

Government of Madras

HOME DEPARTMENT (EDUCATION)

G.O. No. 850, 28th June 1918

Report

Recording the — on the working of the College of Engineering, Madras, during 1917-18.

ORIGINAL

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READ—the following paper :—

Letter—from the Hon'ble Mr. J. H. STONE, M.A., F.R.H.S., C.I.E., Director of Public Instruction.

To—the Secretary to Government, Home (Education) Department.

Dated—Madras, the 17th June 1918.

No.—R.C. 3513.

I have the honour to submit herewith for the information of Government a copy of my Proceedings R.C. No. 3513, dated 10th June 1918, reviewing the report on the working of the College of Engineering, Madras, during the year 1917-18.

ENCLOSURE

Proceedings of the Director of Public Instruction, R.C. No. 3513,
dated 10th June 1918.

Read—the following paper :—

Letter—from W. H. JAMES, Esq., M.Sc., Principal, College of Engineering, Madras.

To—the Director of Public Instruction.

Dated—the 15th April 1918.

No.—C. 6/18.

I have the honour to submit herewith the administration report of the College of Engineering, Madras, for the academic year 1917-18.

2. *Staff*.—M.R.Ry. K. R. Ramaswami Ayyangar Avargal, Professor of Mathematics, was granted privilege leave on half-pay for twenty days from the 15th September 1917 in order to serve on the committee appointed by the University for the inspection of colleges in the mufassal.

Conductor P. H. England, Sub-Engineer, Public Works Department, and Instructor in Civil Engineering, reverted to his department on the 3rd January 1918 and M.R.Ry. S. Rajagopalaswami Mudaliyar Avargal, Sub-Engineer and Honorary Assistant Engineer, Public Works Department, succeeded him on that date as Instructor in Civil Engineering.

Mr. J. Webster resumed charge of his appointment as Instructor in Mechanical Engineering on the expiry of his furlough on the 9th April 1917 and M.R.Ry. S. Subrahmanya Ayyar, who was acting for him, was transferred to the Public Works Department as Supervisor, first grade.

M.R.Ry. K. Subrahmanya Ayyar, Supervisor, first grade (temporary), and M.R.Ry. V. Sudarsana Acharya, Overseer, first grade (temporary), reverted to the Public Works Department on the 20th April 1917 and M.R.Ry. M. S. Srinivasa Rao, Overseer, first grade, and M.R.Ry. A. Muthurama Ayyar, Overseer, second grade (temporary), joined duty in their place on the 7th July 1917.

M.R.Ry. D. Venkatesha Ayyar, Overseer, first grade, reverted to the Public Works Department on the 22nd December 1917 and in his place M.R.Ry. N. K. Gopala Ayyangar, Overseer, second grade (temporary), who was posted to the college

on the 24th September 1917 in connexion with the 'Revenue Officers' class, was retained in the college permanently when the work of the class was over on the 22nd December 1917.

M.R.Ry. K. Somaskanda Ayyar, Overseer, first grade (temporary), and Assistant Instructor of this college, was deputed on special duty for gauging work on the Cauvery river and its tributaries in Mysore on the 5th May 1917 and he rejoined duty in the college on its reopening after the summer vacation on the 7th July 1917.

M.R.Ry. T. V. Sesha Ayyar, Overseer, first grade (temporary), having accepted an appointment in the Military Department as Assistant Engineer, Hindaya Barrage, Mesopotamia, was relieved from the college on the 1st February 1918 and M.R.Ry. R. Subrahmanya Ayyar, Overseer, second grade, replaced him on the 15th February 1918.

M.R.Ry. K. Venkatarama Ayyar, Overseer, first grade (temporary), reverted to the Public Works Department on the 16th February 1918 and his place was taken by M.R.Ry. V. C. Govindarajulu Nayudu, Overseer, first grade, on the same day.

The appointment of Assistant Instructor in Mathematics was included in the cadre of the Subordinate Educational service, Collegiate branch, and M.R.Ry. S. Krishnaswami Ayyar, the incumbent of that post, was appointed to class IV of the cadre with effect from 29th May 1917.

Mr. F. N. Mowdawalla, Electrical Engineering Laboratory Assistant on probation, was exempted from the age rules and confirmed in the appointment with retrospective effect from 3rd January 1916. This officer was on privilege leave on half-pay on account of illness for five days from 17th December 1917.

M.R.Ry. T. N. Govindaswami Rao, Foreman Carpenter, was granted furlough for two years with effect from 18th August 1917 and Krishnaswami Nayakar acts for him from that date.

The services of Mr. A. E. Holloway, Instrument repairer, were dispensed with for absence without leave with effect from 1st July 1917, and Mr. D. Vaz was appointed to the post from 1st August 1917 as a temporary measure.

M.R.Ry. N. Ramanuja Achariyar, Accountant, took privilege leave on full pay for three months from the 17th May 1917 and M.R.Ry. T. Vaidyanatha Ayyar, Head clerk, office of the Inspector of European and Training Schools, acted for him during that period.

M.R.Ry. K. V. Kunhiraman, acting Head clerk, was confirmed in the appointment with effect from the 17th July 1916. He was on privilege leave on full pay for three months from the 14th October 1917. During his absence, G. C. Duraiswami Ayyangar, Librarian and Storekeeper, acted as Head clerk, and T. V. Kuppuswami Mudaliyar, Workshop clerk, as Librarian and Storekeeper.

G. C. Duraiswami Ayyangar, acting Librarian and Storekeeper, was confirmed in the appointment with effect from 3rd November 1916.

