

Edl (191*6*) Department.

Mis SERIES.

G.O. No. 380

DATED 5. 4. 16.

[Despatch Abstract.]

*Legislative Council Resolution Recording
papers relating to the resolution
moved by the Hon. Ras Bahadur B.
Narasimhaswara Sarma at the
meeting of the Legis. Council held on
3-2-16 re industrial experiments.*

BACK PAPERS.

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EDUCATIONAL DEPARTMENT.

NOTES CONNECTED WITH RESOLUTION ON MATTERS OF GENERAL PUBLIC INTEREST.

[SUBJECT.—*Experiments in connection with certain industries.*]

The Hon'ble Rao Bahadur B. NARASIMHESWARA SARMA :—

XXX. This Council recommends to His Excellency the Governor in Council—

(a) that experiments in industrial processes suited to the conditions of this Presidency be undertaken or, if already undertaken, be continued on a larger scale in glass and pencil making, in oil refining and subsidiary industries in small factories well fitted up and equipped for the purpose ;

(b) that the services of competent experts if necessary from foreign countries may be secured for a limited time for the purpose of fitting up and running the said factories and training Indians therein.

The orders of the Secretary of State regulating the conduct of industrial experiments are on pages 23 and 24 of G.O. No. 3851, Revenue, dated 30th December 1912. The most important portion thereof is the following :—

“... there is no objection to the purchase and maintenance of experimental plant for the purpose of demonstrating the advantages of improved machinery or new processes and for ascertaining the date of production.”

2. At the meeting of the Legislative Council held on the 24th November 1914, the Hon'ble Mr. K. R. V. Krishna Rao moved a resolution urging that the Secretary of State might be moved to reconsider his orders prohibiting the establishment of factories on a commercial scale for the development of industries and that industries of all kinds should be started on those lines, a beginning being made in the crushing of oil-seeds and refining of oils and the utilization of by-products, employing European experts, if necessary. The Hon'ble Mr. Cardew explained to the Council the orders of the Secretary of State on the subject and dwelt at length on the difficulties connected with the starting of new industries in the present circumstances. His Excellency the Governor observed that within the present powers of the Department of Industries there was still a large field which “we shall have to explore before we “have a strong case for going further.” In regard to the suggestion made by Additional Members that immediate advantage might be taken of the circumstances arising out of the present war, His Excellency observed that “this must lie rather “with private traders who have staff, machinery, trade connections, experience and “capital which they can invest or risk in such speculative enterprises.” The resolution was finally withdrawn.

3. The present resolution recommends—

No. On a larger scale than at present. (1) that experiments on “a large * scale” in (a) glass manufacture, (b) pencil-making, (c) oil refining and subsidiary industries be undertaken by Government “in small factories” and

(2) that the services of competent experts be obtained for the purpose.

It is submitted that all these industries are already receiving the attention of the Industrial Department so far as—

- the orders of the Secretary of State allow,
- the needs of the case require, and
- funds permit.

In the case of glass and pencils the experiments are directed towards finding out if the manufacture of at least the ordinary kinds of those articles would be possible

in India, while in regard to oil and its allied products it is intended to demonstrate the possibility of manufacturing articles with commercial success.

(a) *Glass-making.*—In 1908 a private glass factory was opened in Madras and the services of trained men were obtained. The Government liberally helped the concern by undertaking to supply free of cost half the quantity of fuel consumed in the furnace during the first two years of its working. The factory, however, did not work successfully and was closed down in 1911.

Last year when Mr. Tressler began to undertake experiments in the manufacture of articles the export of which from Europe had been stopped owing to the war, he entered into negotiations with the owner of the defunct Madras Glass Works to carry on experiments with the manufacture. In the administration report of the department, he stated that he had been devoting his time in designing a furnace of high thermal efficiency and that the chemical side of the experiment was being investigated by Professor Smith of the Presidency College. The latter has now gone on leave. Mr. Tressler, however, desires that the glass works should be acquired by Government. The Government have recently agreed to acquire the property and the Collector has been asked to report the probable value of it. There is at present no expert staff in the department for this industry; and it is doubtful whether any expert can be secured for it from the United Kingdom or elsewhere at present.

In this connection attention is solicited to a note written by Sir Frederick Nicholson in the early part of this year on the feasibility of undertaking glass manufacture in this country. He observed that glass manufacture could only succeed where coal, alkali and materials were at their cheapest and best and where there was an expert staff to instruct and guide the workmen under conditions physically endurable and that not one of these conditions was found or ever would be found in this Presidency.

(b) *Pencil-making.*—Towards the close of last year the Director engaged the services of a pencil expert for a few months and obtained the loan of the machinery required. The expert was able to instruct only in the method of manufacture of pencils provided suitable wood and graphite were supplied. The refinement of the crude graphite and the selection of suitable wood which should have preceded manufacture are just now engaging the attention of the department. The Director has in the meanwhile removed the pencil-making machinery from Cocanada to Madras. The Director has, in G.O. No. 1186, Educational, dated the 2nd November 1915, been allowed to spend on this experiment up to Rs. 10,000 on the whole.

He tells me that he has already spent Rs. 15,000. C.G.T.—13-11-15. Recently he has stated that unless Government would be willing to spend an appreciable sum on the business a company might be formed to take it up. This point is separately under consideration.

(c) *Oil extraction and refining.*—In regard to oil refining and subsidiary industries, it is submitted that at the beginning of this year the Government sanctioned an allotment of one lakh of rupees to enable the Director of Industries to obtain the necessary machinery for the extraction and refinement of oil and to investigate the question of the feasibility of starting subsidiary industries for the utilization of oil in this country. The Director has so far been able to obtain only the smaller mills. The large mill and accessories have not yet arrived owing to the fact that the manufacturing firms in England are now engaged in making munitions. Mr. Tressler has, however, stated that he hoped to get the machinery in a short time. Mr. Tressler has since reported that so far as pressing of ground-nuts is concerned, the Anderson expeller has been found to be useless.

Besides this the Government have also asked the Honorary Director of Fisheries to carry on experiments in soap-making, and he has already succeeded in a measure in manufacturing soap from fish oil on a pretty large scale. He first applied for a large allotment of Rs. 60,000 for buying

plant, etc.; but as such a large amount could not immediately be found, he later on asked for a smaller sum of Rs. 6,000 for smaller plant which was sanctioned. Recently the Government have approved Sir F. Nicholson's proposals to establish an experimental soap factory and to purchase the necessary machinery together with glycerine recovery plant. A sum of Rs. 75,000 has been provided for the purpose in the budget for 1916-17.

In these circumstances it may not, it is submitted, be possible to accept the resolution unreservedly. Perhaps the present position may be explained to the Council with a view to the Additional Member withdrawing the resolution.

It has to be determined as to who is to be in charge of the resolution.

S.K.—13-11-15.

C.R.—13-11-15.

The Secretary of State's Despatch on pages 23 and 24 of G.O. No. 3851, Revenue, dated 30th December 1912, prohibits "trading on commercial lines"; it allows instruction in industrial schools "to be supplemented by practical training in workshops where the application of new processes may be demonstrated"; and there "is no objection to the purchase and maintenance of experimental plant for the purpose of demonstrating the advantages of improved machinery or new processes, and for ascertaining the data of production." The Secretary of State also quoted with approval Dr. Travers's definition of the functions of a Department of Industry which includes a statement that Government can only touch on the organization of industry to a limited extent.

Mr. Tressler's stages of development appear to be roughly—

- (1) Ascertain presence of raw materials at a reasonable price.
- (2) Learn the process of manufacture.
- (3) Conduct manufacture on a small scale.
- (4) Establish a factory.
- (5) Import an expert.
- (6) Float a company.

No doubt it is very satisfactory to be able to point to a company like the Indian Aluminium Company which is a direct product of the Department of Industries. The question is whether the Secretary of State's orders allow the work to be carried so far. My own feeling is that we should stop at No. (3) in the above list and that it is giving too extended a meaning to the words "ascertaining the data of production" to hold that they cover manufacture on a commercial scale.

If this is accepted, it is clear that we cannot accept the Legislative Council Member's proposition that Government should establish small factories under the control of experts and train Indians therein.

It may, however, not be thought advisable to seek too exact an interpretation of a somewhat vaguely worded order, in which some other line of reply may be taken. In summing up the debate on some similar resolutions last year His Excellency took the line that it was unnecessary to ask for further powers until we had exhausted those already given to us—vide page 18 of the extract of the Council Proceedings herewith.

Orders are requested on this point and as to who should take charge of the resolution.

C. G. TODHUNTER—13-11-15.

As on the last occasion of the debate quoted above.

Will Mr. Todhunter be ready please?

P[RENTLAND]—22-11-15.

His Excellency the Governor desired me to take this resolution on the last occasion. I therefore submit for approval below a note of the lines on which I think it might be met.

It is for consideration whether Mr. Narasimheswara Sarma should not be advised of the forthcoming debate on the subject in the Imperial Legislative Council and of Sir William Clark's promised declaration of policy, which will no doubt proceed on the results of the Government of India's confidential correspondence with the Secretary of State. In view of the fact that we are expecting a declaration of policy from India, there is little profit in discussing policy here, and the Honourable Additional Member might be willing in the circumstances to withdraw his resolution or to postpone it to the next meeting.

C. G. TODHUNTER.

The resolution has two aspects, one of policy and one of practice.

As regards the former, the Honourable Mover desires the Government definitely to adopt the principle that the establishment of Government factories is a proper means of forwarding the industrial development of the country. This is not the policy of Sir Dorabji Tata, nor is it that of the Secretary of State. That being the case, we are precluded from adopting it without his sanction and that of the Government of India. The Government of India are to debate the question at the next meeting of the Imperial Legislative Council and Sir William Clark has expressed a hope that he will be able then to make a full statement of that Government's views and intentions. Pending receipt of this statement it would be unwise for this Council to commit themselves.

Presuming that the policy of Government factories is accepted, the Honourable Mover wishes to apply it to three specific industries, viz.,

- (1) glass making,
- (2) pencil making, and
- (3) oil refining and subsidiary industries.

He omits the preliminary essential which was indicated by His Excellency in his speech at the closing of the Madras Exhibition of an industrial survey of the resources of the Presidency. *Prima facie* the first two industries are not suitable. On general economic grounds the working up of raw material which can be more readily obtained in India than elsewhere is of greater advantage to the country than the manufacture of articles upon the sale of which European competition leaves only a small margin of profit. General glass manufacture can only exist where coal, alkali and materials are at their cheapest and best and where there is an expert staff to guide and instruct the workmen under conditions physically endurable. In the case of pencils we have yet to find satisfactory graphite and wood and to create artisan skill and industrial organisation. If the idea is that we can snatch a profit owing to the war it would be dearly bought if we had to scrap our machinery and turn off our trained labour as soon as normal conditions were restored.

The case of oils stands on a somewhat different footing. It is presumed that the Honourable Member means oil pressing when he refers to oil refining. Here there are two difficulties. The small oil expellers, which are all that we have hitherto been able to obtain, extract all the oil in one process just as the country oil mill does. This oil is not suitable for export. The hydraulic machinery, which extracts an oil suitable for export first and an impure oil suitable for manufacture and the like afterwards, is much more expensive and could hardly be set up in a small factory. The subsidiary industries, such as soap making, require considerable factories themselves. At present experiments in these two allied industries are conducted in different departments. Government has the question of their development under consideration, but cannot undertake to develop them exactly on the lines indicated by the Honourable Mover.

Even if Government could accept the resolution, it would be impracticable to carry it into effect. Machinery is not obtainable owing to the war and, if it can be obtained, it is almost impossible to secure freight for it. Exports of the right kind

are equally unobtainable. Worse than all, experience in attempting to secure persons to take scholarships at the Victoria Technical Institute, Bombay, indicates that young Indians of the right sort are not willing to undergo industrial instruction.

The Government recognize that a strong desire for industrial development is abroad and are anxious to foster its growth on the right lines, but they do not consider, on their present information at any rate, that it has been satisfactorily proved that the establishment of the factories advocated by the Honourable Member would be for the ultimate benefit of the country.

C. G. TODHUNTER.

I suggest that for the present it is unnecessary to enter into a discussion of the merits and suitability (as on page 4 of your note) of the various manufactures named. Otherwise I agree generally.

P.
24-1-16.

Discussed in Council. The lines of the reply to be that Government sympathise with the desire for industrial development and agree generally with the Honourable Member as to the lines on which it should proceed. They are proceeding on these lines as far as their financial resources and other difficulties as noted above permit. They do not guarantee success, but will do their best to secure it and will place their results, whatever they are, fully before the public.

C.G.T.
25-1-16.

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24/1/16

c/

(The Hon'ble Rao Bahadur B. Narasimheswara Sarma)

The Hon'ble Rao Bahadur B. Narasimheswara Sarma:—With your Excellency's permission and with the leave of the Council I beg to propose resolution XXX in an amended form. The resolution reads as follows:—

The Council recommends to His Excellency the Governor in Council that experiments in industrial processes suited to the conditions of this Presidency be undertaken or, if already undertaken, be continued on a larger scale in glass and pencil-making, in oil-refining and subsidiary industries in small factories well fitted up and equipped for the purpose; and

that the services of competent experts, if necessary from foreign countries, may be secured for a limited time for the purpose of fitting up and running the said factories and training Indians therein.

The Council re-assembled at the Council Chamber, Fort St. George, at 11 a.m. on Thursday, the 3rd day of February 1916.

