does nothing to aid the development of prudence and other virtues? It is not difficult to prove the contrary. We know that, with the extension of the comforts which the physical sciences devise for our use, we are exempted from temptations to evil that are often otherwise irresistible, that we become more decent in manners and purer in sentiment. Morals are strengthened, and religious life made possible, by our being lifted above the grossness and debasement of a mere animal existence. The study of nature may be as efficient in promoting the virtues of "prudence and justice," as the study of the "Iliad" of Homer; or the "Odes" of Horace.

It was not to be expected that Johnson could appreciate such a course. His political creed and his temperament forbid experiment. He belonged to the class of men who fix their attention so entirely on the good features of existing things as to ignore even the defects that admit of remedy, and to feel but one desire, namely, to keep them as they are. It was not possible for him to approve of the study of physical science. It was equally impossible for him to make experiments in education.

In conclusion, I venture to affirm, with regard to Milton's system, that it is based on the experiments of a teacher, as well as on those of a moralist and patriot; and, though it contains mistakes which are easily detected, it foreshadowed our latest advances; its aims were as noble and practical as any that were ever conceived; and it bears evidence of a righteousness of purpose that we may well admire and emulate. The forms of expression that he employs whenever he discusses educational matters, seem to show that the ghost of an ancient fallacy exerted a tacit influence over him. He speaks as if he held the opinion that there are certain things and certain laws that are theoretically rational, and discovered by contemplation, the study of which is noble and honourable; and that there are other things and other laws that are practical or mechanical, and are discovered by experience, the pursuit of which is ignoble and vulgar. Whereas, as we now know, and as Milton seemed to foresee, there is not a double system, but one harmonious system of laws in the universe, and that for its elucidation experiment and contemplation must go together.—*Educational Times*.

LONDON UNIVERSITY.—The annual presentation<sup>o</sup> of degrees<sup>o</sup> and honours won by students during the past academical year took place on May 11th, in the theatre of the University, Burlington-gardens. The body of the hall and gallery were filled with ladies and male students in the academic robes. The chair was occupied by the Chancellor of the University, Earl Granville, who was supported by Sir George Jessel (Master of the Rolls), Vice-Chancellor; Sir John Lubbock, M.P. for the University; Dr. Storrar, chairman of Congregation; Lord Sherbrooke, Lord Houghton, Lord Arthur Russell, Lady Stanley, Sir Richard Temple, Dr. Carpenter, Dr. Quain, Dr. Johnson, Dr. Wood, &c. The proceedings were opened by the Registrar, Mr. Milman, M.A., reading the report of every examination during the past year. Such of the undergraduates as obtained exhibition prizes and medals were first presented to receive their distinctions from the Chancellor, and they were followed by the graduates who had passed in the several faculties to whom the chairman delivered their diplomas. Those of the graduates who obtained scholarships, prizes, and medals, were subsequently presented separately for every such distinction. The second and fourth undergraduates to receive the reward of successful study at the hands of the Chancellor were young ladies named Edith Sophia Collet, educated at the North London Collegiate School for the Girls; and Jesse Mary Chambers, a private student, both of whom, like the ladies who came after them were most heartily cheered. Bachelors of Science who obtained scholarships<sup>o</sup> were—Sydney Young, Owen's College; Daniel West Samways, St. John's, Cambridge; Moses John Jackson, St. John's Oxford; and Sydney Frederick Harner, University College. The Scholarship for Bachelor of Laws was won by William Henry Upjohn; whilst in the M.B.'s the scholars and medallists were A. Newsholme, A. Money; G. F. Barnes, J. I. Paddle, and J. W. Meek. D. D. Day, and A. Money were medallists in the B.S.; whilst George Courtenay Henderson, University College, carried off the gold medal in the M.D. Examination. At the close of the presentations the Chancellor delivered a short address, in the course of which he said that what he had to say must be said briefly for several reasons, not the least of which was the circumstance that, not now reposing in the cold shade of opposition, he had not this year been able to devote as much attention to the transactions of the University as he should wish to have done. Not but that experience had taught him that it was not those who had most idle time on their hands who devoted themselves most assiduously to the interest of this and kindred institutions. He feelingly referred to the loss of Mr. Egerton, who died since they last met, and to the loss sustained in no longer having the services of Mr. Greenfield, who had accepted a position at Edinburgh University. After careful consideration it had been determined to extend the examinations of this University to the science and art of teaching to teach. A scheme to this end had been prepared and it would be carried into effect. Another satisfactory point in the examinations was the introduction of a degree for music. Referring to the admission of female graduates, he said the principle and practice of the University had widened, and at that moment, he was happy to say, as far as education was concerned, ladies might regard themselves as exactly on the same footing as men. He felt sure the

main controversy which took place, now that the experiment had been decided on, would subside, and all those who had the welfare of the University at heart, would be desirous of seeing the success of the experiment. As far as he knew, there had been no hitch or difficulty in their proceedings, and they had evidence that day of the way in which the ladies had distinguished themselves in the examinations. No less than four ladies had become graduates of the University, which was progressing in every respect.—*The Schoolmaster.*

EDUCATION.—There are strong reasons for believing that a subject of the greatest practical importance to the country receives but very little attention in our Board schools. We have most of us heard the tale of the youth who had been seven years at an expensive school, and yet looked with puzzled curiosity at his uncle when the latter, at the dinner table, recommended him to take a little sodium chloride with his fish. It is to be feared, remarks the *Daily Chronicle*, that chemistry in the present generation is not made the subject of more study generally than it was in the last. There is a growing desire in certain quarters to have Board School children taught the mere accomplishment of music. At the same time that this proposal was made, if any of them had been asked whether steam was visible or invisible, they would, many of them have replied that they were in the habit of seeing it every day, as it issued from the spout of the family kettle. Yet it is pretty generally known among those who have given any attention to such subjects that steam is really as invisible as the air we breathe, and that what is really seen is composed of fine drops of water. In America the case is different. The people there for many years past recognised the value of making the experimental science in question a prominent feature in their schools. This system has already borne fruit, and from time to time we hear of interesting discoveries. No one there has yet found, it is true, a means of dissolving gold without combining two acids for that purpose. But a brief telegram recently received announces that a means of fusing and moulding iridium has been set forth in a paper recently read before the Cincinnati Scientific Society. A bar of this metal, we learn, has been used in place of a negative carbon in an electric lamp, and the results seem to have been highly satisfactory.—*Design and Work.*

AN INCOMBUSTIBLE SAINT.—A native of India who has never seen a Railway will not be easily convinced that the Feringhi has discovered how to convey human beings at the rate of 30 or 40 miles an hour, by merely boiling water in a certain contrivance on wheels. But tell the same incredulous worthy that one of his holy men has the power of calling the dead to life, or of flying through the air every night to roost on the summit of gigantic Gungootri, and he will see nothing out of the way in the strange tale. At the present time there is a fakir at Lucknow about whose miraculous doings the native papers tell the most astounding stories, without any expression of disbelief. His latest exploit was to sit "cool, quiet, and perfectly unconcerned" close alongside of an enormous fire. The heat was so great that the crowds of spectators could not approach within

200 yards of the blazing mass, which was composed of 11 cartloads of highly combustible material. The native scribe who chronicles the feat asserts that the fakir remained "in this interesting position" for four hours, without taking the slightest harm. Of course the fame of the devotee spread abroad like wildfire, and from all parts of Lucknow came pious Hindoos, bringing offerings to the intemperate saint. So great, at last, became the concourse of pilgrims, that a detachment of police had to be stationed on the spot. How the trick was managed remains to be shown. It seems established that some occurrence of the sort described really did take place, but the details have probably received great embellishment from that egregious fictionist, common report.—*Globe*.

### MEDICAL STUDENTS FROM INDIA.

The General Council of Medical Education and Registration have lately discussed the question as to whether medical students from India who had not taken Latin in their Matriculation Examination in India might be admitted to professional examinations by the licensing bodies here, notwithstanding this omission. Several cases of Parsee students in this position have come before the Executive Committee, and that Committee presented a report to the General Council suggesting that power should be given them to make exceptions in such cases, where the exceptions might seem reasonable, and that a rule should be laid down for the future guidance of the Committee. The General Council, at the conclusion of their debate on this question, passed a resolution as follows:—"That in cases where for some special reason candidates for admission to professional examinations by the licensing bodies may not have been able to comply with all the recommendations of the Council as regards the examination in general education and registration therein, exceptions on principles to be fixed by the General Medical Council may be allowed." It was then referred to the Executive Committee to prepare for the consideration of the Council draft rules defining the classes of cases in which exceptions might be properly allowed. The results of this discussion will be considered satisfactory by Indian students. If their Matriculation Examination "fairly represents a good standard of general education equivalent to that required in this country," their case will probably be provided for by the forthcoming rules. Moreover, the Society of Apothecaries are now willing to arrange for a special examination in Latin for students who have not previously taken that subject. Thus the facilities for passing the Indian Medical Service Examination after a few months' stay in England may be considered secured; but till the new rules are issued the matter will not be as definitively settled.

*Journal of the National Indian Association.*

### MISCELLANEOUS.

GRANTS FOR SINGING IN ENGLISH PUBLIC SCHOOLS.—The official return of the amounts paid in respect of the grants of 1s. allowed by the Education Department for singing in public elementary schools, shows that, for the year ending with last August, a total grant of £136,602 was earned and divided among 25,447 schools. This would imply that, in our public elementary schools alone, some 2,750,000 children are being fairly well instructed in class singing, which, we may take it, involves sufficient knowledge and practice of music to render them eligible members of glee clubs and musical societies. Considerably more than half these children are instructed in schools connected with the National Society or the Church of England—rather more than 1,460,000 of such having earned the grant; and, as numbers of such children contribute to the filling of our churches, we may look with some confidence for a gradual increase of the volume and quality of congregational singing. That the test of proficiency applied is not a mere sham is proved by the fact that the grant was refused in the case of thirty-three Church or National schools and thirteen Board schools. In sixty-four of the former and twelve of the latter class of schools, singing was not taught at all.—*Educational Times*.

THE BRITISH ASSOCIATION.—The forty-first Annual Meeting of the British Association for the Advancement of Science will be held this year at York, under the presidency of Sir John Lubbock, Bart., M.P., F.R.S. His inaugural address will be delivered on the evening of Wednesday 31st August, and will be followed on Thursday evening by a discourse from Professor Huxley at a Scientific Soirée. On the following Monday evening there will be another soiree and address from Dr Spottiswoode, the president of the Royal Society.

The Presidents of the various Sections, who are leading representatives of the respective branches of Science, will no doubt have equally interesting and valuable addresses. They are as follows:—

Section A. MATHEMATICAL AND PHYSICAL SCIENCE. Professor Sir William Thompson, M.A., LL.D., D.C.L., F.R.S., and 2.

Section B. CHEMICAL SCIENCE. Professor A. W. Williamson, Ph.D., LL.D., For. Secretary R.S., V.P.C.S.

Section C. GEOLOGY. Andrew Crombie Ramsay, LL.D. F.R.S., V.P.G.S. Director General of the Geological Survey of the United Kingdom, and of the Museum of the Practical Geology.

Section D. BIOLOGY. Richard Owen, C.B., M.D., D.C.L., LL.D., F.R.S., F.L.S., F.G.S., F.Z.S.

Section E. GEOGRAPHY. Sir J. D. Hooker, K.C.S.I., C.B., M.D., D.C.L., LL.D., F.R.S., V.P.L.S., F.G.S., F.R.G.S.

Section F. ECONOMIC SCIENCE AND STATISTICS. The Right Hon'ble M. E. Grant Duff, M.P., LL.B., F.R.S., F.R.G.S.

\*Section G. MECHANICAL SCIENCE. Sir W. G. Armstrong, C.B. LL.D., D.C.L., F.R.S.

## CALCUTTA UNIVERSITY.

Entrance Examination, 1880.

(December 1.) Morning.

## HISTORY.

N.B.—The figures in the margin indicate full marks.

- I. When were the Constitutions of Clarendon passed, and what was their object? 4
- II. Describe the attempts of Edward III. to conquer France. 5
- III. What changes were made by Henry VIII. in the doctrines and government of the Church of England? 6
- IV. How was the power of the English nobles gradually reduced, and what Acts of Parliament were passed to limit the power of the king? 6
- V. What led to the "War of the Spanish Succession?" Name the most important battles, and give the date of each. 4
- VI. What changes were introduced by the Reform Bill of 1832? 5
- VII. What parts of India were visited by the Greeks, and why are the Greek accounts of the country so very valuable? 5
- VIII. Trace the rise of the Sikhs. 4
- IX. Describe the two wars carried on against Tipu Sultan, giving the most important dates. 6
- X. Name the Provinces added to the British Dominions by Lord Dalhousie. What were the reasons for annexation in each case? 5

First Examination in Arts—1880.

(December 1.) Morning.

## ANCIENT HISTORY.

N.B.—The figures in the margin indicate full marks.

- I. Give a concise account of the Phenicians as regards their ethnology, language, religion, civilization, colonies, and importance in history. 8
- II. Point out the sources and extent of our historical knowledge of the ancient Persians, and describe their religion, Government, and social life. 8
- III. Sketch the history of Israel under the Judges, and describe the political extent and state of the kingdom in the age of Solomon. 7
- IV. Give an historical and descriptive account of the City of Babylon, and summarise what has been ascertained from its ruins regarding the Babylonian civilization. 6

V. Write brief biographies of:—1. Ramesses the Great; 2. Cyrus; 3. Hamilcar Barca; 4. Antiochus Epiphanes. 6

VI. Narrate concisely the following events:—1. The overthrow of the Assyrian Empire; 2. The war between Alyattes and Cyaxares; 3. The invasion of Egypt by Cambyzes. 6

VII. Draw an outline map of the region between the Indus and the Mediterranean, putting in the countries, rivers, and cities of chief importance in ancient History. 4

VIII. State the facts which have been ascertained regarding the historical connexions and communications between ancient India and the West. 4

First Examination in Arts—1880.

(December 1.) Afternoon.

## HISTORY.

N.B.—The figures in the margin indicate full marks.

- I. Give the traditional origin of the Hellenic race, and indicate the geographical position of the principal states belonging to each of its four great branches. State at some length the leading characteristics of the political history of Greece. 6
- II. Trace the development of the political institutions of Athens to the time of Clisthenes, and contrast them with those of Sparta as determined by Lycurgus. 5
- III. Give an outline of the struggle between the Persians and the Greeks to the death of Cimon; and show how Athens became the first power in Greece. 5
- IV. Describe and characterise the part played in the history of Greece by Sparta under Agesilaus; and trace briefly the course of events from his death to the subversion of Greek independence by Philip of Macedon. 5
- V. Describe the state of Rome under Tarquin the Proud, and explain fully the character and extent of the revolution that resulted in his expulsion. State what elements in the constitution of the Roman republic were derived from the times of the kings; and trace the steps by which the plebeians established their claim to share in the Government. 7
- VI. Describe fully the course of events by which Greece became a Roman province. Give the name of the province. 5
- VII. Give an account of the downfall of the Roman Republic, specifying its leading causes. 6
- VIII. Indicate the extent of the Roman empire under Augustus, and describe briefly the social and political condition of Rome under the Cæsars. 6
- IX. Write short accounts of the life and times of Alcibiades, Demosthenes, Fabius Maximus, Marcus Aurelius, and Constantine the Great. 5

## MIDDLE-SCHOOL EXAMINATION 1880.

Wednesday, 1st December.—10 A.M. to 1 P.M.

## GEOGRAPHY AND INDIAN HISTORY.

*The answers to questions in Part I of this Paper should be fastened together separately from the answers to questions in Part II.*

## Part I.

I. A vessel sailing from St. Petersburg to Marseilles calls at Riga, Dantzic, Hamburg, Bordeaux and Oporto. Draw a map of the coast line it sails along, and say what cargo will most probably be taken on board at each of the ports called at.

II. In what divisions of India is each of the following towns and for what is each noted? Naini Tal, Murki, Akyah, Shillong, Nagpur, Dindigul?

III. (a) At what places in India are the following found:—Copper ore, gold, coal, nitre, petroleum?

(b) In what districts in India are cotton, indigo, opium and tea produced?

IV. What unites the Moréa and Greece, the Yellow Sea and the Sea of Japan, the Persian Gulf and the Arabian Sea?

V. Where are the following situated and for what are they noted? Odessa, Hongkong, Naples, Mecca, Bagdad, Bankok, Lyons.

VI. Mention three rivers that flow into the Arctic Ocean, the mountains forming the Northern boundary of the central table land in Asia, one lake in Austria, and four islands in Europe and Asia belonging to Britain.

## Part II.

VII. Who were Vikramarka, Nadir Shah, Albuquerque, Labour donnais, and Cheyte Singh, and how are they connected with the history of India?

VIII. Write an account of the reigns of Mahomed Toglak and Humayun.

IX. In what year was each of the following battles fought, and who were the opposing parties in each: Buxar, Farruckabad, Laswaree, Trinomalee?

X. What reformatations did Clive introduce into the Civil and Military services during his third visit to India?

XI. What wars were concluded by the treaties of Mangalor and Salbye? What were the terms of these treaties?

XII. What led to the war with Nepal in 1814? Mention two battles fought in the war.

Wednesday, 1st December.—2 to 4 P.M.

## ARITHMETIC.

I. A lady buys at the bazaar  $10\frac{1}{2}$  yards of silk at Rs. 3-4-0 per yard, five pairs of gloves at Rs. 2-2-0 per pair, six gross of hooks at 8 pies per dozen, and fifty-four reels of cotton at 14 as. per dozen. She gave the bazaarman sixty Rupees in Bank notes. What change should she receive?

II. A boy, after spending one-fourth of his money, finds that one-third of what he has left is 15 Annas. What money had he at first?

III. (a) What is the value of—

$$\frac{(\frac{1}{5} + 2\frac{3}{4} \text{ of } 1\frac{3}{4}) - (\frac{1}{5} \text{ of } 4\frac{1}{2} + \frac{7}{8} + \frac{3}{4})}{(4\frac{1}{2} - 3\frac{1}{2}) \div (1\frac{1}{2} - 1\frac{1}{5})} \text{ of } 7s. 9d.?$$

(b) Express as a fraction—

$$(1.03 - .06) \div (1.13 \times 1.0625)$$

IV. A garrison of 1500 men has provisions for 32 days, but after 12 days it is reinforced by 500 additional men. How long thereafter will the provisions last, supposing the amount received per day by each man to continue the same.

V. A bankrupt's effects consists of £450 at 4 per cents., stock in trade to the value of £680 10s., and £140 in cash. He pays 18s. 4d. in the pound. What is the amount of his liabilities?

VI. A room is 18 ft. 3 in. long, 14 ft. 9 in. broad and 13 ft. 6 in. high. What will be the cost of papering it, if each roll of paper 33 ft. long and 2 ft. 3 in. wide costs Rs. 1-10-0?

VII. If 24 coolies receive Rs. 58-8-0 for 6 days' work, what should 36 coolies and 8 boys receive for 8 days' work, supposing a boy to do one-third the work of a man?

VIII. A master employs the same number of men and women. Each man receives 10 as. per day, and each woman 6 as. 6 pies per day. The total daily wages amount to Rs. 24-12-0. How many are there of each?

Thursday, 2nd December.—10 to 12-30 A.M.

## ENGLISH LANGUAGE.

*The answers to questions in Part I of this paper should be fastened together separately from answers to questions in Part II.*

## Part I.

I. Translate the following into your Vernacular:

Anbri, a man of fortune, while travelling alone through a forest in France, was murdered and buried under a tree. His dog continued for several days at his master's grave; but at length, compelled by hunger, he went to the house of an intimate friend of his master's at Paris. Here he attracted the attention of that gentleman by his melancholy howlings; then repeated his cries, ran to

the door, and looked back to see if any one followed him. His extraordinary movements induced his master's friend, accompanied by some other persons, to follow him. Conducting them to a tree, scratching the earth with his feet, and violently howling, he induced them to dig in that particular spot and there they discovered the corpse of the murdered Aubri.

### Part II.

III. Which of the following are wrong? Correct them, giving reasons for the changes you make. The gentlemen's carriage. The Queen of England's crown. This book is yours'. The doors' hinges. The loveliest of the two.

IV. (a) What is a Distributive Adjective. Distinguish between the meanings of *each*, *either*, *every*.

(b) What is the Superlative degree of *evil*, *southern*, *fore*, *hot*?

(c) What class of adjectives cannot be compared. Give three examples.

V. Distinguish between (a) A Reflexive and a Reciprocal pronoun, (b) the use of *her* and *hers*, and (c) an infinitive and a gerund.

VI. (a) What is meant by Conjugation? Give the past tense and past participle of *lead*, *win*, *rive*.

(b) Which of the following are correct:—

(1) He has went to Conjeveram.

(2) The flower was trodden under foot.

(3) The dog might haverswum a mile.

(4) When he had sang he sat down.