H. Y. Harihara Ayyar, acting first assistant clerk, having accepted an appointment in the Accountant-General's office, was relieved from the college on the 16th April 1917 and his place was taken by A. Ramachandra Rao, who was appointed sub. *pro tem.* first assistant clerk from 1st July 1917 and confirmed in the appointment from 1st October 1917.

T. V. Kuppuswami Mudaliyar, Workshop clerk, was on privilege leave on full pay from the 7th February to 12th March 1918.

P. Subrahmanya Ayyar, Typist, was exempted from examination rules and appointed to act as Workshop clerk on three occasions during the year under report: (1) 17th April 1917 to 30th June 1917, (2) 14th October 1917 to 13th January 1918 and (3) 7th February to 12th March 1918.

Parthasarathi Ayyangar, Muhammad Ibrahim and Panchapakesa Ayyar, acted as typists for those periods respectively in place of P. Subrahmanya Ayyar.

The sanction of four temporary assistant instructors for the college was renewed for this academic year.

3. *Numbers on the rolls.*—The number of students on the rolls at the end of the academic year was—

Class.	Practical course.	In college.				Total.
		Fourth year.	Third year.	Second year.	First year.	
Engineer class	22	25	26	33 *	31 *	137
Upper Subordinate class	43	..	..	44	43	130
Lower Subordinate class	..	..	..	..	79	79
Probationary Subordinate class	..	..	..	126	119	245
Total	65	25	26	203	272	591

* Three in each year are holders of Electrical Engineering scholarships.

Excluding the students on practical course, the total number actually in the college on the 31st March 1918 was 526.

The corresponding totals for the last five years were—

Year	No.
1916-17	511
1915-16	491
1914-15	429
1913-14	380
1912-13	357

The distribution of the students by class of community, districts, wealth and occupation of parents or guardians is given in Appendices A, B and C.

Of the total number 68.8 per cent were Brahmans, 21.1 per cent non-Brahman Caste Hindus, 7.6 per cent Indian Christians, 1.5 per cent Europeans and Anglo-Indians and about 1 per cent Muhammadans. The percentages of Brahmans and non-Brahmans have risen slightly this year while those of the Indian Christians and Muhammadans remained almost stationary. The fall in percentage of Europeans and Anglo-Indians, as compared with that of the previous year, is accounted for by there being no military students admitted to the probationary subordinate class in July last.

As regards districts, Tanjore was represented by 14.1 per cent, Gōdāvari 8.5 per cent, Kistna 7.8 per cent, Malabar and Tinnevely 6.8 per cent each, Madras 6.2 per cent, Trichinopoly 5.9 per cent, Travancore 4.2 per cent, Chingleput 3.6 per cent, South Kanara 3.4 per cent, North Arcot and Madura 3.2 per cent each, Guntūr 3 per cent, South Arcot and Coimbatore 2.5 per cent each, Ganjām 2.4 per cent, Mysore 2.1 per cent, Salem and Cochin 1.7 per cent each, Vizagapatam and Chittoor 1.5 per cent each, Nellore, Cuddapah and Ramnad 1.1 per cent each, Kurnool and Ceylon 0.6 per cent each, Bellary and Pudukkōttai 0.4 per cent each, Anantapur, Hyderabad and Coorg 0.2 per cent of the total number.

4. *Admission of students.*—In all, 204 candidates applied for admission to the Engineer class and 395 for the Probationary Subordinate class, and of these 30 and 122 were admitted to the respective classes.

Twenty-four applications were received for the three electrical engineering scholarships instituted last year, of which four were from ineligible candidates. The number was larger and the standard of general education of the applicants higher than last year, but there is still some room for improvement and it is hoped that in future these fairly valuable scholarships will attract the very best class of students.

5. *Examinations—Engineer class, Senior division.*—The Civil branch consisted of 19 students. All passed the final examination, but five failed to qualify in practical surveying. Four have since passed on re examination.

The average percentage of marks obtained was 58.9.

The five students constituting the Mechanical branch passed the final examination, one with honours, gaining 59.7 per cent of the total marks.

Second division (third year)—Civil.—There were fourteen students in this division. All appeared for the sessional examination and qualified for promotion.

Second division (third year)—Mechanical.—Twelve students constituted this division and all passed the sessional examination except one who was unable to appear through illness.

Third division (second year).—This was a class of 26 students. All appeared for the sessional examination and qualified for promotion to the next higher division except one who was prevented from appearing for the examination owing to illness. Of those qualified for promotion 14 joined the Civil and 11 the Mechanical branch.

Fourth division (first year).—All the 33 students of this class passed on in accordance with the rules to the second year of the course except one student, a French subject from Pondicherry, who was called to the colours about the end of the year.

Upper Subordinate class (Senior division).—There were 43 students in this class. All passed the final examination, six with honours, except that nine failed to qualify in practical surveying. These students have since passed, two after attending this year's survey camp. The average percentage of marks obtained was 60.1.

Upper Subordinate class (Junior division).—This class was 48 strong. One Civil and two Military students failed in the examination and continued in the class this session.

Lower Subordinate class.—Of the 66 students constituting this class, 56 passed (one with honours), nine failed, and the name of one student was removed from the class list. Of those who passed, 11 failed to reach the standard demanded in practical surveying, but all qualified later on in the year on re-examination after obtaining further practice, one student having to attend this year's survey camp.

The average of marks gained was 56.7 per cent of the total.

Probationary Subordinate class (second year division).—The strength of this class was 122 and of these eight failed to qualify for proceeding to higher courses of study. Of those who passed, the 40 at the head of the list were selected for the Upper Subordinate class and the remainder went on to complete their courses in the Lower Subordinate class. Three of the four failing for the first time rejoined the class for this session, but the four failing for the second time had under the rules to sever their connexion with the college.

