Recorded in continuation
of G.O. No. 2719 W d/ 1st
September 1888.

/Sd/ W.L.C.B.
Dr.

Govt. of {1888} Madras.

EDUCATIONAL.

Issued

Recd. *Encl.*

G.O., 4th December 1888, No. 713.

DECEMBER.

Civil Engineering College.

Communicating to certain officers despatch from the Secretary of State, passing remarks on the report on the working of the — during 1887-88.

4th December 1888, No. 713, Educational.

GOVERNMENT OF MADRAS.

EDUCATIONAL DEPARTMENT.

Read—the following paper:—

Despatch from the Right Honorable Lord CROSS, Her Majesty's Secretary of State for India, to His Excellency the Right Honorable the Governor in Council, Fort St. George, dated India Office, London, 31st October 1888, No. 9 (Public Works).

I have received the copy of your Excellency's Proceedings in the Educational Department, No. 479, of the 14th August 1888, forwarded with your Secretary's letter, No. 480, Educational, of the same date.

2. I join with you in the regret which, in your Resolution of that date, you expressed on perusing the unfavorable report on the working of the Madras College of Engineering in 1887-88. By the time the next report is made, your Excellency will be in a better position to form an opinion on the effects of the re-organization of the College, and I shall be glad to know the conclusion at which you may arrive.

3. With regard to the proposal that local and municipal bodies should be compelled to employ only technically-qualified engineering subordinates (by which, I presume, is meant students educated at the College), it would appear that, before any such regulation is made, the sufficiency of the technical education given to the holders of College certificates should be fully assured.

Order—dated 4th December 1888, No. 713, Educational.

Communicated to the Local and Municipal Department and the Director of Public Instruction.

(True Extract.)

J. F. PRICE,
Chief Secretary.

To the Local and Municipal Department.
„ Director of Public Instruction.
Copy to Public Works Department.

Exd. A. Raitt.

Govt. of {1888} Madras.

EDUCATIONAL.

Issued

Recd. Encl.

G.O., 4th December 1888, No. 713.

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Copy to Public Works Department.

Exd. A. Raitt.

No 2724C. 18.7.88
" 3042. 11.6.88
B.No 1615 W. 4.6.88
" 2984 W. 24.1.88
" 2800 W. 20.10.87

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31/8/88

P.W.C. No 8615

(3)

Govt. of {1888} Madras.

EDUCATIONAL.

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Issued

Recd. 29-VIII-88 *Encl.*

G.O., 14th August 1888, No. 479.

AUGUST.

Madras College of Engineering.

Passing orders on the report on the working of the — during 1887-88, and forwarding copy of proceedings to the India Office.

31-8-88

Entered

GOVERNMENT OF MADRAS.

EDUCATIONAL DEPARTMENT.

READ—the following papers :—

From H. B. GRIGG, Esq., M.A., Director of Public Instruction, to the Chief Secretary to Government, dated Madras, 27th July 1888, No. 5485.

I have the honor to submit to Government three copies of the report on the working of the College of Engineering, Madras, for 1887-88, with my review thereon.

ENCLOSURE.

PROCEEDINGS of the Director of Public Instruction, dated 23rd July 1888, No. 5330.

Read—the following letter from the Acting Principal, College of Engineering, Madras, to the Director of Public Instruction, dated 28th May 1888, No. 117 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 which have been held during that period.

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

Engineer classes	17
Engineer Subordinates' classes	43
Draftsmen's classes	36
Surveyors' classes	21
Total ..	117

The average of the previous year was 166; there has therefore been a considerable falling off in the number of students; this is accounted for by the fact that during the year the old and new rules overlapped and students completed their courses and left the College under both sets of rules; thus in May a class of Engineer subordinates, 34 in number, a class of Draftsmen, 22 in number, and a class of Surveyors, 21 in number, passed out under the old rules, and in December Draftsmen and Surveyors to the number of 17 and 8, respectively, completed their courses under the new rules and left the College; this makes a total of 102 students who left during the year. During the year the following students joined the College under the new rules :—

Engineer class in January	3
Engineer Subordinates in August	15
Draftsmen in January	10
Surveyors in do.	4
Total ..	32

Some of the above subsequently withdrew. The number of admissions is less than usual owing to the late extensive reductions in the Public Works Department and the consequent difficulty passed students have in getting employment; to the raising of the standard, which deters many students from joining, as they fear they may after all fail to qualify for certificates; and to the extension of the periods of study and enhancement of the fees.