VII. Express as simple sentences:—

(a) Although you told me so, I could not believe you.

(b) As I returned from school, I met my friend Appiah.

(c) You show your wisdom when you study diligently.

VIII. Correct the following sentences, giving reasons for the changes you make:

(a) Ramasawmys' bazaar had took fire this evening.

(b) This is more better for Ramiah, who you say you love.

(c) Either you or I is sure to pass.

IX. Supply the prepositions omitted in:—

I am anxious to comply—your request. But you must act conformably—my wishes, and discharge—diligence whatever duties may devolve—you. You must never swerve—truth, nor be guilty—fraud, nor yield—any way—temptation.

Thursday, 2nd December—2 to 4 p.m.

### EUCLID AND ALGEBRA.

The answers to questions in Part I of this Paper should be fastened together separately from the answers to questions in Part II.

#### Part I.

I. Define a right angle, a segment of a circle, an obtuse angled triangle and parallel straight lines.

II. What is a postulate? State Euclid's three postulates.

III. If one side of a triangle be produced, the exterior angle shall be greater than either of the interior opposite angles.

IV. If a straight line fall on two parallel straight lines, it makes the alternate angles equal to one another, and the exterior angle equal to the interior and opposite angle on the same side: and also the two interior angles on the same side together equal to two right angles.

V. Describe a parallelogram that shall be equal to a given triangle, and have one of its angles equal to a given rectilineal angle.

### Part II.

I. Find the value of  $a^2 + \frac{b}{c+d} - bc \{ a^2 + b^2 + d(ab+ac) \} + a^2 bc + abcd$  when  $a = 1$ ,  $b = 4$ ,  $c = 6$  and  $d = 0$ .

II. (1) Add together,  $(ax)^2 + (bx)^2 - (ab)^2 - a^2b$ ;  $2ax^2 + 2a^2b + 2ab^2$  and  $2(ab)^2 - 2(bx)^2 - a^2b$ .

(2) Subtract  $x^2 + y^2 - z^2 + 2xy - 2xz + 2yz$  from  $x^2 + y^2 + z^2 - 2xy - 2xz - 2yz$ .

III. (1) Multiply  $x^3 - 3x^2y + 3xy^2 - y^3$  by  $x^3 + 3x^2y + 3xy^2 + y^3$ .

(2) Divide  $x^4 - 2y^4 - x^2 + 2y^2 + 3xy^3 - x^3y - 7x^2y^2 - 2xy$  by  $x^2 + 2xy - 2y^2$ .

IV. Simplify—

$$(1) \frac{x^4}{x^2 - 7x + 12} + \frac{x^2}{x^2 - 4x + 3} - \frac{3}{x^2 - 5x + 4}$$

$$(2) \frac{3a^3 - 48ab^4}{2a^4 + 11a^2b^2 + 12b^4}$$

Friday, 3rd December—2 to 4 p.m.

### ENGLISH HISTORY.

I. To what tribe or nation did each of the following belong, and by whom were they each opposed in battle:—Boadicea, Caractacus, Guthrum, Hardrada? What was the result of each battle?

II. Who was king of Denmark during the reign of Ethelred II? What steps did the latter take to keep the Danes from invading England? What was the result?

III. Explain the terms Bretwalda, Conint of the Saxon Shore, Danelagh, Lollards, Poll-tax.

IV. On what grounds did William I. lay claim to the throne of England? What means did he take after the conquest to establish the Norman power and influence in England?

V. What led to the wars with France in the reigns of Edward I and Edward III?

VI. What led to the quarrel between Thomas à Becket and Henry II? What was the issue of it?

VIII. In what year and in what reign did each of the following events take place? Conquest of Wales, Conquest of Ireland, Capture of Calais, Battles of the Standard, Lincoln, and Bannockburn.

### PUNJAB UNIVERSITY COLLEGE.

#### The Entrance Examination in Arts, 1881.

AN Entrance Examination will be held by the University College, beginning on the first Monday in the month of May next, (*viz.*, the 22nd May 1881 at Lahore, Delhi and such other places as may be appointed by the Executive Committee of the Punjab University College,\* open to all comers, on production of a certificate of good conduct signed by the Deputy Commissioner, or Assistant Commissioner, or Tahsildar, or any other person of standing, in whom the Executive Committee may have confidence, of the district or pargana, in which the candidate resides, or by the Principal of a College, or the Inspector or Manager of a School, in the case of students of Government and Aided Colleges and Schools.

Candidates must also give evidence that they will have completed their sixteenth year before the date of the commencement of the examination; but, in exceptional cases, candidates of fifteen years of age will be admitted to the examination, provided they produce a certificate signed by a Headmaster or Manager of a Government or Aided School, or by some other competent Educational authority, that they have a fair chance of passing the Entrance Examination.

Every candidate must forward his application to the Registrar, Punjab University College, Lahore, on or before the 9th April 1881, accompanied by a fee of ten rupees and a statement showing the place at, and the subjects in, which he desires to be examined.

A candidate who fails to pass or to present himself for the examination, shall not be entitled to claim a refund of the fee.

In this examination four subjects will be compulsory:—

1. A Vernacular language.
2. A classical language, † (*viz.*, Arabic, Sanskrit and Persian).
3. History and Geography.
4. Elementary Mathematics.

The following subjects will be optional:—

1. English.
2. A second classical language.
3. A second Vernacular language. ‡
4. Elements of Natural Science.

\* The Executive Committee will take into consideration any application to constitute any other place as a centre of examination for the Punjab University College, provided that satisfactory arrangements can be made for the supervision of the candidates.

† In the case of vernacular students (namely, those who do not take up English), Persian will not be considered a classical language at, and after, the examination of 1882. Anglo-Vernacular students, however, (namely, those who take up English), will continue to be allowed to take up Persian as a classical language.

‡ A candidate will be allowed to take up a second vernacular language, but the standard of 40 per cent. in four compulsory subjects will not be thereby lowered to 33 per cent.

The following is the scale of marks allotted to the classical and Vernacular languages of India:—

|                                                      |                |
|------------------------------------------------------|----------------|
| Each Vernacular language                             | ... 100 marks. |
| Arabic                                               | ... 150 "      |
| Sanskrit                                             | ... 150 "      |
| Persian                                              | ... 120 "      |
| Arabic and Persian                                   | ... 240 "      |
| Arabic and Sanskrit                                  | ... 300 "      |
| Arabic and Urdu                                      | ... 220 "      |
| Arabic and Hindi                                     | ... 250 "      |
| Arabic and Persian including the elements of Pehlevi | ... 270 "      |
| Arabic and Persian, with the elements of Zend.       | 300 "          |
| Sanskrit and Hindi                                   | ... 220 "      |
| Sanskrit and Urdu                                    | ... 250 "      |
| Sanskrit and Persian                                 | ... 250 "      |
| Sanskrit and Persian with the elements of Pehlevi    | ... 300 "      |
| Sanskrit and Persian with the elements of Zend.      | 270 "          |
| Persian and Urdu                                     | ... 200 "      |
| Persian and Hindi                                    | ... 220 "      |
| Hindi and Urdu                                       | ... 200 "      |
| Panjabi and Urdu                                     | ... 200 "      |
| Panjabi and Hindi                                    | ... 150 "      |
| Persian with the elements of Pehlevi                 | ... 150 "      |
| Persian with the elements of Zend                    | ... 150 "      |

The following are the number of marks allotted to:—

|                             |                |
|-----------------------------|----------------|
| English                     | ... 150 marks. |
| Mathematics                 | ... 120 "      |
| History and Geography       | ... 100 "      |
| Elements of Natural Science | ... 100 "      |

Fifteen per cent. of the above marks will be assigned to the oral examination in Oriental languages; in English and Natural Science 30 per cent. will be thus assigned. If a candidate takes up only four subjects, he will be required to obtain 40 per cent. of the marks allotted to each, in both the oral and the written examinations; if he takes up five\* or more subjects, he will be required to obtain 33 per cent. in each.

The Entrance Examination will be conducted by means of question papers, the same questions being set in all places where the examinations are held. An oral examination in Languages and Natural Science will also be held at all the centres of the examination.

\* Provided the fifth subject is not a second vernacular, when he will still be required to obtain 40 per cent. in the four other subjects.

The following is an outline of the tests in each subject:—

*A—Four compulsory subjects.*

|                                  |                                                    | marks. |
|----------------------------------|----------------------------------------------------|--------|
| I. A vernacular language. Tests— |                                                    |        |
| Urdu                             | 1. Reading and oral explanation                    | 15     |
| Hindi                            | 2. Two written papers of three hours each—         |        |
| or                               | (a) Composition; a short descriptive essay.        | 35     |
| Punjabi.                         | (b) Explanation of passages of ordinary difficulty | 50     |
|                                  |                                                    | 100    |

[N.B.—The Senate has power to add to the list of vernacular languages. Should any candidate, therefore, desire to be examined in a vernacular language not laid down in the scheme, the Executive Committee are empowered to allow him as a special case to take up such language, provided satisfactory arrangements can be made for conducting the examination in it].

|                           |                                                                                             | marks. |
|---------------------------|---------------------------------------------------------------------------------------------|--------|
| II. A classical language— |                                                                                             |        |
| (1) Sanskrit              | 1. Reading and oral explanation                                                             | 15     |
| (2) or Arabic.            | 2. Two written papers of three hours each—                                                  |        |
|                           | (a) Translation from and into the vernacular of an essay passage from some classical author | 70     |
|                           | (b) Grammar and explanation                                                                 | 65     |
|                           |                                                                                             | 150    |

N.B.—At, and after, the examination of 1852, the vernacular candidates who take up either the Arabic or Sanskrit will be examined in those subjects by the Proficiency standard.

|          |                                                                                            | marks. |
|----------|--------------------------------------------------------------------------------------------|--------|
| Persian— |                                                                                            |        |
|          | 1. Reading and oral explanation                                                            | 15     |
|          | 2. Two written papers of three hours each—                                                 |        |
|          | (a) Translation from and into the vernacular of an easy passage from some classical author | 55     |
|          | (b) Grammar and explanation                                                                | 50     |
|          |                                                                                            | 120    |

III.—History and Geography—

|                                         |                                                                                       | marks. |
|-----------------------------------------|---------------------------------------------------------------------------------------|--------|
| Two written papers of three hours each— |                                                                                       |        |
| (a)                                     | History of England and India                                                          | 55     |
| (b)                                     | Geography, with special reference to that of India and elements of physical geography | 45     |
|                                         |                                                                                       | 100    |

N.B.—The papers set in History will also elicit the candidate's knowledge of the principal political facts connected with the subject.

IV.—Elementary Mathematics—

|                                         |                                                                                 | marks. |
|-----------------------------------------|---------------------------------------------------------------------------------|--------|
| Two written papers of three hours each— |                                                                                 |        |
| (a)                                     | Arithmetic, the whole                                                           | 60     |
|                                         | Algebra, to simple equations, together with a knowledge of ratio and proportion | 60     |
| (b)                                     | Euclid, Books I.—IV., with deductions                                           | 60     |
|                                         | Mensuration of plane surfaces, including the theory of surveying with the chain | 60     |
|                                         |                                                                                 | 120    |

*B.—Optional Subjects.*

|             |                                                                                                                                                                                                               | marks. |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| I.—English— |                                                                                                                                                                                                               |        |
| (1)         | Reading and oral explanation                                                                                                                                                                                  | 30     |
| (2)         | Two written papers of three hours each—                                                                                                                                                                       |        |
|             | (a) Translation from and into the vernacular of passages of moderate difficulty from standard writers and newspapers, and of sentences illustrative of the idiom and characteristics of the English language. | 80     |
|             | (b) Grammar and Composition                                                                                                                                                                                   | 40     |
|             |                                                                                                                                                                                                               | 150    |

II.—A second classical language (*vide list of marks on pages 323 and 324*).

III.—A second vernacular language ditto.

IV.—Elements of Natural Science—

Heat, light, electricity and properties of matter and elementary chemistry.

|     |                                            |    |
|-----|--------------------------------------------|----|
| (1) | Two written papers                         | 70 |
| (2) | <i>Viva voce</i> and practical examination | 30 |

100

The Senate of the Punjab University College does not prescribe text-books; but it recommends the following course of reading as an indication of the standard to which candidates will be expected to have attained:—

*Sanskrit*.—Laghu Viakaran; Rijupath, up to Part III; Nalopakhyan; Amar Kosha, up to Section 4 of Book II; and Sruta Bodha.  
*Arabic*.—Miftah-ul-adab, Part I; Nahy Mir; Muqaddamat-us-sarf; Sullam-ul-adab.

*Persian*.—Maadar-Fayuz; Gulistan; Bostan; Anwar-i-Soheili (Selection); Akhlaq-i-Mohsani.

*Natural Science*.—The examination will be mainly based on the Elementary Primers prescribed in Government Schools in the Punjab. It will also test the practical knowledge possessed by the candidate of the instruments and processes described in the above Primers.

The Examiners are required to send in to the Registrar the list of the names of the candidates, successful, and unsuccessful within three weeks from the first day of the Examination.

After the publication of the results of the examination, University College scholarships will be awarded to both Vernacular and Anglo-Vernacular students, under regulations approved by the Senate.\* Government scholarships will also be allotted to one-fourth of the successful Anglo-Vernacular students at the examination of 1881, and to one-fourth of both the successful Vernacular and Anglo-Vernacular students at and after the examination in 1882. The University College scholarships among Anglo-Vernacular successful students will be divided as follows:

one-third to those who have taken up Arabic as their classical language:

" " " Sanskrit " " "  
" " " Persian " " "

The names of successful candidates, whether Vernacular or Anglo-Vernacular, will be arranged in one list in order of merit, the letter E being placed opposite to the names of those who have passed in English. Prizes will be given to the students who special distinguish themselves in the examination.

For further details as to examination papers of past year, vide Calendar for 1880-81.

REGISTRAR'S OFFICE. } G. W. LEITNER, M. A., F.R.D., LL.D.,  
LAHORE, } Barrister-at-Law,  
The 10th March 1881. } Registrar.

#### ARTS (ORIENTAL SECTION).

##### Examinations for the Certificates of Maulvi, Pandit and Munshi.

The examinations for the certificates of Maulvi and Pandit will be held by the University College, beginning, respectively, on Friday the 13th May, and that for the certificate of Munshi on Wednesday the 18th May 1881, at Lahore and other places selected by the Executive Committee.

2. Candidates for examination must give evidence that they will have completed their sixteenth year before the date of the commencement of the examination.

3. Every candidate must forward his application to the Registrar, Punjab University College, Lahore, on or before the 20th April 1881, accompanied by the prescribed fee, viz., Re. 1 and in the prescribed form.

\* No University College scholarships will, however, be given to the successful candidates at the Entrance Examination in 1881, which is merely a Supplementary examination.

4. Candidates not coming from any Government or Aided College or School must send with their application a certificate of good conduct signed by two gentlemen of standing.

5. The examinations will each extend over six days; and will consist of written answers to six papers of questions and of a *civa voce* test.

6. One hundred marks will be allotted to the oral examination and to each of the question papers.

7. Twenty-five per cent. of the marks so allotted must be obtained in each paper and in the oral examination, and thirty-three per cent. of the whole seven hundred marks. One paper of questions will be given each day, and the oral examination will be conducted in the afternoon of the sixth day, candidates being called up one by one.

8. Candidates who shall have obtained certificates of having passed in any of the aforesaid examinations will be exempted from passing in the same subject in the following "Arts" Examinations:—

Maulvi } Entrance Examination.  
Pandit } Proficiency in Arts Examination.  
Munshi }

The following is an outline of the tests in each subject.

#### MAULVI OR LOWER ARABIC EXAMINATION.

| Subjects.                                                           | Books. | Papers. |
|---------------------------------------------------------------------|--------|---------|
| Grammar—Hidayat-un-Nahv; Panj Ganj; Kafia...                        |        | I.      |
| Literature—Calcutta F. A. Course; Sanin-ul-Islam, Parts I and II... |        | II.     |
| Alif Laila (first forty nights)—Tarikh-ul-Khulefa...                |        | III.    |
| Logic—Shara Tahzib...                                               |        | IV.     |
| Law—Sirajia; Kitab-ul-Muaris min Shara'-ul-Islam.                   |        | V.      |
| Translation—Arabic into Urdu and vice versa...                      |        | VI.     |
| Oral examination—Reading and speaking.                              |        |         |

#### PRAGYA OR LOWER SANSKRIT EXAMINATION.

| Subjects.                                                           | Books. | Papers. |
|---------------------------------------------------------------------|--------|---------|
| Grammar—Sarda Vyakarana, or Laghu Kaumudi...                        |        | I.      |
| Prosody—Srut Bodh...                                                |        | II.     |
| Poetry—Raghuvans (I—VII cantos)<br>" Kumara Sambhava (I—VII cantos) |        | III.    |
| Prose—Hitopadesa<br>Drama—Venisanhara                               |        | IV.     |
| Rhetoric—Kavia Dipika<br>Logic—Karikavali or Tarka Sangraha         |        | V.      |
| Translation—Hindi into Sanskrit and vice versa...                   |        | VI.     |
| Oral examination—Reading and speaking Sanskrit.                     |        |         |

## MUNSHI OF LOWER PERSIAN EXAMINATION.

| Subjects.                                          | Books. | Papers.          |
|----------------------------------------------------|--------|------------------|
| Grammar—Abd-ul-wasi; Miftah-ul-Adab (1st part).    |        | I.               |
| Literature—Calcutta F. A. Course; Tohfut-ul-Harar. |        | II.              |
| Insha Munir; Diwan Hafiz (Selection).              |        | III.             |
| Moral Philosophy—Akblaq Jalali (Siyasat-ul-Madan). |        | IV. <sup>a</sup> |
| Translation—Persian into Urdu...                   |        | V.               |
| Urdu into Persian...                               |        | VI.              |

Oral examination—Reading and speaking.

By passing the above examinations in Arabic, Sanskrit and Persian, candidates may obtain *certificates* of Maulvi, Pragyā o Munshi, but to obtain those *titles*, they must pass in the following examination in addition:—

## ADDITIONAL EXAMINATION FOR ORIENTAL TITLES.

| Subjects.                                  | Books.                                                                                                            | Marks. |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------|--------|
| Mathematics—Arithmetic (the whole)         | }                                                                                                                 | 50     |
| Algebra (as far as simple equations)       |                                                                                                                   |        |
| Euclid (First four books) with deductions. |                                                                                                                   |        |
|                                            |                                                                                                                   | 100    |
| History and Geography.                     | { Histories of England and India.<br>General Geography, more especially that<br>of India, and Physical Geography. | 50     |
|                                            |                                                                                                                   | 50     |
|                                            |                                                                                                                   | 100    |

Fifteen per cent. of the marks are assigned to the Oral Examination

To pass this examination the candidates must obtain at least 40 marks in each subject, unless he take up in addition, English, or the Elements of Physical Science, in which case he may pass by obtaining 33 marks in each subject. Of the Physical Sciences, heat, sound, electricity and properties of matter are the subjects chosen for the examination. In the examination in Physical Science, 30 marks are given for oral explanation and 70 for written papers.

For further details and for examination papers of past year, apply to—

REGISTRAR'S OFFICE, } G. W. LEITNER, M.A., Ph.D., LL.D.,  
LAHORE, } Barrister-at-Law,  
The 10th March 1881. } Registrar.

The following is the form prescribed for the applications of candidates for any of the above Examinations.

To

THE REGISTRAR,

Panjab University College, Lahore.

SIR,

I request permission to present myself at the ensuing  
A fee of Rs. and required certificates are forwarded  
herewith.

I have, &c.,

PARTICULARS TO BE FILLED IN BY THE CANDIDATE.

- 1.—Examinations already passed.
- 2.—When passed.
- 3.—Father's name.
- 4.—Age.
- 5.—Race.
- 6.—Religion.
- 7.—Present occupation.
- 8.—Residence.
- 9.—The place of examination.
- 10.—Subjects professed in.
- 11.—Where educated.

REGISTRAR'S OFFICE,  
LAHORE,  
The 10th March 1881.

G. W. LEITNER, LL.D.,

Registrar, Panjab University College.

## The Proficiency in Arts Examination, 1880.

The Proficiency in Arts Examination of 1880 will commence on the fourth Monday in November next, (viz., the 22nd November) at Lahore, and such other place as may be appointed by the Executive Committee of the Panjab University College,\* and will be open to all comers, on production of evidence of having passed the Entrance Examination of the Panjab University College, or of any other University, not later than 1878.

The candidate must also produce a certificate of good conduct signed by the Deputy Commissioner, Assistant Commissioner, Tahsildar, or any other person of standing, in whom the Executive Committee of the Panjab University College may have confidence, of the district or parganah in which the candidate resides, or by the

\* The Executive Committee will take into consideration any application to constitute any other place as a centre of Examination for the Panjab University College, provided that satisfactory arrangements can be made for the supervision of the candidates.

