

Government of Madras.

HOME DEPARTMENT

(EDUCATION)

G.O. No. 1208, 17th November 1916



INDEXED

Affiliation

Sanctioning the — to the University of Madras of the Government College, Kumbakonam,
in Group (ii-A) —Physical Science—of the B.A. Degree courses.

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ORIGINAL

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GOVERNMENT OF MADRAS
HOME DEPARTMENT
(Education)

READ—the following paper :—

Letter—from F. DEWSBURY, Esq., B.A., LL.B., Registrar, University of Madras.
To—the Secretary to Government, Home (Education) Department.
Dated—Senate House, the 9th November 1916.
No.—8681.

I have the honour, by direction of the Syndicate, to submit, under Regulation 374 (d), for disposal by His Excellency the Governor in Council the accompanying application from the Director of Public Instruction, Madras, for the further affiliation of the Government College, Kumbakonam, in group (ii-A) of the B.A. Degree courses together with copies of the proceedings of the Syndicate and the Senate on the subject, and of the report submitted by the Syndicate to the Senate.

At its adjourned meeting held on the 28th October 1916 the Senate recorded its opinion that the affiliation may be granted by Government.

ENCLOSURES

(1)

UNIVERSITY OF MADRAS

Extract from the minutes of the adjourned meeting of the Syndicate held on 14th September 1915.

Read letter No. 4420, dated 5th August 1915, from the Director of Public Instruction, Madras, submitting an application for the affiliation of the Kumbakonam College in group (ii-A)—Physical Science of the B.A. Degree course.

Also report thereon of Affiliation Committee of the Syndicate, recommending that Messrs. Metcalfe and Armstrong be appointed a Commission to make a local inquiry.

Resolved that the report of the Affiliation Committee be accepted and that the Registrar take the necessary action thereon and request Mr. Armstrong to act as Convener of the Commission.

(2)

Extract from the minutes of the meeting of the Syndicate held on 2nd November 1915.

Read letters, dated 12th October 1915, from Messrs. W. H. F. Armstrong and E. P. Metcalfe submitting their reports on a local inquiry conducted in connection with the application for the affiliation of the Government College, Kumbakonam, in group (ii-A) of the B.A. Degree course;

together with the report thereon of the Affiliation Committee of the Syndicate.

Resolved that the report of the Committee be accepted and that the Registrar take action in accordance therewith.

(3)

Extract from the minutes of the meeting of the Syndicate held on 13th September 1916.

Read letter No. 4420/15, dated 30th May 1915, from the Director of Public Instruction, Madras, forwarding extract from a communication received from the Principal, Kumbakonam College, dealing with the points raised by the Commissioners appointed to conduct a local inquiry at the College in connection with the application for the affiliation of the College in group (ii-A)—Physical Science;

together with the report thereon of the Affiliation Committee of the Syndicate recommending that the application for affiliation be refused.

Resolved that the report of the Affiliation Committee of the Syndicate be referred to the Director of Public Instruction with the enquiry whether he has any remarks to offer thereon.

(4)

Extract from the minutes of the adjourned meeting of the Syndicate held on 10th October 1916.

Considered again letter No. 4420/15, dated 30th May 1915, from the Director of Public Instruction, Madras, forwarding extract from a communication received from the Principal, Kumbakonam College, dealing with the points raised by the Commissioners appointed to conduct a local inquiry at the College in connection with the application for the affiliation of the College in group (ii-A)—Physical Science;

together with the report thereon of the Affiliation Committee of the Syndicate recommending that the application for affiliation be refused.

Also letter, dated 21st September 1916, from the Director of Public Instruction, Madras, submitting his remarks on the above report of the Affiliation Committee.

Also further report, dated 6th October 1916, of the Affiliation Committee on the above letter from the Director of Public Instruction, stating that it does not consider that the Director's letter removes the difficulties which led Mr. Metcalfe to recommend that affiliation be not granted at present.

Resolved that the Senate be recommended to record its opinion that the application for affiliation may be granted by Government.

(5)

Report of the Syndicate upon the application of the Director of Public Instruction for the further affiliation of the Kumbakonam College in Group (ii-A)—Physical Science—of the B.A. Degree Courses.

The Syndicate reports the following correspondence relative to this application:—

Letter No. 4420 of 1915, dated August 5, 1915, from the Acting Director of Public Instruction, Madras, to the Registrar, University of Madras.

I have the honour to forward, with reference to Regulation No. 374 of the University Regulations, an application from the Principal of the Kumbakonam College for the affiliation of the Institution in Branch II-A—Physical Science—of the B.A. Pass Course; and to furnish separately the particulars required under by-law 375 of the University Regulations.

Letter R. C. No. 162 of 1915 dated July 16, 1915, from the Acting Principal, Kumbakonam College, to the Registrar of the Madras University, through the Director of Public Instruction, Madras.

I have the honour to apply for the affiliation of Government College, Kumbakonam, in Branch II-A of the B.A. Courses. The college is affiliated in Group i for the Intermediate Courses. The laboratory and equipment are such as to satisfy clauses a, b, c, d, e and f of Article 375 in Chapter XVII 'Rules for the affiliation of colleges'. It is proposed to start work, using the Intermediate laboratory as a nucleus and to supplement the special needs for B.A. instruction by making a suitable provision annually in the Budget. A beginning has been made in this direction by a grant of Rs. 17,000 in the current year and the apparatus and stores are expected to arrive before the year is out.

The teaching staff has been strengthened by the addition of a new officer M.R.Ry. P. Rajagopala Ayyar Avargal who was in charge of the Science Department at Government College, Rajahmundry, for over a decade. Since the equipment and fittings will be completed in a few years to satisfy completely the University Regulations I beg that the application may be granted.

*Application for affiliation of the Kumbakonam College, in Branch II-A,
Physical Science, of the B.A. Pass Course.*

(a) *Management*.—The college is a Government institution under the control of the Director of Public Instruction.

(b) *Teaching staff*.—The college is already affiliated to the University in Group i of the Intermediate Course. The staff has been strengthened by the appointment of an additional Lecturer in Physical Science, M.R.Ry. P. Rajagopala Ayyar Avargal, M.A., of the Madras University, who has had nine years' experience as a Lecturer in Physical Science in the Educational Department. The Lecturer is assisted by an Assistant Lecturer (M.R.Ry. K. C. Subramanya Ayyar) who is also a Master of Arts of the local University in Physical Science and a trained Licentiate in Teaching. He has had more than five years' service as a Lecturer in Physics in this department. Both the officers are Government servants and are subject to the rules of the Civil Service Regulations.

The number of students receiving instruction in Branch II-A of the B.A. Pass Course is only three at present.

(c) *Buildings*.—The college buildings are the property of Government. Provision has been made for the residence in the Victoria Jubilee Hostel attached to the college of students not residing with their parents or guardians and for the supervision and physical welfare of the students. The Principal is the Warden of the Hostel and the Secretary to the Hostel Committee, while one of the lecturers is the Deputy Warden. The latter is in residence in the hostel.

(d) *Library*.—Provision has already been made for a Library. An allotment of Rs. 2,000 has been made in the current year's budget under the head 'Books and Maps' and out of this amount a sum of Rs. 300 has been assigned for the purchase of additional books in Physical Science suitable for the use of students in Branch II-A of the B.A. Course. The Principal proposes to apply for a special grant towards the purchase of some more books in Physics.

(e) *Laboratory*.—It is proposed to start work by using the Intermediate Laboratory and to supplement the special needs for the B.A. instruction by making suitable provision annually in the Budget for additional apparatus. A beginning has been made in this direction by a grant of Rs. 17,000 in the current year, and the apparatus and stores are expected to arrive before the end of the year.

The time-table of the college has been so framed as to permit students in Branch II-A of the B.A. Course to make use of the Science Laboratory when it is not used by students of the Intermediate classes.

(f) It has not been possible to provide for the residence of the head of the college and some members of the teaching staff in or near the college. The college, as already stated, has a hostel attached to it.

(g) The college is a Government institution.

(h) The affiliation of the college will not be prejudicial to the interests of education as there is no other college in the Tanjore district which provides for instruction in Physical Science.

(i) Standard rates of fees are charged.

Assurance.—After the college is affiliated any transference of management and all changes in the teaching staff will be forthwith reported to the Syndicate.

Letter No. 5708, dated September 15, 1915, from the Registrar, University of Madras, to E. P. Metcalfe, Esq., B.Sc., and W. H. F. Armstrong, Esq., B.A.

In connection with an application from the Director of Public Instruction, Madras, dated August 5, 1915, requesting the affiliation of the Government College, Kumbakonam, in Group (ii-A)—Physical Science—of the B.A. Degree Courses, the Syndicate has appointed you a Commission, with Mr. Armstrong as Convener, to conduct the local inquiry at the college in accordance with Section 21 (2) (a) of the Indian Universities Act, 1904. I shall be glad to know as soon as possible whether you are willing to serve thereon.

The Government College, Kumbakonam, is already affiliated to the University in Groups i and iii of the Intermediate and Groups (i), (iv), (v) and (vi) of the B.A. Degree Courses. The scope of the present inquiry should be limited to the further affiliation now sought, and should not extend to the subjects in which the college is now affiliated, except so far as the proposed affiliation would affect the provision already made for those subjects.