3. I anticipate a further falling off in numbers as soon as it is generally known that a student who fails on leaving the College to qualify for a certificate may not be given a certificate even though he succeeds in passing at a subsequent examination. The difficulty about obtaining employment will continue, and I think that it is hardly to be expected that the numbers who qualify for certificates each year should be largely in excess of the requirements of the Presidency.

4. *Changes in Establishment.*—During the year there were several changes in the staff. Mr. C. R. Krishna Aiyar, B.A., Instructor in Tamil, was absent on other duty at Mangalore College from 19th August to 17th December. The services of Mr. T. N. Rajagopala Aiyar, B.A., Special Mathematical Assistant Master, were dispensed with on 4th September, but he was appointed to act as Instructor in Tamil from that date; he resigned his acting appointment on 20th November. The Librarian, Mr. Pearson, was granted six months' leave without allowances from 24th September; and as he did not return from Natal at the expiration of his leave, Mr. C. K. Subrahmanya Aiyar, B.A., who was acting for him, was confirmed in the post. Mr. H. W. Hyde, Third Assistant Master, fell dangerously ill and had to take privilege leave on half-pay for three months from 3rd October. Mr. W. Cames, Second Assistant Master, whose health had for some time been in an unsatisfactory condition, proceeded to England on furlough on medical certificate for one year on 5th November. In January Mr. H. Narasinga Rau, B.A., Instructor in Telugu, left to take up an acting appointment in the Revenue Department. All these changes, especially the absence of Messrs. Cames and Hyde, whose places could not be filled by men with experience in teaching their special subjects, told against the College, and in some cases the arrangements made to fill temporary vacancies did not work well, though in the circumstances nothing better could be done.

5. *Re-organization of the College.*—Final orders were passed by the Secretary of State during the year, and the staff was re-organized on 1st January; the members of the former staff were re-appointed under different designations, but the new scale is still incomplete for want of two Professors, who are to come from England. Some subordinate posts have also to be filled up. The strengthening of the staff, though the number of students has fallen off, is essential, because the number of different classes has been increased and the subjects taught have been multiplied.

6. The Sub-Overseers' class has not yet been formed for want of room; directly the new buildings are completed I hope to form this class; and from the numerous applications I have received, it will apparently meet with good support.

7. *Officers' Mathematical Class.*—The last of the six probationers for the Revenue Survey Department, admitted in September 1886, passed the required test and left the College in September 1887; but before he could qualify, the class was dispensed with by order of Government; the probationer services of the special instructor were dispensed with by order of Government; the probationer remained until December getting instruction from the regular staff, and then he left the College without appearing for examination.

8. *Examinations held.*—The Board of Examiners had many examinations to hold owing to some of the students coming up under the old and others under the new rules; the following is a brief account of the results of these examinations held in December.

9. *Engineer Classes.*—Entrance examination, six candidates were registered, five appeared for examination, four passed, and three joined the College. A. V. Ramalinga Aiyar, B.A., secured the scholarship. The first division of the Engineer class had its second term examination, eight were examined. R. Srinivasa Aiyangar, B.A., kept his place at the head of the class and therefore retains the scholarship.

The second division, 9 in number, was examined at the end of its first term, and the scholarship for the first student was gained by K. Ramaswami Aiyar.

A special re-examination under the old rules was held, three were examined, one qualified for an Assistant Engineer's certificate and two for Overseers' certificates.

10. *Engineer Subordinates' Classes.*—A special re-examination under the old rules was held for those who failed to qualify in the previous May. Six appeared and only one succeeded in obtaining an Overseer's certificate.

The first division had its second term examination, 23 were examined; the two scholarships were gained by U. Venkata Rau and G. Srinivasa Aiyangar.