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Extract from the Proceedings of an Adjourned Meeting of the Council of the Governor of Fort St. George assembled for the purpose of making Laws and Regulations under the provisions of the Act of Parliament, 5 & 6 Geo. V, Ch. 61.

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RESOLUTION RE INDUSTRIAL EXPERIMENTS IN SMALL FACTORIES.

The next and the last resolution on the agenda which stood in the name of the Hon'ble Rao Bahadur B. Narasimheswara Sarma ran as follows:—

"XXX. This Council recommends to His Excellency the Governor in Council

(a) that experiments in industrial processes suited to the conditions of this Presidency be undertaken or, if already undertaken, be continued on a larger scale in glass and pencil-making, in oil-refining and subsidiary industries in small factories well fitted up and equipped for the purpose; and

(b) that the services of competent experts, if necessary from foreign countries, may be secured for a limited time for the purpose of fitting up and running the said factories and training Indians therein."

(Mr. Narasimheswara Sarma.)

[3RD FEBRUARY 1916.]

The Hon'ble Rao Bahadur B. NARASIMHESWARA SARMA:—"With your Excellency's permission and with the leave of the Council I beg to propose resolution XXX in an amended form. The resolution reads thus:—

"This Council recommends to His Excellency the Governor in Council that 'experiments in industrial processes suited to the conditions of this Presidency be continued and if possible extended, and for this purpose and training Indians, the services of experts, wherever necessary, be obtained.'

"Your Excellency, I do not think that many words are needed to commend this resolution to the acceptance of the Council. The Government, with a view to safeguard our industrial interests, have been making experiments in various industries such as glass-making, pencil-making, and have recently given orders that experiments should be made in soap-making. We know that, to a certain extent, the hands of Government are fettered by the directions which were issued by the Secretary of State, sometime ago. We hope for a better state of things in future in regard to the relations of Government towards industrial processes: but, whatever that be, the resolution, as now confined, does not run counter to the instructions of the Secretary of State. We ask that Government may be pleased to continue those experiments on an extended scale with a view to arrive at definite results, which results will induce manufacturers to undertake those industries and to take them up as going concerns and improve them for the benefit of the country.

"The omission of particular industries in the resolution is due to the fact that it is undesirable that the hands of Government should be fettered by asking that experiments should be made in particular industries. Experience may show that they must concentrate their attention upon one particular industry before they could take up another. That is a matter which cannot be discussed by the Council at large. With a view, therefore, to giving absolute discretion to the Government at large, the resolution is amended and is worded in general terms. I hope that attention would be given to the oil-industry, because every one recognises that more than five crores of tons of oil-seeds are being exported from this country and, from an economic point of view, a good deal might be made if the by-products can be utilised and experiments made so as to enable the people to undertake industrial concerns in the by-products of oil.

"Then, with regard to the second part of the resolution, we request that the Government may be pleased to employ competent experts for two purposes, first for the purpose of carrying out these experiments, and, secondly, for the purpose of training Indians. I lay particular emphasis on this part of the resolution for this reason, that the experiments which have been conducted by the Industrial Department so far have not been fruitful of results; and the public are sceptical about the usefulness of continuing these experiments in the manner hitherto pursued. We are practically attempting to rediscover the processes ourselves for these big trades and, however clever may be the men in charge of these works, still if they do not know the secrets of these processes it will take a very long time and the experience of centuries behind the tradesmen of Europe would be a loss to us and I think, therefore, that it is absolutely necessary and desirable, if that can be done, to import experts for the purpose of fitting up these factories and running them as going concerns. The only reason I could conceive for Government not being able to do so in the past was the impossibility of finding experts who were willing to come to India for the purpose. I hope that is the only reason and it is absolutely impossible to conceive how Government could have ordered the continuance of experiments under laymen—they may be engineers, but still laymen. We hope that at the earliest suitable opportunity, as soon as war may permit the introduction of these experts into India, opportunity would be availed of to place these concerns under their guidance, and I hope it will be made a condition precedent to their employment, that these experts should undertake the training of Indians. There is absolutely no use in these secrets being locked up in the breasts of these manufacturers and if these gentlemen are not willing to train Indians, there is no use in their coming here. There should be a condition that they should train Indians within a definite period and it is only on that condition that they should be imported into this country; for this purpose, if there is any expenditure of any sum of money, however large it may be, cannot be unwise or useless and I think

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this Council would be ready to sanction such expenditure. It is not that we grudge the expenditure of money on European experts, but we grudge the perpetual continuation of that system under which no good results accrue in the matter of training Indians here. We know and realise that good European talent cannot be secured for a cheap price; the material which we can get, the men who are to work all their life in this country, cannot after all be so satisfactory as under a system which gives experts a high salary and which enables them to keep themselves in touch with the latest developments of science and technical knowledge in Europe while giving us the benefit of their advice, knowledge, and skill for a time. We hope, therefore, that at the earliest opportunity these experts will be employed on the condition that they should undertake to train a large number of Indians.

"I have already referred to one industry and that is the oil-industry. The paper industry seems to me to be another industry which might be undertaken in the immediate present. There is a good deal of paper-making material in the country and the recent controversy in the newspapers has distinctly shown that even in England it has been realised that the resources of India had hitherto been sorely neglected and that that neglect should not be allowed to be continued. We hope, under the influence of that feeling, which is really not based upon an ephemeral sentiment lasting for a few months, but upon practical and sound commonsense and upon the condition of things—we hope these industries which are peculiarly indigenous and with respect to which there is abundant material will be selected one after another and that the country would be benefited by undertaking these experiments. Hitherto, it was considered that industrial concerns were absolutely no concern of Government and that the people should develop their own industries in their own fashion. But a change of feeling has come about and that is what we have been fighting for. Under this new feeling, we hope for the dawn of a better state of things. Nothing can be worse for the industrial development of the country than the indifference of Government in the matter."

The Hon'ble Mr. K. R. V. KRISHNA RAO:—"My Lord, I second this resolution, and, in doing so, I would like to say a few words. The experiments inaugurated and undertaken last year should not be given up at this stage, but they must be continued—the experiments in pencil making and other small matters. With regard to these experiments, I may be permitted to remark that unless there is a competent expert, it is not possible to demonstrate these industries and carry them on a proper basis. For this, an expert and probably a good chemist may be necessary. As for training persons, the kind of training contemplated in this resolution cannot be imparted by the employment of mere experts alone, unless there is a good manufactory to begin with. That was the method followed by countries like Japan. They first established large manufactories and factories before they began institutions for technical and technological instruction. Whatever that may be, if it is not possible to embark upon establishing large factories and manufactories, even confining ourselves, as the Government have at present confined themselves, to small industries, these industries may not be given up at present but may be continued, under the supervision of proper experts, employing wherever necessary also a good chemist.

"Well, Sir, in this connection, I may be permitted to refer to one recommendation made by the Bengal District Administration Committee. They said that at the head of the department, it was not an expert that was required but an expert who could control experts. We want a person who can find experts, control these experts and take proper work from such experts as can carry on these particular industries.

"Another point which I would like to place before the Government for their consideration is that the small amount of money that may be expended upon these experiments should not be frittered away upon two or three enterprises, but should be concentrated upon one or two, till these industries are perfected and something out of them is practically demonstrated and they are proved by practical demonstration as being such as can be undertaken by private individuals and till large concerns are, on a commercial basis, started. This is a matter which should not be lost sight of at this present juncture, however much we might be under financial stress, because as soon as the war is over—which I hope will not be very long—conditions will become changed and it may not be possible then to

(Mr. K. R. V. Krishna Rao; the President; [3RD FEBRUARY 1916.
Mr. Robinson.)

embark upon any large industrial development of the country and it may not also be possible to secure the services of competent experts. Now, it may be possible to get a few experts on a reasonably good pay and whatever amount may have to be spent for such experts would not be ill-spent. I hope Government would consider this aspect of the question and would be pleased to employ good experts and also good organic chemists and see that these experiments that have been started are properly conducted and placed on a working basis. With these words, I second this resolution."

His Excellency the PRESIDENT:—"The resolution as modified runs thus:—

"This Council recommends to His Excellency the Governor in Council that in 'small factories or otherwise experiments in industrial processes suited to the conditions of this Presidency be continued, and if possible extended and that, for this purpose and training Indians, the services of experts, wherever necessary, be obtained.'"

The Hon'ble Mr. J. O. ROBINSON:—"Your Excellency, it has always been a wonder to me what there is in the training and tradition of the highly cultured legal mind, which leads to the general misapprehension that exists on business matters, particularly commerce and industry. I would like to say at once that I am not a believer in spoon-fed industry in any shape or form. We all realise, or I hope at any rate the business men in England and India realize, that, when the war is over, something effective should be done to develop the industries and more particularly manufacturing industries in India and other parts of the Empire. If that is to be done with the maximum of efficiency and the minimum of cost, I think it can only be arrived at by a closer co-ordination between the Chambers of Commerce and the business-men of India and the English manufacturers themselves. Between the Chambers of Commerce in India and the English manufacturers, Government might prove a valuable connecting link. The point I would like to make clear is this. We all know that the potentialities for commercial development in India are great, but what is necessary to emphasize is that manufacturers in England themselves have been more or less blind to them. The opportunity is here and they could undoubtedly take advantage of them, if the case were put before them in the right way. I do not suggest that it is the duty of the Government to do this. I have always taken the view that the mission or the duty of Government is to assist commercial development more than to initiate. I feel myself that, if there is an opportunity to establish an industry in the Madras Presidency, for instance, it is more within the scope of the Chamber of Commerce to approach the English manufacturer who has the experience and the knowledge gained by hundreds of years of practical work behind him, and to endeavour to induce him to send qualified men to India to establish an industry here. This aspect of the case has been largely overlooked by English manufacturers. I know of only two instances in the case of responsible firms where they have seen their opportunities and have not hesitated to grasp them. Two years ago, the director of one of the largest, if not the largest, manufactories of printing inks came out to India with the object of establishing a factory at Calcutta. He did so, and he told me himself that there was no reason whatever why high class printing ink could not be made in Calcutta and he and his co-directors in England had decided to do it. They satisfied themselves that it was a commercially possible proposition, that good ink could be made and supplied at prices that could compete with anything imported from England and after all, the bed-rock of all business propositions is the question of profit and loss. A spoon-fed industry, no matter what the prospects may be, if it is not based upon actual efficiency and with due regard to the question of profit and loss, will never lead to anything satisfactory. In my view, Government will best fulfil the object they have in view—and we all know that they desire to encourage industry and commerce in every possible way—by stating the possibilities to an English manufacturer and inducing him to send out experts to co-operate with local capital and local management. Experts will not come out to India even on high salaries to teach academic principles of business. You may get a professor or a man of that sort, but the business man is not going to send his experts to India, unless he has a definite object in view. I hope myself, when this terrible war is over, there will be a clearer view in England as to the potentialities that are here. There is much to be done. The business men of India have not done all that might be done to encourage

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(Mr. Robinson; Mr. Gordon Fraser.)

English co-operation. India is terribly short of printing and other kinds of paper and it is likely to be more so. We know that Government are ready to do anything they can, to provide pulp and other things more or less indispensable to this manufacture. But it is not the business of Government to find an expert to teach elementary principles of business. If large manufacturers are brought to see that there are great possibilities of business here and abundance of material, with cheap labour, they would take a wider view of their opportunities. I do not suggest that they should come out with the idea of absorbing all the business worth having and leaving our Indian friends with nothing. I think there is plenty of capital in India and sufficient capacity for management if the expert knowledge could be provided. For myself, I do not believe that there is much to be done by bringing out experts to instruct the young idea on the lines which the Hon'ble Mr. Sarma has indicated. In theory, it is good, it is educational up to a certain point; but there is a very wide distinction between education and business."

The Hon'ble Mr. GORDON FRASER:—"Your Excellency, I fully sympathise with the desire for the promotion of Indian industries which has prompted the Honourable Member to bring forward his resolution. But I am afraid it is of too general a nature to prove really practicable. In the first place, it would be difficult to run a small factory satisfactorily and profitably; and once started there would be the temptation on the part of those in charge to gradually enlarge and spend more and more of the public funds in order to increase the out-put and so reduce the cost of production per unit. Again, a small factory and consequently a small out-put would be little use in making a market for the products. The supply of any goods to be put on the market must be regular and sufficient before any buyers will really interest themselves in them. In dealing with the resolution, we generally find that three industries are put forward, the making of glass, the making of pencil and the making of matches. These are all industries often referred to as industries which Indian capitalists might take up. They are articles of common every-day use and are sold at keenly cut competitive prices. You could buy, I speak of pre-war prices, matches at As. 8 per gross of boxes, and pencils and glassware on an equally cheap scale. Some years ago, in Madras, the making of glass was started on a commercial basis by business men, but it proved a failure. This was due to several reasons but I will not go into these in detail; the final conclusion arrived at however, by those interested was, I understand, that glass-making was not a suitable industry for Madras. As a business man, I would not invest my own funds or funds over which I have control in any of these three industries, glass, pencil, or match factories in Madras and that being so, I could not very well recommend Government to put in their funds. I am sure it is possible to utilise our available capital for much more promising and profitable ventures in this country, where there is no excess of capital. There are many propositions in connection with agriculture, industry, and commerce which would be more worthy of the attention of capitalists and which would yield better results than these three.