The correspondence relating to this application is forwarded in original to Mr. Armstrong who is requested to arrange for the inquiry at the earliest convenient date, so that if possible the report of the Commission may be submitted to the Syndicate for consideration before the date of its next meeting to be held on the 5th proximo. The report of the Commission should be presented to the Syndicate without being disclosed to the authorities of the college.

Letter No. 5709, dated September 15, 1915, from the Registrar, University of Madras, to the Director of Public Instruction, Madras.

With reference to your letter No. 4420, dated August 5 1915, submitting an application for the affiliation of the Kumbakonam College in Group (ii-A) of the B.A. Degree Courses, I have the honour to inform you that the Syndicate has appointed Messrs. E. P. Metcalfe, B.Sc., and W. H. F. Armstrong, B.A., a Commission to conduct the local inquiry under Section 21 (2) (a) of the Indian Universities Act, 1904, and that Mr. Armstrong as Convener has been requested to arrange for the inquiry at the earliest possible date.

Local Inquiry Report on the Government College, Kumbakonam by Mr. E. P. Metcalfe.

I inspected the Government College, Kumbakonam, on October 9, 1915, in consequence of the application by the Director of Public Instruction, Madras, for the affiliation of this College in Group (ii-A) of the B.A. Degree (Pass) Course. The college is already affiliated to the University in Group (i) of the Intermediate Course.

1. Accommodation available

The accommodation at present available in the Physics department of the college is as follows:—

One lecture theatre about 24 feet square.

One store room for apparatus, partitioned off from the theatre, 24 ft. by 9 ft. 4 in.

One large Intermediate Class laboratory, 42 ft. by 26 ft.

One dark room about 9 ft. by 8 ft. 6 in.

One balance room (used also by the Chemistry classes) about 14 ft. by 9 ft.

In a small separate building near by there are

A workshop fitted with a small lathe, a forge and a fair supply of hand tools (28 ft. by 15 ft.)

A dynamo room (15 ft. by 10 ft.) at present empty.

A battery room (15 ft. by 8 ft.) at present empty.

A store room for materials (15 ft. by 10 ft.)

Adjoining is the gas house containing a single-retort high pressure plant with a 1,000 c.ft. container.

2. Water, gas and electricity supply.

The water for the laboratory is stored in an elevated tank on the roof, fed by a hand pump. The head of the water on the taps is about 30 feet.

The gas is Mansfield oil-gas, or something very similar.

There is no electricity supply of any kind. An order has been placed with a firm of electricians for a house-lighting plant including a shunt-wound d.c. generator coupled direct to a high speed petrol engine of 45 h.p. This is to feed a battery of 30 Tudor cells of about 150 ampere-hours capacity. There is also to be a booster for use with the battery. This plant has been on order for some little time and is expected shortly; but no date can be given for the completion of the installation.

3. Apparatus.

There is a fair stock of good apparatus actually in hand, and a large addition is on order.

4. Science Library.

There is a small collection of consulting books in cases in the gangway just outside the lecture theatre. It is proposed to add to this on a fairly liberal scale.

5. Grants.

Recurring.—A recurring grant of Rs. 2,500 is allotted yearly to Chemistry and Physics. It is proposed, in the event of the affiliation being granted, to raise this sum to Rs. 5,000 per annum; Rs. 3,500 to be used for the Physics, and the balance for the Chemistry department.

In addition there is a recurring yearly contingent grant of Rs. 500 divided as follows:—Rs. 150 each for Physics and Chemistry, and Rs. 200 for gas.

Of the college library grant about Rs. 300 is spent annually on books on Chemistry and Physics.

Non-recurring.—A special grant of Rs. 17,000 will just cover the cost of a large order for apparatus already placed with firms in England. Of this sum about Rs. 14,000 is to pay for physical apparatus and materials.

A special library grant of Rs. 1,000 for chemical and physical books is to be asked for.

6. Teaching staff.

The teaching staff in Physics consists at present of two gentlemen, both of them M.A.'s of the University. The senior member is very experienced and has frequently examined for the University.

7. Time-table.

The time-table it is proposed to adopt in the event of affiliation being granted provides for two lectures of an hour each a week, and two periods of practical work in Physics of two hours each a week for each B.A. class.

8. Strength of B.A. classes.

From the results of previous Intermediate Examinations it is calculated that the B.A. (Junior) class of next July would consist of some six students. It is proposed to admit up to ten or so.

9. Remarks.

The paragraphs 1—8 will be considered *seriatim*.

(1) The space available is, in my opinion, not sufficient for the addition of a B.A. class.

The lecture theatre has such a large seating accommodation in proportion to its dimensions that the lecture table is unpleasantly cramped. Work with the optical lantern is almost out of the question on this account. There is only two feet six inches between the front row of desks and the edge of the table and less than five feet behind the table, while the clear space at either end is barely four feet. The single sliding blackboard is much too small.

The store space is insufficient. When the large order for apparatus is delivered there will be trouble in disposing of the new stock.

The Intermediate class laboratory is a fair-sized room and tolerably adapted to its purpose. But it is proposed to use it also for the practical work of the new B.A. classes. In my opinion such an arrangement, even as a temporary expedient, would be very undesirable.

There is no room suitable for optical work: the present dark room is good enough only for occasional photography, it is small and quite unventilated.

It is suggested that a small room on the south side of the main college building might be used as a galvanometer room. I cannot agree that this would be convenient. The room in question has so many windows and doors that the wall space, so necessary for galvanometer work, would be very limited.

There appears to be no very convenient place for steady stone shelves for accurate balances.

(2) The water-supply would be greatly improved if another 10 or 15 feet of hose could be added and a mechanical pump substituted for the manual one now in use.

The gas arrangements seem adequate.

The absence of any form of electricity supply is a serious disadvantage. It is true that a generator set and battery are on order. But the type of generator selected seems to me to be unsuitable for an experimental laboratory. I should have preferred a compound machine with a cut-out for the series winding. Another sixteen or twenty volts in the battery would make arc lamps run more satisfactorily in projection apparatus.

(3) The collection of apparatus in hand is of excellent quality and fair quantity. The lists of goods on order have been shown to me and are quite satisfactory.

(4) The proposed additions to the library will put matters on a satisfactory footing in that department.

(5) The grants both recurring and special for apparatus, etc., seem to be liberal.

(6) The strength of the teaching staff is too low. Two men can hardly do the work of two Intermediate classes. The addition of B.A. classes would demand at least one, and very preferably two, more well qualified assistants for Physics alone.

(7) The number of hours allotted to Physics lectures in the time-table is far too small. It is impossible to do justice to the B.A. Course in Physics with only two hours lecturing a week. The practical hours proposed are barely enough. Moreover, the time-table shows that the plan of using the Intermediate laboratory for B.A. work entails the necessity of removing all B.A. apparatus at the end of the B.A. period so that the resumption of a long experiment from the point at which it was left would be impossible. It may be mentioned that at least three really intelligent laboratory attendants should be provided for an establishment of the proposed size.

(8) B.A. classes of the size suggested (or of any size, for that matter) are impracticable in the department as it stands. At least twice the space now available would be required. Additional rooms for laboratory work in—

(a) Molecular Physics, Sound and Heat (b) Optics and (c) Electricity and Magnetism are necessary.

The store space should be enlarged. Room for private experimental work by the staff is highly desirable. It is possible to bring the strength of the staff and the amount of apparatus up to the required standard fairly rapidly. But floor space cannot be improvised. I should say that if the matter were taken up immediately, at least two years would pass before the college could be considered fit to teach the B.A. ii-A Course.

10. Recommendation.

For the reasons given above I recommend that the application for the affiliation of the Government College, Kumbakonam, in Group ii-A of the B.A. (Pass Course) be not granted.

Local Inquiry Report on the Government College, Kumbakonam by

Mr. W. H. F. Armstrong.

I have the honour to report that I conducted a local enquiry in connection with the application for the affiliation of the Government College, Kumbakonam, in Branch II-A of the B.A. Courses, on Saturday, October 9, 1915.

With regard to the points on which Regulation 375 requires that the Syndicate shall be satisfied the following only are relevant:—

(b) Staff—

Lecturer in Chemistry, Mr. T. K. Hanumanta Rau, B.A., L.T.

The Principal informed me that application had been made for a demonstrator in Chemistry in anticipation of affiliation in Branch II-A and a reply had been received asking for further information. There the matter stands. The provisional time-table arranged for II-A students together with that of the Group (i) Intermediate students, provides for nineteen teaching hours a week, and this seems to me more than one lecturer can undertake successfully. If a demonstrator were appointed his work would consist only of helping with the Intermediate classes and Mr. Hanumanta Rau's actual teaching work would not be decreased. Further, the provisional time-table drawn up for the Junior and Senior B.A. classes also seems to be inadequate. It provides for only one lecture hour and two hours practical work during the week for each class. The Senior B.A. class ought to have two lectures and at least three hours practical work, and if possible the Junior B.A. class should have the same. I do not consider the need so great in the case of the junior class. If the time-table were altered as I suggest two or even four more hours would be added to the teaching work. In order to cope with this efficiently a junior lecturer, in addition to a demonstrator, might be engaged with advantage. A junior lecturer in sole charge of one of the Intermediate classes would relieve the senior lecturer considerably and enable him to give more attention to the B.A. classes.