The second division had its first term examination, 12 were examined. A. Rajam Aiyar was first, but as he joined the Engineer class, the two scholarships fell to the next students, C. L. Venkatanarasayya and C. J. Mani.

11. *Draftsmen's Classes.*—The first division was finally examined. Out of 17 students, only one, W. C. H. Littlewood, passed, and he obtained a first-class certificate and gained the silver medal.

The second division had a term examination, 17 were examined, and the two scholarships were secured by A. K. Subrahmanya Sarma and V. Damodara Mudaliyar.

12. *Surveyors' Classes.*—The first division, consisting of eight students, was finally examined; two qualified for third-class certificates, the others failed. V. Sambasiva Aiyar obtained the silver medal.

The second division had a term examination, ten were examined. G. Gopalakrishna Aiyar and K. R. Krishnaswami Aiyar obtained the scholarships.

13. Copies of remarks by the Board of Examiners are attached. With reference to the observations of the Board, I beg to state that I quite recognize the need for reform, and now the College has been re-organized, I hope there will be an improvement. The Draftsmen's classes

have for a long time been instructed by Mr. Pope alone; in future they will be taken in certain special subjects by other instructors. Mr. Pope had got into a groove, and I had some difficulty in getting him to understand that the system of teaching must be radically altered. The students in the Draftsmen's and Surveyors' classes are as a rule deficient in general intelligence, and it is very difficult to get them to think for themselves. I did not expect good results from the draftsmen; they did not take at all kindly to the new subjects and had apparently convinced themselves that the examination would be as easy as it used to be. I am disappointed in the results of the Surveyors' examination; the class spent some time at Pallávaram and made a theodolite survey with contours of the place; they have to work in squads when under instruction, and the best student often does most of the work for the others to copy from him.

14. The results of the term examinations are stated by the Board to be on the whole satisfactory; paper on strength of materials for the Engineer Subordinates' class, first division, was in some respects in advance of the subjects already taught, but some of the questions should have been answered; most of the students gave in blank papers; the subject carried very few marks.

15. I am not satisfied with the results of any of the examinations; all the classes should have done better, but the general average of intelligence in entering the College is decidedly low, and, until we get a better stamp of student. we cannot except any great improvement. When a large number of students qualify for certificates, it appears to redound to the credit of the College, but I know from experience, and I think every officer of the Public Works Department will agree with me, that many certificates have been gained by students who are afterwards almost useless.

16. The numbers in the College on 31st March 1888, arranged by classes of the community, were as follows:—

Europeans and Eurasians	9
Brahmins	53
Hindus other than Brahmins	27
Native Christians	6
Total	95

17. *Military Students.*—The year opened with six military students on the rolls; two completed their course and left in May, two others joined in August. During the year two were remanded to their regiments at their own request; they had not made good progress with their studies and would probably have failed to qualify in the end, so their departure was no loss.

18. *Photographic Class.*—Owing to the state of Mr. Hyde's health and his absence for three months, not much instruction was given until towards the close of the year; lately there has been a decided improvement, and I am fairly well satisfied with the progress made. The new scale of establishment does not provide for any extra remuneration for the Instructor in Photography, so Mr. Hyde's allowance of Rs. 20 a month ceased on 1st January; he is continuing to teach, and if it is decided that the classes should go on, the allowance should, I think, be restored.

19. *Library.*—Under the new Librarian there has been a considerable improvement in system. A number of new books were ordered from England, but they had not arrived by the close of the year. The library now contains 2,434 volumes; there were 2,021 volumes issued to masters and students in the year.

20. *Apparatus, Models, &c.*—Pending the completion of the new building, when a large room will be available for them, I have not added much to the stock of models, &c. A model of hilly ground has been made and contoured in the College, and it is useful for instruction purposes. A French water-level has been obtained, and all the surveying instruments have been put into good order.

21. *Gymnastics.*—A gymnastic apparatus was set up, but it was not quite complete, and an instructor had not been appointed, so it was not brought into use.