"As regards vegetable oils, oil-refining and subsidiary industries, and paper-making, I think these are all businesses that are well worth looking into, especially vegetable oils. These come under a different class to other industries. They are more in the nature of improving the methods of marketing the crops of this country. They are closely connected with agriculture; and India, after all, is primarily an agricultural country. In regard to the question of the better marketing of crops, I would just refer to the low position which Indian produce does occupy in the markets of the world, mainly owing to the lack of care shown in marketing such crops. I would briefly mention some. For instance, cotton; I have seen cotton delivered to mills containing 30 per cent cotton seed; that gave the merchant a small extra amount of profit but nobody bought from that man again. Again as to bees-wax, I see from the newspapers that Russian merchants are boycotting Indian bees-wax, because it is so heavily adulterated. I am speaking from personal experience. We sent a shipment to the London market and had it all returned to Madras because it had 80 per cent paraffin wax. The same is the case with indigo. The price of indigo is ranging in the London market from two shillings to twelve shillings a pound. With proper factories and methods of manufacture they ought to realise something like twelve shillings for all instead of selling some at two shillings a pound. With regard

(Mr. Gordon Fraser ; Mr. Ramachandra Rao.)

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to leather, it is in very much the same position. It suffers from being branded and spoilt. Again as to ground-nuts, which is one of the biggest of our crops, Madras ground-nuts have been until the last year or two a by-word on the Marseilles market on account of inferior quality and admixture of stones and earth. The West African and Chinese nuts always commanded a high premium. It is only within the last few years that ryots and Indian merchants have awakened to the fact that if they market their kernels in a satisfactory manner, and put down machines for decorticating instead of wetting the nuts, they can get something like 10 per cent better prices for their stuff.

"The Honourable Member refers to the desirability of bringing out experts for training Indian students in the suggested Government experimental factories. I would, however, point out that in Southern India a number of large industrial factories already exist but the work in these factories is not sought after by the Indian students or the Indian young men of education and brains. Practically speaking, the bulk of labour in these mills consists of European supervision and Indian coolies and there is no intermediary. There is a great opening for the students. If you bring out an expert to train your workmen in these factories, what class of men are you going to get? You will get coolies; but you will still lack the young men of education and brains, who will not start at the bottom and tackle cooly work, before they get into positions of authority. I will not trouble you with extracts but it would be quite worth while for all gentlemen interested in this question, the question of training students, to refer to the letters written by Mr. C. B. Simpson to the Industrial Conference held at Ootacamund in September 1908. Mr. Simpson is eminently qualified to speak on the subject and his remarks might be read with attention. I had a very good example that occurred to me the other day in which Mr. Simpson's views were fully confirmed. An Indian gentleman visited me in order to find employment for his son. I went into the question closely with him and suggested industrial work. I suggested that his son should start training and should learn some of these industries like cotton spinning, and such like; but he demurred to that and said that what he wanted for his son was a clerkship. I had not anything to give him and the boy may still be out of employment. If good class well-educated youths would be content to start at the bottom and go through the hard cooly work necessary to get efficient knowledge of industrial factory work, there might be some hope. But, at present, although factories exist—we have a large one at Pondicherry—yet we get no applications from the sort of men I am mentioning. There are openings now; but they are not taken advantage of. I do not think the suggestion put forward in the resolution to import experts would really do very much good."

The Hon'ble Rao Bahadur M. RAMACHANDRA RAO:—"My Lord, the Hon'ble Mr. Robinson and the Hon'ble Mr. Gordon Fraser who represent the commerce and industry of Madras in this Council have taken exactly the same attitude that their predecessors took on previous occasions. It would be within the recollection of the Council that five years ago there was a debate in this Council to reconsider the policy of Government and to address the Secretary of State in regard to certain restrictions which were placed on the development of industries in this Presidency. On that occasion, the honourable gentlemen who represented the commerce and industry of Madras were in a minority of three and the resolution for the reconsideration of these orders was adopted by the Council including the Members of this Government, and I sincerely trusted that, on the present occasion, my honourable friends would have, to some extent at least, expressed their concurrence in the views for starting and encouraging industries in this country. On the other hand, the Hon'ble Mr. Robinson thinks that the Government should have no industrial policy and all that he has stated seems to indicate that the only duty of Government is to put the Chamber of Commerce in communication with the English manufacturers, and, on the question of the development of industries in this country, he absolutely made no suggestion whatever. I think, on the other hand, he said that it was all business and the present proposal was not business."

"My Lord, I am afraid I must invite my honourable friend's attention to the new policy that has been pursued for some years in this country in regard to industrial development; and, perhaps, I might venture to bring to the attention of

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(Mr. Ramachandra Rao.)

the Council a publication of last year where the Bengal District Administration Committee, after examining the policy pursued by each Provincial Government made a recommendation in this matter to the Government of Bengal. If Honourable Members will see and consider the question from the aspect and view that was presented in that report they would readily understand the proposals which have been put forward by the Hon'ble Mr. Sarma that industrial experiments such as those that have been suggested in the resolution should be undertaken. I shall not detain the Council much more than it is necessary. I might perhaps read one particular paragraph; after examining all the proposals the Committee summarised their recommendations in these words:—

"There seems no means by which would-be industrialists in Bengal can acquire this knowledge, except by some form of Government demonstration."

"That the direct encouragement of industries by Government must necessarily lead to interference with private enterprise, is, in our opinion, by no means axiomatic. The only branches of private enterprise with which such action on the part of the Government of Bengal might possibly interfere are those controlled by the large firms of Calcutta, whether Indian or European. Any interference of this kind must, and can be avoided. The larger organized industries are not a suitable field for Government effort, and so far as England itself is concerned, a prosperous, organized, industrial India, will be an infinitely more valuable trading neighbour, than India as a mere producer of raw materials and consumer of manufactured goods."

"A Government may be justified in taking up an industrial enterprise, either with the ultimate object of inducing a certain class to become industrialists or in order to introduce that particular industry, but its people, from want of industrial skill or enterprise, had hitherto not attempted it; or when they are carrying out a certain process in the manner which could be more cheaply and efficiently performed with the aid of modern mechanical appliances, from the employment of which they have hitherto been deterred by the lack of training or example, or of industrial organisation. The following are instances where Government action in the latter direction would be helpful. Industrialists in India, European as well as Indian, at present hang back from new ventures in any direction, where success will not bring them at least a temporary monopoly. Monopolies can be obtained either by a creation of a patent, or by the building up of a highly specialised industry that protects itself by the elaboration of its carefully guarded processes. There is little inducement to pioneers, where technical success will bring only a crowd of competitors, unhampere by the dead weight of capital wasted in preliminary efforts. Again there is a class of cases, where expensive machinery will have to be erected and maintained at a loss for some years, to make the production of the raw material possible. Aloes, for example, can never be grown at a profit, in the absence of an efficient and costly fibre extractor, and this, again, will never repay the cost of installation, without a large area of land under aloes. All these are cases in which the Government of a country like India may well step in and sustain the first loss, the extent of which may be to some extent forecasted, to the great advantage of the general public. Some initial loss must be expected, and the unwillingness of Government to recognize this principle has been largely responsible for its reluctance to engage in direct industrial work. This is a policy for which there are precedents from many parts of the world. The necessity of carrying on demonstration work in agriculture, the greatest industry of the country, on a commercial scale, is fully admitted, and it is only where this principle has been put into practice that agricultural improvements have been taken up by the people."

"My Lord, this is the aspect which has induced me to place these views before my honourable friends who have objected to this resolution. After an elaborate enquiry, this Committee have summarised their recommendations in which they specifically stated exactly what my honourable friend Mr. Sarma wishes your Excellency's Government to do."

"They finally made a recommendation regarding industrial improvement in these terms:—

"That, as an interim measure, and while the large and elaborate scheme for technical and industrial education now before Government is being considered, a Director of Industries be appointed at once, independent of the Director of the Public Instruction; that expert managers be engaged under his control to carry on certain demonstration enterprises; that favourable subjects for demonstration might be found in small power-plants for rice-hulling, oil mills, etc., in coir and copra factories, and in small power sugar, and even gur, installations, but that definite suggestions for the selection of the most suitable industry or industries must come from the Director. These factories will not for a long time be so large or so numerous, that they cannot be easily be supplied with qualified pupils before the proposed technological institutes are started."

"My Lord, my honourable friends do not seem to believe in the possibilities of any of these activities being undertaken in this country; and I believe at least, on a future occasion, they will give us the pleasure of having changed their views on this

(Mr. Ramachandra Rao; Mr. Robinson; Mr. Todhunter.) [3RD FEBRUARY 1916.]

aspect. But, so long as these questions have to be considered from the aspect of the English manufacturer and the European Chambers of Commerce in this country, there is absolutely no possibility of agreement. Our standpoint and the standpoint of my honourable friends are entirely different."

The Hon'ble Mr. J. O. ROBINSON:—"May I offer one word of explanation? It is simply this. The whole basis of my argument was that there should be closer co-ordination between Indians and Englishmen and that Indians can be most efficiently trained in factories opened for business purposes."

The Hon'ble Mr. C. G. TODHUNTER:—"Your Excellency, the honourable mover's amendment of his resolution saves me from the horns of a dilemma represented on the one hand by the very forcible argument of the representatives of the Chamber of Commerce and the Trades' Association that a small "spoonfed" factory cannot pay commercially and that, if it does and teaches its processes, it will be followed by a host of imitators too numerous for the market available, and on the other hand by the equally cogent statement of certain other honourable gentlemen that, if European merchants are invited to embark on suitable industries, they certainly will not, after buying their experience, let their neighbours in to share the knowledge they have acquired."

"Fortunately neither of these questions arises on the resolution as amended which commends, first, experiment and, second, the training of students. This Government have accepted both these, with certain limitations, as part of their policy and have laid down that the exploitation of industries is not a normal but an exceptional function of Government. The resolution as it stands does not ask us to go further than that, and we shall be wise before we do so to await the debate on the whole question which is to take place in the Imperial Council on Sir Ibrahim Rahimtulla's resolution this month in connection with which Sir William Clark has informed the Indian merchants of Bombay that he hopes to be able to make a statement of the views and intentions of the Government of India."

"To turn to the second part of the resolution and to the honourable mover's remarks on the subject of experts, I may say that he is right in supposing that the difficulty in obtaining them is one main reason why more are not employed. It is not the only reason, however. I would remind him that the achievements of Government in connection with the pioneering of industries which have been most successful in the past have been brought about by a process the reverse of that which he recommends, namely, by sending our students to study abroad. I refer to the achievements in respect of chrome-tanning, fisheries and soap-making. If we only had a sufficient supply of students of the calibre of Mr. Chatterton and Sir Frederic Nicholson to send abroad, we might dispense with experts, and the industrial salvation of India would be in sight."

"I would further remark that the Honourable Member seems to be mistaken in thinking that the expert is the proper person to fit up a factory, or that the engagement of the expert is the first step in the development of an industry. Modern industry is so complex that most manufacturing processes involve not one but several experts, none of whom will ordinarily be competent to build the factory. In fact the employment of an expert has quite a late place in the chronological order of things and it is a waste of time and money to employ him before he is needed. The first step of course is the exhaustive investigation of the prospects of the industry, on the necessity for which Sir Dorabji Tata laid so much stress. Next a nucleus organization in the branches not controlled by the expert must be provided. It is only with this as a ground-work that the expert's work can be effective."

"Having said so much, I need only add that Government have already engaged some experts, that they have schemes in hand for the training of students both in workshops and in factories, and that they hope to have small factories in working order in connection with most of the industries in which the Honourable Member is interested much sooner than he expects."

"In other words Government are treading the path he wishes them to tread and have no intention of turning back. In these circumstances I am to say that the resolution is accepted."

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(Dr. Nayar.)