(c) and (e) The lecture-room and laboratory accommodation seems to me sufficient for the teaching of Chemistry in Branch II-A. The laboratory accommodates eighteen students working at the same time, and this is ample as the college authorities do not propose to admit more than twelve B.A. students if the affiliation is granted with the present accommodation at their command. The store-room for chemicals and apparatus is too small (10 feet x 24 feet). When the laboratory extensions for Physics now in contemplation are completed more store-room accommodation should be allotted to the Chemistry section. The gas and water supplies to the laboratory are good, but an increase on the 30 feet head of water now available from tanks on the roof would be advantageous. The present balance room is used for both Physics and Chemistry, but it is proposed to reserve this room for Chemistry alone when the Physics extension is completed. The arrangement would then be quite satisfactory.

Chemicals and apparatus—

A special indent, in addition to the annual indent, has been sent to England this year. The value of the indent is Rs. 2,850 and the money is provided out of a special

non-recurring grant of Rs. 17,000. When this indent arrives the college will be adequately equipped with chemicals and apparatus. In the past an annual grant of Rs. 2,500 has been allowed for Physics and Chemistry together, of which about Rs. 1,000 were utilized for Chemistry alone. The college has asked that this grant be raised to Rs. 5,000 in the future, of which Rs. 1,500 will be allotted to Chemistry. This seems to me sufficient.

Menial staff—

One Chemistry attendant.

One peon (for both Physics and Chemistry). This staff is quite inadequate, and I strongly recommend the addition of a junior attendant and at least one lascar to assist in the laboratory and gas-house.

(d) *Chemistry Library*.—This is at present small but the books are good standard works. There is an annual grant of Rs. 300 for the Science Libraries but a special non-recurring grant of Rs. 1,000 will be applied for if the affiliation is granted. Of this sum the Chemical Library would get about Rs. 300, which would be sufficient for all needs.

If the Syndicate can assure itself that the suggestions I have made above will be carried out at an early date especially those regarding the increase of the teaching staff, I am of the opinion that the college would be in a position to teach the Chemistry required in Branch II-A and I recommend that the affiliation be granted.

Letter No. 6958 dated November 5, 1915, from the Registrar, University of Madras, to the Director of Public Instruction, Madras.

With reference to the application for the affiliation of the Government College, Kumbakonam, in Group (ii A) Physical Science, of the B.A. Degree Courses, I have the honour to forward herewith, by direction of the Syndicate, a copy of the reports received upon the local inquiry conducted at the college by Mr. E. P. Metcalfe and Mr. W. H. F. Armstrong and to invite the remarks of the Management of the college thereon.

I have also to request that the Syndicate may be furnished with the time-table, in full, of the Junior and Senior B.A. classes in Group (ii-A) showing the number of hours per week they attend the lectures and practical classes of the Professors of Mathematics, of Physics, and of Chemistry.

Letter No. 4420, of 1915, dated May 30, 1916 from the Director of Public Instruction, Madras, to the Registrar, University of Madras.

With reference to your letter No. 6958, dated November 5, 1915, forwarding a copy of the reports received upon local inquiry conducted at the Kumbakonam College by Mr. E. P. Metcalfe and Mr. W. H. F. Armstrong, I have the honour to forward herewith extracts from a communication, dated December 2, 1915, received from the Principal, Kumbakonam College, and to endorse the remarks contained therein.

The time-table of the Junior and Senior B.A. classes in Group (ii-A) in the college called for by the Syndicate will be found embodied in paras. 3, 4 and 5 of the Principal's letter and as regards the extensions to the college referred to in para. 10 of the above letter, I am desired by Government to inform the Syndicate that steps will be taken in due course to provide the necessary additional accommodation in the college for science instruction for the B.A. Pass Course.

Letter R.C. No. 162 of 1915, dated December 2, 1915 from the Principal, Kumbakonam College, to the Director of Public Instruction, Madras.

In reply to your letter Ref. on Cur. No. 4420 of 1915, dated November 4, 1915, I have the honour to make the following report.

2. After a careful consultation with the Physics and Chemistry Lecturers, I have come to the conclusion that the Commissioners have not made their recommendations with a due regard either to the feasibility of an immediate opening, on a restricted scale, of the II-A branch, or to the present war conditions, which have intervened since the scheme was inception. If the Government are prepared to promise certain additions and improvements to the laboratories after the present period of financial stringency has closed, I am confident that Physics classes could be conducted prior to that time, with limited numbers, without detriment either to the standard set by the University, or to the students receiving instruction. I am also of the opinion that the demands made by the Commissioners are excessive in some particulars under any circumstances. This will be made clear from the detailed discussion below.

3. The main points of the Commissioners are—

(1) the want of space, (2) the necessity of a much larger staff in the laboratory.

(1) I am in entire agreement with the Commissioners that in order to make the B.A. Physics work a success in the future an extension of buildings is essential. But I do not agree with them that work cannot begin on a small scale until such extensions are complete. If the Government give an undertaking that they will, as soon as is consistent with the financial necessities of the time, make the extensions required, then I think that 'temporary' arrangements can be made to carry on the work in the existing buildings. The Commissioners consider that 'the use of the Intermediate Laboratory for B.A. work, even as a temporary measure, is undesirable' on the valid ground that 'B.A. work in the Intermediate Laboratory entails the necessity of removing all B.A. apparatus at the end of the B.A. period. So the resumption of a long experiment from the point at which it was left would be impossible.' In answer to this, I can but repeat what was told the Commissioners on their visit here, that in the first place such long experiments are comparatively few in number, secondly the time-table has been so drawn up that the Intermediate work comes in the forenoon and the B.A. work, in the afternoon, the experiments being set up in the recess, and thirdly there is certainly space in the Intermediate Laboratory which can be used for B.A. work alone, but the amount of such space being limited I have fixed the maximum strength at four for the present. By using the benches close to the walls in the Intermediate Laboratory apparatus can be set up and left without in any way interfering with the Intermediate work for which the central tables have all along proved sufficient. Thus the extra space can be utilized for a small class of not more than four, and good work can be turned out without sacrificing efficiency.

(a) The Commissioners have remarked that there is no suitable room for electrical work. I cannot agree, remembering, of course, that my suggestions are only to meet 'temporary' needs. The reason they give is that the proposed small room does not give sufficient wall space for the mounting of galvanometers. It appears to me that galvanometers can be mounted on small masonry piers, in that room, as in the Presidency College. Readings of galvanometers can be taken very conveniently by the method of 'Moon projection' on a translucent screen, which does not necessitate the use of a darkened room at all. In the proposed room five galvanometers can be mounted and used, which will be more than enough for a class of only four students.

(2) The next point is the suggested additions to the teaching and menial staff.

The Commissioners have recommended that a Junior Lecturer and a Demonstrator be appointed for Chemistry and two additional assistants for Physics. Thus they require that there should be a teaching staff of three for Chemistry, and of four, not mentioning Demonstrators, for Physics, a total of seven for the laboratory. I have consulted the University Calendar and I find that out of four colleges giving instruction in ii-A in the B.A. Pass Course, none have as large a staff as the one recommended. In the Government College, Rajahmundry, the total staff in the laboratory is only three and the number of students coming under their tuition last year was sixteen for the B.A. ii-A and twenty-two for the B.A. Group i. There were also ninety-six students in the Intermediate classes, whereas here this year we have only seventy. So that with much larger classes, and a staff of only three the *Rajahmundry College* was affiliated in Physics, and it is, therefore, difficult to see why this college should not receive the same treatment, since it has a similar staff and will shortly have a larger one. The Commissioners have recommended about the same strength of staff as is found at present in the Bangalore College, which is affiliated in Honours, and in ii-B Pass, the only difference being an additional Demonstrator. I can find no parallel for such excessive demands as regards staff. If the Rajahmundry College has managed satisfactorily with the total staff of only three, I cannot understand why this college should need seven. Considering that the Commissioners were aware that we were prepared to restrict our numbers to four, or six, their recommendations in this respect seem to me to be excessive. Moreover, the view of the Commissioners is based on the absence of Demonstrators the practice of dividing a class into two batches for practical work is adopted, entailing naturally double work for the teaching staff, but an excessive burden as the B.A. classes have hitherto been absent. This condition will cease as soon as Demonstrators are appointed, as the whole class can then be put in one batch. The Intermediate class then will work eight hours a week in Physics and eight hours in Chemistry instead of the present practice of twelve hours a week. The distribution of work will then be as follows:—

	Physics Lectures.	Physics. Practical.	Chemistry Lectures.	Chemistry Practical.
Junior Intermediate	2 hours ..	2 hours ..	2 hours ..	2 hours ..
Senior do.	2 hours ..	2 hours ..	2 hours ..	2 hours ..
	4 hours ..	4 hours ..	4 hours ..	4 hours ..
	8 hours a week	8 hours a week	8 hours a week	8 hours a week

4. Thus the work of the two Intermediate classes is seen to be four lectures and four hours practical work a week in Physics and four lectures and four hours practical work a week in Chemistry.

