GOVERNMENT OF MADRAS.

EDUCATIONAL DEPARTMENT.

READ—the following paper:—

From D. DUNCAN, Esq., M.A., D.Sc., Acting Director of Public Instruction, to the Chief Secretary to Government, dated Madras, 30th August 1886, No. 5937.

I have the honor to submit three copies of the report on the working of the College of Engineering, Madras, for 1885-86, with my review thereon.

ENCLOSURE.

PROCEEDINGS OF THE DIRECTOR OF PUBLIC INSTRUCTION, dated 20th August 1886. No. 5779.

Madras College of Engineering.

Read the following letter from the Principal, Civil Engineering College, to the Director of Public Instruction, dated Madras, 31st May 1886, No. 162-C.

I HAVE the honor to submit the following report on the working of the College of Engineering during the past year, and on the results of examinations for certificates which have been held during that period.

2. *Numbers.*—The average numbers on the rolls have been:—

Engineer classes	18
Engineer Subordinates' classes	62
Draftsmen's classes	55
Surveyors' classes	40
Total ...	175

The numbers arranged by classes of the community are:—

Europeans and Eurasians	29
Brahmans	68
Hindus other than Brahmans	60
Native Christians	14
Mussalmans	3
Others	1
Total ...	175

3. *Changes in Establishment.*—Mr. H. Narasinga Rau, B.A., was appointed on 17th August 1885 to fill the vacancy caused by the retirement of the Telugu Munshi, Mr. Lakshminarasayya Pantulu, which was alluded to in last year's report. With this exception, the staff has remained unchanged throughout the session. From the present date, however, Mr. M. Kenny, B.A., First Assistant Master, is transferred to Berhampore College, and Mr. Rajagopala Mudaliyar, the Tamil Munshi, after a period of twenty-seven years' uninterrupted duty, retires from the service. Under Mr. Kenny, who joined the college in August 1880, the senior classes have always made good progress in mathematics. Mr. Rajagopala Mudaliyar entered the college in 1859, and attained the age of 55 in 1877; but extensions of service have

from time to time been sanctioned, which have enabled him to remain at his post until the close of the present session. I cannot permit him to leave without expressing appreciation of the excellent work which, during a long series of years, he has done at this college.

4. *Reorganization of the College.*—The year is memorable as heralding a reorganization of the institution which has been under consideration since 1880. In that year, Colonel Macdonald, the Director of Public Instruction, suggested the desirableness of introducing changes based on the scheme which had then lately been approved by the Honorable the Lieutenant-Governor of Bengal for the establishment of an Engineering College at Calcutta. The Madras Government referred the matter to a committee consisting of Engineers of the Public Works Department, the Railways, and Harbour Works, and of Educational officers, presided over by Colonel Shaw-Stewart, R.E. The committee recognised the principle that the college should train men not for the Public Works Department only, but for the country generally; and they submitted reports in 1881 and 1882, advising an increase in the theoretical courses of instruction to admit of Mechanical as well as Civil Engineering subjects being introduced, and the establishment of practical courses to fit all passed students for immediate employment on works, including those who might not be appointed to the Government service. After considerable discussion and criticism by the heads of the Public Works and Educational Departments, the detailed recommendations of the committee were adopted with slight modifications, and the reorganization scheme as finally approved was sanctioned in July 1885, and ordered to be introduced from 1st January of the current year. The classes to be formed are for—

(1) Civil Engineers.
(2) Mechanical Engineers.
(3) Engineer Subordinates.
(4) Draftsmen.
(5) Surveyors.
(6) Sub-Overseers, Maistries and Artizans.

The designation of the institution has been changed from *Civil Engineering College* to *College of Engineering*, so as to embrace the mechanical branches of the profession. The theoretical courses will extend over three years for Engineers, for two and a half years for Engineer Subordinates, and for two years for Draftsmen and Surveyors; and the times of admission will be so adjusted that the final examinations of all classes will take place simultaneously in December. The practical courses will comprise a period of workshop training and a period on Engineering works in progress, and will be undergone by the Engineer and Engineer Subordinates' classes. The details of the practical courses are, however, not yet settled.

Admission to the Engineer and Engineer Subordinates' classes is regulated by competitive examination, open, under restrictions as to age, health, &c., to persons who have passed the First Arts and Matriculation Examinations respectively of an Indian University; the classes for Draftsmen and Surveyors are open to persons who have passed the Middle School Examination; while that for Sub-Overseers and Maistries is reserved for the sons of artizans and for youths who have had practical training in the building trades. Non-commissioned officers and soldiers of British Regiments are eligible, as heretofore, for admission to the Engineer Subordinates' class, but they will undergo their probationary year of instruction at the college instead of at Bangalore.

