

29-6-11

12-4-12 B D

27/8/92 R.H.S. 3/1/14, 17

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26-7-28 B D

6/2/11 R.H.S.

ORDINARY, MS.

Sub: DEPARTMENT.	
G.O., DATED	5 th June 1894
No.	393

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[Despatch Abstract.]

Referring to certain officers
 report the question of the
 future management of
 the Museum, the Free
 Library and the Technical
 Institute

PRINTED IN G.O. dated

16 Augt. 1894. No. 597

FURTHER PAPER, No.

1864/94

READ AGAIN ORDER OF GOVERNMENT, DATED
189, No. , MISCELLANEOUS.

ENCLOSURES.

CURRENT No.

STATEMENT WITH DITTO.

ORDER OF GOVERNMENT

A A

LETTER OF GOVERNMENT.

STATEMENT WITH DITTO.

PAPERS NOT FILED UP, BEING MEANT FOR DESPATCH
IN ORIGINAL (not paged).

N.B.—

- A — Copy in full.
- B — Not to be copied.
- P — Copy abstract only.
- Q — Copy heading only.

Public Dept
393 Police
Order. 5th June 1894. N: 39.

As the new build-
ings in the Museum
compound at Alldra
are rapidly approach-
ing completion the
Govt. resolves to remit
the question of the
future management
of the Museum,
the Library and the
Technical Institute
to the officers named
in the margin with
the request ^{in a brief report} that they
will submit definite
proposals on the sub-
ject at a very early
date.

(from orders in Council -
vide notes with G.P.)

d/5/6/94, N: 394

H.L.

Please return the room

MEMORANDUM

ON THE PROPOSED

VICTORIA TECHNICAL INSTITUTE.

1. As a member of the "Victoria Technical Institute" Sub-Committee of the General Jubilee (Madras) Committee, I have the honour to submit along with the Report of that Sub-Committee a minute on Technical Education. The object of that minute was not to dissent from any of the specific recommendations of the Sub-Committee, with all of which I heartily agree. The resolutions, however, which are printed at foot for convenience of reference,* appeared to me to be unsatisfactory considered as the "practical scheme" that it was the duty of the Sub-Committee, as I read its instructions, to submit to the General Committee. Some are vague, while others, which cannot be accused of vagueness, yet give no indication of the practical steps necessary for carrying out the recommendations contained in them. But the main defects are two; first, the various suggestions however good are mere isolated parts of what ought to be a comprehensive and connected scheme. No such general scheme or plan is formulated, although it would appear to be absolutely essential. Secondly, there is no reference at all to the question of finances. Proposals that are totally oblivious of the difficulties of ways and means cannot claim a highly practical character. The object of the minute referred to was, then, first to call attention to the monetary difficulty; and, secondly, to show how far the Sub-Committee's proposals might be dovetailed into a general scheme. The present Memorandum is merely an expansion in greater detail of the views therein expressed.

2. In developing these views, I have kept in mind certain indispensable considerations of a restrictive nature, which I here briefly state at the outset.

*I. That a representative Council be elected by the subscribers to establish and manage the proposed Technical Institute and its operations, and generally to encourage Technical Education; and that such Council be legally incorporated as may be deemed advisable.

II. That it would be the duty of the council

- (a) To institute exhibitions of the work done by pupils of Technical and Industrial Schools and by apprentices from regular workshops, and to grant certificates and prizes to the exhibitors;
- (b) To form a museum to aid in Technical Instruction;
- (c) To provide for lectures and class instruction in Technical subjects;
- (d) With a view to extend as widely as possible the benefits of Technical education among the native artisans, the institute should establish vernacular classes at one or more convenient places for instruction in mechanical drawing, rudimentary arithmetic, and details of design in the various trades of the country;
- (e) To assist the managers of High and Middle Schools in introducing instruction in the Technical subjects of the Middle School Examination and the Higher Examinations in Arts, in such ways as may be found practicable.

III. That, as a commencement, a small building should be bought or hired, in a central situation, for the head quarters of the Institute.

IV. That a Library of selected Technical works should be established in it, to be kept open both very early in the mornings and late in the evenings, so as to be available for artisans out of working hours.

V. That a beginning should be made by establishing in the said building a mechanical drawing class in the evening, with teaching both in English and Vernacular and that a course of evening lectures should be commenced in working trade subjects.

(a). The funds at our disposal are very limited, and accordingly it is less important to consider what we *can* do. It follows that the spacious public building, filled with machinery and technical apparatus of all sorts, manned by able experts, and turning out highly trained specialists, is at present a chimera.

(b). If special technical instruction of the most approved type were provided, the material on which it could be worked does not exist in the country in any appreciable quantity. The educational system now in vogue does not turn out pupils with either the liking to adopt, or the aptitude to profit by, high Technical Instruction. High Technical Instruction must be performed before high-class Technical Instruction can be appreciated by any but a small minority.

(c). It follows from this that the work of an Institute to be now started must be progressive; it must begin with small things and proceed by indirect methods. It may contemplate much; its aims should be to consolidate, co-ordinate, extend, supplement, and popularize existing agencies; to form the link between purely professional or technical institutions and general educational establishments; to develop an interest in these special subjects among the population generally, and to seize any opportunity that offers for the improvement, resuscitation, or introduction of particular industries. But the way to achieve much is, not by attempting to do everything at once, but by having an elastic constitution in which as the work grows and opportunity for expansion offers. There should not therefore be disappointment though the enterprise at first seem insignificant. If the Institute, however small its beginning, makes good its ground as it goes, it will surely perhaps but surely, rise to greater things.

(d). It is important that any scheme proposed should harmonize and work in with existing agencies. If it is to be a "new departure" these it may indeed absorb, but to begin with a declared course of antagonism would be fatal.

(e). The Institute must endeavour to earn as much Government money as it can. The full meaning of this will appear in the sequel. It does not refer to special grants, which may be reasonably expected, but to the grants which Government has promised to technical education under the Grant-in-aid Code. In other words it will be the duty of the Institute to work in accord with the Educational Department or to persuade the Educational Department to work in accord with it.

If the soundness of these considerations be granted, it follows that the immediate scope of operations will be substantially limited.

3. *Constitution.*—In the name, the Victoria Technical Institute, the word Institute should be taken to signify not a building, but the associated members, as in the Royal Colonial Institute, the Royal Institute of British Architects, &c. It should be incorporated under Section 26 of the Act No. VI. of 1882, as a company carried on, not for profit, but for the advancement of Science, Art and Industries. The members should be

(1). All subscribers of not less than Rs. 50 per annum, membership to cease when the subscription ceases; and

(2). Life members, being all such contribute Rs. 500 either in one donation or in payments extending over a period of not more than five years. *

The Institute so formed may have a President and Vice-President, but the main work would be done by the Council of the Institute.

4. *Council*.—The Council should consist of:—
- (a). Members elected by the Institute. They should be elected for three years, one-third of the number retiring yearly.
 - (b). Members to be nominated by Government.