5. For the B.A. classes the Junior class has two lectures in Physics and four hours practical work in Physics a week and one lecture and two hours practical work in Chemistry a week. In Physics the work totals to six hours a week and in Chemistry to three hours a week. The Senior B.A. class has two lectures and four hours practical work in Physics a week and one lecture and three hours practical work a week in Chemistry. For the Senior B.A. the work in Physics totals to six hours a week and in Chemistry to four hours a week. Thus the work of the B.A. classes is four lectures and eight hours practical work in Physics totalling to twelve hours and in Chemistry to two lectures and five hours practical work totalling to seven hours a week.

	Physics Lectures.	Physics Practical.	Chemistry Lectures.	Chemistry Practical.
Junior B.A.	2	4	1	2
Senior B.A.	2	4	1	3
	4	8	2	5
	12 hours a week Physics.		7 hours a week Chemistry.	

6. Thus the total hours of work for both Intermediate and B.A. classes are eight lectures and twelve hours practical work a week totalling to twenty hours a week in Physics and six lectures and nine hours practical totalling to fifteen hours a week in Chemistry.

7. The subjects treated of by the Physics Department are Properties of Matter, Heat, Wave theory of Light Sound, Electricity and Magnetism. The Department of Mathematics handle Dynamic statics, Hydrostatics and Pneumatics and Geometrical optics, for which purpose four hours a week are used as common hours for Groups i and ii-A in the Junior B.A. class and two hours a week are used as common hours in the Senior B.A. class for the same purpose. The subjects handled by the Mathematics Department are generally finished in a little over a year after which the common hours to Mathematics and Physics are utilized for purposes of Physics and Chemistry giving to each subject an extra hour in the week. Thus on the whole the work under Physics will be twenty-one hours a week, made up of nine lectures and twelve hours practical work; whereas in Chemistry it will be sixteen hours a week made up of seven lectures and nine hours practical work. The above is based on the basis when normal working conditions come in, with all classes at work and with demonstrators attached. It shows that no extra assistants are needed for Physics or Chemistry. The nineteen hours teaching work at present allotted to the Chemistry lecturer will naturally be lightened with the appointment of a demonstrator, and if well qualified men are appointed the work can with ease be equitably distributed. The Commissioners further report that the number of lectures given both in Physics and Chemistry are insufficient.

8. When the scheme of work for the new pass courses was discussed at Madras, the general opinion was that the time allotted to English and optionals should be nearly equal, thirteen hours a week for English and twelve for optionals or *vice versa*. This allotment has hitherto been followed here. If the suggestions of the Commissioners are adopted, and they recommend a total addition of five hours work a week to each of the B.A. classes, this would mean that the English hours would be reduced to only seven or eight, as the total number of hours in a week is only twenty-five, unless the hours are taken away from Mathematics. Neither of these conditions are desirable, and moreover they only represent the minimum suggestions of the Commissioners, as Mr. Armstrong thinks that an addition of a further two hours would be beneficial. Here, again, I find from a reference to other time-tables, that the demands are excessive, as compared with other colleges affiliated in the same subject. Further Mr. Metcalfe's contention that the number of hours at present allotted to practical work are insufficient is hardly a reasonable one. Taking this year's Calendar for the college, I find that the number of working full weeks from the date of opening to the middle of next March is thirty-one—working two practical classes a week, as is at present done, amounts to sixty-two working classes of two hours duration for each of the two B.A. classes per year, giving a total of 120 practical classes for the whole B.A. course, such a number is more than sufficient. It should also be remembered that, as soon as the Mathematics classes are finished for the year, they can be utilized for Physics. The distribution of hours of work for each of the several subjects is shown below on the basis that English requires twelve and thirteen hours a week in the Junior and Senior B.A. classes respectively and the balance of thirteen and twelve goes to the optionals.

	Intermediate.		B.A. classes.	
	Junior.	Senior.	Junior.	Senior.
Physics Lectures	2 per week ..	2 per week ..	2 per week ..	2 per week ..
Practical Physics	2 hours a week ..	2 hours a week ..	4 hours a week ..	4 hours ..
Mathematics			4 hours ..	2 hours ..
Chemistry Lectures	2 per week ..	2 hours a week ..	1 hour ..	1 hour ..
Practical Chemistry	2 hours ..	2 hours ..	2 hours ..	3 hours ..
			13 hours ..	12 hours ..

9. The proposed additions to the menial staff are also surprising. Mr. Armstrong recommends that an assistant attender and a lascar be added to the Chemistry laboratory and Mr. Metcalfe recommends that two additional attenders be appointed for the Physics laboratory making a total menial staff of 10. At present there is a mechanic and a maistry in charge of gas, one whole-time attender to each laboratory, and a sweeper and a peon for the combined laboratory. It appears to me that all that will be necessary is to appoint an extra peon and an extra sweeper. There are also punkah-pullers who assist in the laboratories.

9A. I have dealt with the main points raised by the Commissioners, the minor points can be discussed after the larger question of affiliation has been settled. As for the question of Electrical plant the Syndicate are already aware that the plant has been installed.

10. To sum up, the position is as follows:—

If the Government are prepared to promise extensions in the future, after the war, then I am of the opinion that, as explained at length above, the college can easily open a B.A. Physics class on a restricted scale. If, however, the Government cannot see their way to make such a promise, or which is more likely, the University withholds affiliation for the reasons stated by the Commissioners, then the college is faced by a serious problem.

Letter No. 7255 dated September 14, 1916, from the Manager-in-charge, office of the Registrar, University of Madras, to the Director of Public Instruction, Madras.

With reference to correspondence ending with your letter No. 4420 of 1915, dated 17th July last, on the subject of the affiliation of the Kumbakonam College in Group (ii-A) — Physical Science, I have the honour, by the direction of the Syndicate, to refer to you the accompanying report of the Affiliation Committee of the Syndicate recommending that the application for affiliation be refused and to enquire whether you have any remarks to offer thereon. The favour of an early reply is requested.

Letter Ref. on C. No. 4420 of 1915, dated 21st September 1916, from the Director of Public Instruction, Madras, to the Registrar, University of Madras.

With reference to your letter No. 7255, dated 14th September 1916, regarding the further affiliation of the Kumbakonam College in ii-A (Physics) of the B.A. (Pass) course) I have the honour to offer the following remarks:—

(a) As regards the extensions proposed to be made to the College, I beg to state that Government have allotted Rs. 10,000 this year and material has already begun to be collected. There is ground for anticipating that the extensions will be completed next year.

(b) It is proposed to add rooms of the following description and dimensions:—

	FEET.
1. Preparation Room	26 × 10
2. Chemical Lecture Room	33 × 26
3. Balance Room	26 × 10
4. Dark Room	26 × 10
5. Intermediate Chemical Laboratory Room	45 × 26

(c) One of the existing rooms which is 30 feet × 20 feet is proposed to be used as a Chemical Laboratory for the B.A. class.

(d) As regards the additions to the staff, I have to inform the Syndicate that Government have recently sanctioned the employment in the college of two Demonstrators on Rs. 50 each per mensem—one for Physics and the other for Chemistry.

There are at present 4 students taking Group (ii-A) in the first year and the same number in the second and until the extensions are completed there is no intention of increasing this number. It is doubtful if for some time to come it would be possible to greatly increase it, but I think that the University may rely on Government being willing to make such additions to the staff as the development of this side of the College work

shows to be necessary. As regards the comparison with Rajahmundry I may point out that the American Mission College, Madura, was affiliated in Group (ii-A) although its staff consisted of only three. I think it is further worth remembering that Kumbakonam has a strong Mathematics staff which helps materially with the Physics work while the Madura College is not staffed for B.A. work in Mathematics.

The Syndicate considered the above communication together with the whole correspondence at its meeting held on October 10, 1916, and resolved to recommend the Senate to record its opinion that the application for affiliation may be granted by the Government.

Order—No. 1208, Home (Education), dated the 17th November 1916.

Under section 21 (4) of the Indian Universities Act, 1904, the Governor in Council is pleased to sanction the affiliation to the University of Madras of the Government College, Kumbakonam, in Group (ii-A)—Physical Science—of the B.A. Degree courses.

(True Extract)

P. RAJAGOPALA ACHARIYAR,
Secretary to Government.

To the Registrar, University of Madras.

" Director of Public Instruction.

" Superintendent, Government Press (for publication of the Order in the Gazette).

Editors' Table (Order only).

HOME (EDUCATION) DEPARTMENT.

**NOTES CONNECTED WITH G.O. No. 1208, HOME (EDUCATION),
DATED THE 17TH NOVEMBER 1916.**

[SUBJECT.—*Affiliation of the Government College, Kumbakonam, in Group (ii-A),
of the B.A. degree courses.*]

*Letter from the Registrar, University of Madras, dated the 9th November 1916,
No. 8681.*

A draft order sanctioning the affiliation applied for is submitted. It does not seem necessary to consult the Director of Public Instruction as the proposal for affiliation emanated from him.

E.A.V.—14-11-16.

T.K.—14-11-16.

C. RAMANUJA ACHARIYAR—15-11-16.

P. RAJAGOPALA ACHARIYAR—16-11-16.

P[ENTLAND]—16-11-16.

Issue.

P.R.—17-11-16.

[G.O. No. 1208, Home (Education), dated the 17th November 1916.]

GOVERNMENT OF MADRAS
HOME DEPARTMENT
(Education)

Read—the following paper :—

Letter—from F. DEWESBURY, Esq., B.A., LL.B., Registrar, University of Madras.
To—the Secretary to Government, Home (Education) Department.