The theoretical courses for the different classes will comprise some or all of the following branches:—Mathematics, Physical Science, Civil and Mechanical Engineering, Surveying, Drawing, and Vernacular Language. Examinations of students will take place as a rule annually, and the marks gained will count towards the final total. All the examinations will be conducted by a Board of Examiners appointed by Government. The rates of fee payment for the theoretical courses have been raised; but no fees will be demanded for the practical courses, and, during a portion of the latter, subsistence allowances will be paid to the students. Seven scholarships, ranging from Rs. 30 to Rs. 8 per mensem, are open to students for competition.

One appointment annually as Assistant Engineer in the Public Works Department, as well as a certain number of Supervisorships, will be conferred annually on passed students of the Engineer class. Overseerships in the department are open to those of the Engineer Subordinates' class, appointments as Draftsmen to those of the Draftsmen's class, while passed Surveyors are eligible for the Public Works and Madras Survey Departments.

5. *Requirements.*—From this brief sketch of the new scheme, it will be perceived that a great stride in the progress of the technical education afforded by this institution is about to be made. Additional classes, longer courses, and new subjects cannot, however, be introduced without the provision of a larger staff and more extended accommodation. Suitable lecture-rooms and a laboratory are needed; a museum, a drawing office, and examination hall must be provided; and a reinforcement of the staff is urgently required. Full proposals have been submitted in connexion with these wants, but I am not yet in a position to report on the steps which are to be taken to supply them. In January, classes of (1) Engineers, (2) Draftsmen, and (3) Surveyors were formed under the new rules, and in August a class of Engineer Subordinates will be established. At the present moment, therefore, the old and new courses of study progress side by side, though with unequal steps. Up to the present date it has been found possible to meet most of the earlier needs of the newly formed classes; but I assert in the most positive terms that, without the immediate provision of some additional staff and accommodation, the requirements of the new scheme cannot continue to be carried out.

6. *Examining Agency.*—Before proceeding to report on the work executed by the various classes during the year under review, I have to refer to the remarks made in last year's report on the College Examining Agency. In response to the arguments offered, Government appointed a Board of Examiners to conduct the final examinations of the two senior departments. Their duties commenced in December last with the examination of the Engineer class, and they continued during the current month with that of the Engineer Subordinates' class. The final examinations of the Draftsmen's and Surveyors' classes are still conducted by the College staff, though the new rules contemplate their ultimate transfer to the Board.

7. *Engineer Classes.*—In December 1885, the senior class of eight students was examined by the Board, with the result that all the candidates obtained diplomas as Assistant Engineer. The first man, R. A. Srinivasa Aiyangar, B.A., passed with honors, gaining 84·3 per cent. of the total marks. His position secured for him the guaranteed appointment to the Engineer establishment of the Public Works Department, and he was posted to the Godávari Eastern Division on 1st April last. My knowledge of his character and abilities leads me to expect that he will prove a good servant to the Government.

The next three candidates, V. Aiyaswami Aiyar, B.A., R. V. Subrahmanya Aiyar, and G. V. Subrahmanya Aiyar, passed with credit, with percentages ranging from 71 to 67. The remaining four students, M. A. Ananthalwar, B.A., D. V. Jagannathachari, C. Madhava Rau, and T. Ramaswami Aiyangar, obtained an ordinary pass with percentages ranging from 64 to 51.

One independent candidate, who was formerly a student of the college, also presented himself, but was absent during the greater part of the examination.

In January, the eight students above referred to appeared for the University examination for the degree of Bachelor of Civil Engineering. The following three were successful:—

R. A. Srinivasa Aiyangar, B.A.
V. Aiyaswami Aiyar, B.A.
R. V. Subrahmanya Aiyar.

8. The present senior division consists of ten students and the junior of eight. The latter were admitted by a competitive examination in December last under the new rules, the candidate at the head of the list, R. Srinivasa Aiyangar, B.A., winning the scholarship of Rs. 30 per mensem. This will be re-competed for by

the entered students in December of the current year. Both divisions have just undergone a sessional examination, at which satisfactory progress has been indicated. In the first division, R. Gopala Aiyar, B.A., stands easily first, winning the prizes for Mathematics and Engineering—an aneroid barometer and planimeter respectively. The prize for Drawing and Surveying—an ellipsograph—is secured by A. V. Panchapakesa Aiyar, B.A.

In the second division, R. Srinivasa Aiyangar, B.A., heads the list, and wins the prize for general proficiency, consisting of an Abney's level.

9. *Engineer Subordinates' Class.*—The senior division of this class contains twenty-four students who have just undergone examination at the hands of the Board of Examiners for certificates of qualification as Supervisor and Overseer. The remarks of the Board, which form an appendix to this report, are to the effect that the results are very satisfactory, the average total marks being 60 per cent. of the maximum, and that the five military students who occupy the first, third, fifth, sixth and eighth places on the list have done work which is especially creditable to them. Of the twenty-four students examined, ten obtain certificates as Supervisor, having gained not less than 35 per cent. of the marks in each subject and 60 per cent. of the total; thirteen take certificates as Overseer, the qualification for which is 25 per cent. in each subject and 40 per cent. of the total; and one fails.