Both the proportionate and the absolute numbers of the two classes of members must depend to some extent upon the amount of aid given by Government; but assuming that that aid will be fairly liberal, the number of elected members might be twelve and of nominated members nine. This would make a total executive Council of twenty-one, which is sufficiently large to ensure a working quorum and sufficiently small to ensure that only those who show some considerable interest in the work shall gain admission. This Council will elect its own Chairman and its Secretary, the latter of whom may or may not be a member of the Council. It will be essential to have a paid Secretary; for there will be a considerable amount of detail work which no one can be expected to undertake, or undertaking, to carry out promptly and efficiently, without some remuneration. The resources will not at present admit of the engagement of a Secretary, of sufficient ability and experience, to give his undivided attention to the duties of the office; but probably some one could be found willing for a moderate remuneration to devote a portion of his time regularly to the work. The Secretary would correspond somewhat to the Secretary of the Commissioner for the U. C. S. Examinations, or more nearly to the Registrar of the University.

5. *Funds*.—The Funds at the disposal of the Institute are:

- (a). The General Fund, which, with accumulated interest, will amount to something over Rs. 60,000 by the time operations can be commenced. We may take it at Rs. 60,000, leaving any small surplus for preliminary expenses.
- (b). The sum of Rs. 20,000 given by Rai Bahadur Arcot Dhanakhoti Mudaliar for the purposes of a Library.

These two amounts come to Rs. 80,000. The whole of this should be treated as capital to be expended on buildings or to be funded. To supplement this fund, advantage may be taken of Chapter I. of the Grant-in-Aid Code, Buildings, and of Chapter XII., Endowments.† Under the circumstances, Government would probably gladly sanction the one-half grant therein contemplated. This

* It may subsequently be found possible and advisable recommending pupils for tuition or scholarships, &c.

† Grant-in-Aid Code, Chapter XII.

1. Grants equal to one-half the amount given or devised for the endowment of professorships, teacherships, scholarships, Government, subject to the following conditions:—

(1) The institution with which the endowment permanent character, and must be under management recognized by Government as suitable for receiving such aid.

(2) The endowment must consist of Government securities and be invested in the names of three trustees approved by Government, or, with the sanction of Government, invested in the name of the Director for the time being.

give subscribers certain privileges in the way of

may, with the sanction of Government, be made museums, or other definite object approved by

to be connected must be of a well-established and

management recognized by Government as suitable securities and be invested in the names of three

would give a total of Rs. 1,20,000. Of this Rs. 75,000 should be invested in the names of the approved trustees, giving a minimum yearly income of Rs. 3,000. This is not a large sum, but it will defray office and other current expenses and support the machinery by which in time more may be collected. The balance Rs. 45,000 should be devoted to buildings and the purchase of books for the library.

6. *Buildings.*—It may be possible to rent on lease, at a reasonable rate, suitable buildings; but failing any special arrangement (such as that proposed in paragraph 20 of this memorandum), a building of some sort will be necessary. A site in a suitable central situation can probably be obtained from Government or the Municipality. The building must be unpretentious but specially adapted for its purpose and capable of extensions. Probably the best model would be that of a central building with detached, or semi-detached wings. The central building would contain the offices of the Institute, a lecture theatre, and one or two smaller class-rooms. One wing, to be built at once, would contain the library, which would also be used as a reading room, as in the British Museum. A corresponding wing could form the Technical Museum, but this could not be proceeded with in the absence of funds. Further additions, in the way of laboratories, workshops, &c., could be made as the operations of the Institute become wider and its funds more ample. This system of detached blocks (which might be connected by covered ways) serves three good ends. It enables the work to be proceeded with gradually; it enables specific donations to be devoted to special buildings, which may receive the names of the donors; and it is a great insurance against total loss in case of fire. The last is a very important consideration when it is remembered that much of the work of the Institute must be carried on at night and also that many industrial processes requiring the employment of fire, will in course of time be introduced.

7. *Income.*—The Annual Income will consist, in addition to the fixed sum of Rs. 3,000 mentioned in para. 5, of subscriptions and donations. Subscribers and donors will probably, when the sums are large, indicate the specific objects to which they wish their contributions to be devoted. Where such intention is indicated, it might be well to observe some general principle; for example, that all donations of Rs. 500 and upwards be treated as capital and invested; while smaller donations and annual subscriptions be treated as income. Donations added to the endowment would be increased by the half-grant from Government under the Grant-in-Aid Code, Chapter XII. With regard to annual subscriptions and donations treated as income, some special arrangement will be necessary. Government might be moved to consent to an arrangement similar to

(3) The trustees must render yearly accounts to Government in such form as may be prescribed, and a statement of such accounts shall be published annually by the Director in the *Fort St. George's Gazette*.

(4) The proceeds of endowments shall appear in the annual accounts rendered by each Manager to the Director.

2. The trust-deed, which must be approved by the law officers of Government, shall contain a provision that in the event of the object for which the endowment was created ceasing to exist or of the Manager of the institution with which the endowment is connected ceasing to comply with any condition of the trust, the fund shall be distributed as provided therein.

3. Grants will be given only towards endowments on or after the 1st July 1885 created by one or more private persons from their own property.

In no case shall a grant be given towards an endowment to be created from funds derived directly or indirectly from ordinary funded or school income, from any corporation, society, body of trustees or individual acting on the behalf, the object of Government being to encourage endowments in good and efficient institutions by means of the liberality of private persons.

that adopted in the cases of the Physical Training and Field Games Association, the Friend-in-Need Society, and other bodies; namely, to give an amount equal to the subscriptions up to a certain limit. The limit would in this case be the maximum amount which Government can see its way to contribute as an annual subsidy.

8. In addition to the serious work of the Institute, something may be done at its central building to popularise Technical Instruction and make the people familiar with its aims and benefits. The useful means to this end will be the Library and Museum,* but courses of popular lectures may be delivered, and classes for special subjects formed, as soon as lecturers and teachers are available. But action in these matters must be guided by circumstances and no fixed rules can be laid down.

9. Technical Instruction naturally divides itself into two distinct branches broadly defined as the General and the Special. *General* Technical Instruction means the training of the whole body of school-going children in one or more of those branches which are fundamental or necessarily preliminary to all instruction treating of the application of these branches to particular trades or industries, the latter forming *special* Technical Instruction. Thus all the decorative arts, painting, modelling, engraving, jewellers' work, embroidery, &c., are special applications of design, and it would be useless to admit a pupil into a class for any

* A popular and instructive adjunct to the museum would be the presence of skilled workmen, carrying on their work by the most approved methods. This suggestion is due to Rajah Sir T. Madhava Rao, who writes to me as follows:—

"The plan is to place before the existing industrial classes examples of model workmen doing work with the best tools and the best materials and with the best trained skill that useful instruction may be had by the mere inspection of the model workmen. By such means, the best tools will become known and so also the best materials and the best skill.

"A small fee may be charged for the inspection.

"Arrangements may also be made to procure and give at the lowest price any tools which may be approved and required.

"Arrangements may also be made to exhibit samples of the best work on the best designs.

"The cost of giving effect to this plan will be moderate and within the means at present command.

"The plan is simple and intelligible and will be an important step in the right direction.

"Practical workmen will come from all parts of the Presidency and visit the proposed establishment and carry away a better knowledge of tools, materials, designs, and trained skill so as to improve the already existing industries.

"I append a rough list of industries and processes which might thus be improved.