22. *General Remarks.*—The conduct of the students has been good. I have again to record the obligations I am under to Mr. T. R. Scott, B.A., the First Assistant Master, who has rendered me intelligent and valuable support. Mr. J. Hamilton, who has been acting for Mr. Cames, and who has had to teach subjects comparatively new to him, has worked hard, and Sergeant W. H. Goddard has conducted his duties very satisfactorily. At the beginning of the year I was much troubled by a number of thefts of students' books and instruments; each student has a drawer and provides his own padlock; these padlocks were frequently reported to be picked and articles were missing from the drawers. A student on entering the College makes a deposit to cover the cost of the books and instruments he may require during his course; the balance, if any, is handed over to him when he leaves. Many students represented that they could get serviceable second-hand books and instruments for much less than the cost of new ones, and the custom was to value the articles and hand over their estimated cost to the students. The thefts at last became so numerous that I suspected the students of making away with their own

property in order to get money from their deposits ; at all events, I reasoned that there would be no thieves if there were no receivers, so I summarily put a stop to the system of giving students money to buy books and instruments, and stated that if they want them they can apply to me and I will purchase them and debit the cost to their deposits ; this does not prevent them from buying second-hand books if they prefer to do so with other money. The change has had an excellent effect ; not a single case of theft has been reported to me for the last six months.

23. Service books have been properly maintained for all members of the establishment who should have them.

From Captain W. L. C. BADDELEY, R.E., President of Board of Examiners, to Captain C. B. HENDERSON, R.E., Principal of the College of Engineering, dated Madras, 11th February 1888.

I have the honor to forward four statements showing the results in detail of the following examinations :—

Special examination for Assistant Engineer certificates held in December 1887.
Do. for Overseer certificates held in December 1887.
Examination of Surveyors' class held in December 1886 and December 1887.
Do. of Draftsmen's class held in December 1886 and December 1887.

2. The special examinations were authorised by Government on appeals submitted by students who had failed in the examinations of December 1886, and the results of the present examination are as below :—

Out of three candidates, S. Gopala Chari has qualified for a certificate as Assistant Engineer, while S. Sivagnana Mudaliyar and C. R. Srinivasa Aiyangar have failed, the former in the total number of marks required, the latter in drawing and estimating. After consideration of the statement of results, the Board recommend that the following certificates be granted :—

To S. Gopala Chari, a certificate as Assistant Engineer.
„ S. Sivagnana Mudaliyar, a certificate as Supervisor.
„ C. R. Srinivasa Aiyangar, a certificate as Supervisor.

Out of six candidates for certificates as Supervisor and Overseer, V. S. Gnanaprakasam Pillai has qualified for a certificate as overseer, the other five have failed, and the Board are unable to recommend them for any certificate higher than that of sub-overseer.

3. These special examinations were conducted under the old rules and in accordance with the former courses of study of the College, thereby increasing the work of the Board to a very great extent.

4. The class of draftsmen consisted of 17 students, only one of whom, W. C. H. Littlewood, has obtained a certificate. The work done by this man was excellent, and he has qualified for a first-class certificate, which the Board recommend may be given to him.

The statement of results shows that the greatest number of failures were in estimating—one of the most important qualifications for a draftsman in an Engineer's office. The failures in this subject are not confined to this year's examination, for it will be seen that in 1886 the results of the examination in estimating were most unsatisfactory. In architectural and topographical drawing, there are no less than 10 failures out of a class of 17, and the Board are of opinion, after inspecting the drawings executed in the College by the students, that far too much time is devoted to mere mechanical copying and coloring, the result being that the students are unable to draw from specifications and have not mastered the general principles on which estimates for ordinary buildings and other engineering works are framed.

5. As regards topographical drawing, the same want of knowledge of general principles is apparent, and if the status and pay of the draftsmen in the Public Works Department is to be improved, as is anticipated in paragraph (3) of Article X of the rules relating to the constitution of the College of Engineering, it is certain that the officers of the Public Works Department will expect to obtain from the College men of intelligence properly grounded in drawing and estimating, and not mere copyists.