The Hon'ble Dr. T. M. NAYAR:—"My Lord, the discussion of this question for the last ten years has impressed me with the fact that there is one misunderstanding which is preventing a definite conclusion. The misunderstanding lies in the confusion of exploiting new industries and starting industrial institutions with a view to giving industrial training to students. Unfortunately, the advice which the Madras Government had at the commencement was that an institution could not be started to train students unless it was worked as a factory on commercial basis and for commercial purposes. In other words, it was stated that if you started a manufactory or a factory, the materials manufactured therein should sell at a profit, and it was only in such a factory that students could be trained. That was an initial mistake. From that began all our difficulties, because the moment a proposal was made to start an industry and maintain it with the aid of State funds opposition was roused. That is the position which the Hon'ble Mr. Robinson and the Hon'ble Mr. Gordon Fraser will take up, that is the point upon which some of the proposals of Government were vetoed by Lord Morley when he was Secretary of State. But it is quite a different thing to say that, for affording practical instruction to students, satisfactory factories ought to be opened. The question might be asked what is the difference between the two? The difference is this: that in the first you manufacture a large quantity of commodities and expect to sell at a profit; in the second you manufacture commodities, not necessarily on a large scale, and do not expect to sell at a profit. What the manufacturing institutions in England which are intended for the training of students such as the Technological Faculty of Leeds, etc., do is that all the products that are manufactured, are sold in public auction at the end of the year instead of being sold so as to compete with private enterprises. We have to decide one of two things. Are we going to establish factories merely for training students or to demonstrate that we can start new industries here, or are we going to start manufacturing and pioneering industries? If it is the latter, we must expect opposition from private manufacturers and merchants. I think myself, Sir, that it would be better for us to take the line of least resistance and establish factories merely for the training of young students. I cannot quite agree with the Hon'ble Mr. Robinson in saying that there are plenty of opportunities for the training of students in England. We have heard a good deal about the subject; there are many Indian students in England sent up on scholarships or private expenditure to study manufactures and industries, who have persistently complained that they cannot get admission into first-class factories for the purpose of getting practical training. I believe there was a committee appointed by the India Office to investigate this question but I do not know what the result was but the fact remains that the complaint is a substantial one. I have myself come across students in London, students that have gone from this country to learn manufactures, who have come to me and said "we cannot get admission into proper manufactories for learning practical work." A few years ago one of these students who were sent out on Government scholarships did very creditably at Leeds. His special subject was dyeing industry. He took very high honours and came back to Madras. He went to several capitalists and asked them to start factories in which he could give expert advice. He could not get any capitalist to undertake the work. He came to me and asked me to help him in getting an appointment in one of the big mills in Madras. I took him to Mr. Simpson of Binny & Co., and it so happened that at that time Sir Alexander Mc. Robert of Cawnpore, whom I knew well, when I served on the Factory Commission, was in Madras. I had a discussion with both of them and both of them said "do you expect English manufacturers to take any Indian students and train them?" The moment they have learnt enough from us they will start in opposition to us. We are not here as philanthropists but we are here as business men and no business man will consider it worth while to take young men who will not continue to remain with him, but who will leave soon after learning practical work and start in opposition. Your young men are only coming to learn, they are students under us today, tomorrow they will be rivals. Do you expect us to take them?" "Well, no," I said, "I do not." "You put the case so very clearly that I would not ask you to do it." That is the state of affairs today. English manufacturers are here as business men, and you cannot expect them to take students into factories, to teach them all the trade secrets and let them go and start in opposition. We want practical training for such people and it is for that practical

(Dr. Nayar ; Mr. Narasimheswara Sarma.)

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training that my honourable friend has asked for the establishment of factories. He is prepared now to start on small things, but if you want to be able to have factories of your own and your experts to manage them, those experts must have a very high amount of training and I really do not know whether you can afford, whether it will not be extravagant to get experts to train these people. I was astonished to hear that the salary of one expert at the Tata works was Rs. 20,000 a month. I agree with the Hon'ble Mr. Robinson that experts do not care to come out to India; if you want an expert, you will have to pay such a very high salary, and I do not know whether we can afford to pay such high salaries. That is a practical question. The point at issue must be clearly understood. If my non-official colleagues will not press for starting manufactories with the aid of State funds and merely request facilities for training students, they might get what they want sooner. I think it is more practicable and I think it is the duty of Government to establish such factories. It must be distinctly understood that they are not for manufacturing articles to be sold, but for training young men. Whether the highest amount of training can be given, whether it will not be too expensive—these are practical questions that must be dealt with later on.

"By small factories, I do not think much can be achieved. But this may be simply a small beginning. Whether we are going to make an advance or not we will have to see. I hope this will be a reminder to Government that there is a duty that they owe, which is to provide facilities for the practical training of students."

The Hon'ble Rao Bahadur B. NARASIMHESWARA SARMA :—"Your Excellency, in my concluding remarks, I do not propose to go into the whole controversy that has been raging in this Presidency for now nearly eight or ten years, if not much longer. As one of those who took part in the Industrial Conference at Ootacamund I may say that we ranged ourselves on two sides and these very arguments were advanced then and certain definite conclusions were arrived at in that conference by an overwhelming majority. There is no good repeating those arguments now, because that is a matter of common knowledge to Honourable Members of the Council. But in this resolution, I am not asking the Government to go as far as the recommendations of the Industrial Conference at Ootacamund carried us, because that is a question which is no longer open to us until the Secretary of State revises the order passed. The resolution deals only with the educational aspect of the problem and we do not ask for starting large factories for the purpose of demonstrating to the public by actual sales effected in these factories that these factories can be financially profitable. I do not think, therefore, that the objections which have been urged to a certain extent by the Hon'ble Mr. Robinson and the Hon'ble Mr. Gordon Fraser, if I understand them aright, are really pertinent to the question involved in this proposition. If you go further than this proposition and contend whether it is not the bounden duty of Government in the circumstances of this Presidency, namely, when there are abundant raw materials and when there is an industrious intelligent population and when there is a population capable of understanding and imbibing the principles which would enable them to carry on industrial processes in the best manner possible and to compete with every country in the world,—whether in these circumstances it would not be the bounden duty of the Government to go a step further and to start industries on a large scale, that is a different question that does not arise at the present moment. There is no use of addressing any remarks on that point. The Secretary of State has authorized this Government to start small factories for the purpose of training students and the Hon'ble Dr. Nayar has said distinctly that it is found impracticable to get practical training in India or in England for many of these students and, consequently, we hope by this resolution that things might be made to move at a faster pace if the Government undertake to start these factories and demonstrate to the people that certain industrial processes are practicable and train a certain number for the purpose of demonstrating to the people that these can be undertaken on a commercially large scale. I am very glad that the Hon'ble Mr. Robinson has explained to the Council that he and his brethren feel that all that might have been done by English manufacturers has not been done hitherto. I hope for their hearty co-operation, I hope for their intelligent combination. I think English manufacturers are realising their responsibilities in the development of manufactures in India and I hope for their combination, I hope

[3RD FEBRUARY 1916.]

(Mr. Narasimheswara Sarma.)

for their intelligent and sympathetic co-operation and, as he put it, he hopes also for a combination of the Indian and English elements for promoting the interests of this country. If that is his object, that is also our object. We do not want to say that India is for Indians and that Englishmen have no place here, even though it is sometimes feared that their object is to exclude us altogether from manufactures, even though their past conduct might lead to suspicion; and though I think that it might not have been their intention, still exclusion has been the effect in practice. As to the complaint that the right sort of men do not go to the factories to understand these processes and consequently to get training, I am afraid it has been overstated. There are two classes of students. One class begins as coolies and if they are intelligent they gradually evolve into industrial capitalists. There is a second class of students of a higher order which has got higher brains, which wants to understand the theory of these processes and which, at the same time, should not and could not and, I am sure, does not, despise manual labour and goes through manufacturing processes but at the same time wishes to utilise its superior brains for the purpose of starting life on a higher scale. Perhaps there is not much room or opportunity for starting for such men. We hope to be able to give such classes of students an opportunity of training in these small factories and that is why we ask the Government to start these factories. After all we realise that we require the partnership of the English manufacturers in the development but it must not be for their exclusive benefit, nor should they despise the co-operation and the benefit of Indian students. That is what has led to discontent. I hope that policy will not be followed in future. With regard to this particular resolution, I am thankful to the Government for having accepted it. We hope that a real beginning will be made, as soon as the conditions of the war are over, and that some practical good will be achieved by the Government of this Presidency for the benefit of the people and the country."

The resolution was then accepted.

C. G. TODHUNTER,
Ag. Secretary to Government, Legislative Dept.

Est. Department

Please see the extract from Council proceedings on page 6 to 16 supra. The resolution was accepted by the Govt. It does not appear that any special action should now be taken with reference to it. The notes & proceedings may be recorded and a copy communicated to the Director of Industries for information. A draft order is submitted for approval.

SK
1.4.16
1/4/16

[Signature]
H/US

Thurmer's speech
17 & 18 supra

[Faint, mostly illegible handwritten text, possibly bleed-through from the reverse side. Some words like "proceedings" and "Council" are visible.]

No.	dated	191
"	"	191

READ ALSO:-

J. No.	From the	No.	dated	191
"	"	"	"	"
"	"	"	"	"

12

Papers relating to the resolution moved by the Honble Ras Bahadur B. Karasimbeswara Sarma regarding industrial experiments.

ORDER. *Mis*

No. *3808*, dated *5-4-1916*

R. coded.

8/4/16

1/4/16

2/4/16

4/4/16

copy of extract in Council proceedings.

Dr 3898-1



Educational Department,

Fort St. George,

20th November 1915.

My dear Tressler,

Will you very kindly give me at once any facts and figures you can that will assist in answering the resolution below?

Resolution.

"This Council recommends to His Excellency the Governor in Council--

"(a) that experiments in industrial processes suited to the conditions of this Presidency be undertaken or, if already undertaken, be continued on a larger scale in glass and pencil-making; in oil-refining and subsidiary industries in small factories well fitted up and equipped for the purpose;

"(b) that the services of competent experts if necessary from foreign countries may be secured for a limited time for the purpose of fitting and running the said factories and training Indians therein."

As the Honourable gentleman is evidently very much interested in the progress made I think it would be open with a concise statement under each industry of the amount expended, extent of plant employed, number of persons employed, its working has been demonstrated, and extent of production of pencils, bottles and barrels of oil.

Following that might come a statement as to the results of each experiment is. It is clearly useless to continue till it is certain that it is then

No doubt many other points will suggest
I shall be most grateful for a note of any
would be useful.

14
Yours sincerely

(Sd) L. G. T.

To

K.T.B. Tressler Esquire,

Director of Industries.

Sent
as
20/11/15

D.O.No. 3898-2



Educational Department,

Fort St. George,

20th November 1915.

My dear Sir Frederic .

I am writing to ask if you could very kindly help me, and of your encyclopaedic knowledge of the subject, with a few points for meeting the resolution below:-

This Council recommends to His Excellency the Governor in Council-

(a) that experiments in industrial processes suited to the conditions of this Presidency be undertaken or, if already undertaken, be continued on a larger scale in glass and pencil making, in oil refining and subsidiary industries in small factories well fitted up and equipped for the purpose;

(b) that the services of competent experts if necessary from foreign countries may be secured for a limited time for the purpose of fitting up and running the said factories and training Indians therein.

Points that suggest themselves are that we are already proceeding as fast as ^{is} safe, especially in the industries which offer no certain promise of success; that even if it were otherwise, it is useless training Indians in them until there are private factories to employ them; that we find it difficult to secure Indians of the right sort at all for series even when we offer scholarships; that there is no factory in Europe from which we could draw experts under present conditions, and that the high specialization of labour in makes that the last country from which to draw instruction one where machinery is practically unknown. I am sure you can improve on this.

industries in the manner suggested.

I hope you will forgive my troubling you. My excuse must be that I have only been in contact with Industries, as a side issue of Education, these past three months and want to do the Department justice.

Yours sincerely,

(20) b. g. J.

To

The ~~61~~ Sir Frederick Nicholson, K.C.I.E.

22/4/15

Madras. 22nd Novr. 1915.

My dear Todhunter,

The resolution (at least paragraph (a)) is so badly drawn that it is difficult to criticise it with precision.

"or, if already undertaken, be continued on a larger scale in glass and pencil making. But, apart from one sentence in para (a), I am largely on the side of the Resolution, and you must excuse me if, like Balaam, I find that I must bless.

I will however criticise sentence by sentence.

(1) "Experiments in Industrial processes (aliter "industries") suited to the conditions of this Presidency".

The very first question is, what are the industries suited to local conditions; if we knew that we should have made a vast stride. We require a long and patient enquiry before we can say what industries are even, *prima facie*, so suited, and this enquiry is the precise object of the Bureau of Industries i.e. the Director and his staff, who are actively engaged on it. When these enquiries have established a *prima facie* probability of the success of any specific industry there will come the opportunity for experimental investigation. In many cases, no doubt, experiment is a chief method of enquiry, but prior to experiment there must be a preliminary investigation to ascertain (1) whether an industry or new industrial process is needed by the country; (2) if so, whether it is *prima facie* suited to local conditions. Without such preliminary enquiry there may be expenditure of money as useless as heavy, and, what is worse, a failure which may discourage - which has discouraged - other attempts even in non-related industries.

Take a concrete case, glass, one of those in which "larger scale" experiments are (erroneously) recommended in the Resolution itself; Here are just a very few obvious queries and difficulties:

of material
Fuel is the largest item in glass making; is fuel

fuel cheap or dear, accessible or remote?

Sand and other crude materials: are they free from iron and other impurities?

Alkali and chemicals: are they cheap and locally procurable or must they all be imported?

Experts: are there any in the true sense of the word, the Chemistry and technology of glass being among the most intricate of any; *many years training are necessary.*

Artisans: is there a body of men who can be taught the extremely difficult, trying, and laborious processes of the industry; if not, how can they be obtained?

Climate: is it possible to conduct glass operations involving intense heat day and night in closed buildings in a climate where the normal atmospheric temperature is 70° to 110° F.?

Market: Do the qualities of glass which alone can be made in this Presidency, justify the immense expense of experiments or the risk of starting the manufacture? Can the local market support even a single factory? can the finished goods compare in quality and price with imported goods?

Commercial: Why did the existing glass factory start -ed by business men after much experimenting at Ennur, and with Government free grants of fuel, entirely fail?

Similar questions - mutatis mutandis - would be necessary as regards pencil making where the extraordinary cheapness of imported goods and the extreme badness - from a writing pencil point of view - of Indian and even Ceylon plumbago, and the intricate chemical and physical operations necessary to fit the plumbago for even second-class goods, are reasons which, inter multa alia, militate against commercial success.

So also as regards ~~the~~ paper of the better qualities.

Answer 1.

The answer to this first point therefore seems to be that the Director of Industries is gradually making those wide spread enquiries which will eventually enable him to sift out

out impossible industries and to arrive at those which are *prima facie* both possible and suitable.

2. "Experiments should be undertaken, or if already undertaken should be continued on a larger scale, in glass and pencil making".