"Improvement thus started will naturally further develop. If such a model establishment existed, I would for instance, ask the Dewan of Travancore to send up at the cost of the Travancore Government a number of carpenter maistries of that country.

"Travancore is so rich in timber of all sorts and in clever carpenters that it might be the supplier of beautiful furniture of all kinds to India and also to countries outside. But the Travancore carpenter has rude implements, rude designs, is deficient in finish, does not know how to varnish work, &c.

"Such examples might be multiplied without limit.

"Memo. of trades and industries to be taught by best example and the best instruments:—

"(1) Carpenter's work, (2) Blacksmith's work, (3) Handloom weaving, (4) Lucifer match making, (5) Turning in wood and metal, (6) Toy making of different kinds, (7) Pin making, (8) Lock making of different kinds, (9) Wall paper printing, (10) Cloth printing, (11) Needle making, (12) Mat making, (13) Shoe making, (14) Tanning of leather, (15) Cask making, (16) Cutting of metal plates to required shapes and dimensions for the making of different kinds of vessel, (17) Umbrella making, (18) Carving figures in soft wood as in Switzerland, (19) Cut designs by the fret saw, (20) Casting of metal figures in given designs, (21) Mason's work, especially building up of walls, (22) Brick and tile making of different kinds, (23) Manufacture of playing cards, (24) Making of penknives (very fine steel is available in different parts of India,) (25) Grinding fine flour of different kinds, (26) Tinman's work, (27) Whip-making, (28) Work of different kinds in bone or ivory, (29) Gilding, electroplating, (30) Manufacture of perfumes useful for export, (31) Ink-making, (32) Dye and color manufacturing, (33) Manufacture of different metals, (34) Tape manufacturing, (35) Gold and silver thread manufacturing, (36) Soldering of different kinds, (37) Basket making, (38) Coir making, (39) Sack manufacturing, (40) Bamboo basket making, (41) Rattan manufacture, (42) Bead making, (43) Honey bee rearing, (44) Brush making, (45) Wax candle making, (46) Bangle making, (47) Wire making, (48) Nail manufacturing, (49) Making of playing cards, (50) Making of glass bottles from broken materials procurable in India, (51) Making of playing cards, (52) Manufacturing of paper procurable in India, (53) Making of cardboard from waste paper procurable in India, (54) Resilvering of mirrors, (55) Making of pill boxes, (56) Selecting, packing, and exporting medical drugs, (57) Preparing, bottling, and exporting various jams, syrups, and pickles, (58) Artificial flower making for export, (59) Showing the best methods of polishing wood, metal, and stone things."

one of these subjects, who had not obtained a certain proficiency in freehand drawing. In the same way, an elementary knowledge of geometry and mechanics is essential to the student of mechanical engineering; some acquaintance with chemistry and botany is a necessary preliminary to a study of agriculture, forestry, horticulture, and allied branches. I shall in a subsequent paragraph recur to the special difficulties which, in Madras, prevent at present the introduction of any extensive scheme of *special technical instruction*, but it is here necessary to point out that, however much money we have, however much knowledge we might have, all efforts would be futile in the absence of suitable material. I think these two statements may be taken as incontrovertible, (1) that suitable material is essential, and (2) that we have not got such material in Madras—or in India. Some may contend that we have material in plenty, but it cannot be admitted that either illiterate workmen or literate school-children form suitable material. Little, if any, direct good will accrue from attempts to improve the workmen of this generation. They are wholly illiterate, the result of an hereditary instinct, and it would be utopian to expect them to adopt the more scientific, time and labour-saving, and therefore more remunerative, processes of modern days. All we can hope to do is to awaken their interest and, convincing them of the practical benefit to be gained, induce them to procure for their sons the educational advantages of which they were themselves deprived. With regard to our school-children the case is very different. Possessing a certain amount of general education, they only require to have that education supplemented or expanded by training in the fundamental branches already mentioned. Students thus taught are able to take up and develop any branch in which these principles are applied, they become in fact in the words of Mr. Leland, quoted below, “qualified learners.”*

*The importance of a preliminary course of General Technical instruction is so great and is so little appreciated by the general public that I may be excused for adding, as explaining and enforcing these statements, a few extracts from a recent work, “Practical Education” by Mr. C. S. Leland. Mr. Leland, who has had great practical experience, was one of the pioneers of this subject in America. He specially confines himself to Design and its applications, but his principles are quite general. His methods are adopted in thousands of schools in the United States under the auspices of the Government Bureau of Education, and have been introduced into Austria by the Minister of Education. They are also followed in many schools in England.

“The great question in education at present is: Can children while at school be trained to practical industry? Can their minds be more fully developed? Can they, while learning to read, write, and cipher, be taught a trade, or fitted for some calling, so that on leaving school they may be prepared to work, and if possible gain a living?”

“It was very natural for the ‘practical’ man, when this question rose, to attempt to settle it in a practical manner. It seemed to be a very simple thing to teach a boy to read or write for three hours, and then keep him for the same time at shoemaking, carpenter’s work, or printing. It was tried but with very little success. It is remarkable that so much money and labour should have been spent, to prove that mere children cannot perform men’s work, or even be trained *directly* to most trades. The farmer knows that a colt cannot be put in harness or worked, though even during colthood the animal may be put to work. A human colt is subject to precisely the same conditions. The farmer knows that a colt cannot be put in harness or worked, though even during colthood the animal may be put to work. A human colt is subject to precisely the same conditions. The result of the faith in teaching trades to children has been that so far as the training in the mechanical calling, it has only fully succeeded with vigorous boys at least fourteen years of age. And it is no great discovery that a boy can begin at that age as an apprentice to any hand-work. It has also been found that the industrial or technical school proper costs a fortune to establish, and is only available for the youth in cities or large towns. And the problem to be solved is: ‘By what system can all children, girls as well as boys, both in town and in country, in school, or possibly at home, be trained from infancy to industry?’”

“We will suppose then that it is desired to train a child to industrial pursuits. These are broadly and generally to be classed as agricultural, artistic, economical, and commercial. Under ‘artistic’ I include all manufacturing or technical work whatever; under ‘economical’ all housekeeping and administration of affairs; and under housekeeping again all that pertains to the domestic support and comfort of life. In a broad sense there is no human occupation for which some provision may not be made in education. But I am writing now especially of hand-work and I would declare that there is no division of it which may not be made to a certain extent familiar to the young, and the key to it is simply to call attention to and awaken interest in an industry. It is to make the pupil *think* about it. This sounds extremely commonplace, but it is as far from being generally understood or appreciated as any idea can well be.”

“There are many boys destined to become farmers who are made to think of the *details* of agriculture, such as ploughing and sowing, but very few who think of it as a study, or as a whole.”