Dated—Senate House, the 9th November 1916.
No.—8681.

I have the honour, by direction of the Syndicate, to submit, under Regulation 374 (d), for disposal by His Excellency the Governor in Council the accompanying application from the Director of Public Instruction, Madras, for the further affiliation of the Government College, Kumbakonam, in group (ii-A) of the B.A. Degree courses together with copies of the proceedings of the Syndicate and the Senate on the subject, and of the report submitted by the Syndicate to the Senate.

At its adjourned meeting held on the 28th October 1916 the Senate recorded its opinion that the affiliation may be granted by Government.

ENCLOSURES.

(1)
UNIVERSITY OF MADRAS.

Extract from the minutes of the adjourned meeting of the Syndicate held on
14th September 1915.

Read letter No. 4420, dated 5th August 1915, from the Director of Public Instruction, Madras, submitting an application for the affiliation of the Kumbakonam College in group (ii-A)—Physical Science of the B.A. Degree course.

Also report thereon of Affiliation Committee of the Syndicate, recommending that Messrs. Metcalfe and Armstrong be appointed a Commission to make a local inquiry.

Resolved that the report of the Affiliation Committee be accepted and that the Registrar take the necessary action thereon and request Mr. Armstrong to act as Convener of the Commission.

(2)

Extract from the minutes of the meeting of the Syndicate held on 2nd November 1915.

Read letters, dated 12th October 1915, from Messrs. W. H. F. Armstrong and E. P. Metcalfe submitting their reports on a local inquiry conducted in connection with the application for the affiliation of the Government College, Kumbakonam, in group (ii-A) of the B.A. Degree course;

together with the report thereon of the Affiliation Committee of the Syndicate.

Resolved that the report of the Committee be accepted and that the Registrar take action in accordance therewith.

(3)

Extract from the minutes of the meeting of the Syndicate held on 13th September 1916.

Read letter No. 4420/15, dated 30th May 1915, from the Director of Public Instruction, Madras, forwarding extract from a communication received from the Principal, Kumbakonam College, dealing with the points raised by the Commissioners appointed to conduct a local inquiry at the College in connection with the application for the affiliation of the College in group (ii-A)—Physical Science;

together with the report thereon of the Affiliation Committee of the Syndicate recommending that the application for affiliation be refused.

Resolved that the report of the Affiliation Committee of the Syndicate be referred to the Director of Public Instruction with the enquiry whether he has any remarks to offer thereon.

(4)

Extract from the minutes of the adjourned meeting of the Syndicate held on 10th October 1916.

Considered again letter No. 4420-15, dated 30th May 1915, from the Director of Public Instruction, Madras, forwarding extract from a communication received from the Principal, Kumbakonam College, dealing with the points raised by the Commissioners appointed to conduct a local inquiry at the College in connection with the application for the affiliation of the College in group (ii-A)—Physical Science;

together with the report thereon of the Affiliation Committee of the Syndicate recommending that the application for affiliation be refused.

Also letter dated 21st September 1916, from the Director of Public Instruction, Madras, submitting his remarks on the above report of the Affiliation Committee.

Also further report, dated 6th October 1916, of the Affiliation Committee on the above letter from the Director of Public Instruction, stating that it does not consider that the Director's letter removes the difficulties which led Mr. Metcalfe to recommend that affiliation be not granted at present.

Resolved that the Senate be recommended to record its opinion that the application for affiliation may be granted by Government.

(5)

Report of the Syndicate upon the application of the Director of Public Instruction for the further affiliation of the Kumbakonam College in Group (ii-A), Physical Science, of the B.A. Degree Courses.

The Syndicate reports the following correspondence relative to this application:—
Letter, No. 4420 of 1915, dated August 5, 1915, from the Acting Director of Public Instruction, Madras, to the Registrar, University of Madras.

I have the honour to forward, with reference to Regulation No. 374 of the University Regulations, an application from the Principal of the Kumbakonam College for the affiliation of the Institution in Branch II-A, Physical Science, of the B.A. Pass Course; and to furnish separately the particulars required under by-law 375 of the University Regulations.

Letter, R. C. No. 162 of 1915 dated July 16, 1915, from the Acting Principal, Kumbakonam College, to the Registrar of the Madras University, through the Director of Public Instruction, Madras.

I have the honour to apply for the affiliation of Government College, Kumbakonam, in Branch II-A of the B.A. Courses. The college is affiliated in Group i for the Intermediate Courses. The laboratory and equipment are such as to satisfy clauses a, b, c, d, e and f of Article 375 in Chapter XVII 'Rules for the affiliation of colleges'. It is proposed to start work, using the Intermediate laboratory as a nucleus and to supplement the special needs for B.A. instruction by making a suitable provision annually in the Budget. A beginning has been made in this direction by a grant of Rs. 17,000 in the current year and the apparatus and stores are expected to arrive before the year is out. The teaching staff has been strengthened by the addition of a new officer M.R.Ry. P. Rajagopala Ayyar Avargal who was in charge of the Science Department at Government College, Rajahmundry, for over a decade. Since the equipment and fittings will be completed in a few years to satisfy completely the University Regulations I beg that the application may be granted.

Application for affiliation of the Kumbakonam College, in Branch II-A, Physical Science, of the B.A. Pass Course.

(a) *Management.*—The college is a Government institution under the control of the Director of Public Instruction.

(b) *Teaching staff.*—The college is already affiliated to the University in Group i of the Intermediate Course. The staff has been strengthened by the appointment of an additional Lecturer in Physical Science, M.R.Ry. P. Rajagopala Ayyar Avargal, M.A., of the Madras University, who has had nine years' experience as a Lecturer in Physical Science in the Educational Department. The Lecturer is assisted by an Assistant Lecturer (M.R.Ry. K. C. Subramanya Ayyar) who is also a Master of Arts of the local University in Physical Science and a trained Licentiate in Teaching. He has had more than five years' service as a Lecturer in Physics in this department. Both the officers are Government servants and are subject to the rules of the Civil Service Regulations.

The number of students receiving instruction in Branch II-A of the B.A. Pass Course is only three at present.

(c) *Buildings.*—The college buildings are the property of Government. Provision has been made for the residence in the Victoria Jubilee Hostel attached to the college of students not residing with their parents or guardians and for the supervision and physical welfare of the students. The Principal is the Warden of the Hostel and the Secretary to the Hostel Committee, while one of the lecturers is the Deputy Warden. The latter is in residence in the hostel.

(d) *Library.*—Provision has already been made for a Library. An allotment of Rs. 2,000 has been made in the current year's budget under the head 'Books and Maps' and out of this amount a sum of Rs. 300 has been assigned for the purchase of additional books in Physical Science suitable for the use of students in Branch II-A of the B.A. Course. The Principal proposes to apply for a special grant towards the purchase of some more books in Physics.

(e) *Laboratory.*—It is proposed to start work by using the Intermediate Laboratory and to supplement the special needs for the B.A. instruction by making suitable provision annually in the Budget for additional apparatus. A beginning has been made in this direction by a grant of Rs. 17,000 in the current year, and the apparatus and stores are expected to arrive before the end of the year.

The time-table of the college has been so framed as to permit students in Branch II-A of the B.A. Course to make use of the Science Laboratory when it is not used by students of the Intermediate classes.

(f) It has not been possible to provide for the residence of the head of the college and some members of the teaching staff in or near the college. The college, as already stated, has a hostel attached to it.

(g) The college is a Government institution.

(h) The affiliation of the college will not be prejudicial to the interests of education as there is no other college in the Tanjore district which provides for instruction in Physical Science.

(i) Standard rates of fees are charged.

Assurance.—After the college is affiliated any transference of management and all changes in the teaching staff will be forthwith reported to the Syndicate.

Letter No. 5708, dated September 15, 1915, from the Registrar, University of Madras, to E. P. Metcalfe, Esq., B.Sc., and W. H. F. Armstrong, Esq., B.A.

In connection with an application from the Director of Public Instruction, Madras, dated August 5, 1915, requesting the affiliation of the Government College, Kumbakonam, in Group (ii-A) Physical Science, of the B.A. Degree Courses, the Syndicate has appointed you a Commission, with Mr. Armstrong as Convener, to conduct the local inquiry at the college in accordance with Section 21 (2) (a) of the Indian Universities Act, 1904. I shall be glad to know as soon as possible whether you are willing to serve thereon.

The Government College, Kumbakonam, is already affiliated to the University in Groups i and iii of the Intermediate and Groups (i), (iv), (v) and (vi) of the B.A. Degree Courses. The scope of the present inquiry should be limited to the further affiliation now sought, and should not extend to the subjects in which the college is now affiliated, except so far as the proposed affiliation would affect the provision already made for those subjects.

The correspondence relating to this application is forwarded in original to Mr. Armstrong who is requested to arrange for the inquiry at the earliest convenient date, so that if possible the report of the Commission may be submitted to the Syndicate for consideration before the date of its next meeting to be held on the 5th proximo. The report of the Commission should be presented to the Syndicate without being disclosed to the authorities of the college.

Letter No. 5709, dated September 15, 1915, from the Registrar, University of Madras, to the Director of Public Instruction, Madras.