6. The Surveyors' class consisted of eight students, two of whom, V. Sambasiva Aiyar and N. Ammanna, have obtained third-class certificates ; the other six have failed to qualify. The failures are chiefly in theodolite surveying and in levelling, and considering the waste of money and time that invariably result from incorrect surveys, the Board are of opinion that the College staff should carefully consider the necessity of grounding the students in general principles and insist on accurate and independent work, avoiding as much as possible the tendency to make up neat-looking maps and plans without thoroughly mastering the field work.

From Captain W. L. C. BADDELEY, R.E., President, Board of Examiners, to Captain C. B. HENDERSON, R.E., Acting Principal, College of Engineering, dated Chepak, 22nd March 1888.

I have the honor to forward herewith six statements showing the results of the examinations of the following classes in December 1887 :—

I.—Engineer class, first division.
II.—Engineer class, second division.
III.—Engineer Subordinates' class, first division.
IV.—Engineer Subordinates' class, second division.
V.—Draftsmen's class, second division.
VI.—Surveyors' class, second division.

The average percentage of marks obtained in each class and the highest percentages are—

In I,	46 per cent. and	64 per cent.	(R. Srinivasa Aiyangar, B.A.).
„ II,	65 „ and	77 „	(K. Ramaswami Aiyar).
„ III,	50 „ and	66 „	(U. Venkata Rau).
„ IV,	45 „ and	75 „	(A. Rajam Aiyar).
„ V,	54 „ and	76 „	(A. K. Subrahmanya Sarma).
„ VI,	50 „ and	82 „	(G. Gopalakrishna Aiyar).

These examinations being the first held under the new rules of the College of Engineering, no useful purpose would be served by comparing the results with those of previous years, for in many subjects the scope of the examination has been increased, some new subjects have been introduced, and whereas under the old rules the Board examined in, and finally disposed of, each subject as a whole, under the new rules portions only of different subjects are taken up and finally disposed of at each term examination.

The results of the examination are, in the opinion of the Board, satisfactory, except in strength of materials, about which subject there appears to have been some misapprehension, as the candidates stated they were totally unprepared for the class of questions asked. These were similar to, and not more difficult than, those hitherto set in examinations in this subject at the College.

The introduction of the scheme of re-organization, which was begun on the 1st January 1886, was continued, but all the sanctioned proposals extending the scope of the College have not as yet been introduced. The Professors of Engineering and Mathematics will not join until next month. The Sub-Overseers' class was not formed owing to want of accommodation, but from the numerous applications received by the Acting Principal, it is evident that the formation of this class, after the new buildings are completed, will be an important development in the future working of the College.

2. The average numbers on the rolls for the last two official years are given below :—

	1886-87.	1887-88.
Engineer classes	16	17
Engineer Subordinates' classes	63	43
Draftsmen's classes	50	36
Surveyors' classes	37	21
Total ..	166	117

With the exception of the Engineer classes, a considerable decrease is noticeable in the average attendance of all the other classes, which is much regretted. In paragraph 2 of his letter the Acting Principal states that the introduction of the new rules and the passing out of a large number of students under the old rules were the causes that led to this decline. The Director is inclined to think that these circumstances only partly account for so large a decrease. The number on the rolls on the 31st March 1888 was only 93 (against 181 on the corresponding date in 1887) distributed among the four sections as follows :—

Engineer classes	20
Engineer Subordinates' classes	32
Draftsmen's classes	27
Surveyors' classes	14

From a separate communication from the Acting Principal, the subjoined figures have been obtained as regards the number of applicants and admissions into the various classes during the last two years :—

—	1886-87.		1887-88.	
	Number of applicants.	Number actually admitted.	Number of applicants.	Number actually admitted.
Engineer classes	15	9	6	3
Engineer Subordinates' classes.	41	28	26	15
Draftsmen's classes	24	20	15	10
Surveyors' classes	17	10	9	4
Total ..	97	67	56	32