10. The importance of thus supplementing an ordinary education by instruction in general Technical subjects, has been long recognised and perhaps the only point disputed will be how far it lies within the sphere of a Technical Institute to aid in the work. I think it sufficient to look at the matter practically, and to point out that though strong representations have been made to and by

"Now I venture the assertion that if the boy who is to be a farmer were induced to study a manual written in the simplest attractive style, teaching of farming as a whole, he would study the practical details with greater interest. Experimental gardens or farms would in many places aid such education, but where this is not possible the farm itself would serve as well, and, as many would think, even better. The initial point lies in making the boy feel that farming is an art allied to science, that it is interesting, that it does not consist in tending cattle, or ploughing, or in any details, but in all of these, and the difference between the farmer as a leader and the mere labourer consists of really understanding this. The false ideas of the dignity of being above work, or the indignity of labour, are due in a great measure to the fact that industry has never been properly taught as an art or as a science. To the man taught only to dig, without a hope of rising by his general knowledge above this detail, farming appears naturally enough low and coarse. Train him to regard it as a career with many stages which he comprehends, and which, because he comprehends them, he may surmount, and his calling equals in 'dignity' any other. This is therefore that which corresponds to design in the industrial arts, that boy in country schools shall be trained to think of farming as a study, and this primarily by means of agriculture. For design, as its very name implies, is fore-thought."

"There is no industry which is without its rudimentary design. At present nineteen boys out of twenty go into 'business,' or to shops or callings of any kind, without the least previous training."

"He can be made to take an interest in any industry. His attention may be called to it. Let those who object to this first try the experiment. If the method has succeeded in industrial art, I do not see why it should fail in agriculture and commerce, or in housekeeping."

"There is much needless confusion at present as to Industrial Education. We hear of cooking schools here, art schools there, farm and mechanical and wood carving schools everywhere. What is needed is a co-ordination of these forces, a recognised principle and point of departure. This will be found in mastering certain principles which this book is intended to set forth. The first of these is that from the Kindergarten method, which is too generally known to require explanation, up to the industrial school with its advanced technological training, there are successive steps, and that these are, firstly, design, or the attraction of the attention of a pupil to a calling as a study and as a whole; and secondly, his or her preparation, not so much to at once make a living on leaving school, as to be a preferred junior workman or qualified beginner or learner in a factory, or in any 'business.' The public expects a boy to be able to make a living or be fitted to begin some practical calling when he leaves school, let us say at fourteen years of age. And it can very often be done. But generally speaking, all that I expect of my pupils is that the foremen of factories would give them the preference to other applicants for place. This always means more money for wages."

"To arrive at this co-ordination certain rules must be followed. We begin in my schools by teaching design. After this every pupil takes up one or more applications of it, as they are guided by circumstances. One thing is certain that after working, seeing others work, and becoming familiar, or at least acquainted with half a dozen arts, their taste is cultivated, and all realise that they can, if they choose, turn their hands to and master many things—in fact they have acquired that confidence in their own abilities which makes them sure to succeed in any kind of work."

"Now the basis of all familiarity with all industry, be it agriculture or art, is to first set the pupils to thinking about it as a study, and then to show it to them in practical operation. They must first learn a theory, or general principles, for example design, and then its application. Those who think that because we work from design that our work is necessarily of an "aesthetic" sun-flower kind greatly err. For when a boy can use his hands and brains to guide them, or in fact becomes a practical workman in any form, he can work if he will in many ways. I may say in all. In every school in the country, every teacher should make industry a theme for instruction. From industry and its importance he may proceed to its sub-divisions, to agriculture or art, business or household economy. When this beginning shall have been made, the practical teaching of all branches of manual labour will follow in due place, time, and course. How one of the most important can be realised (I refer to industrial art), I will now explain."

"Many years ago I began to think seriously on the question of training the young to hand-work while yet at school. The possibility of teaching 'trades' to children was dismissed almost as soon as I considered it. Pestalozzi had attempted it; it had been tried in every country in Europe, and very earnestly supported in America, and it had nowhere really succeeded. The cause was not hard to find. Had it been a success, the employment of little children in factories would also have been a success. It is true that this infamous branch of human sacrifice, prohibited by law in England, is still common in Massachusetts, and, I am told, in other American States, but it is none the less inhuman on that account. That something could be done, in a small way, in this direction, no one can doubt. But it was always a false growth."

"While the minor arts, guided by even a slight knowledge of decorative design, are so easy as to be regarded by children as a recreation, they are at the same time of practical value in training the eye and hand, and awakening quickness of perception. They aid all studies and all work. I would here call the attention of the reader to the chapter devoted to this, as a separate branch of education. There have come under my observation many instances in which I have found that beyond all doubt, children who have been regarded as dull in everything have shown great aptness and ingenuity in designing, modelling or carving. When such skill is once awakened, there comes with it greater cleverness in those studies or pursuits in which the pupil was previously slow, because he has begun to think about himself and believe that he can do something. It is a great truth, too little studied, that sluggish minds can be made active even by merely mechanical exercises. And the practice of the minor arts by children effects this to a remarkable degree. Yet while everybody is quick to observe the mental ability or activity when it is transmitted from progenitors, very few notice the innumerable instances in which it is incidentally developed by education or circumstances. It is a matter of fact and observation that children who practise decorative arts or any manual work are thereby improved mentally and morally. The consciousness of being able to make something of value inspires pride and confidence in their ability to master other studies. For these reasons I believe that industrial art should rank in education next to reading, writing, arithmetic, and geography, or rather with them, since it conduces to mental development, and that it should precede music and the other studies which are urged as 'essential.'"

The italics in the foregoing extracts are mine, not the author's.

Government on the matter ever since the time of the Education Commission (to go no further back), and though all parties appear to evince the strongest interest in something being done, nothing has actually been done, nor is anything likely to be done until some such organisation as the proposed Technical Institute takes the matter in hand. I admit it is not the highest, final, or perhaps proper work of a Technical Institute to impart general instruction; but if there are no pupils so instructed, how is it ever to begin to perform its more special duties? I hold, therefore, that the most pressing, present work of the Institute will be to encourage and assist the spread of *general* Technical Instruction. If this course be vigorously followed for some years, it may be hoped that other agencies will take up and carry on the work, leaving the Institute free for its proper duties and in no lack of suitable material.

11. The course which the Technical Institute ought to pursue is plain. Appreciation by the Local Government of *general* Technical Instruction has shown itself in the institution of Examinations in such subjects as Drawing, Modelling, Mensuration, Agriculture, and Botany in the Middle School Examination, and of the Higher Examinations in Science, Art and Industries; and also by the promise of exceptional grants to schools or classes specially devoted to the teaching of these subjects. In spite of all this, progress is almost imperceptible. The schools of the Presidency generally have held aloof from the scheme.* The reasons are obvious.

(a) The business having hitherto been everybody's business has ended in being nobody's business. Managers of ordinary schools have had no object in striving to entice their pupils from the beaten track, and ordinary pupils have seen no advantage in taking up extra and non-paying subjects. Here and there an enthusiast, who is looked upon as a sort of harmless lunatic by his fellow-students, has wandered from the high-way; but these stragglers are few and they have no following. If the proposed High School Examination be introduced, this state of things will be to some extent modified. The effect of that Examination, however, upon Technical Education will be only indirect (though so far good) and not perhaps so great as anticipated. Candidates will soon find out the subjects easiest to pass in, those most akin to their other studies (*i.e.*, the most bookish and literary subjects), and those most valuable in the office.† But nevertheless much will be gained when the pupil can be told that in learning Drawing, or Botany, or Engraving, he is not spending his time on a useless luxury but on something practically useful for the Examinations for which he is preparing.