10. Corporal W. L. Emery, Royal Scots Fusiliers, stands at the head of the list with 81 per cent. of the total marks. He obtains a Supervisor's certificate and carries off the following prizes :— For distinguished proficiency, the Royal Engineer Officer's prize; for mathematics, a case of drawing instruments; for surveying, a case of spring bows.

The second place is taken by M. V. Krishnaswami Aiyar with 76 per cent. of the total marks. He secures a Supervisor's certificate.

Lance-Corporal B. Reynolds, 12th Royal Lancers, occupies the third place with 75 per cent, taking a Supervisor's certificate and gaining the following prizes :— For Engineering, a lever watch; for drawing, a parallel rule.

The following students also gain certificates as Supervisor :—

A. Krishna Menon.	Gunner J. Knox, Royal Horse Artillery.
Lance-Corporal P. King, Hampshire Regiment.	G. Padmanabha Aiyar.
	A. Narayanaswami Nayudu.
E. C. M. Mascarenhas.	M. Gnanaprakasa Pillai.

Thirteen others obtain certificates as Overseer, one of them, V. Ramakrishnayya, winning the prize for Vernacular Language.

11. On comparing the results of the examination with the average marks of the last five years, it will be found that there has been—

A rise of 3 per cent. in Mathematics.
„ 6 „ „ Engineering.
„ 3 „ „ Surveying.
„ 12 „ „ Drawing.
An unchanged percentage in Language.
A rise of 6 per cent. in the total.

I attribute this decided improvement mainly to the circumstance of having better material to work on; but I consider that the substantial increases under Engineering and Drawing are due also to the conscientious and painstaking manner in which the 2nd, 3rd and 4th Assistant Masters, Sub-Conductor Cames, and Messrs. Hyde and Hamilton have carried out the duties entrusted to them.

12. The junior division of the Engineer Subordinates' class contains thirty-eight students, who have just undergone a satisfactory sessional examination. Mahomed Sikandar occupies the first place with 81 per cent. of the total marks, and gains the prize for general proficiency—a pedometer.

The next four students in order of merit are—

F. A. Pope	A. P. Doll
A. V. Krishnaswami Pillai	W. Clay

and to these are awarded scholarships of Rs. 15 each per mensem tenable during the ensuing year.

13. A new division of this class will be formed in August. The entrance examination was held by the Board of Examiners on 3rd May, when thirty-eight Matriculates presented themselves. The results have not yet been published.

14. *Draftsmen's Class.*—The senior division of nineteen students has just undergone examination for certificates as Draftsman and Estimator. Four secure certificates of the first class, five of the second class, and nine of the third class, while one fails. A. Thambu Chetti stands at the head of the division with 90 per cent. of the total marks, and gains the prize for drawing, a case of proportional compasses. The remaining winners of first-class certificates are—

E. A. Sivakrishnaswami Aiyar.	A. V. Ramachandra Aiyar.
M. Angamuttu Mudaliyar.	

The second division contains twenty-six students, who have undergone a satisfactory sessional examination. Scholarships of Rs. 8 per mensem are awarded to the following students of this division :—

J. C. A. Ellis.	P. Ramaswami Nayaker.
M. Sankaranarayana Pillai.	R. Srinivasa Aiyar.
J. D. Francis.	

The third division formed in January last under the new rules contains twenty students.

I consider that the results of the examinations in the Draftsmen's class are very creditable to the instructor, Mr. Pope.

15. *Surveyors' Class.*—The senior division consists of twelve students, eleven of whom secure certificates as Surveyor, viz., two of the first class, Saiyid Raza Husain and J. M. Berlie, five of the second class and four of the third class. The remaining member of the class, M. T. V. Ramanujayya, one of its best students, appeared as an independent candidate for the Overseer's Certificate examination, and was successful. The prize for surveying is won by Saiyid Raza Husain, who stands first with 85 per cent. of the total marks. The average percentage of marks for this division is 69.

The second division contains twenty-three students, who have undergone a satisfactory sessional examination. Scholarships of Rs. 8 per mensem are awarded to the following students :—

M. S. Swaminatha Aiyar.	E. Stuart.
C. C. Somasundara Mudaliyar.	V. Lakshmana Rau.
A. Pereira.	

The third division, formed in January last under the new rules, contains ten students.

Two of the students of the junior divisions, H. R. White and G. Haller, volunteered for the final examination as independent candidates, and were successful, both gaining second-class certificates.

The results obtained by the Surveyors' class are above the average, and reflect credit on Mr. Campbell's instruction.

16. *Independent Candidates.*—Candidates, not belonging to the senior divisions of the different college classes, presented themselves, to the number of one hundred and twenty-seven, for examination for certificates, viz., two as Overseer, ninety-seven as Draftsmen, and twenty-eight as Surveyor. The majority of these are employed in the Public Works Department and Local Fund Boards, and appear for the examination with the view of obtaining a higher class of certificate than they already possess. The results of the examination are not yet published.