The remarks on pages 1 and 2 *supra*, coupled with the actual failures of private firms in both industries, explain the need for very *cautious* further experimenting, if any, in those industries. So far from blindly launching out on "larger" experiments and establishing factories, the main question is whether either of them is, *x prima facie*, *necessary*, desirable, possible, or suitable, and whether experiment should not be abandoned; the general tax-payers' money should not be wasted in experimenting on industries *prima facie* unsuitable, especially when other industries, *prima facie* more suitable and feasible and profitable, exist. Any industry essentially requiring plenty of cheap and good fuel is *prima facie* barred in this Presidency. The only possible site for a glass factory would be the Nilgiris where fuel is good and may be very cheap (100 tons per acre after 10 years said Brasier at the Industrial Conference of 1908), and the climate suitable; cf. the glass factory at Naini Tal. Glass making is probably the very last of all industries to be attempted in this Presidency.

It is axiomatic in industrial experimental work that experiments should be conducted

- (1) only after full previous enquiry and ascertainment of preliminary data;
- (2) on the smallest scale which will give industrial and commercial, as distinguished from mere laboratory, results. The glass and pencil factories already in existence were started as commercial propositions and are therefore more than large enough for Government experiments if such are still desirable.

This is the answer to *para-2*.

Answer 2.

(3) "Oil refining and subsidiary industries"; by this is probably meant "oil extraction and connected (or linked) industries"; the refining of oil is a mere subsidiary process in oil extraction and not a separate industry, while the industries of edible fat manufacture, soaps, candles, and glycerine, paint and varnish making, are not subsidiary to oil extraction but complementary and linked to it by necessary connections.

Here I am entirely with the Resolution; my letters of September - December 1914 urge the establishment of small linked factories to experiment technologically and commercial-ly on these industries, because

- (1) Prima facie the industries are necessary to India, as shown by huge imports, by the known demands for edible fats, soaps, candles, glycerine (for cordite etc.) and so on, and by the grave prevalence of adulterations in edible fats and of imports for the purpose of adulteration;
- (2) Prima facie, the industries are suitable by reason of the enormous production of the raw material (seeds, nuts, etc.) of the finest quality, by comparative technological simplicity, by the comparatively small amount of highly skilled labour ~~that~~ that is necessary, by the moderate amount of fuel required (climate is largely in our favour), by the absence of the long transport distances necessary in the case of the same goods manufactured in other countries. In one industry (soap) there is also a trained expert on the spot.

With an oil extraction factory not as an isolated entity but as the centre of linked experimental factories for the connected industries, a convincing demonstration could be made which would be the model for private factories and the place of instruction for experts, foremen and artisans.

The answer, in my opinion, should be that Government have already sanctioned an oil extraction factory, and experiments are being developed in soap manufacture; these will be gradually extended to include the usual developments

Answer 3.

Page 2 to 9, 17-20
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 Page 8, 9, 14-19
 Note Hereunder
 A

developments within these industries and the establishment of the connected industries.

I have used the word "extraction" to cover the winning of oil both by pressing and by solvents.

(4) Paragraph. (b).

The answer to my mind should be, that on the establishment of a ^{case} prima facie ~~can~~ for any industry, the necessary experts will be obtained whether for the further detailed enquiry which only a technical expert for each specific major industry can safely carry out in elaborate industries involving great technological and business knowledge (e.g. glass or paper), or for experimental factory work in simpler industries, e.g. soap and paint manufacture, button making, inks and adhesives, and so on.

When new industries are to be introduced into any country there are only three practical methods, ^{viz.} (1) the establishment of factories by foreign experts or manufacturers, (2) the thorough training of natives of the country on both the technological and business sides of an industry, in foreign factories and business centres; (3) the introduction of foreign experts of thorough and proved capacity. ~~The~~ The Japanese who, since 1869, have brought about the whole of ~~their~~ ^{their} wonderful business and industrial developments, used all three methods extensively and thoroughly; foreigners were invited to Nagasaki etc. and started factories which were promptly imitated; Government and private syndicates sent their men abroad to learn everything that could be learned; but above all they hired foreign experts who, for many years were made to teach the Japanese every detail of an industry, ship building, glass, soap, weaving, etc. etc., and were then shunted. In 45 years these methods, grafted on to the Japanese character and aptitude, have made Japan an industrial country. For instance they obtained soap experts, and now though they produce practically none of the raw materials but still

still import most of them e. g. oils, animal fats, and most of their alkali, they not only make their own soap but are exporting largely, even to India, at rates so cheap^{as} to threaten other soaps.

Where methods (1) and (2) are unlikely, method (3) is the only one left and it is this which I have always advocated. In the case of certain ^{fishery} ~~fishing~~ industries and soaps we have succeeded by method (2) because myself and my Indian oil expert have gone and studied matters where these industries flourish, but, in general, method (3) will be the usual Indian method when No. 1 is unlikely.

It is only in factories thus started and run by absolute experts in the specific industries under introduction, that we can train up the body of skilled ~~men~~ men who are essential and the factories are necessary if only for that specific purpose.

The French canner at Mahé kept everything a dead secret and thus delayed the introduction of canning for 30 or 40 years; even so I have been able to utilise men partly trained at Mahé, and one main object of my cannery now is to train Indians and others as experts, foremen, instructors, artisans, etc. Your remark that it is useless training Indians in Government factories till there are private factories to employ them, is open to the (correct) retort that one main obstacle to the starting of private factories is that there is no body of skilled men and artisans and ~~these~~ ^{then}, in the absence of methods (1) and (2), can only be obtained by method (3). It is here too - in such factories - that we can secure Indians of the right sort; ~~with~~ with difficulty, no doubt, but we can and do get men of a class who could not go abroad, and we can avoid men who as you rightly say, are often not of the right stamp.

Nevertheless, my own frequently expressed opinion is that Government may do - should I say, ought to do? - much

much more in other ways to encourage private factories; in one of my letters (September- December 1914) I gave a distinct list of ways in which, apart from scholarships and factories and Government experts, Government could encourage and assist private enterprise, such as temporary freedom from income tax, free business sites, loans, etc. etc., and I was curiously supported by a simultaneous newspaper letter from a business firm on similar lines. But the provision of experts and small factories - after previous thorough investigation - is the prime method; in the case of soap the existence and employment of my oil-chemist (trained in England in the Chemistry and practice of oil and soap making) coupled with my own knowledge and the provision by Government of funds for experiment, are resulting, as will shortly be demonstrated, in a successful though infant industry on the basis of business profit.

Hence my answer on this point would be that marked (4) on page 5.

(5) There is, however, at the present moment and for the present Resolution a further though temporary answer ~~required~~ required viz. that under present conditions it is hopeless to try and secure experts. In two of my own lines of business British firms have stated that, during the war, they can take no steps towards new departures, and it is a fact that experts cannot be obtained.

The matter may therefore be left to Government and the Resolution withdrawn, the main answers being those which I have marked as (1) on page 2 and (4) page 5.

In my opinion the main duty of a Director of Industries in a Presidency with conditions like ours, should not at first be the establishing or working of any industry, but patient, widespread, and thorough investigation of the Presidency (conditions, productions, fuel and raw materials, real needs and wants, existing industries and possible

para 20, page 8 of 1614/15

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possible industries, character of the people whether of the business or industrial classes, etc.; the gradual elimination of ~~a~~ prima facie impossible industries, and the tabulation of possible and desirable ones, with the completest possible reports on these latter, showing the grounds for believing in or desiring them; then, - in the case of major industries - the examination of each report by an expert who is a real expert in that specific industry, such examination being, preferably, on the spot; £. 1000 spent on an expert may save enormous waste of money and time and what is often worse, disappointment and discouragement. If the expert report is favourable, then only should such further steps be taken as he recommends. No single man can be a Director of a series of industries; he should be a Commissioner for Industry, primarily an investigator of very wide knowledge versed in industrial economics, ~~acquainted~~ acquainted with and deeply interested in the conditions of the country; only subsequently a Director, through his experts, of actual industrial work. But the experts must be real technical experts and not a mere staff of subordinate officials; though acquainted with soap making in both its scientific and practical aspects, I could not make soap without a soap expert, and I certainly would not try experiments with non-experts in elaborately scientific and technical industries such ~~as~~ as ~~though I had considerable knowledge of glass making~~ glass even though I had considerable knowledge of glass making. There are many minor industries of course, e.g. pearl, horn, wooden and composition button making, ink and adhesive manufacture, etc. which any clever man can introduce and experiment upon with good chance of success; also mechanical industries such as mere oil-pressing; but I am speaking of the large industries and those which involve an elaborate technology. But in any case, the business and commercial side which is often more difficult than the technological,

technological, and more disappointing in its results, must be a subject of deep study; technology and trade must go hand in hand or there will be grave disappointments; I can make excellent soap but the ~~main~~ ^{main} question is whether I can sell it at a profit in competition with other soaps; factories are not the only necessities in industrial developments.

Excuse the length of my note; I have had no time to be brief.

Yours sincerely,

F. A. Nicholson

The Hon'ble Mr. C. G. Todhunter, I. C. S.,

Secretary to Government,

Educational Department,

Madras.

DEPARTMENT.

CURRENT No.

26

From _____

Received _____ 191 Registered _____ 191

Subject.

THE MONASTERY,
MADRAS, S.W.

27.11.11

My dear Jodhambis.

As you want the note caputly
I have written it up today. My figures
are I think substantially correct but
I am speaking from memory.

Please look through the draft
& if you want any further information
you might make marginal comments.

The note is private as I have
put in a good deal that I should not
mention in an official report.

Yours sincerely
A. S. S. S.

Pending orders on the re-constitution of the Dept of Industries, little industrial work could be attempted. When the order for re-constitution was received (April '14) I had no industrial staff- only a Pumping and Boring staff.

2. I submitted schemes for the organisation of the Industrial side, but before any orders could be passed- within 4 months of the re-constitution of the Department- war broke out.

3. Industry I divide into two divisions which I term Large scale or manufacturing Industry and Cottage Industry. The effect of the war has been to reduce production abroad and to limit shipping: hence it has afforded an opportunity for the development of Large scale industries in India. The position as regards Cottage industries remains normal except in so far as a reduction of buying power on the part of the people of India will adversely affect it.

4. Industry is a question of machinery and men. In Cottage Industry the ^{problem appears in its simplest form} ~~machinery is simple and can usually~~ be completely controlled by one man. A reasonably intelligent mechanic, with a certain amount of specialised training should be competent to control the industry. The plant is of a simple character and is usually of a kind generally available in the country. That is to say, one can expect to get the machinery and men required. I do not say it is easy: on the contrary the competent mechanic takes a good deal of looking for and training, but, given say, half a dozen men, I should expect, by a process of ~~elimination~~ ^{selection}, to train one, if not two good ones. ^{within a period of a year}

5. With Large scale Industry the problem becomes much more complex. In the first place the machinery is specialised and takes a good deal of time to obtain: in the second, large scale manufacture requires the services not only of one trained mechanic, but of a group of much more highly trained specialists in different branches.

As regards machinery it may now be said that the supply is completely shut off. Germany used to supply a large proportion of the specialised industrial machinery and Great Britain most of the balance. Germany is bottled up and England is mobilised. The only industries for which plant is still available are match making- and a private company is experimenting with this- and soap making- which Sir F Nicholson is dealing with.

6. For reasons of plant alone, therefore, it may be said that it is impossible now to take up any large scale industries for which the plant is not already in our possession or under order.

7. I found plant for pencil making, glass and wood pulp in the country: Government ~~have purchased~~ ^{ordered} rather more than one Lakh's worth of other machinery more than 9 months ago. This plant has not yet been delivered completely. I and the India Office and the firm concerned have been doing our utmost to get the Munitions Dept to get our stuff through, and we have hopes of ultimate delivery. But two consignments have been sunk already by enemy vessels and I cannot indicate a date for complete delivery.

8 The possible field for Large scale industry is therefore limited to Pencils, Glass, Pulp, Oil milling, Soap and matches. It may be argued that the Dept should have taken up more when there was still a chance of getting plant. But here the problem of staff comes in. When the war broke out I had no staff at all for industrial work. To run even the industries I have taken up I require the services of six 'experts', seven first class supervisors and thirty highly trained workmen and about sixty four trained works accountants, about thirty highly trained workmen and fifty less highly trained ones.

9 How was this staff to be obtained? The popular idea is that the employment of a single 'Expert' on an industry is going to solve the problem. Mr Luber

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a very capable pencil manufacturer started two pencil factories and trained the men. One is in a very bad way: the other has shut down. The Madras Glass works employed an extremely competent Glass 'expert'. They went into liquidation. The Punalur paper mills had a very good paper maker: they failed. These examples can be multiplied indefinitely. What the public fail to understand is that an 'expert' is only an expert in a particular branch and that such a man, by himself, is as likely to make an industry a success unless he is a universal genius. And universal geniuses don't come out to India.

10. Expert supervision and advice is necessary in every industry, but an expert has his place in chronological order and it is a mere waste of time and money to get such a man before ^{he is} they are really wanted. There is a great deal of ^{general} investigation to be done before an expert is necessary and a nucleus organisation in the branches not controlled by the expert must be provided before the expert's work can be effective.

11. What I have been up against since I embarked on industrial work is the tremendous difficulty in getting men suitable for training. One can only discover if a man is suitable by giving him a chance and if he proves unsatisfactory much time is lost. Even if he does prove satisfactory his training takes up a lot of time.