(b) Teachers have not been available. There being no demand for instruction of the kind indicated, naturally few teachers care without some special encouragement to qualify themselves to furnish it.

(c) And thirdly, though the offers of the Grant-in-Aid Code (Chapter

* I do not allude to orphanages and other useful industrial institutions of that class as they lie in a category by themselves.

† To venture on prophesy, I should say the most popular subjects will be, Mathematics, Mensuration, Book-keeping, and Correspondence. Inorganic Chemistry and Physiology will also be selected, because, being already compulsory subjects for the University Examinations, most institutions possess the necessary apparatus, and many graduates are qualified to teach them.

V, &c,) appear superficially to be liberal, the restrictions are so severe and the conditions so onerous as to be practically prohibitive.*

12. The object of the Technical Institute should be to remove, or render nugatory, those reasons.

(a) It should make it its object to overcome the apathy of managers by encouraging the establishment of classes in drawing, &c., such encouragement being both moral and pecuniary; and where this endeavour fails, the Institute should itself assume the position of manager, establish its own classes, obtain recognition by the Department, and draw the grants earned. Gradually school managers will come to recognise their duties, when the Institute will be able to withdraw from this field and devote itself to its more special work.

(b) The Institute should endeavour to provide qualified teachers. And to do this it should endeavour to utilize the existing stock of teachers. If we are to wait until we have on the one hand specialist teachers and on the other school managers willing and able to employ them, we shall have to wait for many years before this class of instruction spreads beyond a few of the very largest schools. But if every teacher in our ordinary schools, or even one in each school, be qualified to teach drawing, or agriculture, or carpentry, or some other special subject, and be encouraged in ways to be presently mentioned to open a class in such subject as an addition to his ordinary work, then we may expect to find at a very early date one or more technical classes in every school in the country.† It may also be pointed out that the influence of these teachers will be certain to extend beyond the walls of the school-room. A body of educated men, possessing some knowledge of technical subjects, spread over the country, must produce a considerable influence on their neighbours and the community generally. They will educate not only their few peculiar pupils but the public at large. Every such teacher will be a veritable pioneer of Technical Education.‡

(c) The Council of the Institute, being absolutely neutral and unselfish, would, as its experience increases, be able to point out to Government, with a force which no private managers could ever possess, the modifications which

* I venture to suggest that the Grant-in-Aid Code requires considerable remodelling in the interests of Technical Education. The difficulties are hardly realized by the Department, simply because private managers do not attempt to face them, and the Code lies a dead letter. But if the work be taken in hand by the Institute, the practical modifications necessary will soon appear, and the Director of Public Instruction will probably be only too glad to profit by the experience of such an organisation. The main fault of the Code is that it proceeds on a vicious principle. It treats general Technical Instruction not as an integral part of an ordinary education, but as something extraordinary and special. Art and Industrial subjects must be taught in specially recognised schools and classes, with special fees, by extra-special teachers, &c.: in fact every thing is done to frighten managers, teachers, and pupils. Again, it is almost impossible to calculate how much grant is earned, and always impossible to tell what proportion of the grant earned will be paid. The provisions of the Code appear indeed at times to be mutually contradictory; e.g., compare Sec. 11, Chap. III. with Section 4, No. IV, Chap. V.

† It may be pertinent here to mention that in Chengal Araya Naicker's High School, which is simply the Technical side of Pacheappa's High School, we have classes (some very large, especially those held in the evening) in Drawing, Chemistry, Mensuration, Phonography, Book-keeping, and Commercial Correspondence, and all with the single exception of Drawing, are taught by the ordinary masters who have taken the trouble to study and qualify in these special subjects. I may also point out that in only the largest institutions are masters specially employed to teach Physics and Chemistry for the Matriculation Examination. These subjects are taught by graduates who, having taken Science as their optional B. A. subject, teach Science as they do History, Geography, or Arithmetic.

‡ As a practical example, the case of the Irish National School-masters may be cited. These as part of their Normal training had (and I believe have) to undergo a course of instruction in Elementary Agriculture. The benefit arising from this training was however seen, not so much in their book-teaching, as in the practical example set to the whole village by the careful and scientific cultivation of the plot of ground attached to the school-house. The reports of the Irish Education Department testify to the great improvement in Agriculture thus brought about in many districts of the country.

may be desirable in the regulations of Chapter V of the Grant-in-Aid Code. The next succeeding paragraph will show that the objects aimed at in that chapter are good and exactly such as the Institute would desire to attain; but it is doubtful if they ever could be attained by working under the restrictions imposed. It would obviously be of first importance that the various agencies of the Institute should obtain the Government Grants offered, which might be supplemented from the funds of the Institute; but the conditions of the Code appear to have been framed as if it were dealing with a firmly rooted and long established system of education, instead of one which is unknown, tentative, and requiring to be encouraged and fostered rather than chained down and repressed.*

13. For details of the work it is unnecessary to go beyond Chapter V of the Grant-in-Aid Code. The Council of the Institute would,

(a). Generally, endeavour to encourage Technical Education by the means enumerated in Section 2† as opportunity offers.

(b). Encourage ordinary teachers and normal students to attend Agricultural, Art, Engineering, or other Technical classes, and so qualify for teaching these subjects. The Council would give grants to such teachers or students, or

* A full discussion of the various educational problems connected with the Grant-in-Aid Code, would be out of place here, but so much reference has been necessary because it is an essential condition of my proposals that the Institute must work hand-in-hand with Government if any great or permanent good is to be achieved. I may point out merely two questions of detail as illustrations. Section 14, Chap. III of the Code says "a school cannot receive aid under the Salary grant system for one department of the school, and under the result grant system for another, except that in results schools salary grants may be allowed for teachers of all special subjects, (i.e., drawing and industries, excluding language, provided that no result grant is claimed for any such subjects." This appears to be exactly the converse of what is wanted. Teachers in salary grants schools, drawing salary grants, should be permitted to draw results grants for pupils whom they may instruct and send up for examination in special subjects. Again in Sec. 5 (c) Chapter V of the Code it is laid down that, as a rule, "pupils admitted into Science or Art schools or classes must have passed the Middle School Examination or some Examination accepted by the Director as equivalent or higher." I thoroughly uphold the principle that general and technical education should go hand-in-hand, but what hope is there for the technical side under such a regulation? Passed candidates do not as a rule want to be taught, and unpassed candidates are not permitted to be taught. The special subjects can also, for the most part be brought up only as extras and cannot be entered for separately. The practical experience of the Institute would soon suggest how these regulations might be modified without injuriously affecting other branches of Education.

† The means for attaining these general objects are—

(i). In regard to science—

- (a) the establishment of applied science classes and of museums, laboratories, demonstration farms and workshops in connection with existing recognized colleges and high schools affording general instruction, such science classes being optionally day or evening classes, and being available both for the ordinary pupils of the colleges and high schools and for outsiders;
- (b) the introduction of science as part of the curriculum in middle schools, and of children's occupations developing manual dexterity, and of object lessons developing habits of accurate observation and description, as part of the education given in primary schools.