Probationary Subordinate class (first year division).—This division contained 126 students and in accordance with the rules all proceeded with the second year of study.

Particulars of the marks obtained by classes in the several branches of the examinations are given in Appendix D.

6. *Honours and distinctions.*—The college medals for the session were awarded to the undermentioned final year students:—

Gold medal—A. R. Venkata Acharyar, Engineer class.

Silver medal—S. R. Venkateswaram, Upper Subordinate class.

Bronze medal—S. Venkataramayya, Lower Subordinate class.

The Harris gold medal for proficiency in electrical engineering was awarded to A. R. Venkata Acharya, and the DeWinton gold medal for hydraulic engineering to V. Ramayya of the Engineer class, who also gained the University Rao Bahadur S. Subbaraya Acharyar Medal and the J. A. Jones Prize.

7. *Prizes.*—The special college prizes were awarded as follows:—

Engineer class.—The Colonel Love prize for proficiency in applied mechanics to A. R. Venkata Acharya. The Madhava Rao Prize for practical surveying to V. Ramayya.

Upper Subordinate class.—The Roger's prize went to the Silver medalist, as well as the Colonel Love prizes for hydraulic engineering. The prizes for engineering, mathematics and surveying were also gained by S. R. Venkateswaran.

The prize for drawing went to S. Ramalingam and the Madhava Rao Prize for workshop practice to Sergeant J. Gold.

The Madhava Rao Prize to a Mahratta Brahman for workshop practice was not awarded for want of a qualified candidate.

Lower Subordinate class.—The Colonel Love Prize was awarded to the senior student, S. Venkataramayya.

8. *University examinations.*—Twenty Engineer students from the college and two ex-students presented themselves for the B.E. Degree Examination and of these ten passed in the Civil branch and two in the Mechanical branch.

For the F.E. Examination 37 students appeared, of whom 26 were second year students, eight third year students and three final year students. In all 19 were successful—14 second year students, four third year students and one final year student.

9. *Practical courses.*—Twenty-two Engineer (18 Civil and 4 Mechanical) and 43 Upper Subordinate students started on the usual courses of practical training towards the end of May last. One civil and one mechanical engineer student, who took up appointments in the Mysore service soon after the completion of their theoretical courses, did not rejoin for practical training.

All the civil engineer and upper subordinate students were posted as usual to Public Works divisions.

The senior mechanical engineer student was selected apprentice engineer and posted to the Gōdāvari Head Works division.

Of the other three mechanical engineer students, one joined the Madras and Southern Mahratta Railway Workshops, Perambur, another joined the Public Works Department Workshops, Madras, and the third was posted to a Public Works division.

With the return of His Excellency's Body Guard the equitation classes were resumed and arrangements have been made for all the students under practical training to pass in turn through the usual course of instruction in riding.

10. *Military students.*—No military candidate applied for admission this year.

The number of military students on the rolls was seven distributed as follows:—

Practical course	2
Upper Subordinate class, second year	2
Do. first year	2
Probationary Subordinate class, second year	1
Do. first year	Nil.
Total	7

11. *Revenue officers' class.*—Twelve officers underwent the usual course of training from the 24th September to the 22nd December 1917. One officer left to join for military duty in the middle of his course. They were a hard-working class and appeared to endeavour to gain all the knowledge they could in the very limited period of the course.

12. *Survey camp.*—The camp was held this year at Tirunirmalai, St. Thomas' Mount and Saidapet, with 496 students in attendance.

The senior, second and third divisions of the engineer class, half the first divisions of the probationary subordinate class and half the lower subordinate class were at Tirunirmalai from January 7th to 17th, changing over for the second period with the two divisions of the upper subordinate class and the other halves of the lower subordinate and probationary subordinate classes who started at St. Thomas' Mount. The senior class divisions remained out till February 2nd, the other divisions at these camps returning on January 26th. The first year divisions of the engineer and probationary subordinate classes worked in the neighbourhood of Saidapet from January 2nd to 23rd.

At Tirunirmalai the parties were engaged chiefly on the survey work of a project for a light railway from Tambaram station on the South Indian Railway to Tirunirmalai. So far as possible the procedure adopted in actual practice was followed. The senior divisions carried out a reconnaissance for the preliminary location of the railway and then made an open traverse near the selected line. On this

were based a series of closed traverse surveys to include the features for an average width of about a quarter of a mile along the line provisionally selected, and these traverse lines were used in turn as a basis for plane table surveys. Levelling parties at the same time contoured the land covered. With the information thus obtained each squad of the senior divisions laid down what they considered the most suitable line for the railway and finally set out on the ground the selected line with the necessary curves.

At St. Thomas' Mount the senior engineer division was engaged chiefly on trigonometrical surveying, traversing and tacheometry, and some little time was devoted to making solar observations for the determination of the true north, latitude, etc. This latter was partly in connexion with a course of the lectures on astronomy given by the Professor of Mathematics out in camp. The senior upper subordinate division did somewhat less advanced theodolite work, while the lower subordinate class put in about equal periods at levelling practice and easy elementary theodolite surveying.

The third year engineer and first year upper subordinate divisions devoted all their time to levelling in connexion with the project and other general practice.

The second year engineer and probationary class divisions divided their time equally between simple levelling and plane table and chain surveying, each squad completing a fairly large chain survey.

The first year engineer and probationary subordinate divisions were engaged on chain and compass surveys of the town of Saidapet and the district round about.

We are again indebted to the military authorities for allowing us to work within cantonment limits at St. Thomas' Mount and to the Garrison Engineer, Fort St. George, for kindly placing at our disposal some buildings for use as office and instrument store rooms.