17. *Sub-Overseers' and Maistries' Class.*—This class, for admission to which several applications have been received, should have been formed in January last. It cannot, however, be established until additional staff and accommodation have been provided.

18. *Proposed Survey Probationers' Class.*—The Superintendent, Madras Survey, is desirous that the probationers for the superior establishment of his department should undergo a course of training in mathematics at this college. It is proposed that a special master be entertained, and that all charges connected with the instruction and examination of the class be defrayed by the fees of the candidates. The class is not likely to consist of more than four students, and the course of study will last from six months to a year.

19. *Military Students.*—Five men are now passing out of the college, three are in the present junior division of the Engineer Subordinates' class, one is at Bangalore prepared to join the college after passing an examination in vernacular language, and four candidates will present themselves for the entrance examination in July.

20. *Photographic Class.*—This class consists of twelve students selected from the Engineer and Engineer Subordinates' classes. Good progress has been made under Mr. Hyde's instruction, and some of the students' work is exhibited on the tables to-day.

21. *Library.*—During the year 216 volumes have been added to the library, which now contains 2,302 volumes. The issues of books to masters and students were 2,603, having increased just ninefold during the last six years.

22. *Apparatus, &c.*—A fresh supply of surveying instruments has been received from England, and a model of a Stoney's sifter has been made locally. I take this opportunity of offering my grateful acknowledgments to Mr. Carter and Mr. West, the Chief and Deputy Chief Engineers of the Madras Railway, for the great trouble they have taken in obtaining for the college thirty specimens of Indian timber used in building construction. Many of the specimens have been obtained from the West Coast, others from Ceylon, from Simla and Lahore. Each specimen is supplied in two sizes—one large for preservation in the College Museum, and one small for use in class instruction. Mr. West has also kindly procured for me twelve specimens of building stones used on the Madras Railway. These form the commencement of what will one day, I hope, prove a fine collection of Indian building stones.

23. *Employment of Passed Students.*—Of the students who passed out in May last, intimation has been received of the employment of ten overseers, seven draftsmen, and three surveyors. Recommendations have also been made of one supervisor, two overseers, six draftsmen, and six surveyors at the request of various officers requiring their services, and I conclude that a considerable proportion of the nominees has been appointed. Of the students of the Engineer class which passed out in December 1885, one, as already mentioned, has been posted to the Public Works Department as an Assistant Engineer, while the remaining seven have been appointed temporary overseers by the department to enable them to gain an insight into the details of practical work and thus to qualify themselves for higher positions.

It is well understood among passed students that the college assists them in obtaining employment; and the fact that but few applications have been received from them by the Principal is an indication that little difficulty is experienced in obtaining employment. The numerous advertisements gathered from the Government Gazette and from the local newspapers and posted on the college notice-board, afford confirmation of this view.

24. It is satisfactory to me to be able to report that the Madras Survey Department proposes to open its ranks to college students. It is in contemplation to entertain annually three or four passed men, Europeans or Eurasians being preferred, as Probationary Deputy Surveyors on Rs. 50 per mensem. If a soldier student is employed, he will join as a Probationary Head Surveyor on Rs. 100, drawing an outfit allowance as in the Public Works Department, and having his promotion to warrant rank governed by the rules affecting departments which own no fixed warrant establishment. Both classes will be eligible to rise to the grade of Sub-Assistant Superintendent on Rs. 250. Under these rules, Corporal

Moore of the batch of 1885, for whom employment could not be found in the Public Works Department, has already been appointed to the Survey, and two military students of the present batch will probably be nominated next month. They are destined to form, I trust, the nucleus of a semi-military class of upper subordinates which will doubtless prove as serviceable in the Survey as the corresponding class has done for a long series of years in the Public Works Department.

25. *General Remarks.*—This college has hitherto been singularly deficient in the cultivation of games and physical exercises, the chief reason being that the hours are exceptionally long and the course of study arduous. Under the new scheme, which provides for longer courses, the hours may be somewhat reduced, and leisure be thus found for gymnastics, cricket, and lawn-tennis. Application has been made to Government for the reservation of the land lying between the College and the Beach road as a cricket and recreation ground, and for a plot on the west side as a gymnasium.

26. I have only to add in conclusion that the conduct of the students has been excellent, that their attendance has been regular, and that the staff generally have heartily co-operated with me in laboring for the welfare of the institution. I trust that masters and students alike will enjoy and profit by their well-earned vacation, which commences to-morrow.

From Major W. H. COAKER, R.E., President, Board of Examiners, College of Engineering, to the Principal, College of Engineering, Madras, dated Ootacamund, 26th May 1886.

I HAVE the honor to forward herewith statement of results of the examination of the first class, second department, held in the beginning of this month.