It will be seen from the above that the number of applicants decreased by about 42 per cent. during the year 1887-88. Even out of the 32 that were admitted, a few—the number is not given, but the Director infers from the strength of the College and the number of admissions and withdrawals during the year that it would be about 18—left the College. The slight decrease in the strength last year was attributed to mere ordinary fluctuations, but the facts disclosed this year evidently lead to the conclusion that the difficulty in finding employment under Government is one of the chief causes that has told so perceptibly on the strength of the College. The stricter rules now in force, as regards the award of certificates, the increased length of the courses, and the increased cost of the education afforded, although unquestionably important factors, did not probably contribute so much to this decline as the cause above mentioned. As the College has hitherto been more or less a training institution for the Department of Public Works, it is not surprising to find the number of admissions fluctuating with the facilities which passed candidates have of obtaining employment under Government. But the Director is disposed to think that the introduction of the re-organization scheme in its entirety and the strengthening of the staff by two European professors will ultimately raise the College considerably in public estimation and thus increase the attendance. If the men turned out under the new scheme prove themselves superior to those educated under the old, the employers of labor will naturally prefer them, and the demand thus created will lead young men to resort to the institution. Until, however, the State compels Local and Municipal bodies to employ only technically-qualified Engineering subordinates, the usefulness of the institution must be limited and its cost to the exchequer be much greater than would otherwise be the case.

3. The subjoined table gives particulars of the pupils distributed according to race or caste :—

	1887.	1888.
Europeans and Eurasians	24	7
Native Christians	12	6
Muhammadans	2	..
Brahmins	79	53
Non-Brahmin Hindus	63	27
Others	1	..
Total ..	181	93

The Brahmin students comprise 57 per cent. of the total number on the rolls, against 43 per cent. in the previous year. The entire absence of Muhammadans is a fact to be much regretted. Under "Europeans and Eurasians" and non-Brahmin Hindus, the decrease is much greater than the general decline in the total attendance. There can be little question that the high fees have told on the attendance in these classes. It is only in the Draftsmen's classes that non-Brahmin Hindus preponderate. There were two "Europeans and Eurasians" in the Engineer classes, three in the Engineer subordinate classes, and two in the Surveyors' classes. Four out of the six Native Christians were in the Engineer subordinate classes. The very large number of Brahmins, especially in the College classes, is noteworthy.

4. Fifty-five per cent. of the pupils belonged to the landholder classes, and 42 per cent. were sons of officials. There was not a single pupil that belonged to the artisan community. It is hoped that the re-organization of the College will afford special facilities for the training of a fair number of pupils of this class. The artisan classes should have the greatest natural aptitude for the engineering profession in all its grades, whilst it is manifestly to the interest of the country that these classes should be improved in their general and technical educational qualifications. This institution should, when thoroughly organized in the matter of practical as well as of theoretical instruction as regards Engineering and its subsidiary arts, afford the best means of improving those classes.

5. Particulars as regards the social condition of the pupils are given below :—

	Of the richer classes.	Of the middle classes.	Of the poorer classes.
College	4	44	4
School	1	34	6

Students belonging to the middle classes seem to preponderate both in the College and School departments. The perceptible decline in the number of pupils belonging to the poorer classes is noteworthy; it was only 10 per cent. of the total number against 22 in the previous year. This bears out the remarks made above in regard to the effect of high fees. But it must not be inferred from this observation that the fees should be lowered in the higher grades. The opening of the overseer and maistry classes will probably be a sufficient concession for the poorer classes.

6. There were several unavoidable changes in the staff during the year. The post of Special Mathematical Assistant was abolished under orders of Government. Three of the changes, however, affected only the arrangements for teaching Tamil and Telugu. The absence on leave during a part of the year of Messrs. Hyde and Cames were the only changes that seem to have affected to some extent the work of the College.

7. The term examinations, as well as those for the award of certificates, were conducted by the Board of Examiners nominated by Government, consisting of the following gentlemen :—

Major Baddeley, R.E., Chairman.
F. B. Hanna, Esq., } Members.
J. A. Jones, Esq., }
G. H. Stuart, Esq., Additional Examiner for Mathematics.

Two special examinations—one for Assistant Engineers' certificates and the other for Overseers' certificates—which were authorized by Government, were held last December. These additional examinations increased very considerably the work of the Board.