The science subjects for instruction in which science schools or classes will receive aid are stated in paragraph 12 of the above notification:

(ii) In regard to art—

- (a) the establishment (ordinarily in connection with existing high schools and colleges) of industrial art classes; and
- (b) the introduction of drawing and modelling into the curriculum of middle schools, and of drawing into that of primary schools;
- (c) the establishment of schools of industrial art in large centres where a sufficient number and variety of students can be found.

The art subjects for instruction in which aid will be given are detailed in paragraph 12 of the notification above referred to.

(iii) In regard to industries—

- (a) the establishment of industrial schools in which, as far as practicable, science and art are applied to the improvement of the industries, and in which correct principles are taught as well as improved practice;
- (b) the establishment of industrial classes in connection with existing high schools and colleges, especially in connection with those having science and art classes.

The industries for instruction in which aid will be given are enumerated in paragraph 12 of the notification above referred to and in the Middle school notification.

supplement the grants earned from Government. The Council would endeavour to obtain appointments for such teachers in schools willing to give facilities for opening special classes, and the teachers or students should undertake, as a condition of receiving grants or scholarships, to open such classes on obtaining appointments. Where the school managers, while willing to give facilities for such classes, are unwilling to assume any responsibility in the matter, the Council would undertake the duties of managers and request to be recognised as managers by the Director of Public Instruction. It is unfortunate that the Government Institutions (The Agricultural College, the Engineering College, and the School of Art) are located at such inconvenient distances from each other and from the populous part of the town; but when the attendance of pupils increases, it should be easy to arrange for special and evening classes in the Institute building, where instruction could be imparted in the first instance by teachers from the afore-named institutions. These classes might offer instruction in Chemistry, Botany, and their applications to Agriculture and Industries, Drawing (Mechanical and its application to machine construction, &c.) and Freehand Drawing (with its application to such arts as carving, engraving, &c.).

(c). Offer result grants to successful students of these classes, either in addition to or in place of Government grants; and assist the most promising pupils to continue their studies to higher standards.

(d). Provide on loan, hire, or easy terms of purchase, the plant and apparatus requisite for teaching the subjects professed, collections of specimens, models, &c. The initial cost of providing these often forms an insuperable obstacle, which the Institute might do much to remove, in the way of starting technical classes.

(e). Arrange for combined classes. In a town where there are several schools, pupils may be drawn from all, but mutual rivalry will often prevent this being successful, if attempted by the managers of any one particular school. This feeling would be non-existent, or small, were the arrangements supervised by an independent and impartial body like the Institute. The combined class could meet in one of the schools or in some specially engaged central room.

(f) Conversely, in towns where a sufficiently large class could be recruited from each of several schools, a special teacher could be engaged by the Institute who would journey from school to school. This plan is adopted for science teaching by several English School Boards, the teacher being provided with a portable collection of apparatus, arranged in a suitable wheeled vehicle and accompanying him from school to school. This will produce the largest effective result with the least unproductive expenditure. The Grant-in-Aid Code says, (Sec. 9 Chap. V) "A teacher giving instruction in science, art, or industry in several small towns or in several schools in a large town, may receive special Grants-in-Aid for his travelling expenses. These special grants are only to be made provided that there is local organisation for a general system of science, art, or industrial instruction, that the teacher is highly qualified, and that local teachers possessing the requisite qualifications are not available." By the system proposed, the Institute will take the place of the local organisation contemplated, until the local public learn to appreciate the work of the Institute and form the necessary organisation to relieve it.

(g) The classes contemplated in this paragraph would, wherever and whenever practicable, include instruction in some handicraft. The importance of this, which forms the basis of the Slöjd and other systems, lies *not* in training the pupil to any particular trade, but in teaching him to use his hands, to make him handy, in short, when he comes to devote himself to any particular craft. The object of teaching boys, say, carpentering in general schools is not to make them carpenters, but is the same as the object of teaching literary student's logic. The latter is intended to train them to reason accurately, the former is intended to train them to manipulate deftly.

14. It will be proper at this stage to repeat specifically the statement that the Council of the Institute should not contemplate continuing permanently as an organisation for the whole Presidency. It should endeavour to establish local organisations in the chief towns and industrial centres, which, while remaining affiliated to the central body, should gradually relieve it of the detailed work of administration. Even a technical school or college proper, if started in the Presidency town, could only serve as a pioneer and model for local schools or colleges, and should look forward to eventually occupying the same relation to such Institutions as the University does to its affiliated colleges. The aim and work of the Institute should be, not to retain everything in its own hands, but to transfer the work to branches as soon as these can be constituted with sufficient guarantees of permanence. And as the promotion of Technical Instruction seems to be very specially within the province of Municipalities, and Local Fund Boards, these should be led to expect and find from the Victoria Technical Institute every assistance in the shape of advice, loan of teachers, &c. In this connection, it is important to remember that most industries are confined to special districts and not diffused throughout the Presidency. Instruction in industries should therefore be imparted in local centres and not preferentially in Madras itself.

15. Reference has already been made incidentally to the question of technical training for artisans and it has been pointed out how little good is likely to accrue from such attempts. There is, however, one aspect of artisan education which deserves earnest attention, though it may be a question as to how far it comes within the province of the Technical Institute. I refer to the education of the children of artisan castes, as for instance, weavers * goldsmiths, &c. Any effort to impart technical instruction to such children has failed because they are totally devoid of general education and because their parents are unwilling to lose the value of their labour during the time spent in acquiring what appears to be useless knowledge. For the latter reason any endeavour to enforce a high standard would prove fruitless in the future as it has done in the past. The three R's, in the Vernacular, together with drawing or some other technical branch, is all that can for the present be attempted. It was largely in view of these classes, that the Madras Educational Conference (1886) reported strongly in favour of raising the standard of Vernacular Primary Schools and also of adding a Vernacular side to Middle and High Schools (English being an optional subject). Both the Director of Public Instruction and Government reserved these points for further consideration,

* For example, the children of the cotton weavers of Conjeeveram, or of the silk weavers of Kumbhakonum are almost wholly uneducated.

but so far as I am aware, nothing further has been done in the matter. Yet it cannot be doubted that the establishment of special schools for such special classes, with a curriculum carefully graduated to their capacities and needs, would do much to raise the general status of manufacturing artisans and so pave the way for more advanced and special Technical Instruction.