Although the exceptional rainfall during January caused some inconvenience, the work of the camp on the whole was quite satisfactory.

The total cost of the camp was Rs. 3,900-9-10.

13. *Workshops and Laboratories.*—All classes had the usual weekly period of instruction in the workshop, but, as pointed out in previous reports, we are much hampered in this connexion by want of space and paucity of machine tools.

The drawback in regard to accommodation will be removed after another year, when we move out to our new premises, but little will be possible in the way of improving our equipment until the war is over. Later on we shall be able to expand our courses of instruction in laboratory and practical work of that kind to include more classes than is feasible at present.

The college undertook the work of the equipment of the new science laboratories at Guindy and the workshop with an increased staff has been fully engaged for the latter half of the session on this work. Apart from the saving to Government on supervision and other like charges, work of this kind is of considerable value in a college, as it helps to bring the staff and students in touch to some extent with the actualities of practice. We expect next session to be engaged on other similar work for the engineering laboratories and the library.

Our accommodation does not allow of our taking in hand the making of the hostel furniture and this is being done by outside contractors.

The Professor of Mechanical Engineering in his report on the workshop and Mechanical Engineering Laboratory classes makes the following remarks:—

“Although more machines are very badly required for the efficient training of the senior classes, little can be done in the matter owing to lack of room. A new Hacksaw Machine and Wet Emery wheel grinder have been ordered and several new carpenters benches have been put in hand.

“A few minor additions have been added to the laboratory equipment during the year under review, and amongst them being a vacuum gauge tester, and a model for carrying out experiments in balancing machines.”

14. The Professor of Electrical Engineering reports as follows on the work in the Electrical Engineering Laboratory:—

“The number of students dealt with this session was 23 against 17 last session. This increase accentuated the difficulties arising from scarcity of instruments, which it has been impossible to remedy owing to complete stoppage of supplies from England. Three instruments only could be obtained locally.

“The instruction, in addition to giving a good grounding in fundamental principles, aims at training each student so that he can handle electrical machines and instruments of all types with confidence. With this in view special attention is given to the mechanical construction and values of the electrical and magnetic constants of all types of machines and instruments. Ignorance of these matters on the part of an operator will very soon result in the serious damage to which most electrical machines and the usually delicate instruments are specially liable on account of the suddenness and magnitude electrical effects. A considerable amount of commercial testing of machines and other apparatus has been carried through and although there are at all times, when testing is in progress, innumerable opportunities for such things to happen, no serious accidents to apparatus or the students themselves have occurred.

“Two machines are out of commission on account of defective field windings. These were dismantled by the students, the faults localized and repairs partially completed by them. The completion of the repairs will be carried out by the staff or it can be done by a local firm. From the first these machines have behaved in a peculiar way and I suspect a mistake in design which we can probably rectify.

“The development of the laboratory has been greatly handicapped by absolute stoppage of supplies from England. The remainder of the items of the 1916-17 indent arrived, but the whole of the 1917-18 indent was refused. A few supplies have been obtained locally including a 75 K.W. 3 phase load and specially designed switch for controlling it.”

15. *Visit to works.*—At about the middle of September the students of E-i. (Civil) Upper Subordinate class first division and five Military students of the college accompanied by the Professor of Civil Engineering and two Assistant Instructors proceeded to Cocanada on a tour of the irrigation works of the Gōdāvari and Kistna deltas. The party on arrival at Cocanada inspected the river jetty and groynes, the disinfectant station, the Jagannaikpur bridge, the tidal lock and the Cocanada water-works, proceeding afterwards to Samalkot where the double lock and aqueduct were also visited. They then went on to Rajahmundry where they inspected the Railway bridge across the Gōdāvari and from there to Dowlaishweram for the head works on the river. Owing to the water being high, the undersluices could not be seen, but a working model of the new shutters was shown and explained to the students by the Anicut Superintendent. The Public Works Workshops and the boat-building yard were visited and also the locks and head sluices at Vijeswaram and Bobberlanka. At Ellore the party paid some attention to works on the canal such as the locks, the East Tammileru escape and level crossing, and they also viewed there the water-works in course of construction.

At Bezwada the Instructor in Mechanical Engineering, sent to relieve the Professor of Civil Engineering who was unable to proceed with the tour owing to illness, conducted the party on the visit to the head works and the Public Works Department Workshops and the water-works, and afterwards to the pumping installation at Divi.

Thanks are due to the Public Works Department and Local Fund officers in the places visited for the valuable assistance rendered to the party and special mention is made of the kindness of Mr. V. S. Jnanaprakasam Pillai, Deputy Sanitary Engineer, who put himself to some inconvenience to meet the party both at Cocanada and Bezwada in order to show them round the works under his charge.

At about the same time, two parties of students were taken to the south on a tour of inspection of some of the works on the Cauvery. The one party consisting of 14 students of E-ii (Civil) and 43 students of U.S.-ii was under the charge of the Instructor in Civil Engineering and an Assistant Instructor, and the other consisting of 78 students of the Lower subordinate class was accompanied by three Assistant Instructors.

The first party started with the upland section of the Cauvery at Erode and Bhavani, and the Kalingarayan channel and head works. They next inspected the Railway bridge at Erode and the water-works, and afterwards, proceeding down the river to Unjalur, they visited the head and scouring sluices of the Pugalur channel and the Korangan aqueduct, and saw what they could of the protective works along the banks. Reaching Kulittalai they paid a visit to the Panjambatti reservoir and from there went on to Trichinopoly for the Upper and Grand Anicuts, Cauvery and Vennar regulators, Uthamacheri bridge, Melur dam, and other works including the river training works on the Coleroon. At the Upper Anicut they saw the gauging operations then being conducted by the Madras and Mysore parties, and at Trichinopoly visited the water-works and Railway workshops. They returned by way of Tanjore and reached Madras on October 7th.