12. As I have already explained, I had no industrial staff at the beginning of the war. For experimental purposes, Government allotted me Rs 10,000 last year and sanctioned six temporary supervisors. They also spent some 1½ lakhs of rupees in purchasing plant. This was the absolute maximum that, under existing circumstances, it was possible and even reasonable to do.

13. I subsequently applied to Government for extra European assistance so as to enable me to get my preliminary work more thoroughly done and, by relieving me of some of my other multifarious duties, to give me more

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time to attend to things myself. This assistance has not, so far, been given with the result that I have had to rely on Indian assistance and this has, on the whole, proved unsatisfactory. Some men I have trained who will ultimately prove useful, but they require a lot more training: others have proved quite useless. So the result has been delay. I have to point out, however, that, even if I had got the men I wanted, this would not have done away with the necessity for training Indians for subordinate, but still responsible positions, and most of the men have shaped so badly that I should not actually be very much further on even had I had the help I wanted. I reckon that I should have saved about four months and about Rs 7,500.

14. What I am hung up on at present is the fact that I have not yet been able to collect a sufficient number of trained and intelligent Indians to warrant my going ahead, and it is absolutely useless to my mind to embark on expenditure on a large scale until men have been trained up to a certain point. After that money will have to be spent. I have already told Government that I may have to apply soon for a glass expert- for an Oil chemist and a works manager. These proposals will be submitted when the time is ripe: meantime I have been making enquiries regarding the availability of experts of the right kind, so that there need be no delay in appointing them when required.

15. In connection with this question of experts I have to remark that their selection is a matter of the greatest importance. I have, for instance, ascertained that Belgian glass workers would be of little use in this country as their method of work is different from that required in this country. Similarly also, in other cases one has to know exactly what one wants and to hunt round a long time before one finds the right man. I have been keeping my eyes open for experts for the last 12 months and it is only during the last few weeks that I have

heard of suitable men.

16. To summarise, the problem in the case of large scale industries is one of machinery and men. Machinery is not available and the selection and training of men is a long process with a large percentage of failures.

17. I have not spent much money on Industries for the simple reason that I haven't had enough trained men to justify any further expenditure. In spite of repeated disappointments, the process of training is however going on and in time I hope to reach the point of production. In pencil manufacture I have had two supervisors and one foreman under training for over a year. The men are not yet perfect by any means, but they are intelligent and have now got the hang of their work, so that I feel justified in launching out on a somewhat larger scale. In the glass work I have had repeated disappointments and have already sacked four men - all of whom were supposed to have special qualifications, because, after extended trial, they have proved incapable. In the case of paper pulp I rejected one man - an alleged expert - at the very start: I have now got two under trial. The delay in this case is due to squabbling amongst the owners of the property. In pencils I have been more fortunate, but the work is two months behind time because the supervisor in charge does not yet know how to handle the problems that arise.

18. Of the ~~thirteen~~ ^{fourteen} men tried, two have made good, four are still on trial and eight have proved failures. One of these men has been trained as an 'expert' and so I am still two men short of what I require, even if the men on trial prove satisfactory. All I can do to fill the vacancies is to sit tight till an apparently suitable man comes along and then to try him. The apparently suitable men are few and far between, and when they are tried, there is still the even chance that they will prove failures.

19. Men of the class required do not come forward for industrial work because it is too arduous and the pay is

not fixed: it depends on a man's ability and men, in India don't seem inclined to back themselves, but prefer the safer paths of public office. The same point is illustrated by the scholarships recently awarded for the V. T. I. Bombay. Two men were originally selected and two more later on. When it was found that the scholarship merely provided opportunities for learning and did not guarantee an appointment afterwards, two men dropped out. The third went to Bombay, but didn't like the look of the place and went home by the next train: the fourth went there for a couple of months and then resigned his scholarship. In the leather trades school one of the pupils also fell out because he was not guaranteed a appointment afterwards. In the glass works one of my senior supervisors made a melt. When half finished he thought he would like to go for his meals and so adjourned and left the furnace burning. He took things so easy that he had the furnace running for 5 days before he finished the melt. The result was that each bottle cost Re 1 in liquid fuel ~~and~~ alone. This is a case that the Chamber of Commerce make much of. It is a delightful example of what the Indian does when left to himself. This sort of thing goes on constantly and it is not surprising that development should be slow.

The Industries actually investigated since the beginning of the war are as follows:

Large scale

Oil milling and refining
 Textiles
 Glass
 Paper pulp
 Lime Brick

C

Cottage

Oil pressing
 Sugar crushing
 Button making
 Wool preparation.
 Tape weaving.

These Industries are dealt with overleaf in detail

How many
 applied?

OIL MILLING AND REFINING.

A large oil mill was sanctioned by Government at a cost of nearly one lakh and the order for the plant was placed on February 17. Delivery was promised in 3 months, but the War office took over the shops. A part of the plant has arrived: regarding the rest I am in constant communication with the India Office. The building is under construction.

PENCIL MANUFACTURE.

On the outbreak of war such available pencil machinery as was available in India was taken over by the Department. As a pencil expert happened to be available his services were engaged and within three months he was producing pencils of reasonably good finish. The graphite was, however, poor and as the expert could give no assistance on this matter and further, knew nothing about the supply of raw material, his services were not retained.

Work was stopped for the time being and experiments made on raw material and graphite. Samples were collected from all over the presidency and tested as to quality. A selection was then made and enquiries made as to quantity. These enquiries took up a good deal of time. When suitable timber had been selected bulk samples were purchased to test price and yield. Meantime a Supervisor was deputed to attend the Indian Institute of Science and study the preparation of pencil lead. To obtain a supply of raw material I went up the Godavari and opened up a mine.

Two pencil plants were available and it was decided to put them together and work the plant in Madras. Labour is more expensive, but a factory there is subject to personal control. This factory is now ready. The research on graphite is complete, so far as the cheaper pencils are concerned and regular manufacture is about to begin.-- say in January.

The expenditure on this experiment has been about Rs 15,000.

The plant consists of a 20 HP Oil engine, centrifugal

separator, disintegrator, lead furnace, six mills, two presses, two filters, two groovers, two rounders, two end cutters, two papering machines, two end trimmers, two varnishing machines two finishing machines with usual accessories.

Two supervisors and one foreman have been trained and the plant will employ about 40 persons.

GLASS MANUFACTURE

On the outbreak of war the present owner of the glass factory placed his premises at my disposal. The furnace was burnt out and the generator was in bad condition. The furnace, moreover, was not of the continuous type and it was necessary, therefore to rebuild the whole heating arrangement. At the same time oil heating was introduced.

The furnace work cost a good deal of money: about Rs 4000 and when complete, Mr Wills, who was in charge, left for the front. An alleged expert now presented himself and was given a three months trial. At the end he proved useless. Another man was I then put on one of my senior supervisors: a B A BC E. His performances I have already mentioned. He succeeded, however in making a melt. Here again I had trouble because Mr Erlam Smith, Professor of Chemistry, who had arranged to attend to the chemical side, went sick and was invalided home. I then tried another man on the ^{glass} work. He proved even more devoid of common sense. After that I sat tight until another suitable man should come along and about a month ago I took on a young fellow on trial. He may do. I cannot as yet tell. I have made arrangements with Dr Simonsen to look after the chemistry of the work and have some hope at arriving at a result.

To be candid I have let the glass work slide as I have been quite unable to do all the work now falling to me, and I thought it desirable to concentrate on pencils. When and if my new assistant is appointed I think I shall be able to push on.

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sional control. This factory is now ready. The research on...
graphite is complete so far as the cheaper pencils are...
concerned and regular manufacture is about to begin...
May in January...
The expenditure on this experiment has been about...
Rs 15,000...
The plant consists of a 50 HP oil engine, centrifugal

21/ 35
The expenditure up to date is about Rs 8000 and the plant consists of a blower, furnace and appurtenances, six bottle machines two compressors, engine, mixing mill grinding mill, &c &c. The plant is worth about Rs 40,000

PAPER PULP.

As I thought it desirable to obtain data regarding pulp production I made arrangements with the owners of the Punalur Mills to lend me their plant. The plant is obsolete but is sufficiently good for making experiments. This work has been hung up for nine months owing to litigation between parties, but I have now started work. (Mr 17)

The expenditure up to date is about Rs 200

The plant consists of two boilers, three rag boilers, cutters, devil dusters, hollanders, super hollanders and an equipment of paper making plant that I am not using as the experiment is confined to pulp.

COTTAGE INDUSTRIES.

OIL PRESSING.

On the outbreak of war, the purchase of two Anderson expellers was sanctioned: primarily with the object of assisting to some extent the ground nut market and with the further object of introducing the machine into the country.

I have to explain that, until a year ago, there was a reasonable chance of Mr Chatterton returning to this Presidency as Director of Industries and as I was acting, I considered it necessary to carry on his policy as far as possible. He was a strong advocate of the Anderson machine: I was not much prepossessed in its favour, for certain technical reasons that I need not enlarge upon. I however thought it necessary to do something urgently, and placed a order for one expeller: the one previously received I got to work in Madras.

*Limited
Rs 50,000 has been
spent. Such plant
as has arrived is up.
The balance is promised
within 6 weeks.*

This machine has worked for 2449 hours and crushed 5333 bags of seed. The extraction is about 28% (with shell) and this is not good. The working profit has been about Rs 400 which has been mostly swallowed up by repairs

The machine is now being overhauled and is to be used for experiment with gingelly.

The second expeller only arrived late and when it did the demand for crushing had subsided. The plant was thrown open to the public but there was no response and as the results of the first expeller had not been very satisfactory I saw no reason for getting the second one to work. ~~It~~ work ed it becomes second hand and must be sold at a big reduction ~~as it stands~~ I can sell it for the new price.

~~The third expeller was not bought~~
As explained, both plants have been thrown open to the public but the only individuals who have made extended use of them are Mr Venkataraman and Mr Dorasami Iyer.

The value of each plant is about Rs 13,500

WOOL MANUFACTURE.

I submitted proposals for the improvement of cottage wool spinning, for the purpose of improving and extending carpet manufacture, but my scheme was not sanctioned, nor have I sufficient staff to take up this work now.

Button making.

A gentleman in Madras, Me Bose, is engaged in the button industry and I am arranging for working this on more modern lines.

TAPE WEAVING.

To find work for weavers, whose business has suffered owing to the war I have introduced tape weaving. Employment is found for about 40 persons, and the work, besides giving the weavers a good wage, has also yielded a small profit of Rs 200

SUGAR CANE CRUSHING.

There are two sugar cane stations, one at Singanallur (Coimbatore), the other at Hospet. The capital value of each is about Rs 10,000

The season is a three months one. Two months have passed and so far the mill has run 929 hours, crushed 1327 cartloads of cane, yielding 771 pothis of jaggery. The gross receipts are Rs 2313 and the working profit about Rs 1000

The Hospet season only begins in December

This machine has worked for 2449 hours and crushed 1327 cartloads of cane. The extraction is about 28% (with shell) and this is not good. The working profit has been about Rs 1000 which has been mostly swallowed up by repairs. The machine is now being overhauled and is to be used for experiment with cane. The second experiment only arrived late and when it did the demand for crushing had subsided. The plant was thrown open to the public but there was no response and as the results of the first experiment had not been very satisfactory I saw no reason for putting the second one to work. It worked it became second hand and was sold at a big reduction. I can sell it for the new price. As explained, both plants have been thrown open to the public but the only individuals who have made enquiries of them are Mr. S. S. S. and Mr. S. S. S. The value of each plant is about Rs 10,000.

I submitted proposals for the improvement of wool spinning, for the purpose of improving and extending carpet manufacture, but my scheme was not sanctioned, nor is a sufficient effort to take up this work now.

A gentleman in Madras, who has been engaged in the cotton industry and is an authority for working on more modern lines.

To find work for weavers, whose business has suffered owing to the war I have introduced tape weaving. This is found for about 10 persons, and the work, besides giving the weavers a good wage, has also yielded a small profit of Rs 200.

D.O.

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Inc 2

Office of the Director of Industries,
MADRAS. 22nd November, 1915.

My Dear Todhunter,

As regards your letter my reply to the points is as follows:-

as follows:-

(1) My information is that the Sidhar pencil factory who used to make fairly decent pencils have now shut down altogether. Mr. Gupta a gentleman who makes nibs and pen-holders in a fairly large way has two pencil machines on which he makes pencils when he gets definite orders. He imports his graphite and wood and can only execute small high class orders, as pencil making with him is merely a side line. As a subsidiary object it does not matter if he gets work or not, but his venture cannot be regarded as a success. There is another firm whose name I do not know who bought a pencil plant and have scrapped it.

(2) I should not as yet like to say definitely that any of the industries I am investigating can be worked at a profit. In any undertaking one cannot expect that the margin of profit will be more than 10% and unless therefore one's data are accurate to within at least 10%, all one could say is that, if the estimated profit is less than the margin of error, the industry probably will not pay. When an industry is first investigated margin in the data may be anything in 30% upwards and as the investigation becomes more detailed the margin is reduced. In the pencil factory I have gone so far as to get preliminary data which I think probably are accurate within 10% and these data lead me to suppose that with careful working there may be a profit on manufacture.

2. I enclose for information and return a copy of these estimates based on the information so far obtained. Appendix B. is the estimate for a factory on the scale I am

working on, appendix C. for a commercial sized factory.

The estimates are for prime cost and the selling price given allows for supervision, interest and depreciation.