16. It now only remains to indicate the attitude of the Institute towards special Technical Education. I have already incidentally pointed out three obstacles to immediate or extensive action in this direction, to wit, want of money, want of teachers, want of teachable material. But in respect to all industries, except only Agriculture and perhaps mechanical engineering, there is a fourth want which it ought to be an early duty of the Institute to remove, either by its own exertions or by moving Government to action, in anticipation of the time when the other three wants shall have ceased to exist. I refer to want of knowledge, knowledge as to the extent and condition of various industries, as to how they can be improved by the application of scientific principles and methods, and as to what sort and amount of instruction is best calculated to lead to much improvement. In my previous minute on this subject I remarked that I had, in common with many other persons, a floating general idea that much could be done but that what enquiry I had been able to make into specific industries showed only the scantiness of our knowledge and the impossibility of framing on that scanty knowledge any practical scheme. I believed that the money, whether of the Institute or of Government, could not be better expended than in paying the expenses of a preliminary enquiry into the actual condition of native industries, *in esse* and *in posse*, not from the æsthetic but from the practical and economic point of view. The aim should be not to produce a renaissance or a revolution in Indian Art, but to discover whether, by improved methods of working and increased technical skill, competition is possible between native manufactures and foreign imports. After renewed attempts to study the subject, I still remain of this opinion; and I find that it is widely entertained and has been pressed upon the attention of the Indian Government. If the Government cannot see its way to appoint a special commission for this purpose, it would probably be willing to render assistance were the enquiry undertaken by the Council of the Institute. As the investigation proceeds, the ground will gradually be cleared for future operations, and work can be commenced by degrees as suitable opportunity offers. Whenever it has become clearly established to what extent and by what means an industry can be improved by Technical Instruction, the attempt should be made, on however small a scale, to improve it.*

* Some very sensible and practical suggestions on this subject will be found in a pamphlet addressed to H. E. the Governor of Bombay by Mr. Dinshaw Ardeshir Talleyarkhan of Baroda. I here quote his list of artisans, which it will be interesting to compare with the enumeration by Sir T. Madhava Rao in a previous note.

"(1) Carpenters, (2) Blacksmiths, (3) Bricklayers, (4) Stone masons, (5) Brick, tile, and mortar makers, (6) Shoe makers, (7) Workers on hand-loom, (8) Dyers, (9) Potters, (10) Goldsmiths, (11) Copper-smiths, (12) Jewellers, (13) Matters, (14) Engravers, (15) Painters, (16) Sculptors, (17) Glass and lamp makers, (18) Paper makers, (19) Lacers, (20) Embroiderers, (21) Tailors, (22) Toy makers, (23) Banglers, (24) Carriage and furniture makers, (25) Gold and silver leaf makers, (26) Bone and ivory workers, (27) Gold and silver sorters (28) Cane workers (29) Carpet makers, (30) Gun smiths, (31) Sword makers, (32) Watch makers, (33) Compositors (34) Printers (35) Lithographers, (36) Photographers, (37) Mechanics, (38) Engine drivers, (39) Drivers, (40) Boat men, (41) Ship men, (42) Clerks, (43) Accountants, (44) Bankers, (45) Soap makers, (46) Cloth printers, (47) Dye makers, (48) Gardeners, (49) Tanners, (50) Dairy men, (51) Musicians, (52) Mint men, (53) Spinners, (54) Weavers, (55) Fire men, (56) Sanitary road inspectors, (57) Roofers (58) Oil men, (59) Metal polishers, (60) Bead and hooka makers, (61) Comb makers, (62) Musical instrument makers, (63) Snuff makers, (64) Attar makers, (65) Twiners, (66) Agricultural implement makers, (67) Saddle and harness makers, (68) Electro platers, (69) Rope and basket makers, (70) Cask makers."

17. These initial difficulties being removed and the Institute being supposed ready to begin the work of special Technical Instruction, it remains to indicate how the Council should proceed; and in this connection to discuss its relations to the Technical Institutions already in existence, namely, the Agricultural College, the College of Engineering, and the School of Arts. Generally, the procedure should be on the lines already laid down for a course of general Technical Instruction, with such modifications as may be rendered necessary by the localisation of specific industries. The Council would first endeavour to procure suitable instructors. These may in the first instance be specially trained here, or may be sent to other countries to be trained, or may be brought from other countries. The instruction given by them should be imparted only to those who have received a fair general education and such technical education as may form the necessary basis for advanced training in the special industry selected. These pupils, when trained, should be encouraged to settle as teachers (especially in the artisan schools, para. 15), foremen, or even independent manufacturers in the local centres of the industry in question; they should be superintended and when possible assisted by the Institute until a local organisation is formed to relieve the parent institution of its charge. It will be well to bear in mind that with limited means and opportunities, it is better to thoroughly take in hand one industry than to attempt a little with many.* It is at this stage that Exhibitions such as are recommended in Resolution II, may be usefully instituted. Every such Exhibition should have a clearly defined object, namely, to test the results of instruction in special industries, as evidenced by the work of the pupils themselves and of other workmen who may have been affected by their influence. For want of such a definite aim, most Industrial Exhibitions are but melancholy monuments of misdirected zeal and perverted ingenuity.

18. The Agricultural College provides everything necessary for the training of experts and specialist teachers. It would be the work of the Institute to bring these specialists into contact with the general body of schools. In fact, Agriculture is the only branch in which we are in a position at once to attack the masses. It is the most widely diffused, it is perhaps the easiest to experiment with, and that it is also the most important, is matter for congratulation. Such large numbers of the population are interested, directly or indirectly, in agriculture, that we may hope ere long to see an Agricultural class in every town boasting a Middle School.

19. The College of Engineering is intended, under its new constitution, to provide everything necessary for the training of Builders, Surveyors, and Mechanical Engineers.† From pupils who have been taught at school Geometrical Drawing and Mensuration, classes may be formed for instruction in building, road and bridge making, &c. These will be beneficial not only to professed builders, surveyors, &c., but to all taking an interest or share in local administration or in the management of their own property. Advanced instruction in

* It is perhaps unnecessary to mention that I do not consider as coming under the scope of the institute attempts to introduce new industries which require for success not skilled labour, but the mere judicious expenditure of capital, as for instance lucifer match making, twine and sack making, &c.

† I omit Civil Engineering proper as being a profession.

Mechanical Engineering can be given with advantage only in large workshops. The committee visited the Gun Carriage Factory and the works at Peramboor (Madras Railway), in connection with both of which schools exist; and the Institute could operate usefully by apprenticing promising youths to these works or making other arrangements whereby its pupils should receive practical instruction.

20. The School of Arts occupies a somewhat different and a peculiarly indefinite position. This is not the fault of the officials of the school or of its pupils, but is inherent in its constitution. It was probably intended to be the South Kensington of Southern India; but what does South Kensington presuppose? It assumes that drawing is taught universally in Secondary and even Primary schools throughout the country, and consequently that there is abundant material from which pupils can be drawn. It assumes a constant demand of qualified teachers and a large preferential demand for trained designers of pottery, carpets, prints, wall-papers, &c., in the great workshops throughout the country. It assumes a public taste educated so far as to demand at least variety, if not beauty, in its surroundings. In India at present these are wanting. The School of Arts has consequently had to diverge from its original intention. Its chief work now consists in teaching elementary drawing to school children, which ought not to be done in a school of Art at all but in the children's own schools. It also produces some very admirable works of art in wood, metal, and pottery, at high prices for connoisseurs, and which are executed to some extent by a few advanced pupils of the school and to a greater extent by ordinary paid and uneducated artisans. I think it may be said that the influence of the School of Arts as an educative agent cannot be traced in any other scholastic institution or in any industry or workshop outside the building itself. If the Institute be successful in making Drawing a general branch of study, there would be plenty work for half-a-dozen training schools for Art teachers; and, if nothing more were contemplated by the Institute, no change would—as far as it is concerned—be necessary in the constitution of the School of Arts. But in view of the further object of the Institute, namely the application of Art to Industries, it would be a serious waste to allow the valuable appliances, staff, and experience of the School of Arts to be devoted to the subsidiary purpose of training teachers of elementary drawing. The latter work is certainly important but can be carried on by less expensive and ambitious institutions than the present School of Arts. Holding these views, I have the temerity to suggest that the School of Arts, the Technical Institute, and the cause of Technical Education would all be best served by transferring the management of the School of Arts to the Council of the Institute. I understand that it was originally intended that the School should be managed by an independent Committee and that the experiment was made without success; but I think the causes of failure, principally indifference, would not be found to exist in the Council of the Victoria Technical Institute. The transfer, to be made of course under proper conditions and saving all the rights of Government, would at once provide the Institute with a local habitation, forming the centre whence its future operations would develop. Indeed, the advantages accruing to the Institute would be so great that I need not enlarge upon them, and I am unable to perceive any disadvantages accruing to the School of Arts itself, to Education, general or technical, or to Government. The proposal will doubtless in some quarters be

considered revolutionary, but I much fear that unless something revolutionary be done, little good will be effected. It is obvious how all the proposals already made would harmonise with this transfer and be carried out with much greater ease and efficiency.