With reference to your letter No. 4420, dated August 5, 1915, submitting an application for the affiliation of the Kumbakonam College in Group (ii-A) of the B.A. Degree Courses, I have the honour to inform you that the Syndicate has appointed Messrs. E. P. Metcalfe, B.Sc., and W. H. F. Armstrong, B.A., a Commission to conduct the local inquiry under Section 21 (2) (a) of the Indian Universities Act, 1904, and that Mr. Armstrong as Convener has been requested to arrange for the inquiry at the earliest possible date.

Local Inquiry Report on the Government College, Kumbakonam by Mr. E. P. Metcalfe.

I inspected the Government College, Kumbakonam, on October 9, 1915, in consequence of the application by the Director of Public Instruction, Madras, for the affiliation of this College in Group (ii-A) of the B.A. Degree (Pass) Course. The college is already affiliated to the University in Group (i) of the Intermediate Course.

1. Accommodation Available

The accommodation at present available in the Physics department of the college is as follows:—

- One lecture theatre about 24 feet square.
- One store room for apparatus, partitioned off from the theatre, 24 ft. by 9 ft. 4 in.
- One large Intermediate Class laboratory, 42 ft. by 26 ft.
- One dark room about 9 ft. by 8 ft. 6 in.
- One balance room (used also by the Chemistry classes) about 14 ft. by 9 ft.

In a small separate building near by, there are

- 3 workshop fitted with a small lathe, a forge and a fair supply of hand tools (28 ft. by 15 ft.)

A dynamo room (15 ft. by 10 ft.) at present empty.

A battery room (15 ft. by 8 ft.) at present empty.

A store room for materials (15 ft. by 10 ft.)

Adjoining is the gas house containing a single-retort high pressure plant with a 1,000 c. ft. container.

2. Water, gas and electricity supply.

The water for the laboratory is stored in an elevated tank on the roof, fed by a hand pump. The head of the water on the taps is about 30 feet.

The gas is Mansfield oil-gas, or something very similar.

There is no electricity supply of any kind. An order has been placed with a firm of electricians for a house-lighting plant including a shunt-wound d. c. generator coupled direct to a high speed petrol engine of 45 h.p. This is to feed a battery of 30 Tudor cells of about 150 ampere-hours capacity. There is also to be a booster for use with the battery. This plant has been on order for some little time and is expected shortly; but no date can be given for the completion of the installation.

3. Apparatus.

There is a fair stock of good apparatus actually in hand, and a large addition is on order.

4. Science Library.

There is a small collection of consulting books in cases in the gangway, just outside the lecture theatre. It is proposed to add to this on a fairly liberal scale.

5. Grants.

Recurring.—A recurring grant of Rs. 2,500 is allotted yearly to Chemistry and Physics. It is proposed, in the event of the affiliation being granted, to raise this sum to Rs. 5,000 per annum; Rs. 3,500 to be used for the Physics, and the balance for the Chemistry department.

In addition there is a recurring yearly contingent grant of Rs. 500 divided as follows:—Rs. 150 each for Physics and Chemistry, and Rs. 200 for gas.

Of the college library grant about Rs. 300 is spent annually on books on Chemistry and Physics.

Non-recurring.—A special grant of Rs. 17,000 will just cover the cost of a large order for apparatus already placed with firms in England. Of this sum about Rs. 14,000 is to pay for physical apparatus and materials.

A special library grant of Rs. 1,000 for chemical and physical books is to be asked for.

6. Teaching staff.

The teaching staff in Physics consists at present of two gentlemen, both of them M.A.'s of the University. The senior member is very experienced and has frequently examined for the University.

7. Time-table.

The time-table it is proposed to adopt in the event of affiliation being granted provides for two lectures of an hour each a week, and two periods of practical work in Physics of two hours each a week for each B.A. class.

8. Strength of B.A. classes.

From the results of previous Intermediate Examinations it is calculated that the B.A. (Junior) class of next July would consist of some six students. It is proposed to admit up to ten or so.

9. Remarks.

The paragraphs 1—8 will be considered *seriatim*.

(1) The space available is, in my opinion, not sufficient for the addition of a B.A. class.

The lecture theatre has such a large seating accommodation in proportion to its dimensions that the lecture table is unpleasantly cramped. Work with the optical lantern is almost out of the question on this account. There is only two feet six inches between the front row of desks and the edge of the table and less than five feet behind the table, while the clear space at either end is barely four feet. The single sliding blackboard is much too small.

The store space is insufficient. When the large order for apparatus is delivered there will be trouble in disposing of the new stock.

The intermediate class laboratory is a fair-sized room and tolerably adapted to its purpose. But it is proposed to use it also for the practical work of the new B.A. classes. In my opinion such an arrangement, even as a temporary expedient, would be very undesirable.

There is no room suitable for optical work: the present dark room is good enough only for occasional photography, it is small and quite unventilated.

It is suggested that a small room on the south side of the main college building might be used as a galvanometer room. I cannot agree that this would be convenient. The room in question has so many windows and doors that the wall space, so necessary for galvanometer work, would be very limited.

There appears to be no very convenient place for steady stone shelves for accurate balances.

(2) The water-supply would be greatly improved if another 10 or 15 feet of hose could be added and a mechanical pump substituted for the manual one now in use.

The gas arrangements seem adequate.

The absence of any form of electricity supply is a serious disadvantage. It is true that a generator set and battery are on order. But the type of generator selected seems to me to be unsuitable for an experimental laboratory. I should have preferred a compound machine with a cut-out for the series winding. Another sixteen or twenty volts in the battery would make lamps run more satisfactorily in projection apparatus.

(3) The collection of apparatus in hand is of excellent quality and fair quantity. The lists of goods on order have been shown to me and are quite satisfactory.

(4) The proposed additions to the library will put matters on a satisfactory footing in that department.

(5) The grants both recurring and special for apparatus, etc., seem to be liberal.
 (6) The strength of the teaching staff is too low. Two men can hardly do the work of two intermediate classes. The addition of B.A. classes would demand at least one, and very preferably two, more well qualified assistants for Physics alone.

(7) The number of hours allotted to Physics lectures in the time-table is far too small. It is impossible to do justice to the B.A. Course in Physics with only two hours lecturing a week. The practical hours proposed are barely enough. Moreover, the time-table shows that the plan of using the Intermediate laboratory for B.A. work entails the necessity of removing all B.A. apparatus at the end of the B.A. period so that the resumption of a long experiment from the point at which it was left would be impossible. It may be mentioned that at least three really intelligent laboratory attendants should be provided for an establishment of the proposed size.

(8) B.A. classes of the size suggested (or of any size, for that matter) are impracticable in the department as it stands. At least twice the space now available would be required. Additional rooms for laboratory work in

(a) Molecular Physics, Sound and Heat (b) Optics and (c) Electricity and Magnetism are necessary.

The store space should be enlarged. Room for private experimental work by the staff is highly desirable. It is possible to bring the strength of the staff and the amount of apparatus up to the required standard fairly rapidly. But floor space cannot be improvised. I should say that if the matter were taken up immediately, at least two years would pass before the college could be considered fit to teach the B.A. ii-A Course.

10. Recommendation.

For the reasons given above I recommend that the application for the affiliation of the Government College, Kumbakonam, in Group ii-A of the B.A. (Pass Course) be not granted.

Local Inquiry Report on the Government College, Kumbakonam by Mr. W. H. F. Armstrong.

I have the honour to report that I conducted a local enquiry in connection with the application for the affiliation of the Government College, Kumbakonam, in Branch II-A of the B.A. Courses, on Saturday, October 9, 1915.

With regard to the points on which Regulation 375 requires that the Syndicate shall be satisfied the following only are relevant:—

(b) Staff—

Lecturer in Chemistry, Mr. T. K. Hanumanta Rau, B.A., L.T.

The Principal informed me that application had been made for a demonstrator in Chemistry in anticipation of affiliation in Branch II-A and a reply had been received asking for further information. There the matter stands. The provisional time-table arranged for II-A students together with that of the Group (i) Intermediate students, provides for nineteen teaching hours a week, and this seems to me more than one lecturer can undertake successfully. If a demonstrator were appointed his work would consist only of helping with the Intermediate classes and Mr. Hanumanta Rau's actual teaching work would not be decreased. Further, the provisional time-table drawn up for the Junior and Senior B.A. classes also seems to be inadequate. It provides for only one lecture hour and two hours practical work during the week for each class. The Senior B.A. class ought to have two lectures and at least three hours practical work, and if possible the Junior B.A. class should have the same. I do not consider the need so great in the case of the junior class. If the time-table were altered as I suggest two or even four more hours would be added to the teaching work. In order to cope with this efficiently a junior lecturer, in addition to a demonstrator, might be engaged with advantage. A junior lecturer in sole charge of one of the Intermediate classes would relieve the senior lecturer considerably and enable him to give more attention to the B.A. classes.

(c) and (e) The lecture-room and laboratory accommodation seems to me sufficient for the teaching of Chemistry in Branch II-A. The laboratory accommodates eighteen students working at the same time, and this is ample as the college authorities do not propose to admit more than twelve B.A. students if the affiliation is granted with the present accommodation at their command. The store-room for chemicals and apparatus is too small (10 feet x 24 feet). When the laboratory extensions for Physics now in contemplation are completed more store-room accommodation should be allotted to the Chemistry section. The gas and water supplies to the laboratory are good, but an increase on the 30 feet head of water now available from tanks on the roof would be advantageous. The present balance room is used for both Physics and Chemistry, but it is proposed to reserve this room for Chemistry alone when the Physics extension is completed. The arrangement would then be quite satisfactory.