Principal of the College, or an Inspector or Manager of Schools in the case of students of Government and Aided Colleges and Schools.

Candidates must send in their applications to the Registrar, Panjab University College, Lahore, together with a fee of twenty Rupees on or before the 1st November 1880, stating the place at, and the subjects in, which they desire to be examined.

A candidate who fails to pass or to present himself for the Examination shall not be entitled to claim a refund of the fee.

In this examination the candidate will be required to take up at least three subjects, of which a classical language must be one. If he takes up three subjects only, not more than two of these can be languages. No candidate will be allowed to take up more than five subjects.

The following are the subjects of examination :—

1. A Classical language, (Arabic, Sanskrit or Persian).\*
2. English.
3. Mathematics.
4. History and Geography.
5. A branch of philosophy.
6. A branch of natural science.
7. A second classical language.
8. A branch of second branch of natural science.

The following is the scale of marks allotted to the classical languages of India :—

|                                                               | marks. |
|---------------------------------------------------------------|--------|
| Arabic. ... ..                                                | 150    |
| Sanskrit ... ..                                               | 150    |
| Persian ... ..                                                | 120    |
| Arabic and Persian... ..                                      | 240    |
| Arabic and Sanskrit ... ..                                    | 300    |
| Arabic and Persian, including the elements of Pehlevi, ... .. | 270    |
| Arabic and Persian with the elements of Zend. ... ..          | 300    |
| Sanskrit and Persian ... ..                                   | 250    |
| Sanskrit and Persian with the elements of Pehlevi ... ..      | 300    |
| Sanskrit and Persian with the elements of Zend ... ..         | 270    |
| Persian with the elements of Pehlevi ... ..                   | 150    |
| Persian with the elements of Zend ... ..                      | 150    |

The following are the numbers of marks allotted to :

|                                    |     |
|------------------------------------|-----|
| English ... ..                     | 150 |
| Mathematics ... ..                 | 150 |
| History and Geography ... ..       | 100 |
| A branch of Philosophy ... ..      | 100 |
| A branch of Natural Science ... .. | 100 |

\* At and after 1882 only Anglo-Vernacular Students will be allowed to take up Persian as a classical language.

Fifteen per cent. of the marks in each subject will be assigned to the oral examination, except in English and Natural Science in which 30 per cent. will be thus assigned. If a candidate takes up only three subjects, he will be required to obtain 50 per cent. of the marks allotted to each; if he takes up four, 40 per cent. if he takes up five, 40 per cent. in three subjects and 33 per cent. in the remaining two subjects. In Language and Natural Science, a candidate will be required to obtain the above proportion of marks allotted in both the oral and the written Examinations, before he can be deemed to have passed.

The Examination will be conducted by means of question papers, the same questions being set at all places where the examinations are held. An Oral Examination will also be held at all such places.

The following is an outline of the tests in each subject :

|                                                                                                                                | marks. |
|--------------------------------------------------------------------------------------------------------------------------------|--------|
| 1. <i>Classical language</i> —                                                                                                 |        |
| (a) Sanskrit } 1. Reading and oral explanation... 15                                                                           |        |
| (b) or Arabic } 2. Two written papers of three hours each—                                                                     |        |
| (a) { Translation from the Classical language and explanation of passages in poetry and prose, and questions on grammar ... .. | 70     |
| (b) { Translation into the Classical language ... ..                                                                           | 65     |
|                                                                                                                                | 150    |

\*N.B.—At, and after, the Examination of 1882, the Vernacular candidates who take up either Arabic or Sanskrit, will be examined in those subjects by the High Proficiency Standard.

|                                                                                                                 | marks. |
|-----------------------------------------------------------------------------------------------------------------|--------|
| Persian—                                                                                                        |        |
| 1. Reading and oral explanation ... ..                                                                          | 15     |
| 2. Two written papers of three hours each :—                                                                    |        |
| (a) { Translation from Persian and explanation of passages in poetry and prose, and questions on grammar ... .. | 55     |
| (b) Translation into Persian ... ..                                                                             | 50     |
|                                                                                                                 | 120    |
| 2. <i>English</i> —                                                                                             |        |
| 1. Reading and oral explanation ... ..                                                                          | 30     |
| 2. Two written papers of three hours each :—                                                                    |        |
| (a) { Explanation and analysis of passages in poetry and prose ... ..                                           | 70     |
| (b) Translation from Vernacular and Composition... ..                                                           | 50     |
|                                                                                                                 | 150    |

|                                         |                                                               |     |
|-----------------------------------------|---------------------------------------------------------------|-----|
| 3. Mathematics—                         |                                                               |     |
| Two written papers of three hours each— |                                                               |     |
| (a)                                     | Arithmetic, Algebra and Euclid                                | 70  |
| (b)                                     | Trigonometry to solution of triangles and elements of statics | 65  |
|                                         | Oral Examination                                              | 15  |
|                                         |                                                               | 150 |
| 4. History and Geography—               |                                                               |     |
| * History—(a) Ancient or (b) Modern     |                                                               |     |
|                                         | Geography—(c) General and Physical                            | 45  |
|                                         | Oral Examination                                              | 40  |
|                                         |                                                               | 15  |
|                                         |                                                               | 100 |

N.B.—The paper set in History will also elicit the candidate's knowledge of the principal political facts connected with the course read by the student. The question set in Physical Geography will be such as to test the candidate's general knowledge of the subject.

|                            |                         |     |
|----------------------------|-------------------------|-----|
| 5. A branch of philosophy— |                         |     |
| (1)                        | Deductive logic and     | 40  |
| (2)                        | * One of the following— |     |
| (a)                        | Psychology              | 45  |
| (b)                        | Political economy       |     |
| (c)                        | Moral Philosophy        |     |
|                            | Oral Examination        | 15  |
|                            |                         | 100 |

|                                 |                                     |     |
|---------------------------------|-------------------------------------|-----|
| 6. A branch of Natural Science— |                                     |     |
| * Any one of the following:—    |                                     |     |
| (1)                             | Chemistry and Physics.              |     |
| (2)                             | Zoology and Comparative Physiology. |     |
| (3)                             | Geology.                            |     |
| (4)                             | Botany.                             |     |
| (a)                             | Written examination                 | 70  |
| (b)                             | Viva voce and practical examination | 30  |
|                                 |                                     | 100 |

7. A second classical language (vide list of marks on page 330).

8. A branch or second branch of natural science ... 100

The Senate of the Panjab University College does not prescribe text-books, but it recommends the following course of reading as an indication of the standard to which candidates will be expected to have attained.

For the present, the questions on English set to students taking up English, will be chiefly confined to the books prescribed by the Calcutta University for the First Arts Examination for the years 1879 or 1880 at the option of the candidate.

\* Separate (alternative) papers of three hours each will be set in these subjects.

# FIRST ARTS COURSE IN ENGLISH FOR 1879.

|           |                                                |
|-----------|------------------------------------------------|
| Cowper    | Table Talk.                                    |
| Goldsmith | The Deserted Village.                          |
| Macaulay  | Lay of Horatius.                               |
| Pope      | Essay on Criticism.                            |
| Johnson   | Life of Milton.                                |
| Prescott  | Essays on Sir W. Scott, Cervantes and Moliere. |
| Helps     | Spanish Conquest of America, vol. I, Book II.  |
| Macaulay  | History of England, Chapter I.                 |

## FIRST ARTS COURSE IN ENGLISH FOR 1880.

|                  |                                                       |
|------------------|-------------------------------------------------------|
| Mrs. Creighton's | Life of Sir W. Raleigh.                               |
| Macaulay         | Lord Clive, Warren Hastings.                          |
| Mullen's         | Simple Poems (Rivingstone's English School Classics). |
| Scott            | Lay of the Last Minstrel.                             |
| Milton           | Paradise Lost (Book I).                               |

## FOR THE YEAR 1881 THE FOLLOWING COURSE IN ENGLISH HAS BEEN ADOPTED BY PANJAB UNIVERSITY COLLEGE:—

|            |                           |
|------------|---------------------------|
| Milton's   | Paradise Lost, Book II.   |
| Macaulay's | Essay on Milton.          |
| Scott's    | Lay of the Last Minstrel. |
| Hutton's   | Life of Scott.            |

Selections from Byron, Moore, Scott and Wordsworth.

Selections from the Spectator and Rambler.

Ability to write English with a fair degree of accuracy to be a *sine qua non* condition in this Examination.

Explanation and analysis of a passage of poetry and prose as above.

Translation from and into English of passages not in the student's Course.

English Composition on practical subjects of daily life, or on matters connected with the text-books that have been prescribed.

*Sanskrit*.—Safal Viakaran; Raghu Vans, first 7 cantos; Hitopadesh.

*Arabic*.—Hidayat-un-Nahv; Panj-Ganj; Mr. Kempson's Selections (Calcutta University Course).

*Persian*.—Calcutta University Course and Akhlaq-i-Julali (Siyasat-i-Madan).

*Logic*.—Fowler's or Whately's Reductive Logic.

*Psychology*.—Reid's Inquiry or Bain's Mental Science.

*Political Economy*.—Fawcett's or Mill's.

*Moral Philosophy*.—Fleming's.

*History.*—Taylor's Ancient History.

Taylor's Modern History.

*Geography.*—Physical Geography and Geography of the world.

*Mathematics.*—Todhunter's Series.

*Natural Science.*—Physics as in the elementary treatises by Everett and Stewart, and Chemistry as in Roscoe's Lessons, up to the end of the metalloids.

The Examiners are required to send into the Registrar the list of the names of the candidates, successful and unsuccessful, arranged in order of merit at the latest by the 18th December following the Examination.

After the publication of the results of the Examination, University College scholarships will be awarded to both Oriental and Anglo-Vernacular students under regulations approved by the Senate. Government scholarships will also be allotted to one-fourth of the successful Anglo-Vernacular students at the Examinations of 1880 and 1881; and also to one-fourth of the successful Oriental students at and after the Examination in 1882. The University College scholarships among Anglo-Vernacular successful students will be divided as follows:—

One-third to those who have taken up Arabic as their classical language:  
 " " Sanskrit " "  
 " " Persian " "

The names of successful candidates, whether Anglo-Vernacular or Oriental, will be arranged in one list in order of merit, the words "English" and "Oriental" respectively, being placed, in brackets, opposite to the names of the successful candidates. The successful will also be classified in three Divisions and will receive certificates setting forth the Division in which each has passed. Prizes will be given to the students who specially distinguish themselves in the Examination.

For further details and for Examination Papers of past year, *vide* Calendar for 1880-81.

REGISTRAR'S OFFICE,  
 LAHORE,  
 The 20th May 1880.

G. W. LEITNER, M.A., Ph.D., LL.D.,  
 Barrister-at-Law,  
 Registrar.

The unmentioned Schools are added to the List of Schools to be examined for Result Grants payable from Provincial Funds during 1881-82.

| Number. | LOCALITY.           |              |                             | Door Number. | Responsible Manager. | Date on which the Schools will be examined. | Standards in which the Schools will be examined. |
|---------|---------------------|--------------|-----------------------------|--------------|----------------------|---------------------------------------------|--------------------------------------------------|
|         | Municipal Division. | Suburb.      | Street.                     |              |                      |                                             |                                                  |
| 1       | 7th                 | Triplicane   | .....                       | .....        | Rev. Jas. Cooling    | 1881.<br>September                          | 1, 2, 3, 4, 5, 6, 7.                             |
| 2       | 3rd                 | Black-Town   | Sengalani Pillayar<br>Koil. | 22           | M. Sengubada Pillay  | May                                         | 1, 2, 3.                                         |
| 3       | 8th                 | Rayapet      | Mowbray Road                | .....        | Rev. G. Fryar        | September                                   | 1, 2, 3, 4.                                      |
| 4       | 6th                 | Perambur     | .....                       | .....        | Mr. C. A. Taylor     | "                                           | 1, 2, 3.                                         |
| 5       | 5th                 | Purasaipakam | .....                       | .....        | Rev. R. Handmann     | November                                    | 1, 2, 3, 4, 5, 6, 7.                             |
| 6       | 3rd                 | Black Town   | Linghi Chetti Street.       | 215          | M. Thiyngiah         | October                                     | 1, 2, 3, 4.                                      |

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## UNIVERSITY OF MADRAS.

RAJAH Sir T. Madhava Rau's Second Prize has been awarded to T. Rangaswami of the Kumbakonam Town High School, who stood seventh in the 1st Class at the Matriculation examination held in December 1880.

## APPOINTMENTS.

Mr. Edmund Thompson, Principal of the Presidency College, to act in the 1st Grade during Mr. J. T. Fowler's absence on privilege leave or until further orders.

Mr. Thomas Marden, Inspector of Schools, 5th Division, to act in the 2nd Grade, *vice* Mr. Thompson.

Mr. George Bickle, Principal of the Normal School Madras, to act in the 3rd Grade, *vice* Mr. Marden, and to officiate as Inspector of Schools in the 3rd Division during the absence of Mr. Fowler on privilege leave or until further orders.

Mr. George Duncan, Head-master of the Practising School, Madras, to officiate as Principal of the Normal School *vice* Mr. Bickle.

NOTIFICATIONS.—The following revised sections are substituted for those in the Notification of the 8th April 1880, with effect from the 1st July 1881:—

Section 12.—In the event of a candidate for admission to the school, or of a pupil of the school, being prevented by illness or other sufficient cause from attending the examination, the Inspector of Schools or Deputy Inspector, or in the case of Middle Schools which are located in the same building with a College or High School, the Head of the Institution, or his delegate, or in the case of Middle Schools unconnected with any school of Higher Grade and of large Upper Primary Schools unconnected with a School of Higher Grade or College, the Head-master or Mistress (provided such Head-master or Mistress be especially authorized by the Director, on the recommendation of the Inspector, to conduct such examination) may examine such pupil and give him or her a certificate declaring that the pupil has passed, and specifying the branches in which he or she has been examined. Provided always that, when the certificate is not issued by the Inspector or Deputy Inspector, a copy of the certificate shall be forwarded to the Inspector of the Division.

Section 21.—In the event of a pupil being prevented by illness or other sufficient cause from attending the examination, the Inspector of Schools or Deputy Inspector, or in case of Upper Primary Schools which are located in the same building with a College or High School, the head of the Institution or his delegate, or in case of large Primary Schools connected with Middle Schools, or unconnected with a School of Higher Grade or College, the Head-master or Mistress (provided such Head-master or Mistress be especially authorized by the Inspector to conduct such examinations) may examine such pupil and give him or her a certificate declaring that the pupil has passed. Provided always that, when the certificate is not issued by the Inspector or Deputy Inspector, a copy of the certificate shall be forwarded to the Inspector of the Division.

## APPOINTMENTS.

*Appointments made by the Director of Public Instruction, between the 16th June and 15th July 1881.*

T. Srinivasa Row, trained F.A., 2nd Assistant Master, Saidapet, to act as Deputy Inspector of Schools, Saidapet Range, during the absence of G. Vedanta Chariar on leave, or until further orders.

C. R. Krishna Aiyar, B.A., is appointed to act as 5th Assistant Master, Cuddalore College, on Rs. 40, during the employment of V. R. Vencattarama Aiyar, on other duty.

Mahomed Majabridin, to be Assistant Master, Mahomedan Normal School, Madras.

V. Dharmaling Mudali, Head-master, Middle School, Arcot, to be 1st Assistant Master, Middle School, Arni.

T. R. Tripathi Row, 1st Assistant Master, Middle School, Arni, to be Head-master, Middle School, Arcot.

Joseph Moses Valu Pillai, Vernacular Superintendent, Government Normal School, Madras, to act as Head-master, during the employment of Mr. George Duncan on other duty, or until further orders, with effect from the date of Mr. Duncan's taking charge of the Normal School.

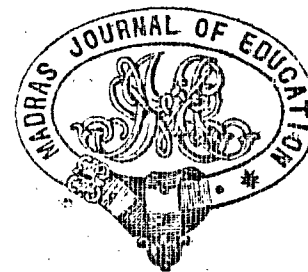
Mr. Joseph Pantalem Lewis, Deputy Inspector of Schools, Salem Circle, to act as Superintendent of Vernacular Studies in the Normal School, Madras, during the employment of J. M. Valu Pillai on other duty or until further orders.

N. Krishnayya, B.A., 3rd Assistant Master, Mangalore College, to act as 2nd Assistant Master, during the employment of S. Mangesha Row, on other duty or until further orders.

N. Ragavandra Row, B.A., 4th Assistant Master, to act as 3rd Assistant Master.

T. R. Srinivasa Aiyar B.A., is appointed to act as 2nd Assistant Master, Saidapet High School, *vice* T. Srinivasa Row, appointed to act as Deputy Inspector of Schools, Saidapet Circle.

N. Sivaramayya, to be Head-master of the Government Girls' School, Nayadupet.



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### THE MONTH.

OF various interesting matters contained in Col. Macdonald's last Educational Report of this Presidency, only a few which seem most prominent will now be here noticed.

The spread of education in Middle and Primary schools is rightly regarded with satisfaction, even when contrasted with the stationary condition of the higher education in Government Institutions. In other Institutions there is a great increase in the number of scholars receiving the higher education. All this is it should be.

**PARTIAL DECAY OF PRIMARY EDUCATION.**—Neither Colonel Macdonald in his Report, nor the Government in their order thereon, refer to its proper cause the very low condition of the Ceded Districts and of Salem in the matter of education. In the former, education was a very young plant, which had not struck deep root among the people. Of the pupils under instruction previous to the famine, only a small proportion belonged to well-to-do classes. A large number in the elementary and primary schools were of the poorest classes. Most of the pupils and teachers in these schools, whom the great famine did not kill off, it drew away from education to relief work. The elementary schools disappeared altogether. The case might have been

somewhat different had the Madras Government, like that of Mysore, given to pupils for attending school what they received for being present at relief works. After the famine the greatest difficulty was experienced in securing the attendance in elementary schools of any but the youngest children; and these were allowed by their parents to attend, only because they could do nothing afield towards cultivating the soil, or at home towards increasing domestic comfort. When elementary and primary education was thus feebly struggling to again bud into life, the new rules for Grants-in-Aid were established, requiring much higher attainments for greatly diminished grants. Except in the towns, therefore, where the famine had been least severely felt, there were in the year under review a great number of schools and pupils receiving no aid as yet from Government, but still qualifying for result grants. The wonder is that in all the circumstances of the case, even so much primary education existed. To foster it, extraordinary measures have been taken by Local Fund Boards. In some places result grants have been doubled; in others salary grants have been made with a view to result grants; and scholarships have been established in High schools for raising and improving teachers for primary schools. It would hardly have been excessive liberality had a small monthly capitation grant been allowed such pupils as, having earned result grants under the old rules, might now be thereby enabled to attend and quickly qualify for grants under the various standards recently established for primary schools. The statistics of 1879-80 have been compared with those of the previous year. It might have been more instructive in some cases to compare them with those of the year before the famine.