2. The results appear to me to be very satisfactory, the total marks obtained being 60 per cent. of the maximum as compared with 55 per cent. last year. The percentages obtained in the different subjects compare as follows :—

	1885. per cent.	1886. per cent.
Mathematics	55	60
Civil Engineering...	49	53
Surveying and Levelling	62	65
Drawing and Estimating	56	65
Language	47	46
Total ...	55	60

It will be observed that in both years the marks in Surveying and Levelling, and in Drawing and Estimating, exceed the average percentage; that those in Mathematics correspond with the average; while those in Civil Engineering and Language are considerably below it.

3. Of the twenty-four students examined all gained the required number of marks for a pass, but one student having failed in Language, only twenty-three obtain certificates. Eleven students gained sufficient marks for certificates as Supervisor, but owing to one of these having failed to obtain the qualifying marks (35 per cent.) for this grade in language, only ten obtain the higher certificate. Thirteen students obtain certificates as Overseer. The average percentage of marks obtained corresponds to that required for the grade of Supervisor.

4. It is gratifying to note the good position taken by the five military students. Sergeant W. L. Emery heads the list with a percentage of 81·4, being first in Mathematics and in Surveying and Levelling; Corporal B. Reynolds stands third with 75 per cent. and takes the prizes for Civil Engineering and for Drawing and Estimating; Corporal P. King is fifth; Corporal J. W. Jones sixth; and Gunner J. Knox eighth.

The satisfactory examination passed by these men cannot fail to be regarded as highly creditable to them.

Of the other students, M. V. Kristnaswami Aiyar stands second with 76·5 per cent.; A. V. Kristna Menon is fourth with 74 per cent., and E. C. M. Mascarenhas is seventh.

The prize for Language is taken by V. Ramakristnayya.

THE average numbers on the rolls in the several classes for the last two years were as under:—

	1884-85.	1885-86.
Engineering classes	19	18
Engineer Subordinate classes	51	62
Draftsmen's classes ... ... }	55	{55
Surveyors' classes ... ... }		{40
Total ...	125	175

Though there was a fall of one student in the Engineer classes, the increase in the other classes, notably in the Draftmen's and Surveyors' classes, is very satisfactory.

2. The numbers for the same two years arranged according to the classes of the community are—

	1884-85.	1885-86.
Europeans and Eurasians	29	29
Brahmans	49	68
Hindus other than Brahmans	33	60
Native Christians	11	14
Muhammadans	1	3
Others	2	1
Total ...	125	175

It is to be regretted that the number of Europeans and Eurasians shows no advance. The increase in the number of Muhammadans is encouraging.

3. The only change in the establishment during the year was the appointment of Mr. H. Narasinga Rau, B.A., to the post of Telugu Munshi, rendered vacant by the retirement of the former Munshi on the last day of the preceding year. The transfer of Mr. Kenny, First Assistant Master, and the retirement of the Tamil Pandit, belong to the transactions of the current official year, and should therefore find place in the next report. The Acting Director is, however, glad to note the favorable mention made by the Principal of the above two officers.

4. In paragraph 19 of Proceedings No. 4932 of the 18th July 1885 it was pointed out that the year 1884-85 marked "an important era in the history of the institution, the higher ranks of the Public Works Department having been systematically opened for the first time to its students in accordance with the orders of the Supreme Government guaranteeing one such appointment annually to the college." But much more worthy of special notice is the year now under review, which has witnessed the reorganization * of the college, a brief account of which is given by the Principal. The designation of the institution has been changed to that of "College of Engineering." The courses of study and rules for admission, as well as the appointments thrown open to the successful candidates under the new scheme, are also briefly summarized by the Principal. Partial effect has been given during the year under report to the new scheme, which will probably be introduced in its entirety during the current year. The Principal strongly advocates that in consideration of the "great stride in the progress of the technical education afforded by the institution," an addition to the staff and the accommodation should be provided immediately. The Acting Director observes that in Governm ent Order (Educational), No. 328, dated 27th May 1886, Government admitted the necessity for the reorganization of the staff of the college and stated that the Secretary of State would be addressed. The question of increased accommodation was disposed of in Government Order (Educational), No. 329, dated 27th May 1886. It is hoped that the additional buildings will soon be put in hand and completed, and that the sanction of the Secretary of State may

* Government Order (Educational), No. 443, dated 16th July 1885.
Government Order (Educational), No. 7, dated 7th January 1886.
Government Order (Educational), No. 328, dated 27th May 1886.

be obtained at an early date, so that the new scheme may be carried out to its full extent.

5. During the year under report Government were pleased to sanction the appointment of a Board of Examiners to conduct the final examinations of the two senior departments. The Board examined the Engineer class in December 1885 and the Engineer Subordinate class in May 1886. The final examinations of the Draftsmen's and Surveyors' classes were conducted by the College staff, but they also are to be transferred ultimately to the Board.