The second party started at Trichinopoly and took the tour in the opposite direction finishing up at Erode.

Another party comprising the second year students of the Engineer and Probationary Subordinate classes accompanied by six Instructors proceeded to Nellore for visits to the works in that district. For convenience this party was also divided into two groups and they began their inspections from different places. The works visited by these students included the Nellore anicut and head works, the Railway bridge across the Pennar, the Sarvapalli and Jaffar Sahib canals, Nellore Tank channels, Nellore water-works and tank, the Sangam Anicut and head works on the right side of the river, the Kanigiri reservoir, the Southern, Eastern and Central channels and surplus weirs and head-sluices.

In September also the Professor of Mechanical Engineering took the students of the Mechanical Engineering classes to the Bombay Presidency on a visit to the works of the Tata Hydro-Electric Company. The party started at Khandala with the hydraulic works—Walwhan and Lonarva Lakes, aqueducts, fore bay and pipe line and after that went on to the power station at Kopoli. Heavy rain interfered with the arrangements for the inspection of the Shirwata dam now in course of construction. Proceeding to Bombay they inspected the receiving station at the Tata Hydro-Electric Scheme and finished off an instructive tour with visits to the mills of the Morarji Goculdas Spinning and Weaving Company, and the Girgam Paper Company, where they had opportunity for seeing in some detail the methods employed in the application of electrical power.

The total number of students who took part in these tours was 357 and the expenditure Rs. 2,971-3-3.

During the session visits were paid as usual by all classes to local engineering works including the Madras Corporation Water-supply and Drainage works, Law College Pumping station and Gravitation Main at Tondiarpet, Madras Harbour works, Government Brickfields, Aminjikarai Tile works, South Indian Industries, Public Works Workshops, Rayapuram, Buckingham Mills, Madras and Southern Mahratta Railway Workshops at Perambur, Madras Electric Tramway sheds, Power Station of the Madras Electric Supply Corporation, and Red Hills Tank and head works. The students were also taken out on inspection to buildings under construction, such as the Madras and Southern Mahratta Railway Company's new offices and new officers' quarters, Engineering College at Guindy, branch buildings of the Madras Bank on the Mount Road, Queen Mary's College, Mylapore, and Pachaiyappa's College Hostel, Chetput.

16. *Library*.—During the year under report 114 new books were added to the library bringing the total up to 6,193 volumes. Books ordered from Messrs. Baker & Co. in August last have not yet come to hand. The numbers of issues to the staff and students were 927 and 2,816, respectively, while 158 references were made to books in the reference library. The books in the library have been checked and the few reported missing are being traced.

17. *Athletic Club*.—Mr. H. W. Barker, Professor of Civil Engineering, has kindly continued as Honorary Secretary of the club this session, and the following are extracts from his report:—

“The College Cricket and Hockey teams have not been very successful but the Football eleven has done well in the Inter-College League Competition and also

in two cup-tie-Competitions. The team tied with the Rayapuram Medical School for first place in the College League, but were defeated by three goals to two in a match played to decide the championship. The team won the Young Men's Social Club's Cup and the Raja Venugopaul Challenge Cup.

“The aim of the officers of the club is to get as large as possible a number of students taking part in field games rather than to specialize on first elevens. Inter-class competitions have been held on the League system in Football and Hockey and a ‘Knock-out’ tournament in tennis.

The winners being—

Football	...	...	...	...	...	Lower Subordinate class.
Hockey	...	...	...	...	...	Do.
Tennis	...	...	...	...	...	Engineer class 2nd division (third year Engineer students).

“Athletic sports were held in December. With a view to enlarging the number of competitors a college hostel championship was instituted; this had the desired effect and there were 100 bona fide competitors and a further number took part in the inter-class team races.

“At the inter-college sports this college's representatives were ‘runners up’ for the college championship.

“In the inter-college swimming competition the first and second places were taken by students from this college.

“Tennis has been even more popular than in former years, 79 students paying an additional subscription for tennis.

“Members of the college staff take it in turn to superintend the recreation ground from 5 p.m. until dark each college day, but the bulk of the organization of games has been undertaken by Mr. W. C. Old to whom the students owe a great deal. Mr. K. N. Sarma has been energetic in this direction also.”

18. *Electric lighting installation*.—The lighting installation throughout the college was completed early in the session and soon afterwards arrangements were made to keep open some of the drawing offices until 8 p.m., in order that those students who desired might have opportunity for reading after college hours under conditions more favourable than is possible to many of them in their own rooms. The junior members of the staff are posted in turn to be in attendance and a selected reference library of about 100 volumes has been made available for the use of those present in addition to the books they borrow from the library in the usual way. It cannot be said that more than moderate advantage has been taken of these facilities, and this is due I gather to the distance the majority of the students who might be expected to avail themselves of the privilege live from the college, but as there has been latterly a somewhat larger attendance, it is intended to continue the arrangement for the next session.

19. *First aid lectures*.—The local Honorary Secretary of the St. John's Ambulance Association was unfortunately not able to provide honorary lecturers this as in previous years, but it is hoped the courses will be resumed next session. Some knowledge of first aid is of so great importance to engineers that failing honorary service it will be necessary to consider the advisability of offering remuneration rather than that the lectures and demonstrations should be permanently discontinued.