Chemicals and apparatus—

A special indent, in addition to the annual indent, has been sent to England this year. The value of the indent is Rs. 2,850 and the money is provided out of a special non-recurring grant of Rs. 17,000. When this indent arrives the college will be adequately equipped with chemicals and apparatus. In the past an annual grant of Rs. 2,500 has been allowed for Physics and Chemistry together, of which about Rs. 1,000 were utilized for Chemistry alone. The college has asked that this grant be raised to Rs. 5,000 in the future, of which Rs. 1,500 will be allotted to Chemistry. This seems to me sufficient.

*Mental staff—**One Chemistry attender.*

One person (for both Physics and Chemistry). This staff is quite inadequate, and I strongly recommend the addition of a junior attender and at least one lascar to assist in the laboratory and gas-house.

(d) *Chemistry Library.*—This is at present small but the books are good standard works. There is an annual grant of Rs. 300 for the Science Libraries but a special non-recurring grant of Rs. 1,000 will be applied for if the affiliation is granted. Of this sum the Chemistry Library would get about Rs. 300, which would be sufficient for all needs.

If the Syndicate can assure itself that the suggestions I have made above will be carried out at an early date especially those regarding the increase of the teaching staff, I am of the opinion that the college would be in a position to teach the Chemistry required in Branch II-A and I recommend that the affiliation be granted.

Letter, No. 6958 dated November 5, 1915, from the Registrar, University of Madras, to the Director of Public Instruction, Madras.

With reference to the application for the affiliation of the Government College, Kumbakonam, in Group (ii A) Physical Science, of the B.A. Degree Courses, I have the honour to forward herewith, by direction of the Syndicate, a copy of the reports received upon the local inquiry conducted at the college by Mr. E. P. Metcalfe and Mr. W. H. F. Armstrong and to invite the remarks of the Management of the college thereon.

I have also to request that the Syndicate may be furnished with the time-table, in full, of the Junior and Senior B.A. classes in Group (ii-A) showing the number of hours per week they attend the lectures and practical classes of the Professors of Mathematics, of Physics, and of Chemistry.

Letter, No. 4420, of 1915, dated May 30, 1916 from the Director of Public Instruction, Madras, to the Registrar, University of Madras.

With reference to your letter, No. 6958, dated November 5, 1915, forwarding a copy of the reports received upon local inquiry conducted at the Kumbakonam College by Mr. E. P. Metcalfe and Mr. W. H. F. Armstrong, I have the honour to forward herewith extracts from a communication, dated December 2, 1915, received from the Principal, Kumbakonam College, and to endorse the remarks contained therein.

The time-table of the Junior and Senior B.A. classes in Group (ii-A) in the college called for by the Syndicate will be found embodied in paras. 3, 4 and 5 of the Principal's letter and as regards the extensions to the college referred to in para. 10 of the above letter, I am desired by Government to inform the Syndicate that steps will be taken in due course to provide the necessary additional accommodation in the college for science instruction for the B.A. Pass Course.

Letter R.C. No. 162 of 1915, dated December 2, 1915 from the Principal, Kumbakonam College, to the Director of Public Instruction, Madras.

In reply to your letter Ref. on Cur. No. 4420 of 1915, dated November 4, 1915, I have the honour to make the following report.

2. After a careful consultation with the Physics and Chemistry Lecturers, I have come to the conclusion that the Commissioners have not made their recommendations with a due regard either to the feasibility of an immediate opening, on a restricted scale, of the II-A branch, or to the present war conditions, which have intervened since the scheme was inception. If the Government are prepared to promise certain additions and improvements to the laboratories after the present period of financial stringency has closed, I am confident that Physics classes could be conducted prior to that time, with limited numbers, without detriment either to the standard set by the University, or to the students receiving instruction. I am also of the opinion that the demands made by the Commissioners are excessive in some particulars under any circumstances. This will be made clear from the detailed discussion below.

3. The main points of the Commissioners are—

(1) the want of space, (2) the necessity of a much larger staff in the laboratory.

(1) I am in entire agreement with the Commissioners that in order to make the B.A. Physics work a success in the future an extension of buildings is essential. But I do not agree with them that work cannot begin on a small scale until such extensions are

complete. If the Government give an undertaking that they will, as soon as is consistent with the financial necessities of the time, make the extensions required, then I think that 'temporarily' arrangements can be made to carry on the work in the existing buildings. The Commissioners consider that 'the use of the Intermediate Laboratory for B.A. work, even as a temporary measure, is undesirable' on the valid ground that 'B.A. work in the Intermediate Laboratory entails the necessity of removing all B.A. apparatus at the end of the B.A. period. So the resumption of a long experiment from the point at which it was left would be impossible.' In answer to this, I can but repeat what was told the Commissioners on their visit here, that in the first place such long experiments are comparatively few in number, secondly the time-table has been so drawn up that the Intermediate work comes in the forenoon and the B.A. work, in the afternoon, the experiments being set up in the recess, and thirdly there is certainly space in the Intermediate Laboratory which can be used for B.A. work alone, but the amount of such space being limited I have fixed the maximum strength at four for the present. By using the benches close to the walls in the Intermediate Laboratory apparatus can be set up and left without in any way interfering with the Intermediate work for which the central tables have all along proved sufficient. Thus the extra space can be utilized for a small class of not more than four, and good work can be turned out without sacrificing efficiency.

(a) The Commissioners have remarked that there is no suitable room for electrical work. I cannot agree, remembering, of course, that my suggestions are only to meet 'temporary' needs. The reason they give is that the proposed small room does not give sufficient wall space for the mounting of galvanometers. It appears to me that galvanometers can be mounted on small masonry piers, in that room, as in the Presidency College. Readings of galvanometers can be taken very conveniently by the method of 'Moon projection' on a translucent screen, which does not necessitate the use of a darkened room at all. In the proposed room five galvanometers can be mounted and used, which will be more than enough for a class of only four students.

(2) The next point is the suggested additions to the teaching and menial staff. The Commissioners have recommended that a Junior Lecturer and a Demonstrator be appointed for Chemistry and two additional assistants for Physics. Thus they require that there should be a teaching staff of three for Chemistry, and of four, not mentioning Demonstrators, for Physics a total of seven for the laboratory. I have consulted the University Calendar and I find that out of four colleges giving instruction in ii-A in the B.A. Pass Course, none have as large a staff as the one recommended. In the Government College, Rajahmundry, the total staff in the laboratory is only three and the number of students coming under their tuition last year was sixteen for the B.A. ii-A and twenty-two for the B.A. Group i. There were also ninety-six students in the Intermediate classes, whereas here this year we have only seventy. So that with much larger classes, and a staff of only three the *Rajahmundry College* was affiliated in Physics, and it is, therefore, difficult to see why this college should not receive the same treatment, since it has a similar staff and will shortly have a larger one. The Commissioners have recommended about the same strength of staff as is found at present in the Bangalore College, which is affiliated in Honours, and in ii-B Pass, the only difference being an additional Demonstrator. I can find no parallel for such excessive demands as regards staff. If the Rajahmundry College has managed satisfactorily with the total staff of only three, I cannot understand why this college should need seven. Considering that the Commissioners were aware that we were prepared to restrict our numbers to four, or six, their recommendations in this respect seem to me to be excessive. Moreover, the view of the Commissioners is based on the current practice in the laboratory of having no Demonstrators at all. In the absence of Demonstrators the practice of dividing a class into two batches for practical work is adopted, entailing naturally double work for the teaching staff, but an excessive burden as the B.A. classes have hitherto been absent. This condition will cease as soon as Demonstrators are appointed, as the whole class can then be put in one batch. The Intermediate class then will work eight hours a week in Physics and eight hours in Chemistry instead of the present practice of twelve hours a week. The distribution of work will then be as follows:—

		Physics Lectures.	Physics Practical.	Chemistry Lectures.	Chemistry Practical.
Junior Intermediate		2 hours ..	2 hours ..	2 hours ..	2 hours ..
Senior do.		2 hours ..	2 hours ..	2 hours ..	2 hours ..
		4 hours ..	4 hours ..	4 hours ..	4 hours ..
		8 hours a week Physics		8 hours a week Chemistry.	

4. Thus the work of the two Intermediate classes is seen to be four lectures and four hours practical work a week in Physics and four lectures and four hours practical work a week in Chemistry.

5. For the B.A. classes the Junior class has two lectures in Physics and four hours practical work in Physics a week and one lecture and two hours practical work in Chemistry a week. In Physics the work totals to six hours a week and in Chemistry to three hours a week. The Senior B.A. class has two lectures and four hours practical work in Physics a week and one lecture and three hours practical work a week in Chemistry. For the Senior B.A. the work in Physics totals to six hours a week and in Chemistry to four hours a week. Thus the work of the B.A. classes is four lectures and eight hours practical work in Physics totalling to twelve hours and in Chemistry to two lectures and five hours practical work totalling to seven hours a week.

	Physics Lectures.	Physics Practicl.	Chemistry Lectures.	Chemistry Practicl.
Junior B.A.	2	4	1	2
Senior B.A.	2	4	1	3
	4	8	2	5
	12 hours a week Physics.		7 hours a week Chemistry.	