6. The results of the examination of the senior division of the Engineer class were satisfactory. Of the eight students who were examined by the Board, all were successful and obtained diplomas as Assistant Engineers. Mr. R. A. Srinivasa Aiyangar, B.A., took the first place with honors and thus secured the guaranteed appointment to the Engineer establishment of the Public Works Department. He is to be congratulated on having won the prize offered by Government. He will doubtless prove himself worthy of the honor conferred on him. The percentages of marks obtained by the successful candidates ranged from 84·3 to 51. An independent candidate, who was formerly a student of the college, appeared for the examination, but was absent during the greater part of it. All the above ten students appeared for the B.C.E. Examination, but only three were successful, one in the second and two in the third class, their order being the same as in the examination by the Board.

7. The strength of the present senior division is stated to be ten, and of the junior eight. It is satisfactory to note that the senior division maintained its numbers and that the progress of the students as tested by the sessional examination is favorable.

8. The senior division of the Engineer Subordinates' class contained twenty-fur students. All of them were examined by the Board, and the Acting Director notes with much pleasure that the results are characterized as very satisfactory. With the exception of one, who failed in language, all were successful. Thirteen students obtained certificates as supervisors, while the remaining ten took certificates as overseers. The favorable mention made of the good position taken by the five military students is gratifying.

9. On a comparison of the results of the examination of the year under report with the average marks of the last five years, it is observed that there has been a decided improvement in every subject, notably in Engineering and Drawing. Mathematics, which showed a fall of 2 per cent. in the preceding year, now shows a rise of 3 per cent. These very satisfactory results bear testimony, as Captain Love says, to the good work done by the teaching staff and the better material which the teachers had to work upon.

10. The strength of the junior division of the Engineer Subordinates' class was thirty-eight against twenty-four. The sessional examination is reported to have been satisfactory. The Acting Director is glad to observe that the first place was occupied by a Muhammadan. The formation of a new division of this class belongs to the transactions of the current year and will be dealt with in the next report.

11. The senior division of the Draftsmen's class was nineteen strong against nine in 1884-85. All the students were examined with satisfactory results. Four secured certificates of the first class, five of the second, and nine of the third class. Only one failed. The marks gained by the student who headed the list of successful candidates were 90 per cent. of the total marks. The second division consisted of twenty-six students against twenty-one in the preceding year. The results of the sessional examination were satisfactory. The strength of the third division formed in January last under the new rules was twenty. The Acting Director notes with pleasure the Principal's remarks that the results of the examination in the Draftsmen's class were very creditable to Mr. Pope, the instructor.

12. The senior division of the Surveyors' class consisted of twelve students against seven. Eleven of these secured certificates as surveyors, two of the first class, five of the second, and four of the third class. It is satisfactory to observe that one of the two students who obtained first-class certificates was a Muhammadan. The remaining student is reported to have appeared for the Overseer's Certificate Examination as an independent candidate and to have succeeded in passing. The strength of the second division was twenty-three against fifteen. The results of the sessional examination were satisfactory. The third division formed in January last under the new rules contained ten students.

Two students of the junior division are reported to have volunteered for the final examination as independent candidates and to have succeeded in passing, both gaining second-class certificates.

The results, as a whole, of the Surveyors' class are stated to be above the average and are creditable to the instructor, Mr. Campbell.

13. The number of independent candidates who appeared for examination for certificates was 127 against 69 in the preceding year. This increase is evidence of the value set upon the certificates given by the college. Of the above candidates, two sought the Overseers' certificate, ninety-seven that of Draftsmen, and twenty-eight that of Surveyor.

14. The Acting Director regrets to observe that though several applications had been received for admission into the Sub-Overseers' and Maistries' class, the Principal was unable to arrange for the formation of the class owing to the want of teachers and accommodation.

15. The proposals regarding the training of Probationary Assistant Superintendents of Revenue Survey were sanctioned in Government Order, Revenue, No. 115, dated 12th February 1886.

16. Five military students were passing out. Three were in the college, one was to join from Bangalore after passing the vernacular examination, and four were to present themselves for the entrance examination.

17. It is satisfactory to observe that good progress has been made by the students of the photographic class.

18. The condition of the library is satisfactory; 216 volumes were added during the year and 2,603 were taken out.

19. The Acting Director is glad that the Principal is taking steps for collecting materials for the College Museum, and he is indebted to Messrs. Carter and West of the Madras Railway for their kindness in obtaining specimens of Indian timbers and of buildings stones.

20. It is encouraging to observe that the passed students of the college seem to experience little difficulty in procuring employment.

21. A new field of employment has also been opened in the Madras Survey Department by the appointment, as an experimental measure, of the best qualified of the passed students of the Survey class as Probationary Deputy Surveyors.

Government Order (Educational), No. 654, dated 26th October 1885.

One of the military students who passed in 1885 has been appointed to the Survey and two will probably be nominated in the current year. Measures have been taken for providing the college with a gymnasium and a cricket and recreation ground. The proposal made by the Principal for the reservation of a cricket and recreation ground and of an additional tennis ground for the students have been referred by Government to the Public Works Department (Government Order, Educational, No. 329, dated 27th May 1886).