3. It will be seen that the selling price for country wood pencils is 0-12-6 and for cedar 18.3 annas. The normal market price of white wood pencils is from 8 to 14 annas. I expect to turn out an article which will compete with the 12 and 13 anna quality, but cannot ~~assure~~ ^{be} how the market will take my pencils.

4. As regards cedar, my estimate of selling price is 18.3. The normal price for cedar wood pencils of cheaper grade is from 16 to 28 annas and I hope to compete against the middling quality. You will understand from these figures that it is quite impossible to say whether the industry can be run at a profit without trial as it all depends what price I can get in on and also whether I can keep my costs within the estimated figure. By careless working it is quite possible to get 50% of waste which will double the prime costs straight away. This question of waste and selling price ~~however~~ ^{but} is one that can only be determined by trial ~~and~~ ^{but} I consider that indications are sufficiently favourable to warrant me going on with the experiment and obtaining more accurate figures of cost and selling price.

5. As regards glass I have not got to the point of estimating for the simple reason that I know from first principles that the cost of fuel must be kept within a certain figure and the furnace at present consumes more than my limiting figure. I could make glass to-morrow---- and shall make a certain amount for the exhibition but it is obviously useless to start manufacture on a large scale when you know before hand that one item of cost exceeds the permissible figure. As regards lime brick I have

figured out the prime costs at Rs.11/- a thousand equivalent to a selling price of 16 or 17. I think I can get this sum but here again cannot ~~permit~~ ^{commit} myself to a definite expression of opinion until I have tried the market.

(3) You are correct in assuming that glass and pencil

experiments were taken up on account of the war and fall into quite a different class from the previous industries which were developed gradually. War conditions made it necessary for me to make a start at once without adequate staff and to trust to luck for the staff turning up when required. In the pencil work I have had the luck, in the glass work I have not had it so far. I should probably in any case have taken up pencils and glass later on, but I should have spent 9 months or more in making the preliminary enquiries which I have in the case of war experiments have had to do concurrently with practical experiments in order to save time.

(4) The total number of applicants for the Bombay scholarships was 75. The standard of general education required was the Intermediate in Arts and only 10 applicants possessed this qualification. 37 had reached the matriculation standard. 13 applications came from men already studying at technical institutes and apparently not therefore requiring financial assistance and 15 from individuals whose educational qualifications were too low or were not stated. The last two classes were eliminated and in the second class 17 names were thrown out for obvious reasons such as failure to fill in the forms, obviously inadequate general education etc., etc., leaving 10 men of the qualified class and 20 of the matriculate class to be considered.

6. Of the former only 2 ~~were~~ ^{fully} qualified, the others either failed to fill in the application form completely or else asked for guarantees etc. etc., The 2 men who did qualify were recommended for scholarships but subsequently declined them.

7. I was then told to call for applications once more and this time I also submitted selected names from my second list. I did this after ~~making~~ ^{writing personally} into the candidates and trying to get an idea of what they ~~could~~ ^{can} do. The result of my cross-examination made me ~~to~~ regard only 3 of them as likely to profit by industrial training and one inter-

intermediate man subsequently applied.

8. After my sending up the names the last man failed to reply to any letters and it was presumed that he had withdrawn his application. The remaining 3 were given scholarships.

Of the 3 one was subsequently found to be enjoying a scholarship in veterinary science and on the representations of the principal of veterinary college his scholarship was cancelled. The second man went to Bombay and returned by the next train, the third stopped in Bombay for 2 months and then decided that family affairs necessitated his return to his native place.

(5) The estimate for the oil mill has been sent in. No estimate is required for the lime bricks as the plant is being erected in a shed belonging to the South Indian

Industrials in accordance with the arrangements arrived at with that firm, details of which have already been approved by Government.

Yours sincerely,

Secretary to Government,
Madras.

Appendix B.

Estimate based on Cocanada.

On 20,000 Country wood.

Labour	2,500	2,500	2.0	29
Timber 3,200 if @ 10 as.	32,000	2,000	1.6	23
Fuel and oil	1,250	1,250	1.0	14
Graphite 4 tons @ 135/- and clay @ 3 tons @ 20/-	600	600	.5	7
Stores	1,500	1,500	1.2	18
Repairs	750	750	.6	9
	8,600	8,600	6.9	100

Selling Price 12.5 annas.

Packing Extra

	On 20,000	Cedar		
Labour		2,500	2.0	17
Timber		8,000	6.4	52
Fuel and oil		1,250	1.0	8
Graphite and clay		600	.5	4
Stores		1,500	1.2	10
Repairs		750	.6	5
Painting stores		650	.5	4
		15,250	12.2	100

Selling price 18.3 annas.

Packing Extra

Interest and depreciation on 30,000	3,600
Supervision @ 300	3,600

Ratio 2 1/2 : 1 : 1
4 : 1 : 1

Pe : Selling price 5/9 2/3

Appendix C.

Estimate (Luber)

on 90 000 .

Labour	...	10,000	1.3	36
Timber	...	8,500	1.5	30
Fuel and oil	...	2,500	.45	9
Graphite 20 @ 135 clay 15 @ 20	..	3,000	.5	10
Stores	...	3,000	.5	10
Repairs	...	2,250	.25	5
		<u>28,300</u>	<u>5.0</u>	<u>100</u>

Selling price 10 annas.

Packing Extra

Cedar

Labour	...	10,000	1.8	18
Timber	...	34,000	6.1	61
Fuel and oil	...	2,500	.45	4.5
Graphite and clay...	...	3,000	.5	5
Stores	...	3,000	.5	5
Repairs	...	1,250	.25	2.5
Painting stores	...	2,750	.4	4
		<u>56,500</u>	<u>10.00</u>	<u>100</u>

Selling price 14.3 annas.

Packing extra

Interest and depreciation on	1,50,000	18,000
Supervision	750	9,000
		<u>27,000</u>

Ratio ---- 3 : 2 : 1

6 1/2 : 2 : 1

I. Whether the establishment of factories

is a proper function of a Department of Industry.

This point as a general question was first raised in connection with the Industrial Conference held at Ootacamund in 1908. It was recommended therein that the Government might undertake as a pioneer the introduction of new industries for demonstrating that such industries would be commercially successful subject to certain limitations, one of which was that no such undertaking should be engaged in unless it was one in which a private capitalist did not already exist nor was willing to venture. This evoked strong adverse comment from some of the local European merchants (Messrs. Yorke, Orr and Simpson). They pointed out, among other things,

- (1) that Government factories were wrong in principle, the State being necessarily unsuited to work them,

*Recommendation No. 5, pag. 215
of Papers relating to the
Conference (Vol. I. part 1)*

Page 225 of - d₂ -

- (2) that State industry was unfair to the tax-payer,
- (3) that private enterprise would inevitably suffer as it could not compete with Government institutions provided with unlimited capital at low rates of interest,
- (4) that floatation of companies by Government was undesirable, and
- (5) that the proposal to start industries and hand them over as growing concerns was a dangerous one for the new proprietors.

An Indian section of the conference strongly dissented from the above views, and Mr. Chatterton also joined them and pointed out that most ~~xxx~~ civilized nations maintained large factories in admittedly special cases and that the pioneering of factories in Madras was equally special and justified by the peculiar conditions of the country. The Government recognized this question of pioneering as their exceptional function, though not as a general principle, and accordingly accepted the conclusion of the conference. The proposal to create the Department of Industries

pages 227 to 229
of Papers relating to the
Conference, (Vol. 1, Part 1)

pages 230 + 231 of the —

para 2, page 239 of the —

as a sequel to this decision evoked the following

observations of the Secretary of State, Lord

Morley:--

6. I have examined the account which the Madras Government have given of the attempts to create new industries in the province. The results represent considerable labour and ingenuity, but they are not of a character to remove my doubts as to the utility of State effort in this direction, unless it is strictly limited to industrial instruction and avoids the semblance of a commercial venture. So limited, interference with private enterprise is avoided, while there still remains an ample and well-defined sphere of activity. The limit disregarded, there is the danger that the new State industry will either remain a petty and ineffective plaything, or will become a costly and hazardous speculation. I sympathise with the Conference and the Madras Government in their anxiety for the industrial development of the province, but I think that it is more likely to be retarded than promoted by the diversion to State-managed commercial enterprise of funds which are urgently required for the extension of industrial and technical instruction.

7. The policy which I am prepared to sanction is that State funds may be expended upon familiarising the people with such improvements in the methods of production as modern science and the practice of European countries can suggest; further than this the State should not go and it must be left to private enterprise to demonstrate that these improvements can be adopted with commercial advantage. Within the limits here indicated it appears to me that the objects which the Industrial Conference had in view can all be accomplished by means of technical and industrial schools; it is in such schools that a knowledge of new industries and new processes can best be imparted, that the use of new implements can best be taught, and the technical skill of the artisans most readily improved. In a leather school the method of chrome-tanning can be demonstrated and taught; in a weaving school the indigenous hand-loom can be improved and the advantage of the improvement demonstrated. If the schools are properly managed they will supply the private capitalist with instructed workmen and with all the information he requires for a commercial venture. To convert the leather or weaving school into a Government factory in order to demonstrate that articles can be manufactured and sold to the public at a profit goes, in my view, beyond what is desirable and beyond what is found necessary in other provinces. My objections do not extend to the establishment of a bureau of industrial information, or to the dissemination from such a centre of intelligence and advice regarding new industries, processes, or appliances, provided that nothing is done calculated to interfere with private enterprise.

I have not overlooked certain remarks in my Public Despatch No. 110, dated 30th July 1909, which might be read as assenting to schemes for pioneering new industries in the United Provinces. I understand that no steps have been taken in that province in this direction, and I desire that in it and in other provinces the instructions of this despatch may be observed.

The next stage was the acceptance of a resolution

moved at the meeting of the Legislative

Council in February 1911, requesting that the

Secretary of State might be moved to reconsider

his orders. This formed the basis of a communication

to the Government of India for a reconsideration

of the Secretary of State's orders.

Lord Crewe's despatch referring to the limitations

imposed by Dr.Travers was the outcome of it.

page 17 + 18 of Gp. 3446 Rev
27.10.10

page 6 to 15 of Gp. 3857 Rev
30.12.12

page 2 to 6 of do.

page 23 + 24 of do.

as a result to this decision evolved the following

Observations of the Secretary of State, Lord

Morley:--

Page 24 + 25 of
Ex. 3857 Rev. R
10.12.12

45
These limitations are--

It appears to me that the chief functions of a Director of Industries should be--

- (i) to collect information as to existing industries, their needs, and the possibility of improving them or of introducing new industries. The Department of Industries should be a bureau of Industrial and technical information;
- (ii) to carry out and direct experiments connected with his enquiries;
- (iii) to keep in touch with local manufacturers, to bring the results of his experiments to their notice, and to obtain their co-operation in the conduct of operations on a commercial scale;
- (iv) to supervise the training of students;
- (v) to advise Government with regard to technical matters involving legislation.

I will now sum up the conclusions which I have arrived at--

- (i) There are three factors which determine the position of an industry, viz., the *mental capacity of the workmen*, the efficiency of *their tools*, etc., and the degree of the *organization of the industry itself*. Of these factors, the first and third dominate the school.
- (ii) The first step towards the improvement of an industry is the improvement of factors one and three. Government can only touch upon factor three to a limited extent.
- (iii) So far as Government is concerned, the preliminary education of the artizan class is the first subject for attention. Such education should be provided by higher elementary, or middle schools, of a type which does not yet exist in India. On this subject much information is to be found in the reports of the British Department of Education or in the reports of the American Bureau of Information. The basis of instruction is *manual training*.
- (iv) *Trades cannot be taught in schools, but in factory and workshop.*
- (v) Trade schools dealing with trades and with subjects allied to trades may be established in industrial centres, but should be opened only to men and boys actually engaged in trades. The museum should be an important part of each school.
- (vi) Trade schools and similar institutions should not actually engage in trade as they can only do so at the expense of legitimate trade.
- (vii) Only workmen of some education are likely to benefit by study in trade schools: hence they are not likely to be highly successful till progress has been made in educating the workers.

The next stage was the acceptance of a resolution

then moved at the meeting of the Legislative

Council in February 1911, requesting that the

Secretary of State might be moved to reconsider

his orders. This formed the basis of a resolution

presented to the Government of India for a resolution

in relation of the Secretary of State's orders.

Lord Greve's despatch referring to the limitations

imposed by Mr. Trevelyan was the outcome of it.

Page 24 + 25 of
Ex. 3857 Rev. R
10.12.12

The above are the guiding principles of the department in respect of the operations undertaken towards the industrial development. It may be mentioned that on receipt of Lord Morley's orders one of the factories which the Government had then been running, namely, the Handloom Weaving Factory at Salem, was closed as one

Please see page 2 of
Ex. No. 3966 Rev. R
14.12.10 (Lr 2)

opposed to the orders of the Secretary of State.