**INSPECTING SCHOOLMASTERS.**—The Inspectors of Schools are in some cases dissatisfied with the Deputy Inspectors; and more general and deeper is the dissatisfaction with Inspecting Schoolmasters. The difficulties these men have to contend with are not readily appreciated. They are particularly great in districts where from want of qualified teachers and from paucity of pupils, primary education is at a low ebb. The toil and weariness of incessantly travelling long distances over bad roads and in vehicles of primitive construction soon lessen a man's elasticity of intellect and educational zeal, especially if a fever fit intervenes to sap his

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energy. With less developed physique than Inspectors of Police, and more intellectual work, Deputy Inspectors of Schools and Inspecting Schoolmasters are put in charge of larger tracts of country, and have to travel longer distances and more frequently. The work of Inspecting Schoolmasters does not seem to be sufficiently defined or supervised. Perhaps they are expected to do all they can to further elementary and primary education, and to improve teachers by giving model lessons in their schools. What they really did was to collect statistics, and lecture on the advantages of education. They also went about examining pupils in passages which, strangely enough, were in many instances the very ones shortly afterwards selected by the Deputy Inspectors when examining with a view to grants according to results. It would be a poor way of mending the matter to abolish the office of Inspecting Schoolmaster: just as decapitation would be a bad remedy for head-ache. What is wanted is that each man should have a smaller area of country to labour in, more definite work, and closer supervision. The Inspecting Schoolmaster should be a sort of headmaster to such elementary and primary schools as are unattached to larger schools that have highly educated schoolmasters to superintend them. He should be made to examine monthly every elementary and primary school in the tract of country in which he is set; and the number of schools placed under him should depend upon the distances to be travelled, and the number of classes to be examined, and of lessons in which examination is to be held; though, of course, all the lessons of each school need not be taken up at every examination. In regions where primary education flourishes, some schools may take a whole day to examine; while in other cases, as many as four elementary schools, or even more, may, with proper management, be gone over in one day. Five days in every week should be thus spent, and the sixth day given to preparing the monthly table and report of his range of schools. As both capacity for organization and also mastery of details are required in a good ruler or administrator; so the European Inspector of Schools should not deem himself above such small matters as talook maps with names variously marked to indicate the number, standard and size of the elementary and primary schools in different villages; and programmes of monthly visits to different schools. Even suitable conveyances for examining schoolmasters should not be beneath

the notice of officers of the educational department, any more than such matters are beneath the notice of officers in the postal department. Over every five or six Inspecting or Examining Schoolmasters should be set a Superintendent of elementary and primary schools, whose duty it should be to go over the schools every three or four months, testing the correctness of the examining Schoolmasters' reports and statistical tables, preparing them for the Inspector of the Division, and furnishing the Deputy Inspector with only so much of the information contained in them as may be useful to him in examining for grants. In this way will the teaching in elementary and primary schools and the work of the Deputy Inspector be rendered effective. The number of examining Schoolmasters and Superintendents will have to be large; and the outlay on elementary and primary education will have to be greatly increased. But if the Government are in earnest about extending and improving the education of the masses, they will not grudge to give the greatest help where it is most needed. In Rajahmundry there is a school where 34 pupils cost the Government each more than 40 Rs. annually, with the result that one passed the Upper Primary Examination, and six the Lower. It is true that this is a Mahomedan school; but at Badrachalam there is a school of 57 pupils, not Mahomedans, each costing Government 20 Rs. annually; and not a single pupil passed either the Higher or the Lower Primary Examination. As to the higher education, each scholar of the Second-grade colleges at Berhampore and Bellary cost the Government 731 Rs.; at Salem each student cost 568 Rs.; and at Rajahmundry, nearly 400 Rs. That is, each scholar in these colleges cost the Government as much as would pay a Deputy Inspector of Schools or an Inspecting Schoolmaster, or enough to maintain from 3 to 6 or even 8 elementary or primary schools of from 20 to 30 pupils each! Meanwhile 12,000 out of 176,000 pupils, or 31 out of every 88 pupils actually under instruction in the presidency, receive no help at all; in parts of the presidency only 1 in every 287 of the population attends school; and the aid rendered by Government to students in the Madras Christian College, which is of the First grade, is less than Rs. 36 a head! Now however wise this disposal of public money for education may be to pre-eminently far-seeing eyes, it does seem desirable that the expenditure should have its justice more

apparent to ordinary capacities. For every Rupee of land tax that the ryots pay, they give an anna extra, which is supposed to be for roads, medicine and education. Surely then there might be thrown to them a few more crumbs from the educational table. And where rustics have no schools to inspect, more of the money that they contribute for local purposes might be spent in establishing elementary schools among them. Some Local Boards allot to education about one-twelfth only of what they collect.

VERNACULAR LITERATURE.—Connected with this subject is the creation of a wholesome vernacular literature. Neither is the dissemination of western ideas among the millions of India through the medium of English possible; nor is it desirable that the time of poor rustic youth should be wasted in acquiring a smattering of English with all its difficulties and anomalies. On the other hand the style and genius of Indian languages should not be marred by the prevalence in schools and among the populace of books prepared in the vernacular languages by those men only to whom English has become more familiar than their own mother tongue, and whose idiom and phraseology have a strong English flavour. For the good of the people it is desirable that there be found and encouraged men who are deeply and extensively read in vernacular literature, and who can write it in a style of classical purity and elegance, unimpaired by familiarity with English. Through such men, impressed by all manner of means with the importance of simplicity of diction, should be passed as a rule, every work translated into the vernaculars; though every such work should be finally revised by the Anglo-Vernacular translator, to secure faithfulness and guard against the importation of vagueness, inaccuracy and error. Thoughts on this subject will doubtless be suggested by the perusal of the papers of the Panjab University College, where provision is made for the production of Moulavies and Pandits; and by some extracts from the Journal of the National Indian Association.

Allusion must be made to the importance of both Greek and Sanskrit to those who would clothe western ideas in Oriental garb. The former supplies English with most of its scientific terms: from the latter must be derived most of the equivalents for them in vernacular translations. Colonel Macdonald's report shews that in the Madras

Presidency Greek is taught only in the theological schools of the S. P. G., where Sanskrit seems to be neglected. The languages are more alike than any other two languages of which one is European and the other Asiatic; and they might with advantage be taught together oftener they are. Much of Greek literature would be deeply interesting to Hindus; yet it would not be desirable to teach them in schools enough of the language to enable them to read most of the Greek classics in the original. Another matter that calls for remark is the fact that there is never a failure in the Sanskrit examinations of the Madras University. The suspicion will arise that there must be something wrong somewhere in these Sanskrit examinations.

**FRENCH AND GERMAN AND THE INDIAN VERNACULARS.**—The War Office in England having asked heads of schools to impart to scholars a better colloquial knowledge of French and German, the heads of schools state in reply that this would require time which could be better devoted to subjects of greater educational value; that a colloquial knowledge of those languages is best acquired by residence in France and Germany; that for educational and moral reasons such residence should be deferred to after the school going age—the age when boys can best be trained to bear responsibility; that to insist strongly on a colloquial knowledge of French and German would keep out of the army able men with no aptitude for the acquisition of those languages; that they see their way to imparting a larger amount of scholastic but not colloquial teaching in French and German. The subject is interesting in Madras in relation to the teaching of the vernaculars in the Doveton College, Bishop Corrie's Grammar School, and other such institutions. More necessary than the knowledge of French and German to officers in the British Army is a knowledge, scholastic and colloquial, of the vernaculars to Europeans and Eurasians who would hold positions of responsibility, or indeed do any work at all in this country any where out of the town of Madras itself. So important is this, that for those who come out from England for the Indian Civil Service there are teachers of Indian languages at home; and except in a few departments, none in the Government Service here can rise without passing examinations in the vernaculars. Now, will Europeans and Eurasians continue to struggle for a few posts in the purely English depart-

ments? or will they qualify themselves to meet the desire of many in high position in India to introduce a number of them into the subordinate Revenue, Judicial and other branches of the service? or indeed to go and do any sort of work out in the country which will bring them in contact with the natives? If a knowledge of the vernaculars be necessary, is it best to defer its acquisition to after the school going age? The fact is that as soon as a boy leaves school or college, he is obliged to begin earning his livelihood; and he naturally tries to find that sort of employment of which he can fulfil the duties; and once engaged in such—especially on the small salary that a large competition for such posts renders possible—he cannot, or, at any rate, he does not learn the vernaculars. When Indian languages were taught in the above institutions, however imperfectly, a lad on leaving them could go out into the country and begin work there. And if that was the case in the days of Munshis of the old school, still more ought it to be the case now, when there are many who can teach the vernaculars somewhat in the style in which English and the classics are taught. It is not here intended that the vernacular languages should take the place of the classics in the above schools, or even be learned with a view to University examinations, but that they should be taught in addition to the classics, and to such an extent that a youth on leaving school or college should be able to pass the test for Proficiency, or even for High Proficiency appointed for Civilians. However well a man's physique may be developed, he is at a disadvantage when contending with another who wields a weapon of even poor metal. If in England, French and German can be taught in public schools in addition to the classics; much better can vernacular teaching be added to a classical education out here; and if the vernaculars are so necessary to usefulness here that they are taught in England to Englishmen preparing for work in this country; much more should they be taught to youths born and bred, and meaning to live and labour here. It would be well to see to it that the glory of passing University examinations does not lessen the chances that European and Eurasian lads had of earning a decent livelihood.

**ST. ANDREW'S SCHOOL.**—St. Andrew's School is to be closed on the 30th November; as the Kirk Session "cannot bear

the burden of its maintenance any longer." Most people thought it a pity that it was ever reopened.

**BISHOP COTTON'S SCHOOL.**—An arrangement with Mr. Atkinson having been found impracticable, the office of Warden of the Bishop Cotton Schools and College has been filled; the Committee having appointed the Rev. A. H. Hildersley, M. A., now first assistant master in the Bishop Cotton School at Simla. Mr. Hildersley is a graduate in honours of Cambridge, and an able and zealous teacher. It is not improbable that he may be appointed to the charge of All Saints' Church also. This will, however, depend on the Bishop of the Diocese. It also remains to be seen whether a stipend can be raised for the incumbent of that church, where the services have been hitherto gratuitous. The present Warden has earned his rest; but with a young and able master, a man of scholarship and mark, a gentleman, and endowed with tact and temper, the future of this important institution should be assured. It is an excellent appointment.

**GIRLS' SCHOOLS.**—The Director of Public Instruction submitted the following proposals to Government:—"In order to encourage girls reading in Government Girls' Schools to pursue their studies beyond the Lower Primary Examination (the 3rd Results Standard), I have the honor to propose, for the sanction of Government, the following scale of stipendiary scholarships in schools:—On passing the Lower Primary Examination (or 3rd Results Standard) Rs. 1 per mensem. On passing the Upper Primary Examination (or 4th Results Standard) Rs. 2 per mensem. On passing the Special Upper Primary Examination (or the 5th Results Standard) Rs. 3 per mensem. I propose that the scholarships be in each case tenable for one year, subject to the condition that the scholar continues to attend regularly in the school in which she obtains the scholarship or in any other school, Government, Local, Municipal, Aided, or under inspection, in which she may be permitted to study, and that her conduct continues satisfactory. I further propose that the scholarships should be given on the results of the several examinations in order of merit, and they should not exceed three for the Lower Primary Class, two for the Upper Primary Class, and one for the Special Upper Primary Class, or 10 per cent. of the total attendance in the school. The cost of the measure will be very trifling, considering that there are only 13 Government Girls' Schools with an attendance of about 600 pupils, and that in 1880 only 54 girls in these schools passed the Lower Primary Examination, and 19 the Upper Primary, and may be met from the savings in the Female Normal School, Madras. I should be glad if Municipal Commissions and Local Fund Boards were encouraged to institute scholarships similarly in their girls' schools." The Director's proposals have been sanctioned by Government, who have ordered that "these Proceedings will be communicated to the Presidents of the Municipal Commissions and Local Fund Boards for favorable consideration of the subject."

**COOPER'S HILL COLLEGE.**—An attempt is to be made to enable Cooper's Hill College to pay its way, by admitting a large number of engineer-

ing students, if it can attract them, altogether unconnected with the Government Service, and then a small number of P. W. D. appointments will every year be given to be competed for by the students actually in residence. From ten to twenty appointments will thus be filled up every year: whilst the number of students in the college will be 150. It is said that the Cooper's Hill men themselves expect this scheme to fail utterly, unless the Government will consent entirely to do away with the invidious distinction now made between Royal Engineers and Cooper's Hill men in the P. W. D. It is at any rate certain that the men chosen from Cooper's Hill by this very stiff competition will be men of very high scientific and technical attainments. It is rumoured at the India Office that Government contemplates abolishing, for these and for the highly educated members of the other Indian Scientific Departments, such as the Educational, the Forests, and the Surveys, the obnoxious title of "Uncovenanted," which has long been a grievance, and is believed to be unnecessary and absolute.

In the conversation, which is reported to have lately taken place in the House of Lords with reference to this College and in which the Duke of Argyll is said to have taken a leading part, the question would seem to have been looked at by all the speakers from the English standpoint, the interests of India having escaped the notice of them all. The Duke of Argyll remarked that the College was started by him with a view to prevent the failure of important public works in India owing to incompetent Engineers and that since its establishment it had done much good by doing away with the evil he complained of. But the noble Duke forgot that in establishing the College, he did a manifest injustice and gave a direct discouragement to the Engineering Colleges in India. It had been better if his Grace had supported his statement that the construction of public works by Engineers sent out from Cooper's Hill has given satisfaction and removed the old evil, by citing a few facts. But instead of that he took credit to himself for the establishment of the College.—*Hindu Prakash.*

**SAHSKRIT AND PERSIAN AT OXFORD.**—Some members of the University of Oxford in India recently signed a protest to the Vice-Chancellor against certain changes proposed in connection with Indian Civil Service candidates. It is now stated that the provision to which objection was chiefly taken, namely, the reduction of the term of residence required for a degree, has, for the present at least, been rejected by Congregation. All that the statute as passed, does, is to allow a certain amount of Sanskrit or Persian to be taken up in lieu of Aristotle and Livy; and this is not confined to Indian Civil Servants, though meant chiefly to benefit them.

**DR. BURNELL.**—Last year Dr. A. Burnell, M. C. S., the first Oriental scholar in Southern India, was compelled by ill-health to leave this country. On his way home he spent several months in Italy, and his residence there did him so much good that he intends to go back to San Remo in October. But, though it is hardly possible that he will ever be able to return to India, he has by no means abandoned his interest in Indian matters. In addition to an exhaustive biblio-

graphy of books relating to the Portuguese in India, he is now engaged in printing a document of the greatest importance connected with the same subject, which he copied in the Marciana Library at Venice last May. This is the Italian (and only existing) copy of a letter from King Manuel in 1505 to Ferdinand, which gives an account of what the Portuguese did in India during the first five years after the landing of Vasco de Gama at Calicut.

**PROFESSORSHIP OF GEOLOGY.**—Mr. Valentine Ball, M.A., of the Geological Survey of India, has been nominated by the Council of the University of Dublin to the Professorship of Geology in that University.

#### MEDICINE IN THE MADRAS UNIVERSITY.

The following Candidates have passed the Medical Examination held in July last:—

##### FIRST L.M.S. EXAMINATION.

###### First Class.

1. Kelly, John Abraham, Madras Medical College.

###### Second Class.

1. Seneviratne Buddekorale, H. C. Medical School, Ceylon, and Madras Medical College.
2. Athalye, Sairam Vasudev, Grant Medical College, Bombay, and Madras Medical College.
3. Ramanujulu Naidu, Pasupuleti, Madras Medical College.
4. Bannajee, Dadabhoi Pestonjee, Grant Medical College, Bombay.
5. Chalke, Edmund Lerode, Madras Medical College.
6. Kannan, Cauckiyath Kunji, Madras Medical College.
7. Ganapati, Codanda Ponnappa, Madras Medical College.

##### SECOND L.M.S. EXAMINATION.

###### Second Class.

1. Appaye, Koravanda Muthanna, Madras Medical College.
2. Patankar, Vitahala Visvenatha, Madras Medical College.

##### PRELIMINARY SCIENTIFIC EXAMINATION.

1. Ailsworth, Methuselah, Madras Medical College.
2. Rangappa, Hyttakudur, B.A., Madras Medical College.
3. Everts, Alfred C., Medical School, Ceylon, and Madras Medical College.
4. Parthasarathi Chetti, Pulicat, Madras Medical College.
5. Rego, Francis Xavier, Madras Medical College.
6. Saldanha, Camillo Norbert, Madras Medical College.
7. Short, Edward William, Madras Medical College.
8. Gomez, Francis Daniel, Madras Medical College.
9. Fox, Richard John, Madras Medical College.

##### FIRST M.B. & C.M. EXAMINATION.

1. Swaminatha Aiyar, V. K., B.A., Madras Medical College.
2. Vaidyanathan, A. R., B.A., Madras Medical College.

#### SECOND M.B. & C.M. EXAMINATION.

##### Second Class.

1. Staunton, Henry Foster, Madras Medical College.
2. Jesudasa Pillai, Nallathumbi, B.A., Madras College.

##### FREE SCHOLARSHIP, MEDICAL COLLEGE.

The Principal of the Medical College has notified that the Free Scholarship sanctioned under G.O., No. 9, dated 12th January 1880, has been for Session 1881-82 granted to K. Ramasawami Naidu, B.A. He will attend the M.B. and C.M. Section of the Senior Department of the College from the 1st October next.

#### EDUCATION IN THE MADRAS PRESIDENCY.

Report of the Director of Public Instruction for 1879-80, dated 7th November 1880, No. 5173.

Order thereon, 29th April 1881, No. 132.

THE RIGHT HONORABLE the Governor in Council proceeds to notice the leading features in the Administration of the Educational Department for the year 1879-80.

2. The total number of inspected schools in the Presidency rose from 9,274 with 237,838 pupils in the previous year to 10,533 with 268,379 pupils in the year under notice. The increase was due chiefly to the greater development of primary education fostered by the modification of the official rules for Results Grants, and aided by the return of prosperity to the country after the famine. Very probably the increase in uninspected schools has been still larger. In the Ganjam District there was a decrease of 13 schools but an increase of 422 pupils. In Tanjore, there was a decrease of 41 schools and 638 pupils. In all the other districts there was an increase both of schools and pupils, the most marked cases being Madurai and Vizagapatam. In Municipalities the pupils rose from 71,275 to 73,304, and in Local Fund Circles from 166,563 to 195,075. On the whole, the number of boys rose from 211,640 to 238,960, and the number of girls from 26,198 to 29,419.

3. From the point of view of the agency maintaining the schools, Government Schools were stationary, and Local Board Schools showed an increase of 346 schools and 10,077 pupils. Aided Schools showed a considerable increase, and would doubtless have shown more but for the difficulties in the way of putting them on the inspection list. The Director is requested to give his serious attention to the matter just mentioned. The Government fear that the arrangements made by the subordinate agency for the inspection of aided schools in the rural tracts are often arbitrary and capricious.

4. The district which has the least education as compared with area and population is Cuddalore, although there is a great improvement shown in this respect since 1878-79. Excluding Madras and the Nilgiris, which are exceptionally circumstanced, the district which has the most education is Tinnevely, where 1 person in 59 is under instruction.

5. Looking to race of pupils Native Christians show the largest proportionate increase since 1878-79, Hindus next, and Mahomedans third. The total increase of girls in the girls' schools is very satisfactory.

6. There was a decrease of Rs. 1,111 in the fees receipts of Government Institutions, which was due to the large failure of the previous year in the Matriculation Examination, the attendance of Colleges having been thereby materially affected. Over all institutions there was an increase of Rupees 43,424. The entire amount collected in fees was Rupees 691,727, out of which Rupees 5,920 belonged to the Medical College. As regards the calculation of an average fee the Government observe that the Director proposes to furnish a corrected statement for 1880-81.

7. The average cost to Government per pupil was Rs. 235-3-7 in the College Department of Government Arts Colleges against Rs. 183 in the previous year, the amount of fees having fallen. In Aided Colleges there is no marked variation. In Government High Schools attached to Arts Colleges fees have increased and cost has diminished. In the Middle Department of Arts Colleges there has been an increase of 400 per cent. in the cost to Government. Taking the average cost of a pupil in a College including the school departments, the cost in a Government College and Aided College, respectively, was Rs. 61-4-10 and Rs. 12-6-6, against Rs. 56-3-5 and Rs. 12-8-9 in the previous year.

8. In Government High Schools for boys the average cost has gone up from Rs. 86-2-7 to Rs. 103-15-6; in Aided Schools of the same class the cost has gone down from Rs. 31-14-1 to Rs. 23-4-9. This is excluding the Middle and Primary Departments. Including them the cost has gone up from Rs. 21-15-10 to Rs. 23-3-5 in Government Schools, and has gone down from Rs. 11-6-9 to Rupees 9-6-9 in Aided Schools.

9. Taking Middle Schools proper, there was a slight decrease in the cost to Government of each pupil in the Middle Department, but a heavy increase in this item in the Primary Department in Government Schools. There was a very great decrease in the cost to the State in these departments of Middle Schools under Local Fund and Municipal management. In Aided Institutions the cost of pupils in the Middle Department was about the same as last year, but there was an appreciable fall in the cost to Government in the primary branch.

10. In Primary Schools, whether Government or Local Board, there was a marked decrease in the cost to Government of each pupil, whilst in private aided schools there was a very slight increase, probably due to larger payments from Provincial Funds for grants in results standards above the third, and the increasing charge for elementary education in Madras, which has been thrown on Provincial Funds.

11. Under the Grant-in-Aid system the Provincial contribution to private schools was Rs. 2,61,292 out of a total of Rs. 3,81,693. Local Funds gave Rs. 99,297 and Municipalities gave Rs. 21,104. The grant from Local Funds shows a falling off since last year owing to the alteration of the results rates. The Municipal contribution on the other hand shows an increase.

12. A reduction in the grants of the following schools came into force at the beginning of the year:—

Free Church Institution, Madras.

Patcheappah's High School, Madras.

S.P.G. High School, Vepery, Madras.

Church of Scotland Mission School, Madras.  
 London Mission School, Madras.  
 Wesleyan Mission School, Madras.  
 Hindu Proprietary School, Madras.  
 Govindu Naidu's School.  
 Free Church Mission Branch School, Madras.  
 Town School, Kumbakonam.  
 S.P.G. College, Trichinopoly.  
 S.P.G. College, Tanjore.  
 Coimbatore College.

12. Out of the sum saved by the reduction of grants, the salary of an Inspectress of Girls' Schools was provided. A sum of Rs. 6,000 was reserved for Salary Grants to new girls' schools. The balance was set apart for building grants.