22. The Acting Director is glad to note the excellent conduct of the students as brought to notice by Captain Love, and the hearty co-operation he has received from the teaching staff generally.

23. As requested in para. 5 of the Principal's letter, No. 163-C, of the 31st May 1886, the whole of the marks obtained by the students in the several examinations will be printed as an appendix to this review.

(True Copies and Extract.)

(Signed) D. DUNCAN,
Ag. Director of Public Instruction.

To the Principal, College of Engineering.
Copy to the Principals of Government First-grade Colleges.
" Principal, Teachers' College.

ORDER—dated 29th September 1886, No. 619, Educational.

Ordered that the report be forwarded to the India Office.

(True Extract.)

E. F. WEBSTER,
Chief Secretary.

To the Director of Public Instruction.
" Public Works Department.

Exd. T. O'Connor.

No. 2734 W. d/16 "Octr. 1886

Recorded.

(Sd) J. O. H.

Govt. of {1886} Madras.

EDUCATIONAL.

Issued

Recd. *Encl.*

G.O., 29th Sept. 1886, No. 619.

No. 2734 W. d/16 Octr. 1886.

SEPTEMBER.

College of Engineering.

Forwarding to the Secretary of State report on the working of the — for the year 1885-86.

With order

IV

The papers referred to have been communicated to the PWD, indirectly with reference to para 3 of Capt Jones's letter of the 28th Feb.

It seems to me that it is not sufficient to "record" this papers, but that we should make some such remarks as that in para 3 of the order as originally drafted.

MW
2.5.87

Dr.

The order was passed in accordance with the instructions of the Hon.

Jolly
3/5/87.

MW

No. 2734 W. d/16 "Oct. 1886

Recorded.

(Sd) J. O. H.

To W

Submitted that the proposed para 2 of the draft order on this paper is not in order.

The papers contain a report on an Educational institution, submitted by the Director of Public Instruction to the Govt in the Educational Dept, as it is of interest to the P.W. Dept it has been communicated to this Dept. If the Govt consider any remarks necessary they should apparently have been made in the Edn Dept.

It seems beyond the province of the P.W.D. to praise the work of Officers of the Edn Dept, or his assistants, when

G.-2-5-87 Q. 5-5-87

No. 2734 W.d/16" Octr. 1886

Recorded.

(Sd) J.O.H.

the Govt. in the Edn Dept have said nothing on the subject —

If the paragraph be allowed to stand, the order should apparently go to the Ch. Secy. for communication.

Ch
28.4.87

It was wrongly thought that Capt Hoover was on P.W. permanent Estt.

Civil Branch. No. 673. C.

Dated 4th February 1887.

Despatched 5th Do.

From

The Principal,

College of Engineering.

To,

The Director of Public Instruction

Madras.

Sir,

I have the honour to submit the following report on the examinations of the College classes which were held in December last.

2. I Final Examination for Certificates as Assistant Engineers.

This examination was held by the Board of Examiners under the old rules. Ten Students of the Senior division of the Engineer class presented themselves, and one independent candidate. A tabular statement of the marks

obtained, together with the Board's report, will be found in appendix A. From this it will be seen that seven of the candidates, viz:

R. Gopala Aiyar, B.A.
R. V. Sundara Aiyar, B.A.
A. V. Panchapakesa Aiyar, B.A.
S. Lakshminarayana Aiyar
D. Sesha Charlu, B.A.
N. Venkatarathnam Aiyar.
V. K. Narayana Menon

secured Certificates as Assistant Engineer, the first three passing with credit, with percentages of 66 and over; while three students, and the independent candidate, failed for the higher Certificate, but qualified for the grade of Overseer.

3 The percentages of marks obtained by the students of the College were:—

Mathematics	53.
Engineering	54.
Surveying & Levelling	60.
Drawing & Estimating	59.
Optional Examinations	63.
Total	58.

4. The first man, R. Gopala Aiyar, B.A., gains a total of 2,066 marks out of 2,900, or 71.2 per cent. His position secures for him the Government guarantee of an appointment to the Engineer Establishment of the Public Works Department on 1st April next.

5. The class subsequently appeared for the B.C.E. degree Examination of the Madras University, the results of which will be reported to you in due course.

6. II Optional Examinations held under the old Rules.

The usual Optional Examinations of the Senior divisions of the Engineer Subordinates' Class, Draftsmen's Class, & Surveyor's Class, were held by the College Staff. The results indicated satisfactory progress.

III. Optional Examinations held under the the new Rules.

The term examinations of the junior divisions of the Engineer class, the Engineer Subordinates' class, the Draftsmens' class and the Surveyors' class were held by the Board of Examiners under the new Rules. These rules permit the marks gained at the term examinations to count towards the final total. It thus became necessary to assign the marks which each term examination should carry, so as to work up to the final total fixed by the rules. The following distribution was adopted, I trust that it will have your approval. The proportion between the marks awardable by the Board and those awardable by the College is fixed by the rules.