8. Four out of five candidates that appeared for admission to the Engineer classes passed the entrance examination, but only three joined the College. The number of applicants last year was 15. The results of the examination of the Engineer class, first division, were by no means satisfactory. The average percentage of marks obtained was only 46. The results of the examination of the second division were good. At a special re-examination for Engineers' certificates only one out of the three examined passed. The failed candidates were, however, recommended for Overseers' certificates. Six candidates appeared for the B.C.E. Degree examination, of whom four passed—three in the second and one in the third class. The Acting Principal should have given full particulars of the students that went up for this examination. It is not known whether there were any old students among them, and whether all that appeared succeeded in securing Assistant Engineers' certificates.

9. Judging from the average percentage of marks obtained by the students, it is evident that the Engineer subordinates' class, second division, did not produce satisfactory results in the term examination. At the special re-examination of the candidates under the old rules for certificates as Supervisor and Overseer, only one out of six that were examined passed—a fact which shows that the majority of candidates were far below the standard they were expected to attain.

10. The results of the final examination of the Draftsmen's classes were most disastrous, only one out of 17 that were examined secured a certificate. This outcome of the year's work is very discreditable to the teachers concerned. This is the first time the working of this class and that for Surveyors has been tested by the Board, although, in 1887, the examination was entrusted to two gentlemen not connected with the College, Messrs. Brassington and Stephens. From the report of the Board of Examiners it would appear that most unsatisfactory results were produced in estimating, and that there were as many as ten failures in architectural and topographical drawing. The teaching in drawing has evidently been of a most routine character, and hence the students' ignorance of general principles. The Board well remarks that "the officers of the Public Works Department will expect to obtain from the College men of intelligence properly grounded in drawing and estimating, and not mere copyists." The state of things above noted shows how very necessary it was to put an end to the old system prevailing until 1887 of conducting this examination by members of the College staff, for it cannot be for a moment contended that these unfavorable results indicate a sudden deterioration in the character of the teaching and in the attainments of the students. The knowledge that the examination was to be held by an independent Board probably induced more careful preparation on the part of the students than in former years. The miserable results produced point, therefore, to the need of a radical change in the mode of instruction imparted to the Draftsmen's classes. The Acting Principal is requested to state definitely what arrangements he has made for improving the instruction in the various subjects.

11. Eight students of the senior division of the Surveyors' class were examined, of whom two passed and secured third-class certificates. These results compare very unfavorably with those of the previous year, when out of 18 pupils that were examined as many as 15 succeeded in obtaining certificates. The chief failures in this class were in theodolite surveying and in levelling. The irregularity complained of by Captain Henderson in paragraph 13 of his report regarding the survey work of the class can easily be put a stop to if the work of each student is subject to a proper scrutiny. The Director would specially draw the attention of the Acting Principal to the remark of the Board that "the College staff should carefully consider the necessity of grounding the students in general principles and insist on accurate and independent work, avoiding, as much as possible, the tendency to make up neat-looking maps and plans without thoroughly mastering the field work."

12. Captain Henderson's statement that the students of the College, more especially those in the Draftsmen's and Surveyors' classes, are wanting in general intelligence, is not understood. If the entrance examinations are conducted as they should be and are of a sufficiently testing nature, there should be no room for this complaint. In any case if unintelligent students obtained admission, they should have been weeded out long before they came to the final examination and should never have obtained certificates. That inefficient students should be able to pass each year's barrier tends to show that the system of final examination in some subjects during the course is by no means a sound one.

13. Only two out of the six military students that were on the rolls completed their course. Two left the College without finishing their course. At the close of the year there were only four on the rolls.

14. In G.O., dated 21st May 1888, No 307, the Government ordered the discontinuance of the photography class, as the results of maintaining the class were not worth the expenditure incurred. Government have, however, promised to consider the question of re-opening it on an extended basis after the arrival of the expected additional professors.

15. The working of the library during the year was satisfactory. The large number of books taken out for private study shows that good use had been made of the library.