13. The entire expenditure on education in 1879-80 was Rs. 28,23,473, of which Rs. 10,36,953 came from Provincial Revenues and the Educational Building Fund, Rs. 3,53,783 from Local Funds, Rs. 58,799 from Municipal Funds, and Rs. 13,74,838 from Endowments, Fees, and other sources. The percentage spent on superintendence was 10.55; on primary instruction 45.24; on secondary instruction 21.91; and on superior general instruction 7.66. The remainder was spent on miscellaneous charges, special instruction, &c.

14. In the University, the test in English for the M.A. degree was made more severe by fixing a minimum of marks for a pass. Candidates for the degree of Bachelor of Civil Engineering were required to produce a certificate of having studied eighteen months in an institution affiliated in Civil Engineering to the University, and candidates for the degree of Bachelor of Medicine and Master in Surgery, who had not passed the First in Arts Examination, were permitted, if they passed, to count the professional courses previously attended by them. For the degree of Master of Arts 8 candidates against 5 last year were registered, and 7 were examined against 4. Two passed, both in the fifth branch. They took up Mental Philosophy and Sociology. For the B.A. degree the number of candidates registered was 181 against 237; the number examined was 175 against 231, and the number passed 85 against 140. For the First Examination in Arts the number registered was 597 against 683; the number examined 582 against 663, and the number passed 295 against 172. The number of First-grade Colleges, viz., those providing an education up to the B.A. degree standard, was 6 as in the preceding year. The number of Second-grade Colleges, viz., those providing education up to the F.A. standard, rose from 14 to 18. The number of students reading for the B.A. degree rose from 222 to 278. For the degree of Master of Laws 2 candidates appeared against none last year, but both failed. For the degree of Bachelor of Laws 32 were registered against 38, 29 were examined against 35, and 4 passed against 23. All four were from the Presidency College. In the Faculty of Medicine 1 candidate came up for the Preliminary Scientific Examination but failed. Six candidates came up against 2 last year for the First L.M.S. Examination, and all passed. Two candidates came up against 4 last year for the Second L.M.S. Examination and passed. For the First M.B. and C.M. Examination there were 3 candidates against 2 last year and 2 passed. In the Faculty of Engineering and for the degree of B.C.E. there were 8

candidates against 4 and 5 passed. Five students of the Civil Engineering College obtained certificates as Assistant Engineers against 3 last year and 4 subsequently took the degree of B.C.E.

15. As regards secondary education, the number of candidates registered for the Matriculation Examination was 3,357 against 2,648; the number examined 3,309 against 2,597, and the number passed 1,094 against 356. The cause of the high proportion of failure was, as last year, the great severity of the examination. The attendance in English High Schools for boys rose from 4,415 to 4,499. A comparative examination was held of the fifth classes of all Government Schools excepting those attached to First-grade Colleges and to the Practising Department of the Madras Normal School. Altogether nineteen classes were examined and the result was that 327 out of 431 candidates were pronounced fit for promotion into the sixth class. A comparative examination was also held of the upper fourth classes of the same schools. Out of 649 candidates examined, 420 were found fit for promotion. A Middle School Examination was also held of the upper fourth classes of schools. The number registered for examination was 1,987, the number examined 1,767, and the number passed 1,050 with 196 in the first class. The attendance in English Middle Schools was 13,183 against 12,878. There were 47 girls attending nine English High Schools and 285 attending twenty-two English Middle Schools. For the Teacher's Certificate Examination, First-grade, 30 candidates were examined against 20, and 20 passed against 16. For the Second-grade, 85 were examined against 62, and 48 passed against 26. Of the successful candidates 11 came from up-country schools.

16. The number of pupils in Primary Schools rose from 218,089 to 247,771, of whom 17,514 were in the Upper Primary Division against 15,187 in the previous year. The number of pupils presented for examination rose from 62,825 to 69,492, and the expenditure on Results Grants from Rs. 1,74,850 to Rs. 1,76,760. The number of pupils in Local Fund Schools rose from 22,753 to 26,287, and in Municipal Schools from 4,470 to 5,210. The attendance in Municipal Girls' Schools fell from 409 to 392. In Local Fund Girls' Schools the attendance rose from 224 to 372, the increase having been caused by the establishment of five schools at Narasapur, Punganur, Namakal, Tiruchengod, and Atur. The attendance in English Salary Grant Girls' Schools and in three Unaided Schools which furnished returns rose from 2,167 to 2,942; but of these five were Vernacular Schools last year, and one English School became a Vernacular School. Three schools were newly established. At the Teacher's Certificate Examination 93 candidates passed in place of 5 last year. The attendance in Vernacular Salary Grant Girls' Schools fell from 2,829 to 2,046, owing to the transfer stated above. Only 2 passed the Teacher's Certificate Examination, Third-grade, in place of 7 last year.

17. The number of students in Normal Schools for Masters rose from 396 to 533, the increase being due in part to the opening of the Government Normal School at Kurnool and of the Local Fund Normal Schools at Cuddalore, Vellore, Salem, and Betutnaad. The number of Normal Schools was nineteen. For the special examination in Method, 36 candidates, who had previously passed the B.A., F.A., and Matriculation Examinations and had entered the Normal

Schools for the purpose of being trained, came up against 40 last year. The whole 36 passed against 39 last year. For the Fourth-grade there were 15 candidates against 19 and 10 passed against 14. For the Fifth-grade there were 255 against 237, and the number passed was 198 against 160. The Normal Students, in the three Female Normal Schools rose from 113 to 129. For the First-grade 10 went up against 9 in the previous year, and 3 passed against 5. For the Second-grade 25 went up against 15, and 15 passed against 6. For the Third-grade 37 went up against 20, and 27 passed against 15. The general results indicate satisfactory progress.

18. The Government take this opportunity to record their obligations to the late Director of Public Instruction, Colonel Macdonald, who retired from office at the close of the year under report.

(True Extract.)

R. DAVIDSON,  
Chief Secretary.

### EDUCATION IN COORG.

The Coorg Educational Report for 1880-81, is thus reviewed by the Chief Commissioners:—

It is satisfactory that another year of real and easily marked progress has passed in Coorg. Besides a steady advance in the aggregate number of pupils under instruction in the Province, the year has exhibited the Mercara Central School risen for the first time to the rank of a High School by having passed candidates through the Matriculation Examination of the Madras University.

After a long and useful career, Mr. Richter who had witnessed the inception of Government educational efforts in Coorg, and had, 25 years ago, been the master of the first Anglo-Vernacular school in Coorg, retired from the service at the beginning of the second half of the year. Mr. Richter's name will be ever connected with the history of education in Coorg, where the system that he saw so modestly begun grew under his hands to what it has now become, a department teaching 2,792 pupils in 56 Government and 3 Aided schools; besides which there are 28 Unaided schools which are said to be teaching 431 pupils. These figures show nothing very vast, but they show a progress of which Mr. Richter at least may be proud.

On his retirement, Mr. Marsden who had been Head-master of the Mercara School was appointed Inspector as well, an arrangement which had existed in Coorg before Mr. Marsden's advent, when Mr. Richter was both Inspector and Head-master, and as had then been the case, a Sub-Deputy Inspector now aids the Inspector in his duties. With an officer of Mr. Marsden's ability, experience and enthusiasm the interests of education are not likely to suffer. He brings with him the advantage of a thoroughly practical acquaintance with the kindred and neighbouring educational system in Mysore, and having at once instituted comparisons between the Primary Vernacular teachers of Coorg and the Hobli schoolmasters of Mysore, much to the disadvantage of the former, Mr. Marsden has initiated means of raising them to the required standard. Sir

James Gordon has read Mr. Marsden's remarks upon the primary schools with much interest, and he feels that in his hands the interests of elementary education in Coorg are very safe.

Nor has the change in the Inspectorship led, as it might have been anticipated, to any decrease in the actual work done as measured by the miles travelled and the number of schools seen; for while 15 schools were visited once and 5 twice by Mr. Richter in the first half of the year, Mr. Marsden visited 40 schools once and 4 twice during the second half; and he travelled 150 miles more than Mr. Richter. The Sub-Deputy Inspector too visited 40 schools once, and 6 twice during the second half; and indeed there is every reason to hope that inspection in Coorg will be more frequent and more thorough than it ever has been.

While much is being done to improve the primary schools in Coorg and awake an interest in elementary education among all classes, the advancement of the higher grades is not neglected also. Every opportunity is seized to improve the teaching staff of the Mercara Central School, which institution shows an advance in every way. The total numbers have risen from 285 to 302, the number of High School pupils from 41 to 51, the fee receipts from Rs. 1,111 to Rs. 1,657 and for the first time candidates have been sent direct from this school to the Matriculation examination, and two of the five who were sent passed.

Under a new committee of management the endowment coffee plantation which has been leased for a term of years bids fair at last to afford a steady income to the Central School which should afford opportunities for considerable improvement and so conduce further to the popularity and usefulness of this already flourishing institution.

As before there were 6 English Primary Government schools, 47 Vernacular and 3 Aided Primary Vernacular schools, making the total of primary schools 56. But though no new schools were opened there has been a general increase in the attendance. In the English Government schools the attendance has increased from 281 to 300, in the Vernacular schools, from 2,037 to 2,253; and in the Aided schools from 67 to 89. There has been no more encouraging sign during the year than that afforded by the general rise of school fees. It means a higher appreciation by parents of the benefits of education, and it means too a stricter enforcement of rule by the officers of Government.

The educational income increased a little, owing to the larger collection of fees, and stood at Rs. 7,515, notwithstanding that the credits on account of the plough tax showed a small diminution which is accounted for by the fact of the previous year's income having been unduly swelled by the collection of arrears. Government expenditure on education amounted to Rs. 23,246, of which Rs. 6,148 were from local funds. The sums realized from fees are paid into the Treasury to credit of Government, and there is no expenditure incurred from fees; so that the column 2c of Appendix Statement No. 3 is out of place in the Coorg return. Nevertheless, the realizations on that account have been exhibited in the column for expenditure from fees, but the amount so shown has not been added into the total expenditure.

In paragraphs 11 and 12 of his Report Mr. Rice gives two state-

ments, first the expenditure on Education, under Direction, Inspection and Instruction, and secondly the analysis of the expenditure on Instruction, but though the totals of the last mentioned statement should agree with the figures against Instruction in the first statement, they do not, because contingent expenses under Inspection have been in the statement in para. 11 added to the figures under Instruction. This detracts from the utility of the statements. The statements contained minor errors in figures which have been corrected. In Form No. 3 too, a correction has been made in the details of expenditure from Local Funds, which the Director should observe and enter in his copy.

### MADRAS SCHOOL OF AGRICULTURE.

To what a high degree of proficiency the Madras School of Agriculture has attained is shown by a pamphlet containing the "Question Papers of Class I. of 1876 in the Madras School of Agriculture." Eminently practical in their character, and admirably suited to test the thinking-powers and the capacities of his students generally, no one can rise from even a cursory glance at them without feeling convinced that a thorough knowledge of the various subjects mentioned in the papers cannot but constitute a scientific agriculturist in a very large sense of the term. Economically considered, the country has been too long a sufferer from the agricultural charlatanism which it has been a victim to, and Mr. Robertson has never ceased to point to means of escape from the dangers of a neglected agriculture. Field chemistry and geology are points which Mr. Robertson very justly lays much stress upon. They are subjects which the ordinary ryot treats with huge disdain, and the various papers set for examination show that the Superintendent of the Government Farms is anxious, beyond all things, to impress on the minds of his young pupils that Nature has no superfluities, either organic or inorganic, and that certain processes whose utility may not be apparent to us at first sight or thought either, are as necessary to the comfort of animal life as is the food that such life is supported by. Mr. Robertson leads with some very practical questions as to benefiting the soil by hoeing, deep tillage, and the conditions under which crops benefit by the latter. He has omitted no pains, apparently, in the analysis of water, and expects his class to be able to determine the difference between Hydrostatic water, Capillary water and Hygroscopic water. Manures, and the several gases that go to form a fertile field, in short all the elements of plant food, are points on which he must have well grounded his class to expect it to be proficient. Flax and wheat, sugar, cotton, and maize, are crops whose scientific cultivation he urges the necessity of, while the growth of tobacco, hemp and fibre of all descriptions on principles better calculated to develop them to their fullest capabilities could not have been omitted in his lectures. Coffee loses none of its importance by the side of cereals and fodder producing plants. Farm implements and gear generally are matters Mr. Robertson thinks his class ought to be adepts in; and, looked at from every point of view, the portion of questions set by him shows that there is no part of a farm, no concern of it, however petty it may be, that has not been recognised and highly important.

function to discharge. Doctor Western's papers on veterinary science follow those of Mr. Robertson. They are of a highly professional character, and extend to all matters connected with animal life on the farm either in health or disease. He is critical in the use of terms employed in the pharmacopœa of veterinary lore; and the general tenor of his paper denotes the inestimable value he sets upon cattle and the condition of perfect freedom from disturbing influences he would see them in. Mr. Hamilton's questions on chemistry are proof of the high standard of perfection to which the class must have attained to be expected to answer them. A discriminating intelligence alone could enable a student to pass through them successfully, and we feel certain that the questions demanding an explanation of the different kinds of acids known to the field chemist are meant to be something more than tentative. Mr. Wilkins follows with a string of very pretty questions on botany, and we would fain hope that the replies received were significant of the value the class attached to that branch of Nature's choicest gifts which the science of botany illustrates. Wiser than our ancestors in not a few respects, it is an unmistakable evidence of triumph of modern botany that we no longer labour with them in the ignorance which once existed with reference to a thousand discoveries that the science has made known in these latter days. Dr. Kees's questions on zoology are searching and interesting at the same time; and the habits and characters of the animals he calls upon the students to classify cannot be contemplated with indifference. We have left ourselves but little space to notice the papers on Physical Geography, Arithmetic and Book-keeping, Mensuration and Building, set severally by Mr. Ganapati Iyer and Seetharam Moodelly Garoo, and have only to add by way of concluding remarks that the little volume contains matter which we would gave the students of Class I. of the Agricultural School the full credit of being thoroughly acquainted with.—*Madras Times*

#### DEGREES IN AGRICULTURE.

THE following petition has been presented to the Senate of the University of Madras by late and present students of the Madras Agricultural College:—

The humble petition of the undersigned late and present students of the Madras Agricultural College (graduates and undergraduates of the Universities of Madras, Bombay and Calcutta), respectfully sheweth—

1. That in the year 1874 His Excellency the Governor in Council, recognising the importance of the application of western science to agriculture in this country, founded an Agricultural College in Madras, and thus conferred on the people a boon for which they are and will ever be grateful.

2. That the said College has now been in existence for about five years, and that the instruction imparted therein embraces a study of the art and science of agriculture, chemistry—inorganic, organic and agricultural,—zoology, veterinary medicine and surgery, botany in its various departments, meteorology, physical geography, mechanics, book-keeping, and surveying and mensuration in their relation to agriculture.

3. That considering the curriculum of studies pursued in the College, it would be reasonable to expect that the local University would patronize the institution, and take under its fostering wings a science, the study of which your petitioners submit, is no less important than that of civil engineering and medicine.

4. That seeing the primary importance which the profession of the husbandman occupies and must occupy in this country in the face of a rapidly increasing population, with the arable area already pushed almost to its extreme limits, your petitioners feel sure that you will think it necessary and desirable that the intellect of the country should be directed to the study of scientific agriculture, which alone can prevent the results which such a condition must bring about if unchecked.

5. That from the improvement of Agriculture as great benefits will accrue to the people of this country as from the study of Civil Engineering and Medicine, which have been patronized by the University.

6. That your petitioners hope that if the University affiliates to it this institution, and grants Degrees in Agriculture, the art now so degraded will rise in the eyes of the people, and its true importance as "the most useful, the most noble employment of man" will come to be better recognised.

7. That agriculture is a recognised part of the University curriculum of many American, Scotch and German Universities,\* and that distinct Degrees in Agriculture are now granted in some of them.

8. That your petitioners believe that the agricultural prosperity of these countries is, to a considerable extent, owing to the encouragement afforded to the study of agriculture by their respective Universities; and that your petitioners hope that a similar encouragement here will be attended with similar results.

9. That the course of study which your petitioners undergo extends over a period of three years, in which time they would be able if undergraduates of the Bombay University to proceed to Arts and Civil Engineering Degrees, and if undergraduates of the Madras University to have nearly completed the necessary course of study for similar Degrees.

10. That regarding the nature of studies which your petitioners undergo, and the tests of application to them, your petitioners humbly beg that the Principal of the Agricultural College and the Director of Public Instruction may be consulted, who, your petitioners trust, will testify those studies to be no less arduous than those required for undergraduates to proceed to Degrees in the Faculties already established in your University.

11. That in Medicine two Degrees are open to undergraduates of Universities, one to Matriculates, and the other to those who have passed the First Examination in Arts.

12. Your petitioners therefore pray that they may be admitted to the privilege of proceeding to Degrees in Agriculture, as other undergraduates are allowed to do in Medicine and Civil Engineering, and that if the Senate do not deem it fit yet to open special

\* Cornell, Kentucky, Massachusetts, Edinburgh, Halle, Göttingen, Munich, Leipsic, Berlin, Bonn, Vienna, Giessen, Kiel.

Degrees in Agriculture, a Degree in Science may be inaugurated having "Agriculture" as an optional subject.

For which act of patronage your petitioners shall, as in duty bound, ever pray.

### PROPOSED EXHIBITION OF NEEDLEWORK AT MADRAS.

The following notice as to an Annual Exhibition of Needlework has been circulated by the Committee of the Madras Branch of the National Indian Association:—

The Madras Branch of the National Indian Association has resolved to establish an Annual Exhibition of Needlework, to be held towards the close of each year.

1. The following prizes will be offered:—

I. For the best collection of Native garments, cut out and made entirely by the exhibitor or exhibitors, two prizes of Rs. 12 and Rs. 10 each, one to be awarded to a Native lady and the other to the pupils of a Native Girls' School.

II. For the best specimen of embroidery or other fancy work, applied to Native garments, executed entirely by the exhibitor or exhibitors, two prizes of Rs. 10 each, one to be awarded to a Native lady and the other to the pupils of a Native Girls' School.

III. For the best collection of English garments, cut out and made entirely by the exhibitor or exhibitors, two prizes of Rs. 12 and Rs. 10 each, one to be awarded to a Native lady and one to the pupils of a Native Girls' School.

IV. For the best specimen of knitting, two prizes, one of Rs. 12 or an English sovereign for a Native lady, and one of Rs. 10 for the pupils of a Native Girls' School.

V. For the best specimen of English embroidery in satin stitch or open work, white, two prizes as in para. IV.

VI. For the best specimen of crewel-work, two prizes as in para. IV.

VII. For the best design, drawn and executed in embroidery by the same person or persons, two prizes as in para. IV.

2. The specimens of Needlework should be sent to the care of Mrs. Brander, Joint Secretary, National Indian Association, Madras, not later than November 1st.

3. Each competitor for a prize should send with the specimens a declaration, attested by herself or her parent or guardian, that the work has been executed entirely by herself. In the case of a School, the declaration should be to the effect that the work has been executed entirely by the pupils in the School, and should be signed by the manager.

4. (a) The garments exhibited must not be in miniature, but of a useful size.

(b) In awarding prizes I and III the shape of the garments, the beauty and strength of the Needlework, and the size and variety of the collection will all be taken into consideration.

(c) In awarding prizes for embroidery and other fancy work, the beauty of the workmanship, the taste displayed, and the suitability of the ornamental work for the purpose

to which it is applied, will all be taken into consideration.

5. Competitors for prizes will not be allowed to send the same piece of Needlework twice for exhibition.

6. The Sub-Committee will be glad to receive specimens of fine Needlework, for exhibition only. These also should be sent to the care of Mrs. Brander.

7. All the specimens of Needlework will be returned to, such exhibitors as send a messenger to fetch them, within a fortnight after the close of the Exhibition.

ISABEL BRANDER, Joint Secretary,  
Madras Branch, National Indian Association.

3, ORME'S ROAD, MADRAS,

May, 1881.

—Journal of the National Indian Association.