20. *College of Engineering hostel*.—The hostel was accommodated throughout the year in the rented building in Akbar Sahib street, Triplicane, for which a fresh lease was taken for a further period of one year from 1st July 1917.

M.R.Ry. K. Venkatrama Ayyar, Assistant Instructor of the college, continued to be deputy warden of the hostel up to 5th January 1918, when, on his transfer to the Public Works Department, M.R.Ry. N. Ramanuja Achariyar, accountant, was appointed to the post.

The average number of boarders was 70 and the monthly boarding charges varied from Rs. 11½ to Rs. 12. Of the 70 members, 44 are resident members and the remainder live outside only taking meals in the college hostel. The health of the members has been very good.

As in previous years, the hostel was temporarily moved to Saidapet for about 20 days in January for the convenience of the junior students camp at that place, and boarding and lodging was provided in the hostel for 55 students. The inclusive charge per member was Rs. 13½ as against Rs. 16 which it cost the students who formed into lodges in the town.

In this connexion, I desire to place on record the good work done by M.R.Ry. K. Venkatarama Ayyar during the 14 months he was deputy warden of the hostel.

21. *College of Engineering Association.*—The association has continued its useful career with a considerable increase in the number of members. During the session five well-attended meetings were held at which papers of technical interest were read and discussed by members of the staff and students.

The association has broadened its scope by admitting passed students of the college as honorary members, and another new departure has been the starting of a College Magazine of which two very readable numbers were published. The usual social function and exhibition of students' work was held at the close of the session.

22. *Attendance and conduct.*—The percentage of attendance to numbers on the rolls of the college was 95.3. Detailed particulars for the several classes are given in Appendix E. The conduct of the students during the year was satisfactory.

23. *Employment of passed students.*—Sixteen Engineer students of the first batch after the reorganization and extension of the engineer course from three to four years completed their practical training in 1917, and of these the senior in the Mechanical branch was appointed to the permanent establishment of the Public Works Department as Assistant Engineer and other students obtained employment as follows:—

Assistant District Board Engineers ...	3
Temporary Upper Subordinates, Public Works Department ...	9

Of the 37 Upper Subordinates who satisfactorily completed their courses of practical training, the senior among the civilian students, S. V. Srinivasa Rao, was appointed permanent Overseer, third grade, in the Public Works Department. There were no military students on practical course this year. Reports have been received of 33 Upper Subordinates having obtained employment as under:—

Temporary Upper Subordinates, Public Works Department ...	26
Municipal Supervisor ...	1
Municipal Overseers ...	3
Local Fund Overseer ...	1
Irrigation Overseer ...	1
Third-grade Temporary Overseer, Cochin State ...	1
Total ...	33

Forty-five Lower Subordinates completed the college course in April 1917. Of these 35 reported employment as under:—

Sub-overseers, Public Works Department ...	11
Draughtsmen, Public Works Department ...	7
Assistant Draughtsman, Public Works Department ...	1
Overseers, District Board ...	2
Sub-overseers, District Board ...	2
Draughtsmen, District Board ...	2
Do. Corporation, Madras ...	1
Draughtsman, Forest Department ...	1
Minor Irrigation Sub-overseers ...	3
Do. draughtsman ...	1
Sub-overseer, Public Works Department, Cochin ...	1
Assistant draughtsman, Mysore Gold Mining Company ...	1
Surveyor in a private company in Travancore ...	1
Total ...	35

No information has been received from the remainder. Particulars of the vacancies notified during the year are given in Appendix F.

24. *Casualties.*—I regret I have to record the death of one student of the first year division of the upper subordinate class, one student of the first-year division

of the probationary subordinate class, and also one military student, Sergeant Cresswell, of the second-year division of probationary class, who died in hospital during the last hot weather vacation.

25. *Financial details.*—This information is given in Appendix G. It will be noted that the receipts for 1917-18 amount to Rs. 38,644 and the charges to Rs. 1,60,352, resulting in a net cost to Government of Rs. 1,21,708. The average number of students on the rolls during the year was 528 and the net cost per student Rs. 230.

The above figures are subject to modification after full particulars of all adjustments, such as payments on account of Europe stores, etc., are communicated to this office.

An abstract of receipts and charges for the last five years is given in Appendix H.

26. In conclusion, I desire to acknowledge the loyal co-operation of all members of the staff in carrying on the work of the college. Military duty has interfered to some extent with the attendance at college of the senior members, but the best has been done under the circumstances and the interests of the students have not been affected very appreciably.

APPENDIX A

Class.	Europeans and Eurasians.	Indian Christians.	Muham-madans.	Hindus.			Others.	Total.
				Brahmans.	Non-Brah-mans.	Pancha-mas.		
Engineer classes ..	2	14	1	82	15	..	1	115
Upper subordinate classes ..	4	10	1	55	17	..	..	87
Lower subordinate class ..	..	6	2	15	17	..	..	79
Probationary subordinate classes ..	2	10	1	170	62	..	..	245
Total ..	8	39	5	362	111	..	1	526