6. Thus the total hours of work for both Intermediate and B.A. classes are eight lectures and twelve hours practical work a week totalling to twenty hours a week in Physics and six lectures and nine hours practical totalling to fifteen hours a week in Chemistry.

7. The subjects treated of by the Physics Department are Properties of Matter, Heat, Wave theory of Light Sound, Electricity and Magnetism. The Department of Mathematics handle Dynamic statics, Hydrostatics and Pneumatics and Geometrical optics, for which purpose four hours a week are used as common hours for Groups i and ii-A in the Junior B.A. class and two hours a week are used as common hours in the Senior B.A. class for the same purpose. The subjects handled by the Mathematics Department are generally finished in a little over a year after which the common hours to Mathematics and Physics are utilized for purposes of Physics and Chemistry giving to each subject an extra hour in the week. Thus on the whole the work under Physics will be twenty-one hours a week, made up of nine lectures and twelve hours practical work; whereas in Chemistry it will be sixteen hours a week made up of seven lectures and nine hours practical work. The above is based on the basis when normal working conditions come in, with all classes at work and with demonstrators attached. It shows that no extra assistants are needed for Physics or Chemistry. The nineteen hours teaching work at present allotted to the Chemistry lecturer will naturally be lightened with the appointment of a demonstrator, and if well qualified men are appointed the work can with ease be equitably distributed. The Commissioners further report that the number of lectures given both in Physics and Chemistry are insufficient.

8. When the scheme of work for the new pass courses was discussed at Madras, the general opinion was that the time allotted to English and optionals should be nearly equal, thirteen hours a week for English and twelve for optionals or *vice versa*. This allotment has hitherto been followed here. If the suggestions of the Commissioners are adopted, and they recommend a total addition of five hours work a week to each of the B.A. classes, this would mean that the English hours would be reduced to only seven or eight, as the total number of hours in a week is only twenty-five, unless the hours are taken away from Mathematics. Neither of these conditions are desirable, and moreover they only represent the minimum suggestions of the Commissioners, as Mr. Armstrong thinks that an addition of a further two hours would be beneficial. Here, again, I find from a reference to other time-tables, that he demands are excessive, as compared with other colleges affiliated in the same subject. Further Mr. Mefcalfe's contention that the number of hours at present allotted to practical work are insufficient is hardly a reasonable one. Taking this year's Calendar for the college, I find that the number of working full weeks from the date of opening to the middle of next March is thirty-one—working two practical classes a week, as is at present done, amounts to sixty-two working classes of two hours duration for each of the two B.A. classes per year, giving a total of 120 practical classes for the whole B.A. course; such a number is more than sufficient. It should also be remembered that, as soon as the Mathematics classes are finished for the year, they can be utilized for Physics. The distribution of hours of work for each of the several subjects is shown below on the basis that English requires twelve and thirteen hours a week in the Junior and Senior B.A. classes respectively and the balance of thirteen and twelve goes to the optionals.

	Intermediate.		B.A. classes.	
	Junior.	Senior.	Junior.	Senior.
Physics Lectures	2 per week ..	2 per week ..	2 per week ..	2 per week ..
Practical Physics	2 hours a week ..	2 hours a week ..	4 hours ..	4 hours ..
Mathematics			4 hours ..	2 hours ..
Chemistry Lectures	2 per week ..	2 hours a week ..	1 hour ..	1 hour ..
Practical Chemistry	2 hours ..	2 hours ..	2 hours ..	3 hours ..
			13 hours ..	12 hours ..

9. The proposed additions to the menial staff are also surprising. Mr. Armstrong recommends that an assistant attender and a lascar be added to the Chemistry laboratory and Mr. Metcalfe recommends that two additional attenders be appointed for the Physics laboratory making a total menial staff of 10. At present there is a mechanic and a maistry in charge of gas, one whole-time attender to each laboratory, and a sweeper and a peon for the combined laboratory. It appears to me that all that will be necessary is to appoint an extra peon and an extra sweeper. There are also punkah-pullers who assist in the laboratories.

9A. I have dealt with the main points raised by the Commissioners, the minor points can be discussed after the larger question of affiliation has been settled. As for the question of Electrical plant the Syndicate are already aware that the plant has been installed.

10. To sum up, the position is as follows:—

If the Government are prepared to promise extension in the future, after the war, then I am of the opinion that, as explained at length above, the college can easily open a B.A. Physics class on a restricted scale. If, however, the Government cannot see their way to make such a promise, or which is more likely, the University withholds affiliation for the reasons stated by the Commissioners, then the college is faced by a serious problem.

Letter No. 7255 dated September 14, 1916, from the Manager-in-charge, office of the Registrar, University of Madras, to the Director of Public Instruction, Madras.

With reference to correspondence ending with your letter No. 4420 of 1915, dated 17th July last, on the subject of the affiliation of the Kumbakonam College in Group (ii-A)—Physical Science, I have the honour, by the direction of the Syndicate, to refer to you the accompanying report of the Affiliation Committee of the Syndicate recommending that the application for affiliation be refused and to enquire whether you have any remarks to offer thereon. The favour of an early reply is requested.

Letter Ref. on C. No. 4420 of 1915, dated 21st September 1916, from the Director of Public Instruction, Madras, to the Registrar, University of Madras.

With reference to your letter No. 7255, dated 14th September 1916, regarding the further affiliation of the Kumbakonam College in II-A (Physics) of the B.A. (Pass) course, I have the honour to offer the following remarks:—

(a) As regards the extensions proposed to be made to the College, I beg to state that Government have allotted Rs. 10,000 this year and material has already begun to be collected. There is ground for anticipating that the extensions will be completed next year.

(b) It is proposed to add rooms of the following description and dimensions:—

1. Preparation Room 26 x 10
2. Chemical Lecture Room 33 x 26
3. Balance Room 26 x 10
4. Dark Room 26 x 10
5. Intermediate Chemical Laboratory Room 45 x 26

(c) One of the existing rooms which is 30 feet x 20 feet is proposed to be used as a Chemical Laboratory for the B.A. class.

(d) As regards the additions to the staff, I have to inform the Syndicate that Government have recently sanctioned the employment in the college of two Demonstrators on Rs. 50 each per mensem—one for Physics and the other for Chemistry.

There are at present 4 students taking Group II-A in the first year and the same number in the second and until the extensions are completed there is no intention of increasing this number. It is doubtful if for some time to come it would be possible to make such additions to the staff as the development of this side of the College work shows to be necessary. As regards the comparison with Rajahmundry I may point out that the American Mission College, Madras, was affiliated in Group (II-A) although its staff consisted of only three. I think it is further worth remembering that Kumbakonam has a strong Mathematics staff which helps materially with the Physics work while the Madras College is not staffed for B.A. work in Mathematics.

The Syndicate considered the above communication together with the whole correspondence at its meeting held on October 10, 1916, and resolved to recommend the Senate to record its opinion that the application for affiliation may be granted by the Government.

Order—No. 1208, Home (Education), dated 17th November 1916.

(True Extract)

To the Registrar, University of Madras

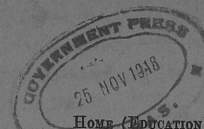
„ Superintendent, Government Press (for publication of the Order in the Gazette)
Editors' Table (Order only).

(EDUCATION)

G.O. No. 1208, 17th November 1916

Affiliation

Sanctioning the — to the University of Madras of the Government College, Kumbakōnam, in Group (ii-A)—Physical Science—of the B.A. Degree courses.



HOME (EDUCATION) DEPARTMENT.

NOTES CONNECTED WITH G.O. No. 1208, HOME (EDUCATION),
DATED 17th NOVEMBER 1916.

[SUBJECT.—Affiliation of the Government College, Kumbakonam, in Group (ii-A),
of the B.A. degree courses.]

Letter from the Registrar, University of Madras, dated the 9th November 1916,
No. 8681.

A draft order sanctioning the affiliation applied for is submitted. It does not
seem necessary to consult the Director of Public Instruction as the proposal for
affiliation emanated from him.

E.A.V.—14-11-16.

T.K.—14-11-16.

C. RAMANUJA ACHARIYAR—15-11-16.

P. RAJAGOPALA ACHARIYAR—16-11-16.

P[ENTLAND]—16-11-16.

Issue.

P.R.—17-11-16.

[G.O. No. 1208, Home (Education), dated 17th November 1916.]

Assimilation

Home DEPARTMENT

Sanctifying the — (Ed. 3)

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- Govt. college, Jalandhar,
in group (ii - A) of the B. A. Degree
Council.

READ AGAIN G.O. No., dated 191

” ” ” ” ” 191

READ ALSO:—

C. No. 4082 From the Rajd University No. 8681, dated 10th Nov. 1911
of Madras,

" ") " ", , , " " 191

ORDER.

No. 1208, dated 12-11-1916

Under Section 21(4) of the Indian Universities Act, 1904, the Government in Council is pleased to sanction the affiliation ~~with~~ to the University of Madras of the Govt. College, Kumbakonam, in Group (ii - A) - Physical Sciences - of the B. A. Degree courses.

Sis. Wright
this is for
the [unclear]
[unclear] 9/10/68

To
The Regt., Admin. of Marine
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" S. G. P. for publication
of the Order in the
" E. T. (Cavalry)

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