### SREENIVASA PILLAY'S EDUCATIONAL CHARITY.

The distribution of prizes to Sreenivasa Pillay's Girls' School took place yesterday evening, in Patcheaph's Hall. Among those present on the occasion were Mr. Justice Tarrant, Captain Heming, Mr. D. M. Cruickshank, M.A., Mrs. Brander, Mr. Krishnama Chariar, Mr. Somasoodram Chettiar, Mr. B. Loverly, Mr. Viziarungum Moodelly, Mr. Ranganatha Moodelly, the Rev. Mr. Rajagopal and others. Mrs. H. J. Tarrant having taken the chair, the proceedings opened with the Secretary of the School reading the report, from which we take the following:—

The year under review commenced with a cash balance of Rupees 4,359-15-0, which added to the receipts during the year, viz., Rupees 2,649-7-1, raised the available funds to Rs. 7,009-6-1. Deducting from this the expenditure during the same period, there remained at the credit of the School on 31st December 1880, Rs. 4,666-5-0. The transactions of the year resulted in a saving of Rs. 306-6-0; and this was owing to the realization of the road cess due by the renters of the Toduccaudu Mntah for the last 5 years, and also to an addition to the income in the shape of compensation received from Government for lands taken up for a public road passing through the Mntah. The School had on its rolls 125 Girls at the close of 1879. The admissions during 1880 amounted to 116 against 101 withdrawn, leaving 110 Girls at the end of the year. Mrs. I. Brander, the Government Inspectress of Girls' Schools, inspected the Institution for the first time in September 1880; and the several classes have since been examined by the Tamil and Telugu Pundits, M. Murugasa Mudeliar, and T. Singara Chariar respectively. Their reports are on the whole favorable and encouraging: and much good is no doubt done to the school by having the defect under past management pointed out, and a superior method of teaching set before the teachers, as Mrs. Brander's report especially has done. The Trustees are glad that they have been able, though after much difficulty, to secure the services of a caste Hindu Mistress and replace the East Indian Superintendent whom they were forced to retain for want of a better,

person. The good effects of the management by this new Mistress, under whom the school has made a fresh start, already appear in the shape of an increase in the number of pupils and also a decided improvement in the regularity of attendance; and this latter circumstance becomes noteworthy, when it is remembered that habitual irregularity is one of the chief drawbacks to the progress of Hindu Girls' Schools.

After the distribution of prizes by Mrs. Tarrant, three of the senior girls sang some sacred songs in Telugu and Tamil, which elicited applause, and this over, Mr. Kristnama Chariar rose and addressed the meeting thus:—

LADIES AND GENTLEMEN,—I have been desired to explain by my colleagues in the Board of Trustees of this Institution that no meetings for the distribution of prizes to the successful girls could be held for the past two years, chiefly on account of the adverse season, and the consequent difficulty of securing the presence of the heads of society, in the hot weather, when the prize books and reports were got ready. The Trustees are therefore greatly indebted to Mrs. Tarrant for kindly enabling them to hold the presenting this year. One or two interesting facts in connexion with this school and Native Female Education generally in Madras seem to deserve prominent mention on this occasion. The year 1880 to which the report already relates witnessed an important change in the School Staff, which used to consist of male teachers with an East Indian Mistress who could only teach some needle-work. The want of a Hindu Caste Lady Superintendent of sufficient educational attainments, greatly felt for several years past, has at last been supplied by the appointment of the certified Schoolmistress Mrs. Arantammal, regularly trained in the Government Female Normal School. The appointment of this Hindu Superintendent has already produced favorable results as stated in the Trustees' Report. The number of girls and the income from fees paid by them have increased, the attendance of the girls is more regular than ever before, and the elder girls at the meeting, you would have noticed, have so much confidence in the new Superintendent that they have willingly remained longer in the school for instruction beyond the age at which native girls usually withdraw from public schools. The teaching from books and the sewing work of the girls as well as the general tone of the school show signs of improvement, and the trustees look forward to being able to report still greater improvement in future years. For such improvement and progress the school, in common with other girls' schools in Madras, must look mainly to Mrs. Brander's kind suggestion and active sympathy, which, we have no doubt, will stimulate all girls' schools to fresh efforts. We need hardly say that by the appointment of this lady as the first Government Inspector of girls' schools, the year 1880 will ever be regarded as an important date in the History of Native Female Education in Madras.

Mr. Justice Tarrant then made a few remarks. He said that it gave Mrs. Tarrant great pleasure in having been requested to preside at the anniversary of this Institution. In common with other ladies she had taken some interest in the cause of Female Education. This Institution had its origin from the year 1866, and Mrs. Tarrant was glad to see from the report that considerable progress had been made. It also gave her great pleasure to see the intelligent, bright,

and smiling faces of the girls who came up to receive their prizes. In the name of Mrs. Tarrant he wished the Institution every success, and thanked them for the honor done her in asking her to preside on this occasion.

Mr. Somascondram Chettiar then thanked Mrs. Tarrant for having kindly presided. A small collection of fancy articles was exposed for sale, after which the meeting broke up.—*Madras Times*.

### THE ROMAN CATHOLIC CONVENT AT TRICHINOPOLY.

IN the hope of preventing the intended abolition of the European Convent of the *Meres de Reparatrice* at Trichinopoly, a large body of Roman Catholics thus describe, in a petition to the Pope, the work of the ladies of the Convent:—"The venerable mothers have, during the twenty-two years of their stay, thrown their heart and soul into noble works of charity and rendered invaluable service to the community at large."

They are engaged in the training and education of European and East Indian children, who, but for them, would be utterly unprovided for, there being no Catholic school or other institution here of any description to provide for them.

The venerable mothers have under their care a well conducted orphanage of nearly 500 souls in Trichinopoly itself.

They afford an Asylum to helpless widows, and as to prevent infanticide and abandonment of children, and are the cause of their conversion. It is computed that there are in India about 8 millions of widows, who by reason of their unfortunate custom and caste prejudice cannot remarry. Among them occur innumerable cases of infanticide and abandonment of infants. Western civilization and education, nay, the Government itself is unable to remedy this calamity, but these venerable mothers have opened a broad way of relief to redress this end, and many of the children of the orphanage are none but those saved from such a destruction.

This boon has been extended by the venerable mothers not only to the circle of Christian widows, but to that also of the heathen community, who really appreciate the immense benefit of this institution.

That they are a substantial help to the poor and sick for whom they maintain a small dispensary is well known and wants no representation.

The venerable mothers have, by their exemplary piety and virtue, been the cause of producing not only many good Indian nuns here, but have also promoted virtue and Godly living among others.

The native nuns are not so far advanced as to meet the requirements of the native Christian females: much less are they in a position to look after the training and education of European, Eurasian and Pariah children, by reason of the unfortunate difference of their caste and feelings which, on no account, allow the Indian nuns even to come in contact with them, and in fact the whole population of the European, Eurasian, and Pariah Christians is greater than the Hindu Christians of this station.

The state of Hindu society requires the advancement of female

education and the undertaking of the venerable mothers in this noble cause, is a real blessing to this community.

The venerable mothers ably manage a very large charitable institution composed of children and women, which, without them, must suffer.

This country is very often visited by famine and other calamities, and affords the best field for works of charity which is sadly wanting.

Helpless children and orphans of all denominations are taken, proper care of by the venerable nuns till they are settled in life, and the abolition of the Convent would be an incalculable loss in this respect."

### THE OXFORD INDIAN INSTITUTE.

THE establishment of an Oriental Tripos at Cambridge and the change in the rules for Indian Civil Service Probationers made it incumbent on the University of Oxford to consider the question of founding an Oriental School at Oxford, and of making provision for the special teaching of Indian civilians. In the Summer Term of 1875 discussions took place in Congregation, and many of us expressed an opinion that our tenure of India involved University as well as National duties towards our Indian empire. Special Readers and Teachers were therefore appointed, but the question of founding an Oriental School was left undetermined.

As Boden Professor of Sanskrit I thought it my duty to urge upon Congregation that to make an Oriental School successful and to provide sufficient pupils for the Teachers we had appointed, an Institution should be founded, the object of which should be to create an appetite and respect for Oriental studies, as well as to afford special facilities and encouragements for their prosecution. It seemed to me that by such means only could we hope to attract many Oriental students to this University.

In May, 1875, I circulated a paper embodying these views, which was signed by a large number of members of Council and Convocation.

In the autumn of 1875 I went to India. There I held meetings, explained the nature of my project, and asked for aid. Everywhere the proposal to found an Indian Institute at Oxford was received with favour and approbation. His Royal Highness the Prince of Wales expressed to me his approval of my scheme, and in the presence of Sir Richard Temple at Calcutta promised me his patronage. I brought home a petition signed by five hundred graduates, students, and influential persons connected with the Indian Universities, praying for the establishment of an Oriental School at Oxford, and I laid this memorial before the Vice-Chancellor and Hebdomadal Council in the summer of 1876.

Towards the close of 1876 I went to the south of India, met with similar encouragement, and brought back additional signatures to the petition.

With regard to the prospects of the Institute, Her Majesty the Queen and the Royal Princes have graciously become contributors to the Fund. I have also obtained promises of pecuniary aid from numerous subscribers to the amount of £18,000, Mr. Edward Cazalet

has given £100, and has promised a further sum of £1,000 if three other contributors will give sums to the same amount. By far the largest contribution has been received from Sir Thomas Brassey, K.C.B., M.A., of University College, M.P. for Hastings, and Civil Lord of the Admiralty. More than £14,000 has been already paid and invested in the name of Sir Edward Colebrooke, Bart., M.P., Sir Thomas Brassey, K.C.B., M.P., and Professor Monier Williams, C.I.E.

I have also formed the nucleus of a Library and Museum, which must those interested in India will help me to enlarge by gifts of books and objects of interest. Part of the collection is open to inspection in the temporary Indian Institute rooms, 8 Broad Street, and part in the basement and passage of the Ashmolean Museum.

On the 18th of last November a Decree was proposed to Convocation and carried by a large majority, granting a sum of £550 a year towards the endowment of the Institute from the date of its opening. Hence it will be seen that the University has not only accepted the Institute but has also endowed it, and provided it with a personnel of Oriental Readers and Teachers. Aid will, it is hoped, be received from the University Commissioners. But the University has left to me, as acting Trustee, the purchase of a site and the erection of a building. The best and most central site in Oxford on land belonging to Merton College at one end of Broad Street, close to the Bodleian, has just been secured, but the cost will be great. Further contributions towards the purchase of the site and erection of the building and towards the founding of Oriental Fellowships, Scholarships, and Prizes in connexion with the Indian Institute, are earnestly solicited. All sums sent to me will be immediately invested in the names of the three Trustees.

OXFORD, June 8, 1881.

MONIER WILLIAMS.

### CHRISTIAN EDUCATION IN ASIA MINOR.

THE Rev. Dr. Trowbridge, president of the Central Turkey College at Aintab, by the kindness of Mr. and Mrs. Swanston, who placed their drawing-room at 171, Cromwell-road, Kensington, at his disposal, made a very interesting statement on Wednesday afternoon on the progress of the work with which he is connected in Asia Minor. Dr. Trowbridge is an American Minister, and is the head of an institution to prepare agents of different kinds to bring about a religious change among these populations. Sir W. Muir presided, and made a few introductory observations, and there were also present, the Rev. Dr. Koelle, the Rev. Thomas Boyajian, and the Rev. G. Carlyle. The Rev. Dr. Trowbridge having been called upon to speak, explained that the American missionaries had laboured among the Armenians of Asia Minor for the past 50 years; they had found the people simple-minded, industrious, and ready to avail themselves of all the educational privileges which the Americans had placed before them; that the people had a high degree of intellectual ability was proved in various ways; young Armenians who had entered the colleges of Europe and America had taken a high position as scholars, and many of the young men who had entered the colleges established by the Americans in Turkey had shown intellectual capacity of a good order. Even the common people showed a strong

desire to have their children educated, as was proved by the fact that the Americans had established over 400 schools among them, which are attended by 15,000 scholars. One of the most cheering signs for the future of Asia Minor was the interest which all the Christian races were beginning to take in the education of women. High schools and seminaries for the training of girls had been established by the Americans at many of the principal cities in Asiatic Turkey. Not less than 32 unmarried, educated American ladies devoted themselves to this special department of work, and with the happiest results. There were also several institutions for the special training of young men for the Christian ministry. Of late years efforts had been made to establish several colleges for the more thorough training of young men of all nationalities for all departments of work and life; four institutions of this character had been already founded at Constantinople, Beyrout, Aintab, and Kharput. From the programme of the daily lessons of the college at Aintab it appeared that much attention was given to the English language: when the students had acquired a knowledge of English they proceeded to study history, algebra, chemistry, geology, political economy, mental philosophy, and similar studies. Men of high position in the Turkish service had expressed their gratification at the establishment of this college, and had declared that the greatest need of the Turkish Empire was a class of honest and well-educated men, who should take the lead in public affairs, such men as would be likely to be trained in these newly established colleges. A medical department has been opened in connexion with the college at Aintab, and a small hospital has been built and 1,500 patients have been treated since the opening of the hospital in the fall of last year. Educated medical men are scarcely to be found in Asia Minor. This department of the college, therefore, promises to be of great utility. Dr. Trowbridge stated that the Mission Board with which he is connected expends annually for education in Turkey nearly £20,000. The object of his visit to this country is to obtain from £900 to £1,000 for the completion of the college buildings and for the purchase of books and apparatus. The Rev. Thomas Boyajian, a Protestant Armenian pastor, of Darbekir on the Tigris, also addressed the meeting, and fully indorsed the statements made by Dr. Trowbridge in regard to the importance of Christian education in Asia Minor. His remarks were heard with much interest. At the conclusion of the meeting votes of thanks were passed to the host and hostess and to the speakers.—*Times*.

### THE CULTIVATION OF SCIENCE IN INDIA.

Mr. U. K. Dutt's Suggestions (abridged.)

THE sciences may be divided into two broad classes, namely, the useful and the æsthetical. Under the latter would be included the fine arts. This part of the subject I shall exclude from my address to-night. I shall confine myself to the cultivation of useful arts and useful sciences in India.

The chief object of such sciences as chemistry, physiology, biology, geology, astronomy, &c., is to be of service in the application and furtherance of useful arts, and consequently the sciences are best

learnt by constantly applying them to useful arts, such as agriculture, mining, hygienic applications, medicine, navigation, &c.

Now the advancement of the useful arts depends on the requirements of society. Take this inkstand and this pen for instance. If every one is satisfied with a penny inkstand ready to upset in any direction, we would not have a tray for putting it on, &c. So it is with the stylo-graphic pen, carriages and trains, ploughshares and *vagmures*. A thousand other instances might be added from phenomena of every-day life, to show that the advancement of arts depends always on the requirements of the society. The cultivation of science depends in a great measure on the advancement of art, and this on the requirements of society. Now, in India the requirements of the people are few, and, naturally, we cannot expect an advancement of art, and we can understand consequently the low standard of science culture. But is the cultivation of science necessary? and if so, why? It is, indispensable, not because we want to mimic the different nations in Europe who have cultivated it well, but because the progress of science means the progress of civilization. The real cause of human progress lies in the culture of science, and therefore it is indispensable that it should be cultivated in India.

All sciences are founded primarily on the observation of facts. But it is impossible for man in his life time to observe all the facts which are going on simultaneously at different parts of the world. Hence he has to have recourse to *past experience*, which is simply observation of facts, and deductions therefrom recorded by other men who preceded him, and the shortest cut to acquire past experience is study of books recording past phenomena. This acquirement is what we would call scientific knowledge. The scientific knowledge at any one time is necessarily greater, provided that the science is progressing, than at any past time; and such knowledge is absolutely necessary for scientific progress and the discovery of new laws of science and new methods of scientific pursuit.

Now, let us consider the state of science culture in India. It was, say twenty years ago, almost *nil*. Now there is some sign of a dawning, but even that is not very hopeful, and why is it not? In my opinion, it is because the attainment of knowledge in India is only possible through the medium of such a highly specialized language as the English. This language is not very easily acquired, and most of us know, after nine years of schooling in English, we can talk or understand comparatively little English. We can neither understand a fluent English speaker nor converse in it very fluently. These difficulties may well deter many, who have their worldly affairs to look after, from spending nearly half of their life in pursuit of science, which they might well employ in seeking for a livelihood.

The few who have independent means of their own, and the still fewer who have the energy &c. well, to surmount these difficulties of learning English; instead of making the knowledge of English as a means to an end make it the sole aim of their study, and when they have acquired a tolerably good knowledge of English stop there, and never think of scientific researches. Then the question, an important one too, arises, how is this evil to be remedied? How may the pursuit of science and the application of science to art be made more general? In one word, how can the mass be made to think for themselves? How can a greater number of people than now be

employ in the pursuit of science and hereby further its progress in India? The answers to these questions have been thrown into form of the following suggestions. I have called them suggestions, mere hints, which may prove to be the true grooves for the advancement of science.

*A few persons should be required to learn the sciences and Western languages at the same time, by making them go through a University course either in France or Germany or England.*

I emphasize the word a few, for I, of all others, would be the last to recommend such a course to all. Why then to a few? Only because that these might acquire the scientific knowledge of any country in Europe at their own time, and make current this knowledge among their countrymen by writing books and giving lectures in their own vernacular, and hence the following three suggestions:—

*That these men be appointed teachers and lecturers in their own country.*

*That the lectures be delivered in the vernacular alone.*

*That they be encouraged to write, not merely to translate, both elementary and advanced works of science in their own vernacular or any other Indian language with which they are well acquainted.*

Now, these three suggestions presuppose the establishment of scientific classes and lectures, which do not exist at the present time in India. To make the mass of people attend such classes, they must be made quite free of charge at first, and to attract people by explaining to them striking elementary truths of science.

*That Prizes and Scholarships be awarded in these classes for the spirit of original research and not for mere acquisition of knowledge.*

This will also attract people to these classes. A few prizes may be allotted for a few useful inventions and for striking appliances of truths of science to arts. This however is encouraged by the Government in the form of patents granted to such inventions, whereas original researches or discoveries in the province of science are not so rewarded.

*That both the teachers and scholars be provided with money to carry on any useful researches which they have already commenced.*

Now, in all the above the great difficulty is to find the money. We are a poor nation, and where shall we get such endowments as the foregoing schemes require? This at first sight may seem to you to be an insuperable difficulty. But those of us who value education and progress of science must not grudge the subscribing for it, and thereby trying to solve this rather difficult problem. Supposing the governing power did for us the same that we propose to do ourselves; well, the Government could not have done it without taxing us, and, at any rate, we should have had then to pay; only not as much, for the richer classes in that case would have been obliged to pay a great deal, a class of people who value very little the progress of science and subscribe very little to it.

*That the scientific discussions and researches be carried on in magazines written in the vernacular of the place.*

The object of this, of course, is to bring the researches within the grasp of a great mass of workers in science. For if they were confined to a few by writing them in a language not understood by the people of the place, they would not be of much benefit, at least to his fellow-workers.

Thus will come about the enrichment of our mother-tongue, without which no nation has ever become great and no work has been brought down to posterity. Did Aristotle or Dionysius or Plato or Sophocles write in a foreign tongue? Did Seneca or Charvak use other than the purest words of their mother-tongue? Do scientific men of the present age write their treatises in Latin? and were not most of the scientific works of the middle ages so written? and yet how few of them are now read; or how few of them can compare to the lucid works written in the mother-tongue. Many of them are, as we know, absolutely worthless excepting to the book-worm. Need I remind you, gentlemen, that the Roman Empire was a great Empire once, as the British Empire is at the present time, and the Latin language was considered at one time as the only permanent vehicle of thoughts, exactly in the same way that English is among us Indians considered at the present time; but the one had its fall, and the other, experience teaches us, will have its fall in some time to come. Let us be warned therefore, gentlemen, by past facts, by truths of history, and by experience if not by arguments. Let us abandon the idea of laying the foundation of a great Science-Empire in English.

U. K. DUTT.

#### Remarks by a Japanese Gentleman.

The suggestions of Mr. Dutt should be examined and analyzed minutely with reference to the present state of scientific knowledge among the natives and the nature of the vernacular tongue. I have no acquaintance with these questions in India; but let me present to you some general observations of mine as based on the present state of Japan, which country, it may be said, is very similarly situated with the Empire of India in this respect.

Japan commenced only ten years ago to adopt the system of Western education. Now her boys and girls are taught in Japanese with elementary instruction such as is given to English children. She has higher schools to educate her children in the more advanced course of such learning. She has also one University, consisting of the departments of Law, Medicine, Science and Literature, which are carried on by the Western system of education, and taught by both Japanese and Europeans. The object of the University is to give the instruction at last (in the future) entirely in the native tongue. Now the question is, how to carry out that object? It might be answered that it could be done by translating or writing books of instruction in the native tongue. But this is not an easy task, and requires a careful and scientific execution; for the success of an educational work depends upon the possession of the clear, exact, accurate and systematic language in hand, and it is a great drawback to the progress of instruction for professors to use loose and unsystematic terms, and to have the trouble always of limiting and defining their significations, as is proved from the case of jurisprudence in Japan; and this is the trouble that follows as the result of the unsystematic way first adopted in the establishment of that science among us. Here is a point of contact between the subject of this letter with the essay of Mr. Dutt. Therefore I am now going to put some modifications to four of his suggestions, viz., I, III, IV., VI.

Let me add to his first suggestion that these persons so educated should be well-versed in their native tongue, for I find that the fault of many Japanese students who have studied special branches of higher education both in Japan and the West has been that they are not first well taught in their native tongue, and consequently they could not make real use of their study either in writing or practically; they cannot instruct others by their pen or teach them the arts based on their study.

As to the third suggestion I would only observe that it would be easily carried out if the first be executed together with my addition, and its true aim would not be difficult to be attained.