16. There will be ample accommodation for a good museum of models, apparatus, &c., in the new buildings, which should have been completed by this time.

17. The Director regrets to find that arrangements for gymnastic instruction were not made in time. He trusts that systematic attention will be paid to the physical instruction of the pupils in future.

18. The thefts of books and instruments reported to have occurred in the College show either carelessness on the part of the students, or, if the Acting Principal's surmise be correct, a tone of low morality much to be deplored. The present arrangements for the supply of the articles necessary are approved.

19. The results of the College for the past year have been far from satisfactory, but it is hoped that the re-organization of the institution will mark a new era in its history, and that, with the additional staff of professors and its extended scope, and improved methods of operation, it will yet play an important part in the promotion of technical education in general and of Engineering in particular.

(Signed) H. B. GRIGG,
Director of Public Instruction.

To the Principal, College of Engineering, Madras.
" Principals of the other Government Colleges.
" Superintendent, School of Arts.
" Editor, *Madras Journal of Education.*

Order—dated 14th August 1888, No. 479, Educational.

The Government have perused with regret the unfavorable report on the working of the College of Engineering during 1887-88 submitted with the foregoing letter. The Director's remarks as to the effect of the change in the constitution of the examining authority are noted. The scheme of re-organization of the College must be given a fair trial before a final decision with regard to its effect can be arrived at, but the results so far are not encouraging.

2. The suggestion that local bodies shall in future be required to employ technically-qualified Engineering subordinates only will be considered in the Local and Municipal Department. With reference to the remarks in paragraph 3 of the Acting Principal's letter, No. 117-C., dated 28th May 1888, it is observed that in G.O., 2nd July 1888, No. 384, the Government have sanctioned the grant of a modified certificate to students who eventually succeed in passing after one or more failures.

3. The report will be forwarded, as usual, to the India Office.

(True Extract.)

W. R. Barkley
for Chief Secretary.

To the Director of Public Instruction.
" Public Works Department.
" Local and Municipal Department.

Exd. A. Raitt.

No 2724 C. 18. 7. 88
" 3042 D. 11. 6. 88
B. No 1615 V.

P. W. C. No 3615

(3)

Recorded in continuation of G. O. No. 2719 W dated 7th September 1888.

[illegible] W. P. C. B
Dy

Gobt. of {1888} Madras.

EDUCATIONAL.

Issued

Recd. *Encl.*

G.O., 4th December 1888, No. 713.

DECEMBER.

Civil Engineering College.

Communicating to certain officers despatch from the Secretary of State, passing remarks on the report on the working of the — during 1887-88.

~~31-8-88~~ [illegible]

[illegible]

4th December 1888, No. 713, Educational.

GOVERNMENT OF MADRAS.

EDUCATIONAL DEPARTMENT.

Read—the following paper:—

Despatch from the Right Honorable Lord CROSS, Her Majesty's Secretary of State for India, to His Excellency the Right Honorable the Governor in Council, Fort St. George, dated India Office, London, 31st October 1888, No. 9 (Public Works).

I have received the copy of your Excellency's Proceedings in the Educational Department, No. 479, of the 14th August 1888, forwarded with your Secretary's letter, No. 480, Educational, of the same date.

2. I join with you in the regret which, in your Resolution of that date, you expressed on perusing the unfavorable report on the working of the Madras College of Engineering in 1887-88. By the time the next report is made, your Excellency will be in a better position to form an opinion on the effects of the re-organization of the College, and I shall be glad to know the conclusion at which you may arrive.

3. With regard to the proposal that local and municipal bodies should be compelled to employ only technically-qualified engineering subordinates (by which, I presume, is meant students educated at the College), it would appear that, before any such regulation is made, the sufficiency of the technical education given to the holders of College certificates should be fully assured.

Order—dated 4th December 1888, No. 713, Educational.

Communicated to the Local and Municipal Department and the Director of Public Instruction.

(True Extract.)

J. F. PRICE,
Chief Secretary.

To the Local and Municipal Department.
„ Director of Public Instruction.
Copy to Public Works Department.

Exd. A. Raitt.