APPENDIX B

Districts.	Engineer class.	Upper subordinate class.	Lower subordinate class.	Probationary subordinate class.	Total.
Ganjam ..	1	1	..	12	14
Vizagapatam ..	4	..	1	3	8
Godavari ..	6	5	13	21	45
Kistna ..	2	8	7	24	41
Guntur ..	2	1	2	11	16
Bellary ..	..	..	1	1	2
Anantapur ..	..	..	..	1	1
Kurnool ..	..	..	2	1	3
Nellore ..	1	..	2	3	6
Madras ..	8	4	4	17	33
Chingleput ..	3	4	3	9	19
Cuddapah ..	1	1	2	2	6
North Arcot ..	..	5	6	6	17
Chittoor ..	1	2	..	5	8
South Arcot ..	..	1	4	8	13
Tanjore ..	14	12	6	42	74
Trichinopoly ..	5	8	3	15	31
Madura ..	3	3	2	9	17
Ramanad ..	2	..	..	4	6
Tinnevely ..	9	10	1	16	36
Coimbatore ..	3	1	3	6	13
Salem ..	4	2	2	1	9
Malabar ..	8	3	8	17	36
South Kanara ..	9	3	2	4	18
Pudukkottai ..	2	..	..	..	2
Cochin ..	5	..	3	1	9
Travancore ..	10	8	1	3	22
Mysore ..	8	1	1	1	11
Hyderabad ..	1	..	..	..	1
Ceylon ..	2	..	..	1	3
Coorg ..	1	..	..	..	1
Total ..	115	88 (4)*	79	244 (1)*	521+(5 Military)

* Military students.

APPENDIX C

Class.	Wealth.			Total.	Occupation.							Total.
	Richer class.	Middle class.	Poorer class.		Officials.	Petty officials.	Traders.	Landholders.	Artisans.	Mendicants.	Others.	
Engineer class, fourth year ..	1	24	..	25	16	..	2	7	..	..	..	25
Do. third year ..	2	24	..	26	21	..	1	4	..	..	..	26
Do. second year ..	4	29	..	33	24	..	1	8	..	..	..	33
Do. first year ..	5	25	1	31	21	..	5	4	..	..	1	31
Upper subordinate class, second year.	1	41	..	42	22	1	5	14	..	..	..	42
Upper subordinate Military students.	..	..	..	2	..	..	..	..	..	..	..	2
Upper subordinate class, first year.	..	38	3	41	21	2	4	12	..	..	1	41
Upper subordinate Military students.	..	..	..	2	..	..	..	..	..	..	..	2
Lower subordinate class ..	..	73	6	79	33	3	11	28	..	1	3	79
Probationary subordinate class, second year.	2	120	3	125	58	3	7	56	..	..	1	125
Probationary Military students ..	..	..	..	1	..	..	..	..	..	..	..	1
Probationary subordinate class, first year.	1	108	10	119	64	..	9	46	..	..	..	119
Total ..	16	482	23	525	280	10	45	179	..	1	6	526

APPENDIX D

Results of examination of March 1917.

Engineer class, fourth year, Civil branch—

Branch I, Mathematics and Science ..	..	..	..	..	58.2
Branch II, Engineering ..	..	..	..	..	59.1
Physical exercises ..	..	..	..	..	59.5
Average ..	..	..	..	..	58.9

Engineer class, fourth year, Mechanical branch—

Branch I, Mathematics and Science ..	..	..	..	..	51.7
Branch II, Engineering ..	..	..	..	..	62.3
Physical exercises ..	..	..	..	..	50.0
Average ..	..	..	..	..	59.7

Engineer class, third year, Civil branch—

Branch I, Mathematics and Science ..	..	..	..	..	58.2
Branch II, Engineering ..	..	..	..	..	60.3
Physical exercises ..	..	..	..	..	53.7
Average ..	..	..	..	..	59.3

Engineer class, third year, Mechanical branch—

Branch I, Mathematics and Science ..	..	..	..	..	51.2
Branch II, Engineering ..	..	..	..	..	61.1
Physical exercises ..	..	..	..	..	47.7
Average ..	..	..	..	..	57.7

Engineer class, second year—

Branch I, Mathematics and Science ..	..	..	..	..	54.5
Branch II, Engineering ..	..	..	..	..	63.4
Physical exercises ..	..	..	..	..	59.2
Average ..	..	..	..	..	59.2

Results of examination of March 1917—cont.

Engineer class, first year—

Branch I, Mathematics and Science ..	..	..	..	..	57.5
Branch II, Engineering ..	..	..	..	..	61.6
Physical exercises ..	..	..	..	..	59.3
Average ..	..	..	..	..	59.9

Upper subordinate class, second year—

Branch I, Mathematics ..	..	..	..	..	66.5
Branch II, Engineering ..	..	..	..	..	59.0
Physical exercises ..	..	..	..	..	58.8
Average ..	..	..	..	..	60.1

Upper subordinate class, first year—

Branch I, Mathematics ..	..	..	..	..	58.9
Branch II, Engineering ..	..	..	..	..	60.1
Physical exercises ..	..	..	..	..	55.1
Average ..	..	..	..	..	59.5

Lower subordinate class—

Branch II, Engineering ..	..	..	..	..	56.3
Physical exercises ..	..	..	..	..	60.3
Average ..	..	..	..	..	56.7

Probationary subordinate class, second year—

Branch I, Mathematics ..	..	..	..	..	63.2
Branch II, Engineering ..	..	..	..	..	61.2
Physical exercises ..	..	..	..	..	62.5
Average ..	..	..	..	..	61.1

Probationary subordinate class, first year—

Branch I, Mathematics ..	..	..	..	..	59.8
Branch II, Engineering ..	..	..	..	..	59.0
Physical exercises ..	..	..	..	..	59.6
Average ..	..	..	..	..	59.2

APPENDIX E

	Average number on rolls.	Average daily attendance.
Engineer class, first division ..	24.9	23.7
Do. second do. ..	25.9	24.7
Do. third do. ..	32.2	30.5
Do. fourth do. ..	31.7	30.8
Upper Subordinate class, first division ..	43.9	41.4
Do. second do. ..	44.0	43.1
Lower Subordinate class ..	79.0	74.5
Probationary Subordinate class, first division ..	125.7	118.9
Do. second do. ..	121.6	116.2
	528.9	503.8

Percentage of numbers present to number on rolls .. 95.3

APPENDIX F

Classification of vacancies notified during the year 1917-18.