As to the fourth suggestion, let me add that more encouragement should be given to writing than to translation; for if it be the object of the suggestions to make the natives at home with scientific knowledge, translated works cannot accomplish this end, being unable to convey the knowledge properly, however well they may be rendered; it is like looking at a thing in dim light, we cannot read it in its true form. If it were possible, which every one does not believe, I should like very much to put an end to the translation of books except in the cases of really valuable works translated into a standard native tongue.

I would add to the sixth that money be also provided to repay the labour of the scholars for writing their original works, not translations; for though Japan has many persons who can offer to write books with their own pen, they would not do it, simply because it takes a long time to produce truly valuable books, and they cannot support themselves without pay so long, so they turn themselves to the more easy ways of life, to translate books of a few pages in a few weeks and in a meagre manner.

In Japan we have societies and papers established for the promotion of science, both special and general, yet I have been always put to regret that they are often carried on in a meagre sort of manner, in poor and imperfect language. It would be very happy for India if she is not yet so far advanced in these matters as Japan; for then the public interested in her progress may lead her to the true path of progress in knowledge, guided by such suggestions as are referred to here. Attention should be directed to carry on the Indian education in accurate systematic language for which the suggestion by Mr. Dutt to enrich her native tongue is necessary.

R. MASIJIMA.

Reply to Mr. U. K. Dutt.

I was pleased to find in the January number of this Journal some suggestions on the cultivation of science in India by Mr. U. K. Dutt. As subjects like this are of the greatest importance to our country, discussions on them cannot but be interesting both to the people of India and also to its well-wishers. Discussion generally leads to clear ideas; and, inasmuch as increased knowledge means increased responsibility, those of my countrymen who by passing their days usefully in one of the centres of Western enlightenment are constantly enlarging the sphere of their duties, can do no better than, by discussing, to arrive at some definite ideas on this subject, as the enlistment of their active energies in it would soon fall within that ever-spreading sphere of duties.

That the progress of civilisation involves progress of science, and that the pursuit of science and its application to art should be more general in India, are observations too sensible to meet with opposition. Indeed, I entirely agree with Mr. Dutt when he sets forth the main problem, but I part company with him when he attempts its solution. His scheme of suggestions is ingenious and plausible; but, viewed in its practical bearing, it is not one which fails to arrive at the desired end, but one which can hardly be put even to the test. In fact it shows a disregard to the existing state of things, and in few words implies such thorough changes as could only be attempted by the governing body, with less risk if it be native, with much risk if it be a foreign one. Perhaps Mr. Dutt's scheme might have a better chance of trial in Japan, as appears from Mr. Masijima's writing.

Mr. Dutt sets out with the assumption that the state of science-culture in India is not hopeful, because it is only possible through the English language. He has grounded his assumption on the supposition that several years of our life must be spent in acquiring that language, and that very few can afford to "lose nearly half of their life in pursuit of science, which they might well employ in seeking for a livelihood." Against these arguments I would show that English, merely as a language, is not so difficult to acquire as he supposes, and that in India English education, instead of being a digression from the ways of livelihood, is almost universally pursued as one leading to them.

Mr. Dutt says "after nine years of schooling in English, we can neither understand a fluent English speaker nor converse in it very fluently." To be able to speak well, and to be spoken to readily, though very useful, are not good tests for ascertaining one's proficiency in a language. They are mechanical arts, which are better learnt by a little practice, and not so well by much reading. I have come across some Continental men, well acquainted with the English science-literature, speaking very imperfect English, and feeling difficulty in following a lecturer. On the other hand, many there are who speak fluently, but can scarcely read.

But Mr. Dutt says, further, that we understand comparatively little English. In considering this we must not lose sight of the fact that nine years in a school are not spent in acquiring the language only, but in education generally. We must also look to the defective system of schooling which at present exists. One of the defects in that system consists in putting boys to learn English without giving them an insight into their vernacular. Nothing facilitates the acquirement of knowledge so much as association and comparison. It is obvious that language as knowledge in the abstract can in no way be so easily acquired as through one's vernacular. When thus attained it affords a standard for comparison, and thereby gives distinct localities in the recesses of memory for the elements of any new language. As an illustration of this, I would simply mention the fact that, as a general rule, the vernacular scholars are the best students in their classes in all English schools, and they go more rapidly through the school-course; so that, while it takes other students nine years, it does not take them more than five or six years to be ready for the University matriculation.

Another of the defects in the system of schooling is to be found in

the arrangement of the classes and subjects. Can anything be more absurd than this, that a student should be required to spend several years of his school life in learning such subjects as geography? Yes, it is a fact. With each advance in class students get new books, but no new knowledge. Second Clift succeeds First Clift, Stewart follows Anderson. The same thing they read in one and all. As in geography, so in many other subjects. It would be out of place here to examine in detail the defects of the present system of schooling, but I feel certain that a more rational organisation may save three or four years of each young man's life from being simply wasted. Now that there is no more any restriction as to the minimum age for matriculation, a system, which takes away three or more years of the best period of a student's life, which induces a sluggishness of intellect at the very time when it should have its full play, ought to have our serious consideration.

Now with regard to the point that English education is more sought for as a means of livelihood, no arguments are needed at all. It is a fact recognised by everyone who has some experience of India.

Having considered Mr. Dutt's arguments against the English language being the medium of science-culture, I would give some in favour of it. During the last few years there have been several books and articles on science published in the Bengali language. I have had occasion to read many of them. One circumstance which I remember to have noticed at the time was that all words used in those books, and not current in the language, I had to understand through corresponding words or ideas in English. Some of them immediately suggested the latter; others did not. These I had to observe through their formation; then I had to wander through certain vague ideas derived from their radices till one suggested the real corresponding idea in English, and then all seemed clear. And my impression is that if I had not had some knowledge of those subjects through the English, I should have contented myself with that vague intermediate state of the understanding which I have just mentioned. I have examined purely vernacular students who read those books, and for whom they are intended, and, so far as my experience goes, they have very loose ideas about such words and phrases, and consequently about the subject of which the books treat. I have seen also that the articles on popular science, which are now to be found oftentimes in the Bengali periodicals, are read with more interest and more accurate thought by those who are well read in English literature than by those whose education has been of a purely vernacular character.

From these facts, it appears to me, that so long as our vernacular is not sufficiently enriched in science, so long as the number of words having oscillating ideas about them abound, and so long as we have other reasons for learning the English language, not only is a decent knowledge of the sciences by the greatest number of people best possible through it, but it must be used as a stepping-stone to reach that eminence of ideas whence alone we can construct a ladder of our own.

\* This is the case with the scientific terms used in every language. Their meanings often being special or technical, have to be explained to learners. Science cannot dispense with definitions, specimens, apparatus, or living teachers.  
—ED. M. J. or E.

How the vernacular can be so enriched as to do away with this necessity is the next point of my contention with Mr. Dutt. He seems to think if a few persons be made to go through a University course in Europe, and these be appointed teachers and lecturers on their return, and encouraged to write in the vernacular, the difficulty would be met. That such persons might do much towards the advancement of the language cannot be denied, but the conditions on which they are supposed to do so renders the project imaginary. Now who is to appoint them as teachers and lecturers? Who are to attend their lectures? If by some change in the present system of education vernacular Universities were established whose hours could secure to their students position and prospects in life not inferior to those of the English Universities, then alone Mr. Dutt's scheme of lectures, researches, magazines, &c., on an extensive scale, and exclusively in the vernacular, might be feasible. In India, where education, English and vernacular, is almost entirely a state machinery, changes of the above nature could only be effected by the Government. But when we consider that the Government, by giving education to the people, serves its own purpose too, that out of the two millions who are receiving education in India the Government will want the services of a million, we do not think it possible for the Government to encourage the vernacular so much at the expense of its own language.

On the other hand, if we suppose those persons appointed as lecturers by means of a private fund, I do not see any chance of the lecturers meeting with an audience so long as attendance on their lectures remains in the option of the people, and is not a necessary condition for some of their purposes in life. Making the lectures at first free of charge would not alter the case materially.

In my opinion the better way to proceed for enriching the vernacular would be to see if this be a new task or one already being worked out; then, if the latter, to see what are the circumstances favouring and what discouraging it, and then to see how the one could be furthered and the other checked. The following observations will have special reference to Bengal, but in principle may be applied to other provinces as well. I have had ample opportunities for watching the progress of the Bengali language during four or five years, and my conviction is that, during the last ten or twelve years the progress of the language, in all branches, is extremely satisfactory. At present, perhaps, there is in each main branch of science one book at least. The following list very nearly represents all the books on science that have been published during the last few years:—

|                    |     |     |     |   |                       |     |     |     |   |
|--------------------|-----|-----|-----|---|-----------------------|-----|-----|-----|---|
| Chemistry          | ... | ... | ... | 5 | Medicine              | ... | ... | ... | 1 |
| Physics            | ... | ... | ... | 4 | Surgery               | ... | ... | ... | 1 |
| Botany             | ... | ... | ... | 5 | Physiology            | ... | ... | ... | 1 |
| Physical Geography | ... | ... | ... | 4 | Materia Medica        | ... | ... | ... | 3 |
| Zoology            | ... | ... | ... | 1 | Medical Jurisprudence | ... | ... | ... | 1 |

These numbers comprise all the various books on the above subjects which I remember to have seen while in India. The number may have increased. Nor does the above list contain books on Indian Medicine or on the Mathematical sciences.

Nearly all the books have sprung out of necessity, and the necessity which has brought them in keeps them up. Some of them have already gone through four or five editions. Since the introduction of general science into the courses for the Vernacular and the Normal School Examinations, books on these subjects have been in demand. The medical books have come out to meet the wants of the students of the Vernacular Medical Schools. The books, as they are increasing in number, are becoming, by competition, better and better, so much so that the same book in its latest edition seems almost a different one.

While then circumstances are so tending to our desired object, is it not more reasonable that we should look to see if the institutions through which the task has been commenced need improvement? These institutions, as I said before, are the Normal, the Vernacular and the Vernacular Medical Schools. That they are not as they should be will appear to every right thinking man. It is not possible for me here to dwell upon the details in which they require improvement, but I should content myself with mentioning the principal points.

The Vernacular Schools being more the places of education, preliminary to the English Schools mostly, and to the Normal Schools partially, might be left out of consideration here. The Normal Schools, as preparing the future teachers from whom the youths in all the primary Schools will receive their first instruction, as the only solitary instances of a purely vernacular high education, are looked to with interest by all who bestow any thought on their country. That the prospect in life for these who go through them is so discouraging that only the sittings of the Vernacular Schools should come to them; that these institutions, (already far too few), which under a thorough foreign government are peculiarly in want of its protecting hand, should meet with its pruning knife (for I learn from the Educational Report of 1878 that their number has been reduced from 31 to 17), that the Government should not feel inclined to let them have a chance of asserting their power of giving a good sound education, education irrespective of language, are things to be pitied.

No better is the condition of the Vernacular Medical Schools. I find from the same Educational Report that the number of students in them is gradually decreasing. This has been accounted for by the supposition that the novelty of the Vernacular Schools has, to a certain extent, worn off. But in many instances, which I know of, the students discontinued their attendance at the school, finding it not a very easy task, for much hard-working is necessary in medical study, and considering that with all their trouble they would be no better off. Whatever may be the cause, this impending evil may be prevented by two means. Firstly, by making the prospects in life for these students a little brighter. It is not the duty of the Government to see everyone provided for, but to see that he who is, is provided for properly. Secondly, if some stringent rules are made against all quackery and unlicensed practice, they would not only ensure the continuance of the students but would provide them with better chances in country practice by limiting competition.

I have said before that a foreign Government could not, if it would, adopt a system of extensive vernacular high education. This

is one of the necessary evils of a foreign rule, which can only be mitigated but can never be avoided. When therefore a Government, whose very existence takes away all incitements and rewards from vernacular education, feels unable to satisfy the nation with such a natural right, it becomes its imperative duty to see that the most it can allow is conceded. For these reasons the duty of the British Government towards the vernacular languages of India is great, and its success or failure in the performance of that duty will determine to a great extent the progress of those languages.

We have seen, then, that at the first stage the vernacular may be best enriched in science by encouraging science-reading in the vernacular. To work upon the greatest number of people nothing could be so effectual as some Government measures. At the same time we can best co-operate with the Government in encouraging this science-reading by introducing into our country institutions and establishments of our own to give employment to the readers. When this first stage will have done its work, when a sufficient number of readers has been established, when the elementary books have come out of themselves, when minds have been accustomed to the words and ideas, then will arrive the second stage. When we get to this point, then our active interference will be necessary, then we shall have directly to encourage higher writings, and then alone Mr. Dutt's suggestions may have fair play. But in incorporating such a vast structure as the Modern Sciences into our language, whose elasticity can only by gradual distention make adequate room within it for that large mass, we must be patient, as it must, of necessity, be a slow process.

There is however something, which by hindering the progress of the first stage, just mentioned, renders the approach of the second more distant, which, not remedied, our part of the work in the first stage remains undone, and which impedes the progress of all science-culture in India, vernacular and English. That is a thing which deserves our first consideration. In respect of this, at least, we cannot be too impatient, and this is the state of our Industries in India.

M. N. BANERJEE.

King's College.

—*Journal of the National Indian Association.*

## EDUCATION IN ITALY.

By S. J. BRUZEMAKER, B.A. Lond.

A NEW work by M. Laveleye\*, the well-known economist of Belgium, on the educational and social condition of Italy, and the progress it has made since its establishment as a kingdom, cannot fail to be welcomed by many readers. We confess that we opened the work not without some diffidence of the author's capacity to interest us. Who could add to the knowledge of Italy stored up in all kinds of books on travel, art, and literature? Is not Italy a country as well-known to Cook's tourists as to artists, archæo-

\* "Italy of the Present Day." Letters to a Friend. By Emile de Laveleye. London: Bache & Co.

logists, and classical students confess, however, to our being agreeably disappointed. M. de Laveleye's book is full of interest to the general reader, and specially so to those interested in the education and the social condition of this classical land. Besides, it is high time that some one should undertake to give us some accurate ideas about the state of education in Italy under the new régime. There is but too much reason to fear that many of us still cling with regard to this question, to notions which held good some twenty years ago. Italy then had no elementary education worthy of the name, and superstition and ignorance cast gloomy shadows beneath her sunny skies. But since the establishment of the new kingdom, and, above all, since the surrender by the Pope of his temporal power, much progress has been made. Elementary education in Italy is obligatory, and the schools are highly efficient, and well organised. Strange to say, they are strictly secular, religious instruction being given by the lay teachers, without any interference whatever from the clergy. But, stranger still, the clergy, instead of moving heaven and earth to retain their grasp of what is considered their special province in nearly every other country, submit to this without a murmur. This seeming anomaly calls for an explanation, and M. de Laveleye has taken great pains to find one based upon no mere hearsay authority. The clergy in Italy are, he says, Italians first and Catholics afterwards. To this position they have been led by self-interest, as well as (it is to be hoped) from a higher motive. A great many derive part of their income from glebe-lands, and this keeps them in close relations with their parishioners, with whom they generally live on good terms. They are, for the most part, largely engaged as farmers, in addition to their clerical duties. A new law will, however, in all probability, be passed disendowing them of property in land. Our author thinks this will be a step in the wrong direction. It will sever them from the laity, make them as unpatriotic as they are patriotic at this moment, and induce them to combine into a power outside the state, and with interests and aspirations apart from it. A second reason for the present position and political views of this model clergy, from a secular aspect, is to be found in their inferior culture and education, want of dignity, and religious apathy. Italy seems almost the only country where, with a tolerably high state of civilisation, there exist no burning religious questions. Not only the clergy, but the whole people, rich and poor, are without any religious enthusiasm. Their love of sensuous pleasures still prompts them to join in the outward and visible forms of their religion, but here their participation stops. As M. de Laveleye puts it, "Le Catholicisme n'est pas la religion, mais l'irreligion de l'Italie." Already, however, strenuous exertions are made, by the Vatican to form a nucleus of a more zealous body of clergy, who shall be Catholics before anything else; and the new disendowment clause, if enacted, may greatly assist these efforts.

Before dismissing the subject of Elementary Education, and glancing at other matters treated in this book, we will mention two points connected with it which show clearly to what state of organisation it has attained. Firstly, there are Froebel schools over nearly the whole country; and secondly, in many towns, there is a fixed sum voted annually for a service instituted for the purpose of taking the children of the poor to school, and from school home again.

Higher education is still in a very backward state. In some countries the cry is for a diminution of subjects in the curriculum, but in Italy the students are not yet overtaxed in this respect. They learn Latin without much difficulty, and therefore one would expect them to be first-rate Greek scholars. Yet very little Greek is taught in the Universities. In speculative philosophy they have not yet gone beyond Hegel, who, after a lingering death in Germany, seems to have come to life again in Italy, as well as at Oxford. Here and there a professor is found of the Positivist school, but in most universities science is but scantily represented. Middle class education is chiefly deficient with regard to the girls' schools. Great efforts, however, are made to remedy this defect. If the priesthood ever again attempted to be a ruling power in the State, as it is in France and Belgium, it would without doubt take advantage of their easy sway over uneducated women. In Catholic countries this is one of the greatest and most difficult social questions. To leave the training of the mind of the women of the middle and higher classes to the clergy, is to give the latter one of the most powerful weapons wherewith to make themselves feared. On the other hand, to ignore the emotional side of woman's nature, or, to speak with Mr. Herbert Spencer, to suppress their craving for the unknowable, is equally dangerous, and must lead to even more deplorable consequences. Our author sees but one solution of this dilemma, the substitution of a more rational religion for Catholicism. Already Protestantism is making slow but sure headway in most of the large towns, so much so that the Pope complains that it even nestles under the very shadow of the Vatican. But, whether its progress will be swift enough to prevent the evils that must ultimately arise out of the present state of things, is very doubtful.

Another of the questions dwelt upon at great length is, that of representative government. In Italy there are no clearly defined political parties. However desirable this may seem to those of us who have shaken their heads over the revelations of some recent election petitions in England, the position of Italy is not without serious drawbacks. No ministry can count upon retaining office for any length of time; it may sustain a defeat upon the most trifling question used by their adversaries as a means to oust them. Hence a disinclination by those in power to take the initiative even with regard to the most urgent questions, and a general lack of stability in the government.

The condition of the peasants in Italy is in most provinces far from enviable. Except in Tuscany, and in a few parts of the plain of Lombardy, where the *métayer* system works still very satisfactorily, we find in all the other provinces a peasantry very little better off than that of Ireland. Their chief burdens are the excessive rates and taxes, which have been rendered necessary by the unification of the kingdom, and the questionable ambition of possessing a powerful army and navy. No wonder that from the peasants great contributions are made to swell the number of Socialists, especially from among those who have passed through the military service. But Socialism on the Continent finds its most numerous adherents in the manufacturing districts. The intelligent but half-educated artisan is ever the most ready to accept its violent solutions to those questions which daily stare him in the face, and upon which, rightly

or wrongly, he imagines his well-being to depend. We thoroughly agree with the author when he warns the Italian government not needlessly to burden themselves with the evils of Socialism, which necessarily will follow its ambition to create great manufacturing centres. Italy has neither coal nor iron. In order, therefore, to compete with other and more favoured countries, it must employ cheaper labour, and this means a physically and morally degraded class of labourers, who are sure to fall a prey to Socialism.

Among the advantages of the present condition of Italy, our author accentuates the following:—"Her frontiers are perfectly marked off by nature, and she can almost boast of as convenient a silver streak of sea as England." As for the *Italia irredenta* party, he holds their influence to be as small as their pretensions are great. Italy has a dynasty devoted to the welfare of her people, and very popular among all classes of society. Her nobility is imbued with a spirit of progress, and but seldom shows any reactionary proclivities. Her people is intelligent, and, in spite of prejudicial opinions to the contrary, very industrious, whenever it sees a chance of a fair return for labour. There exists no religious fanaticism, not even among the clergy. As yet there are but few factories, and the evils of excessive centralisation are warded off as long as Rome cannot become a large capital, absorbing the provincial towns, on account of the malaria infesting its surrounding marshes.

The chief evils which afflict Italy are these. A too unequal distribution of wealth, which is the principal cause of the extreme misery of the agricultural classes. Crushing taxes, which are often spent in an unproductive manner. No security of life and property in the southern states, where trial by jury is as inadequate a means of dispensing justice as in Ireland, with which they have another point of resemblance in the secret societies, such as the Camorra and the Mafia, which strike terror in the towns and in the country. To these may be added incessant ministerial crisis, "resulting from the absence of clearly defined political parties; a dangerously increasing class of malcontents, recruited in the small towns from noisy café-politicians, and in the country from peasants, ruined by high rents and taxes, who easily yield to the influence of socialistic theories; and finally the deplorable ambition of a certain party to figure more prominently in European politics. Although there are in Italy many elements for the formation of a great revolutionary party, our author believes that they will never strand the ship of state as long as Rome remains the small capital it is at present, and does not absorb the provincial towns. If the malaria is banished from round Rome, he says, it will become a "second Paris, and a danger to the existence of the present dynasty.—*Educational Times*.