21. I shall conclude with a brief formal recapitulation of the scheme suggested. It is not proposed as exhaustive but as coherent yet elastic and admitting easily of modification or extension.

THE VICTORIA TECHNICAL INSTITUTE

(Incorporated under the Act)

- Members.* (1) *Annual*, Subscribers of Rs. 50 yearly.
 (2) *Life*, Donors of Rs. 500 in one sum or in instalments extending over not more than 5 years.
- Executive Council.* (1) Twelve chosen for three years (four annually) from and by the members.
 (2) Nine nominated by Government.

Capital and Building Fund.

(1) Subscriptions received or promised	...	Rs.	80,000
(2) Government grant	...	„	40,000
		„	120,000
of which to be invested	...	„	75,000
to be spent on building and library	...	„	45,000

If the School of Arts be assigned to the Institute, then the last sum to be devoted to the Library and Museum, and to necessary alterations and additions.

Annual Income. Minimum of Rs. 3,000 from investments, new annual subscriptions, and unappropriated donations under Rs. 500.

Special work in the Institute Building.

- (1) Library and Reading Room.
- (2) Museum, with artisans at work.
- (3) Popular lectures.
- (4) Evening classes, for Drawing, &c., and, in affiliation with other Institutions, for Agriculture, Mechanical Engineering, Mensuration, &c.

Work in Encouragement of General Technical Education.

- (1) Offering scholarships to teachers qualifying in Drawing, Agriculture, &c.
- (2) Offering results grants to teachers passing pupils in these subjects.
- (3) Assisting managers and teachers in procuring the needful apparatus for instruction in these subjects.
- (4) Arranging for combined classes.
- (5) Supplying itinerant teachers.

- (6) Assisting, or creating and carrying on, schools for the children of artisan communities.

Work in Encouragement of Special Technical Instruction.

- (1) Enquiring into the condition of various industries, so as to discover which are capable of improvement by Technical Instruction and how the latter can be most suitably provided in each case.
- (2) Procuring trained experts to afford this instruction in the first instance.
- (3) Encouraging and assisting locally instructed pupils to teach others and to open or superintend workshops where the improved methods would be practised; and encouraging employers to engage such skilled men.
- (4) Holding Exhibitions of the work done by pupils of Technical Schools and by apprentices in regular workshops and granting certificates and prizes to successful exhibitors.
- (5) Assisting in the establishment of new industries wherein Technical skill is required.

PACHAIYAPPA'S COLLEGE, }
MADRAS, 18th July 1888. }

JOHN ADAM.

Note.—This Memorandum has been drawn up at the request of the Chairman of the Committee, the Hon'ble P. P. Hutchins, C.S.I. While it is passing through the press, the Government of India has issued a Resolution on the Progress of Education in India, in which the subject of Technical Education is dealt with. If the summaries that have appeared in the public journals be correct, this Memorandum would appear to resolve itself into suggestions for the special application to this Presidency of the general principles enunciated by the Governor-General in Council. I hope that, in the interests of Technical Education, such is the case.—J. A.

N^o 88Madras
1st November 1888

From

John Adam Esq. M.A.
Secretary,
Victoria Technical Institute

To

J. H. Price Esq.
Acting Chief Secretary.

Sir,

I have the honour to inform his Excellency the Governor-in-Council that a meeting of the Committee of the Victoria Technical Institute was held on the 29th of October last, The Hon. P. P. Hutchins C.S.I. Chairman in the Chair, at which the following resolutions were agreed to.

I. That this Committee accept with thanks the contribution to the funds of the Victoria Technical Institute, intimated in G. O. N^o 546, Educational, dated 15th September 1888, and agree to the conditions which his Excellency the Governor-in-Council has considered it necessary to impose.

II. That the Committee resolve that the Victoria Technical Institute be incorporated under the Companies' Act in the general lines indicated in the Memorandum of the Honorary Secretary, dated 18 July 1888; and that the first Council do consist of

eight members to be elected at the present meeting and the four members and Chairman to be nominated by Government in accordance with Resolution I.

III That the Council thus constituted shall have full power to proceed with the incorporation of the Institute, to frame a constitution, to conduct its affairs, and to deal with its funds; that of the elected members, the three having the lowest number of votes shall retire at the end of one year, the three having the next lowest number at the end of two years, and the remaining two at the end of three years, the vacancies created being filled up by members elected in accordance with the new Articles of Association; and that the Committee, as functus officio, do dissolve itself at the close of this meeting

2 In accordance with the second resolution the Committee elected eight gentlemen as members of the first Council, namely,

Sir Charles Dawson

Hon J. A. Boyson

Mr John Adam M.A.

Rai Bahadur P. Perumanna Mudaliar M.A.

Rai Bahadur S. Subramania Aiyar B.L.

Sir Savalai Ramaswami Mudaliar M.B.E.

Mr T. B. Hanna

Mr R. V. Krishnamachariar A.M.

And I have to request that His Excellency the Governor-in-Council will be pleased to complete

the Council of the Institute by nominating a
Chairman or President and four additional members

I have the honour to be
Sir

Your Most Obedient Servant

John Adam
Secretary, Victoria Technical Institute

15/9/88 2: 546 Quid

Walden

For orders

A fuller record of the Pro^{ts} of the Meeting of the 29th Oct^r will be found in the Madras Mail of the 30th Oct^r.

13 Nov. 8. 14 M.

The Hon. Mr. Tutchins writes that
John W. Chalmers and I should
like it but will consent
if Mr. & the Hon. Mr. Trenchard are
pleased to approve. P. S.

[illegible]

Done

Willie
Gore

best copies of Mr Adams's memoir
manuscript preserved in the Lib. of the

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16 Nov.
 Stenokoti Modellierung
 Hon. Mr. Trillingham } to the appointed. (100)
 Mr. J. S. H. Stuart } to the appointed. (100)
 15/11/1914 } to the appointed. (100)
 1/11/1914 } to the appointed. (100)
 17/11/1914 } to the appointed. (100)

From

J. Adams Esq. M.A.
Secy. Victoria Technical
Institute

Nº 82

By 1. 11. 88.
Recd 1-11-88

Subject

Requesting nomination of a fraim
or President and 4 assl. members to the
Council of the Institute.