Engineer

(i) Engineer Class.

Examination at end of 1st year.

By Board --- 540.

By College --- 60 600.

Examination at end of 2nd Year.

By Board --- 810.

By College --- 90 900.

Examination at end of 3rd Year.

By Board --- 1,350.

By College --- 150. 1,500.

Total --- 3,000

(ii) Engineer Subordinates Class.

Examination at end of 1st half year.

By Board --- 270.

By College --- 30 300.

Examination at end of 3rd half year.

By Board --- 630.

By College --- 70. 700.

Examination at end of 5th half year.

By Board --- 900.

By College --- 100. 1,000.

Total --- 2,000.

(iii) Draftsmen's Class.

Examination at end of 1st year

By Board ---- 240.

By College --- 60. 300.

Examination at end of 2nd year

By Board ---- 560.

By College --- 140. 700.

Total --- 1,000.

(iv) Surveyors' Class.

Examination at end of 1st year.

By Board ---- 240.

By College ---- 60. 300

Examination at end of 2nd year.

By Board --- 560.

By College --- 140. 700.

Total ---- 1,000.

7. The division among different subjects of the marks assigned to any one term examination cannot be definitely settled until the new syllabuses are drawn up, and these again cannot be prepared until additional buildings & reorganised staff permit of the new scheme of instruction coming into operation. In the meantime the division should be left to the Principal who will best be able to devise the relative value of the various subjects studied by a class during the session preceding a term examination. The Board, as in the late examination, can furnish their marks for each paper in the form of a percentage, and the requisite tabulation will then be carried out in the College.

8. The results of the Board's examinations will be found in Appendices B, C, D & E. It will be obvious that the labours of the Board have been much enhanced by the introduction of the new rules; and that their work will

continue to increase in the future.

I have &c.

(Signed) W. D. Lone Capt. R.E.
Principal.

Civil Branch. No. 735. C
Dated 28th February 187

From,
The Principal,
College of Engineering.

To The Director of
Public Instruction,
Madras.

Sir.

In continuation of my No. 693 C, dated 4th February 1887, I have the honour to inform you that out of the nine students of the Engineer class who appeared for the B.C.E. degree Examination in January last six have been successful, and have been classed as follows:—

R. Gopala Aiyar, B.A.
B.V. Sundaram Aiyar, B.A.
A.V. Panchapakesa Aiyar B.A. } Second Class
S. Sakkammanayana Aiyar
D. Sesha Charlu, B.A. } Third Class
N. Venkatasubbiah Aiyar

One student, V.R. Narayana Aiyar did not present himself for examination on account of sickness.

2. Two candidates (of the College batch of 1885) appeared a second time for the B.C.E. degree Examination. One of them, G.V. Subramanya Aiyar, has been successful, and has been placed in the third class.

3. Excepting R. Gopala Aiyar, who has been appointed to the Public Works Department as Assistant Engineer, 3rd Grade on probation, none of the students have as yet been

successful in obtaining employment. The abolition of the temporary establishment of the Public Works Department, recently ordered, throws a large number of passed College students out of employ; and the majority of these must be gradually re-engaged before the selection of any of the present batch is likely to take place.

I have &c

(Signed) R. D. Lowe. Capt R.E.
Principal.

(True Copies)

D Duncan
Actg Director of Public Instruction

We have now the experience of the passed students who entered the College

Edwd

Educational Department.

CHIEF SECRETARIAT, MADRAS.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

READ the following paper

from the Director of Public Instruction dy 29th March 1887 no. 2057.

I have the honor to submit copies of letters from the Principal, College of Engineering, Nos 673b and 735C dy 4th and 28th February 1887, reporting on the results of the Examinations of the College Classes for 1886-87 and to request that they may be communicated to the Secretary to Government, Public Works Department. The results are very creditable to Captain Lowe and his Assistants. They to invite the attention of Government to para 3 of Captain Lowe's letter of the 28th February last.

Order thereon dy 16th April 1887 no 200

Communicated to the P.W. Department.

(True Extract)

H. Stuart
Under Secretary

To
The Public Works Department, with original ones:—

Encl
PW 3143/87

Educl 262/87

V.T.C.I. 3143

Govt. of {188} Madras.

B. No 1231 5th May 1887

Recorded.

To The Secretary

Proceedings, dated 16/4/ 188.
No. 200

B. No 1231 Subject. 5th May 1887

Report on the results of the College classes of the — for 85/86

2. The results are very creditable to the staff & students. When this order will be communicated to the Principal.

3. After passed [illegible] have recently been re-constituted on the temporary establishment with effect from 1st April but the supply of men from the College is for the [illegible] of the Regiments of the Dept.

MCS 26.4.87

Ag 2.5

Ag 28/4/87

Ag 26-4-87 [illegible] 2-5-87