## UNIVERSITY OF MADRAS.

B. A. Degree Examination, 1881.

Examiner—W. A. Porter, M.A.

## GENERAL ENGLISH.

I. Shew that English has a two-fold relation to Latin, and illustrate your answer by the following pairs of words: bear and transfer; feather and pen.

Point out what consonants have disappeared from *four* and *ten* by comparing them with *quatuor* and *decem* (c in Latin = k.)

Why is English classed with the Teutonic group rather than with the Romance languages?

II. In a dictionary of old English there are no words beginning with *ch* or *qu*. Give the different sources of words in modern English beginning with those letters, and an example of each class.

Point out that the change in inflexions in nouns and verbs in passing from old English to modern has made the language more silulant.

III. Give the declension of the demonstrative pronoun of the third person in early English as far as you can gather it from the extract you have read in the Southern dialect belonging to the 14th century.

In this declension there is only one stem, whereas there are now three. Whence are the other two borrowed?

IV. Distinguish between strong and weak verbs.

Morris remarks that the history of a word must sometimes be known before it can be decided to which class it belongs. Illustrate this by the words *hold* and *feed*. Explain the change of vowel in the past tense of *tell*.

Give the evidence in favour of the theory that the past tense of strong verbs is formed by reduplication and contraction.

V. Give the elements of the following compounds:—

ajar, orchard, lord, which, every;

and give the origin and meaning of the italicised portions of the following words:—

outrage, asleep, rally, trespass, twenty, reads, worship, drake.

VI. Give Bain's account of what constitutes Humour.

(a) A good deal of American humour depends on exaggeration. Quote an instance or two from the Autocrat. Can you bring this species within Bain's explanation?

(b) A passenger by the P. and O. once remarked, "I wonder more children are not thrown overboard." Does this fall within Bain's explanation? Quote a similar instance of humour from the Autocrat's first breakfast.

VII. Paraphrase the following passages, dispensing in each case with the figure in the original:—

(a) Grant that our hopes yet likely of fair birth.  
Should be still born, and that we now possessed  
The utmost man of expectation,  
I think we are a body strong enough,  
Even as we are, to equal with the king.

(b) Fly but our valuation shall be such  
That every slight and false-derived cause  
Shall to the king taste of this action :  
That were our royal faiths martyrs in love,  
We shall be wound'd with so rough a wind  
That even our corn shall seem as light as chaff,  
And good from bad find no partition.

N.B.—The "action" here spoken of was a rebellion.

(c) Fame, if not double-faced, is double-mouthed,  
And with contrary blast proclaims most deeds ;  
On both his wings, one black, the other white  
Bears greatest names in his wild airy flight.

(d) But 'tis a common proof  
That lowliness is young ambition's ladder.

VIII. Give in as few words as you can the argument of the following sonnet :—

Mysterious night ! when our first parent knew  
Thee from report alone, and heard thy name  
Did he not tremble for this lovely frame,  
This glorious canopy of light and blue,  
Yet neath a curtain of translucent dew,  
Bathed in the rays of the great setting flame,  
Hesperus with the host of heaven came,  
And lo ! creation widened in man's view.  
Who could have thought such darkness lay concealed  
Within thy beams, O Sun ! or who could find  
Whilst fly and leaf and insect stood revealed  
That to such countless orbs thou mad'st us blind ?  
Why do we then shun death with anxious strife ?  
If light can thus deceive wherefore not life ?  
Explain "curtain of translucent dew."

IX. Mention briefly the circumstances in which any four (not more) of the following passages were spoken :—

(a) There is a tide in the affairs of men,  
Which taken at the flood leads on to fortune.

(b) There's a divinity that shapes our ends  
Rough hew them how we will.

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(c) The tapers have been  
That when the brains were out the brains were out,  
And there an end ; but now they rise again  
With twenty mortal murders on their crowns  
And push us from our stools.

(d) Then shall our names  
Familiar in their mouths as household words  
Be in their flowing cups freshly remembered.

(e) Not to know me argues yourselves unknown  
The lowest of your throng.

(f) What boots it at one gate to make defence  
And at another to let in the foe  
Effeminately vanquished.

(g) Hereditary bondsmen ! know ye not  
Who would be free themselves must strike the blow.

Examiner.—W. A. Porter, M.A.

#### ENGLISH PROSE

MILL'S REPRESENTATIVE GOVERNMENT, THE AUTOCRAT OF THE  
BREAKFAST TABLE, SELECTIONS IN OLD ENGLISH PROSE.

\* I. Give Mill's two criteria for judging of the merits of a set of political institutions ; and hence shew with illustrations that the same institutions are not good at all times.

Mention two valuable results of despotism in France before the time of Louis XIV.

II. Mention the two characteristic defects of a democratic government, and point out how these evils are aggravated by the present mode of electing representatives, and how they might be reduced by the representation of minorities.

III. (1) Point out the political principle illustrated by each of the following statements :—

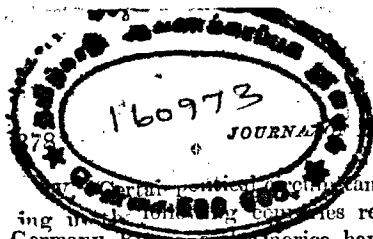
(a) In a despotism there is at most but one patriot, the despot himself.

(b) The man makes the motive, and not the motive the man.

(c) One person with a belief is a social power equal to ninety-nine who have only interests.

Give two illustrations of the last point, one from the reign of George III, and the other from that of Queen Victoria.

(2) How do you account for the fact that while considerable progress has been made in India in codifying the law, nothing has yet been done in England in this direction.



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ing in the following countries respectively, viz., Ireland, France, Germany, Russia, and America, have been changed since the time he wrote. Mention these circumstances and the changes.

V. Justify the term autocrat in the title of this book.

What purpose is served by the Divinity Student, and by "the young fellow whom they call John." The latter on one occasion incurred a severe censure; what was his offence?

VI. (1) Explain the following:—

- I shall use the same types when I like, but not commonly the same stereotypes.
- Every probability is provided with buffers at both ends.
- The human will is a drop of water imprisoned in a crystal.
- The O that revealed Giotto.
- Love *should* be both rich and rosy, but *must* be either rich or rosy.
- All a man's antecedents and possibilities are summed up in a single utterance.

(2) Give in a single sentence the purport of the poem entitled "Latter-day Warnings" and explain  
When berries, whortle—rasp—can—straw  
Grow bigger downwards through the box.

VII. The autocrat sees two uses in conceit; mention them.

He also sees both a good and a bad side in cultivating a love of the ridiculous. Give both sides.

VIII. Write the following passages in modern English:—

- And hadde yhadde the maystry hadde the Normans yfeyned to vle.
- The other lordes were glad hereof and pot here answerd and here wordes oppon thes William hys mouth al as he wolde sygge.
- And also thei conen no langage but only hire owne that no man knoweth but thei and therefore mowe thei not gon out.
- Bote the duc hys archers hadde here vorth.
- Hy beth no prustes bote a beth wel stalword knyghtes.
- A lewede oth tholde be ybroke, nameliche while hyt was compelled to be yswere vor nede.
- Right gode to mannes mete.
- And sent Harold hys body to Harold hys moder wythoute eny mede as hue hadde yprayed.

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ALGEBRA QUESTIONS.

IX. Compare the two earlier of the selected extracts with two later ones as regards the relative pronouns; and give peculiarities of the Southern dialects noticeable in the passages the foregoing question.

What light is thrown on the etymology of the following by the early spelling:—

As, publish, did, early, not? Give the different uses of *ne* the etymology of *nathetes*.

X. (1) Of whom and in what connection were the following passages originally spoken:—

- Letters four do form his name.
- These are four minds which like the elements might furnish forth creation.

(2) "I abstained" says the autocrat on one occasion "from making Hamlet's remark to Horatio." Why do you suppose did abstain?

ALGEBRA QUESTIONS.

I. Resolve into factors

$$(1) ab(a+b-c) + bc(b+c-a) + ac(a+c-b) + 5abc.$$

$$(2) (a^2+b)^2(a-b) + (b+c)^2(b-c) + (c+a)^2(c-a).$$

II. Find

(1) the G. C. M. of

$$a + 2b^2 + (a + 2b)\sqrt{ab} \text{ and } a^2 - b^2 + (a - b)$$

(2) and the L.C.M. of

$$(a^2 + bc)(a^2 + b^2) + (c^2 + ab)(c^2 + b^2) - (b^2 - ac)(c^2 + a^2) \\ \text{and } (b^2 + ac)(a^2 + b^2) + (c^2 + ab)(c^2 + a^2) \\ - (a^2 - bc)(b^2 + c^2).$$

III. Shew that the following are exact squares:—

$$(1) (a+b)^2(a+c)^2 - 4abc(a+b+c)$$

$$(2) 4ab(a-b)^2 \left\{ a+b+\sqrt{ab} \right\}^2 + \left\{ (a-b)^2(a+b) - 4ab\sqrt{ab} \right\}^2.$$

IV. Find the value of

$$(1) \frac{ab}{(x-a)(x-b)} + \frac{ac}{(x-c)(x-a)} + \frac{bc}{(x-b)(x-c)}$$

$$\text{when } \frac{1}{x} = \frac{1}{a} + \frac{1}{b} + \frac{1}{c}$$

$$(2) \frac{1}{ab-ax} - \frac{1}{bx-ab} + \frac{1}{(x-a)(cb-cx)}$$

$$\text{when } \frac{1}{x} = \frac{1}{a} + \frac{1}{b} + \frac{1}{c}$$

It thus the following results are true when  $a + b + c = 0$

$$a^3 + b^3 + c^3 + 3abc = 0$$

$$\frac{a}{b-c} + \frac{b}{c-a} + \frac{c}{a-b} = \left\{ \frac{a-b}{c} + \frac{b-c}{a} + \frac{c-a}{b} \right\} = 0$$

Simplify

$$\left( \frac{1}{a} + \frac{1}{b} \right) \left( \frac{a+b-c}{2} \right) + \left( \frac{1}{b} + \frac{1}{c} \right) \left( \frac{b+c-a}{2} \right) + \left( \frac{1}{c} + \frac{1}{a} \right) \left( \frac{c+a-b}{2} \right)$$

$$\frac{a-b}{(a-1)(b-1)} + \frac{b-c}{(b-1)(c-1)} + \frac{c-a}{(c-1)(a-1)}$$

$$\frac{a^3(b-c)^2 + b^3(c-a)^2 + c^3(a-b)^2}{(a-b)^3 + (b-c)^3 + (c-a)^3}$$

II. Solve the equations

$$(1) \sqrt{x+a} + \sqrt{x+b} = \sqrt{x+c}$$

$$(2) (3x^2 + b^2)(x^2 - a + 1) = (3b^2 + a^2)(x^2 + 1)$$

$$(3) ax + by + cz = a + b + c \quad (i)$$

$$bx + cy + az = b + c + a \quad (ii)$$

$$cx + ay + bz = c + a + b \quad (iii)$$

VIII. A number consists of three figures, in which the hundreds figure is one less than the tens figure, and the units figure is one more than the tens figure; and if fourteen be added to the number a new number is formed, in which the units figure is twice as great as the tens figure and the tens figure is twice as great as the hundreds figure. Find the number.

AUG. 1881.]

NOTIFICATIONS.

NOTIFICATIONS.

PRESIDENCY COLLEGE.

July 12th 1881.

The Professor of Law commenced his course on the 2nd at 6 p.m. The fee for the course is Rupees thirty.

HIGHER EXAMINATION FOR WOMEN.

August 2nd 1881.

The Higher Examination for Women and the Special Upp Primary Examination will be conducted by the Commission for the Uncovenanted Civil Service Examinations. The Te. Examinations in School Management under the Grant-in-Aid Code will continue to be conducted by the Director of Public Instruction.

MIDDLE SCHOOL EXAMINATION.

August 5th 1881.

Pupils of Schools being candidates for the Middle School Examination, who, prior to the Notification dated 29th June 1881, had taken up Hygiene, Political Economy or Agriculture as optional subjects, will be allowed to appear in those subjects in the ensuing Examination in December next, the marks allotted to each of them being the same as fixed in the previous Notification.

GRANT-IN-AID CODE.

July 1st 1881.

The following rules are inserted in the Grants-in-Aid Code:—

"Rule 46 (a). In special cases when a qualified Sewing Mistress cannot be procured, a salary grant of one-fourth may be assigned by the Director to a Tailor approved by the Inspector."

Clause 3, Rule 19. For "Teaching a class in the presence of an Inspector," substitute "Teaching a class in the presence of an Inspector, or in the case of 5th Grade Teacher, or a 3rd Grade Mistress, of a Deputy Inspector."

August 18th 1881.

The following Rule is substituted for the Rule of the Grant-in-Aid Code now in force:—

"55. No school shall be deemed eligible for a results grant if it contains classes above the Sixth Class of a Government School."

The following Rule is inserted in the Grant-in-Aid Code:—

"99-A. Grants, not exceeding Rupees 200, for class books for the use of children in poor schools may be sanctioned by the Director of Public Instruction at such intervals as he may deem expedient, on condition that the books remain the property of the schools concerned, and are used by the children during school hours only."

## EXAMINATIONS UNDER THE EDUCATIONAL GRANT-IN-AID CODE.

August 1st 1881.

Departmental Examinations laid down in the Educational Grant-in-Aid Code will be held on the 8th December next and 3 days, at the following stations:—

|               |               |              |
|---------------|---------------|--------------|
| Anda.         | Vellore.      | Sawyerpuram. |
| Chittoor.     | Chittoor.     | Sachiapuram. |
| Salem.        | Salem.        | Edyankudi.   |
| Hosur.        | Hosur.        | Nazareth.    |
| Kumbakonam.   | Kumbakonam.   | Travandrum.  |
| Negapatam.    | Negapatam.    | Palghat.     |
| Tanjore.      | Tanjore.      | Calicut.     |
| Trichinopoly. | Trichinopoly. | Tellicherry. |
| Coimbatore.   | Coimbatore.   | Cannanore.   |
| Madura.       | Madura.       | Mangalore.   |
| Dindigul.     | Dindigul.     | Ootacamund.  |
| Ramnath.      | Ramnath.      |              |
| Palamcottah.  | Palamcottah.  |              |

The Examinations will be conducted in the order of time and date shown below:—

| Days.  | Hours. | Higher Examination for Women.                                                  | Special Upper Primary Examination.                               |
|--------|--------|--------------------------------------------------------------------------------|------------------------------------------------------------------|
| Dec.   | 10—12  | Arithmetic .....                                                               | Arithmetic.                                                      |
| "      | 12—1   | English Dictation .....                                                        | English Dictation.                                               |
| "      | 2—4    | Geography .....                                                                | Geography.                                                       |
| "      | 4—4½   | Vernacular Dictation .....                                                     | Vernacular Dictation.                                            |
| "      | 10—1   | Eng. Prose & Poetry, Matri. Text Books ...                                     | Eng. Poetry (Selections No. 1), two hours.                       |
| "      | 2—5    | Eng. Gram. & Lang., Reciprocal Translation (or Paraphrase and Composition) ... | English Grammar and Composition, two hours.                      |
| 8th "  | 10—1   | Vernacular Prose and Poetry, Matriculation Text Books .....                    | Vernacular Poetry (Text Books proscribed in the Code) two hours. |
| "      | 2—5    | Vernacular Grammar and Composition .....                                       | Vernacular Grammar & Composition.                                |
| 12th " | 10—11½ | Indian History .....                                                           | Indian History.                                                  |
| "      | 11½—1  | Needle-work .....                                                              | Needle-work.                                                     |
| "      | 2—3½   | English History .....                                                          | Hygiene.                                                         |
| "      | 3½—5   | History of English Literature .....                                            | Agriculture.                                                     |
| 13th " | 10—11½ | Botany .....                                                                   | .....                                                            |
| "      | 11½—1  | Geology .....                                                                  | .....                                                            |
| "      | 2—3½   | Chemistry .....                                                                | .....                                                            |
| "      | 3½—5   | Physics .....                                                                  | .....                                                            |
| 14th " | 10—11½ | Mathematics .....                                                              | .....                                                            |
| "      | 11½—1  | Astronomy .....                                                                | .....                                                            |

3. Female candidates who have passed the Middle School Examination will be examined in Needle-work on the 12th December from 11½ A.M. to 1 P.M.

4. The following fees must be paid into a Government Treasury or the Bank of Madras. In the latter case the duplicate receipt must be attached to the application. No fees will be received in the Commissioner's Office:—

|                                                                     | Rs. | a. | p. |
|---------------------------------------------------------------------|-----|----|----|
| Higher Examination for Women .....                                  | 5   | 0  | 0  |
| Special Upper Primary Examination, male and female candidates ..... | 3   | 0  | 0  |
| Needle-work (Middle School Candidates) .....                        | 0   | 8  | 0  |

5. The Special Upper Primary is open to all candidates.

6. Candidates are required to send in their applications for examination on printed forms which may be obtained in the Mofussil from all Tahsildars and Treasury Deputy Collectors and in Madras on application to the undersigned.

7. All applications should be sent direct to the undersigned, post paid, superscribed.

Application for the Higher Examination for Women or Application for the Special Upper Primary Examination (as the case may be) and addressed

To

The Secretary to the Commissioner for the

U. C. S. Examinations, Madras.

They should be despatched so as to reach the Commissioner's Office not later than the 30th September next, after which no application will be received. Candidates anxious to assure themselves that their applications have been received should enclose an addressed post-card in their respective applications. Such post-cards will be initialled simply and returned through the post to the addressee. No other form of acknowledgment except that required by the Postal Rules regarding registered letters can possibly be given.

## APPOINTMENTS.

Appointments made by the Director of Public Instruction, between the 16th July and 15th August 1881.

M. Seshagiri Prabhoo, Acting 4th Assistant, Tellicherry High School, to be 3rd Assistant sub. pro tem, on Rs. 40, per mensem, vice T. V. Vaidhanatha Aiyar.

T. C. Chandra Kurup, 6th Assistant, sub. pro tem, to be 4th Assistant, sub. pro tem, on Rs. 30, vice Seshagiri Prabhoo.

A. Hariharan Aiyar, 6th Assistant, sub. pro tem, to be 5th Assistant, sub. pro tem, on Rs. 20, vice Chandra Kurup.

P. Rungaswami Iyengar, to be sub. pro tem, 4th Assistant Master, Salem College, vice Elaiyatambi Pillai, from the 4th July 1881.

Venkataramana, 7th Assistant Master, Salem College, to act as Headmaster, Walajapet School, vice Rungaswami Iyengar, from the 29th June 1881.

A. Seshayya, Headmaster, Municipal Girls' School, Ranganachikla, to be 2nd Master, Government Girls' School, Nanguneri.

T. A. Saminatha Aiyar, 6th Assistant Master, Cuddalore College, to be 1st Assistant Master, Middle School, Arni, vice P. Chinnaiyanga Mudaliyar deceased, but to continue to act as 6th Assistant Master, Cuddalore College, on Rs. 40.

P. Narayana Chariar, B.A., to be 6th Assistant Master, Cuddalore College, vice T. A. Saminatha Aiyar, but to continue to act as First Assistant Master, sub. pro tem, Tellicherry High School.

P. Seshu Aiyangar, second Assistant Master, Middle School, Arni, to be First Assistant Master, sub. pro tem, in that School during the employment of T. A. Saminatha Aiyar, on other duty, or until further orders.

P. Namasivaya Mudaliyar, Assistant Master, on Rs. 30, per mensem, to be Clerk and Writer Master on the maximum salary of Rs. 25 per mensem in the Bellary College.

Shunmuka Mudaliyar, Deputy Inspector of Schools, Karnool Range, 5th Class, is promoted to the 4th Class on Rs. 150.

Appayya Sastri, Deputy Inspector of Schools, Trichopoly Circle, 6th Class, is promoted to the 5th Class.

Murugesu Mudali, Deputy Inspector of Schools, Chittoor Circle, to be Deputy Inspector of the Saidapet Range.

T. Srivasa Rau, 2nd Assistant Master, Saidapet High School, and Acting Deputy Inspector of the Saidapet Range, to be Deputy Inspector of Schools in the Chittoor Circle, 6th Class.

R. Chalerasarti Aiyangar, B.A., 6th Assistant, Cuddalore College, to be 2nd Assistant, Saidapet High School, but to continue to act as 7th Assistant in the College, Kumbakonam.

P. Narayana Chariar, B.A., 6th Assistant, Cuddalore College, to be 5th Assistant, in the same College, but to continue to act as 1st Assistant, Tellicherry High School.

V. R. Venkatarama Aiyar, B.A., to be 6th Assistant, Cuddalore College, and 1st Assistant, Madurai College.