	Government.				Local boards and municipalities.				Railways.				Native States.				Private employees.				Total.
	Above Rs. 200.	Rs. 100 to 200.	Rs. 50 to 100.	Under Rs. 50.	Above Rs. 200.	Rs. 100 to 200.	Rs. 50 to 100.	Under Rs. 50.	Above Rs. 200.	Rs. 100 to 200.	Rs. 50 to 100.	Under Rs. 50.	Above Rs. 200.	Rs. 100 to 200.	Rs. 50 to 100.	Under Rs. 50.	Above Rs. 200.	Rs. 100 to 200.	Rs. 50 to 100.	Under Rs. 50.	
Engineer or Assistant Engineer ..					1	1															2
Supervisor ..																					1
Overseer ..																					1
Sub-overseer ..																					1
Draughtsman ..																					1
Surveyor ..																					1
Total ..	35	17	1	2	8								2	1	5						70

APPENDIX G

Financial details for the year 1917-18.

	RS.	A.	P.
<i>Receipts.</i>			
(1) Tuition and registration fees ..	38,080	14	0
(2) Miscellaneous ..	563	15	1
Total ..	38,644	13	1

	RS.	A.	P.
<i>Charges.</i>			
(1) Principal ..	15,000	0	0
(2) Professors and Instructors including Presidency and house-rent allowances ..	83,639	1	11
(3) Allowance to Deputy Warden, College of Engineering Hostel, Madras ..	360	0	0
(4) Accountant, Librarian, clerks and servants and grain compensation allowance ..	6,279	3	10
(5) Library, prize, books, maps and medals ..	767	1	5
(6) Travelling allowance of officers and establishment ..	3,409	11	6
(7) Europe stores and laboratory charges ..	13,185	6	2
(8) Workshop materials ..	9,306	3	1
(9) Survey camp and inspection tour charges ..	6,871	13	1
(10) Printing maps and diagrams at the Survey office ..	287	10	0
(11) Riding and workshop fees ..	275	0	0
(12) Exchange compensation allowance ..	2,566	3	0
(13) Office contingencies and games ..	11,520	4	1
(14) Scholarships and stipends ..	6,884	6	1
Total ..	1,60,352	0	2

Net cost to Government .. Rs. 1,21,708

Average number of students on rolls ... No. 528
 Net cost per student ... Rs. 230
 Average tuition fee paid by students per annum ... Rs. 69

APPENDIX H

Comparative financial details.

	1913-14.	1914-15.	1915-16.	1916-17.	1917-18.
Receipts ..	RS. 27,041	RS. 30,269	RS. 36,142	RS. 37,576	RS. 38,644
Charges ..	1,27,230	1,59,385	1,33,179	1,47,738	1,60,352
Net cost to Government ..	1,00,189	1,29,115	97,037	1,10,162	1,21,708
Average number of students on rolls ..	NO. 383	NO. 436	NO. 493	NO. 512	NO. 528
Net cost per student ..	RS. 261	RS. 296	RS. 197	RS. 215	RS. 230

Proceedings—R.C. No. 3513, dated 10th June 1918.

Recorded.

2. The report necessarily deals mainly with technical matters on which the Director cannot comment in detail. He has, however, found it interesting and it leaves an impression of a year's varied and strenuous work on which the Principal and staff are to be congratulated. He notes with satisfaction efforts that are being made to organize athletics and field games.

(True extract)

J. H. STONE,
 Director of Public Instruction.

To the Principal, College of Engineering.
 " Principals of other Government colleges.
 " Inspectors of Schools.
 " Superintendent, School of Arts, Madras.
 Copy to the Director of Industries, Madras, for information.
 " the Chief Engineer, Public Works Department, for information.
 " Government, for information (with C.L.)

Order—No. 850, Home (Education), dated 28th June 1918.

Recorded.

(True extract)

R. RAMACHANDRA RAO,
 Secretary to Government.

To the Director of Public Instruction
 " Public Works Department.
 Editors' Table.

GOVERNMENT OF MADRAS

HOME (EDUCATION) DEPARTMENT

No. 851

From

THE HON'BLE DIWAN BAHADUR

R. RAMACHANDRA RAO AVARGAL,

Secretary to the Government of Madras,

Home (Education) Department,

To

THE UNDER SECRETARY OF STATE FOR INDIA.

Dated Ootacamund, the 28th June 1918.

SIR,

With reference to the instructions conveyed in Lord Harhington's Despatch No. 9 (Public Works), dated the 18th May 1882, I am directed to forward a copy of the proceedings of the Madras Government recording the report on the working of the College of Engineering, Madras, during the academic year 1917-18.

I have the honour to be,

Sir,

Your most obedient servant,

R. RAMACHANDRA RAO,

Secretary to Government.

Home Ed. DEPARTMENT.

Report

Recording the — on the working of the College of Engineering,
Madras during 1917-18

READ AGAIN G.O. No. _____, dated _____, 191

” ” ” ” ” 151

READ ALSO:—

C. No. 1587A From the D. I. J. Re, No. 3513, dated 17.6.1918

191

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27 JUN 1918



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$\frac{12.5 \times 10^3}{101} = 123.76$

51

With reference to the instructions conveyed in Lord Harlington's Despatch no. 9 (Public Works) dated the 18th May 1882, I am directed to forward a copy of the Proceedings of the Madras East. recording the report on the working of the College of Engineering,

2

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9 DEPARTMENT

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