The Aluminium factory had already been handed over to a private company, while the Sembium tannery had just then been sold to the Rewa State. It is clear that a factory such as that recommended in the Report would be impossible under Lord Morley's orders. Whether such a thing would be permissible under the limitations recommended by Dr. Travers is a question which is not free from doubt. The statement made by Sir William Clark at the Viceroy's Council that "if you can show by the ^(working) actual of an industry that an industry can be "worked at a profit, then the State has gone as "far as it can ^{reasonably} ~~be expected~~ be expected to go" may not be construed as over-riding the orders of the Secretary of State or permitting the establishment of a regular factory:

II. Whether State establishment of factories is feasible.

Even assuming that the orders of the Secretary of State permit the establishment of factories, it is doubtful whether Government as

such

Letter No. 535 L.P. (D)
29.10.03

pages 31 & 32 of notes
to L.P. No. 2446 Rev (A)
27.10.10

page 303 of extract
from Council proceedings (A2)

such can undertake them. First comes the question of finance. Any undertaking "on a large scale" as recommended in the resolution must naturally involve a large initial expenditure, besides provision for running them, irrespective of any subsequent return. Then comes the question of agency and staff. The first attempt at industrial development, viz., the Aluminium industry, was at the time the only one that engaged the attention of the officer, Mr. Chatterton, who had been transferred for that purpose from the College of Engineering to the School of Arts. As soon as that business was closed, two new industries were taken up, viz., chrome-tanning and weaving. For the supervision of the former special assistance had to be given to the Director in the form of an assistant; and the weaving concern was placed in charge of a separate assistant. The Director is now experimenting upon more than five industries, oil, pencil, glass, paper and lime-bricks and in none of these cases has he now experts to conduct the operations.

Sir

44. No. 574 2nd (B)
5.8.1899
44. No. 5-14 2nd (D)
29.10.03

44. No. 574 2nd (B)
5.8.1899
44. No. 5-14 2nd (D)
29.10.03

Received from Mr. J. H. ...
...

opposed to the orders of the Secretary of State.
The Aluminium factory had already been handed over
to a private company, while the Bannockburn
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7 48
Sir Frederick Nicholson has in his recent

note observed--

"I certainly would not try ^{experiments} ~~experiments~~ with
"non-experts in elaborate scientific and
"technical industries such as glass, even
"though I had considerable knowledge of glass-
"making. x x The experts must be real
"technical experts and not a mere staff of
"subordinate officials."

None of the European countries can spare any of
their experts at present. It is also doubtful
whether any could with advantage be imported from
America.

If, however, funds are forthcoming and
experts are available, the next question is how
long should Government continue to maintain the
factory and employ experts. The Resolution
suggests that the experts should be employed
until Indians are trained therein. The Ootacamund
Conference recommended, as observed above, that
the industry to be selected should be one in which
private capitalist did not already exist or was
not willing to venture and that it should be a
rule that Government should withdraw from any
such undertaking as soon as it was clear that
they had sufficiently demonstrated the advantages

(This note is with Sec 2.)

Recomd M. 5, page 215
of Papers relating to the
Conf. (Vol. put up)!

of the improved methods. Thus the Government undertaking should be based on an expectation of its being followed in a reasonable time by private enterprise. The tardiness with which private capital in this part of the country comes in to aid industrial development should render the selection of industries for State pioneering rather a difficult task, especially if the aim is to incite private enterprise. If the object is not achieved, Government money would have been wasted and ^{the} Indians trained ^{herein} would have been left adrift. A perusal of the following extract from a note written by Dr. Travers for the Ootacamund Industrial Conference of 1908 may be useful:--

"x x there is in India too much of a tendency to attempt to introduce entirely "exotic industries, such as the manufacture "of lead pencils or glassware, and to neglect "the natural resources of the country. On "general economic grounds the working up of "raw material which can be more readily "obtained in India than elsewhere, both for "export and for home consumption, should be "of greater advantage to the country, than "the manufacture of articles upon the sale "of which European competition would leave "but a small margin. At present enormous "quantities of material used in the manufac- "ture of drugs, essences, etc., are "exported from India, and large quantities "of the manufactured articles are reimported. "The fibre-yielding materials of India have "been by no means completely investigated. "This list might be extended considerably. "Of course there is no reason why such "products as acids, alkali, and heavy "chemicals generally should not be manu- "factured extensively in the country, as the

Page 183 of Papers
relating to the Ind. conf.
(1908. put up).

Page 183 of Papers
relating to the Ind. conf.
(1908. put up).

note observed--
"I certainly would not try experiments with
"non-experts in elaborate scientific and
"technical industries such as glass, even
"though I had considerable knowledge of glass-
"making. x x The experts must be real
"technical experts and not a mere staff of
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"freight alone is sufficient to protect the
"industry from competition.

"With regard to the improvement of
"existing industries which flourish, but
"for which much might be done, the manufac-
"ture of pottery, oils, paints, tobacco,
"silk, should be considered at an early
"date."

Oil pressing experiments have been admitted
to be not an inadvisable venture, while the same
cannot be said of the other two. Sir Frederick
Nicholson despairs of their success most. He has
exhaustively dealt with the question of glass in
his note of 15th December 1915 and his views are
summed up in the following:--

"In brief, general glass manufacture
"can only exist where coal, alkali, and
"materials are at their cheapest and best,
"and where there is an expert staff to
"instruct and guide the workmen under
"conditions physically endurable; not one
"of these conditions is found or ever will
"be found in this Presidency."

Similarly his note, dated 18th December 1914,
deals with the possibility of a successful pencil
factory and his conclusions are summarised in the
following:--

"I doubt the possibility of in any
"way competing with European goods in price or
"quality; we are up against excellent
"graphite, excellent wood, excellent artisan
"skill and excellent industrial organisation
"resulting in good pencils at really absurd
"prices. x x"

Experiments
Thus, though ~~experiments~~ with these two

industries have been ~~experiments~~ ^{actual, commenced}, no undertaking can
be

pag 5-7 of 7629
25-1-15

pag 11 of 40

freight alone is sufficient to protect the industry from competition.

With regard to the improvement of existing industries which flourish, but for which much might be done, the handicrafts of pottery, oils, paints, tobacco, silk, should be considered at an early date.

Old pressing experiments have been admitted to be not an inadvisable venture, while the same cannot be said of the other two. Sir Frederick Nicholson despairs of their success most. He has exhaustively dealt with the question of glass in his note of 15th December 1915 and his views are summed up in the following:--

"In brief, general glass manufacture can only exist where coal, alkali, and materials are at their cheapest and best, and where there is an expert staff to instruct and guide the workmen under conditions physically unsuitable; not one of these conditions is found or ever will be found in this Presidency."

Similarly his note dated 18th December 1914 deals with the possibility of a successful factory and his conclusions are summarised in the following:--

"I doubt the possibility of in any way competing with European goods in price or quality; we are up against excellent artists, graphite, excellent wood, excellent organisation, skill and excellent industrial organisation, resulting in good pencils at really absurd prices."

Thus, though some with these two industries have been suggested, no manufacturing can

para 3 of report of the Committee on page 47
 G. N. 77161
 26.8.12

[The only reference to Cottage industry is in Res. No. 9 of the Dist. Conference on page 216 of the Report]

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be given of the possibility of ^{Govt} establishing any manufacture of these articles in view of the doubts expressed above.

Besides, in respect of capital and expert, another difficulty which presents itself in giving immediate effect to the resolution is the absence of skilled artisans and mechanics. The cry has been loud that even in the City of Madras the dearth of trained mechanics is seriously felt. Industrial line does not seem to be attractive. This is evidenced by the fact that out of the six scholarships of Rs.30 each offered for study at the Bombay Victoria Technical Institute, only one candidate actually availed himself of the scholarship and even he has now withdrawn.

Ca
22/11/15

(1).

GLASS-MAKING.

In 1908 a private glass factory was opened in Madras and the services of trained men were obtained. The Government liberally helped the concern by -- undertaking to supply free of cost half the quantity of fuel consumed in the furnace during the first two years of its working. The factory, however, did not work successfully and was closed down in 1911.

Last year when Mr. Tressler began to undertake experiments in the manufacture of articles the -- export of which from Europe had been stopped owing to the war, he entered into negotiations with the owner of the defunct Madras Glass Works to carry on experiments with the manufacture. In the administration report of the department, he stated that he had been devoting his time in designing a furnace of high thermal efficiency and that the chemical side of the experiment was being investigated by Professor Smith of the Presidency College. The latter has now gone on leave. Mr. Tressler, however desires that the glass works should be acquired by Government. The Government have recently agreed to acquire the property and the

Gr. No. 677 Rev J
2.3.10

Para 59 to 61, page 20
of Gr. No. 1090 Rev J
1.10.15

(Separate file)

* under disposal in office.

Please see newspaper cutting at 2 page 105 of Proceedings of U.P. Council put up.

Collector has been asked to report the probable value of it.

In a letter dated the 18th January 1916, Mr. Tressler states as follows:- "The position at present is that I have constructed a new type of furnace and have collected formulae for glass, experimented with them and have tried to train a foreman and a certain amount of skilled labour. In a few days' time I propose to make trials which will tell me whether my organization is sufficiently complete to undertake larger scale experiments. If the result is favourable I can proceed to the working stage; if not I shall have to go on with my experiments".

"As this industry is somewhat doubtful I propose to submit a further report as soon as I have obtained definite results."

It is submitted that at present there is no expert staff in the Department and it is doubtful whether any such can be recruited at present from the United Kingdom or elsewhere. In this connection, however, it may be noted that it is understood that the United Provinces Government are taking steps to recruit a glass expert from Belgium or elsewhere to advise those engaged in the industry

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Para 16 of Mr. Tressler's
note on page 21 of notes
on the Resol. Macintosh.

page 26 of do

page 24 of do

in those Provinces. But Mr. Tressler states that he has ascertained that Belgian glass workers would be of little use in this country as their method of work is different from that required in this country.

In a note forwarded by Mr. Tressler on 21-11-15, he stated that the expenditure up to that date on the glass industry was about Rs.8,000.

PENCIL-MAKING.

In the note dated 21-11-15, referred to above, Mr. Tressler stated as follows in regard to the experiment connected with pencil making:-

"On the outbreak of war such pencil machinery as was available in India was taken over by the Department. As a pencil expert ^(Mr. Dubois) happened to be available his services were engaged and within three months he was producing pencils of reasonably good finish. The graphite was, however, poor and as the expert could give no assistance on this matter and further, knew nothing about the supply of raw material ^(wood) his services were not retained.

"Work was stopped for the time being and experiments made on raw material and graphite. Samples of wood were collected from all over the Presidency and tested as to quality. A selection was then

made and enquiries made as to quantity. These enquiries took up a great deal of time. When suitable timber had been selected bulk samples were purchased to test price and yield. Meantime a supervisor was deputed to attend the Indian Institute of Science and study the preparation of pencil lead. To obtain a supply of raw material I went up the Godavari and opened up a mine.

"Two pencil plants were available and it was decided to put them together and work the plant in Madras. Labour is more expensive, but a factory there is subject to personal control. This factory is now ready. The research on graphite is complete so far as the cheaper pencils are concerned and -- regular manufacture is about to begin -- say in January.

"The expenditure on this experiment has been about Rs.15,000."

Mr. Tressler has recently stated that unless Government would be prepared to spend a considerable sum on the establishment of this industry, a company might be formed to take up the business. He has also proposed that for the first few years the company should be allowed the free supply of wood and graphite up to a certain extent. His proposals are separately

File has been sent to Rev.

Sp. No. 347 Rev
3.2.14
in linked file.

Please see the note
on groundnuts on page
9 of Sp. No. 2802 Rev.
8.26.9.14 in linked file.

page 13 of - do -

separately under consideration. He has also stated that pending orders on his proposals the expenditure on the factory would be limited to Rs.250 per mensem.

OIL-PRESSING.

Before the commencement of the war, the Government had sanctioned the purchase of an Anderson oil-exPELLER by the Director of Industries to carry on experiments in the crushing of oilseeds in order to improve the existing methods of oil pressing in the country. After the war broke out the export of -- ground-nut and other oil seeds to European countries seriously suffered for want of shipping facilities and the closure of the oil mills in Marseilles. The question as to how to dispose of the seeds in this country came then under the serious consideration of the Department. The feasibility of crushing the seeds locally and exporting the oil to Europe was considered. In that connection the chief difficulties were found to be -

- (1) that machinery costing a large amount were required for the business, and
- (2) that there was the uncertainty of the Indian oil not finding a market in Europe in case the export trade in ground-nut revived and Marseilles began to manufacture oils again.

The Director however stated that a few more

small

undertaken

Ho. N-52 Bud 8 16.1.15-
 + Ho. N-158 " } 13.2.15-
 Slaps (N) + (H) in linked file

undertaken with financial success.

SMALL MILLS.

As regards the working of these mills Mr.

Tressler in his recent letter states as follows:-

"As regards the substitution plant, I got the first Anderson expeller to work in October 1914 and made preliminary trials with a variety of seeds. As, however, the only practical test for a machine is by extended trials on one class of seed only, I selected ground-nut and confined myself to this to begin with. Crushing was begun in October and -- carried on fairly regularly till the middle of -- December when there was a break of a month while the plant was being transferred to another site. After that, work ^{re}regularly continued until the middle of August. It was then discontinued for the time and this for two reasons: firstly because the export market had improved and secondly because the working parts of the machine had worn out entirely.

X X X X

INXSPITEXOFXTHEXDOUBTX,XCONSIDEREDXTH

~~the machine should be given an extended trial~~

" As results were not satisfactory, I saw no object in bringing a second mill into commission

seeing

seeing that I could get results just as well from one mill as from two. For protective reasons I sent the second mill to Cuddalore and offered its use to the ryots. The fact was given wide publicity and ordered to be notified in the District Gazette and as no applications were forthcoming, I saw no reason for pushing on with the second mill until I had obtained satisfactory results with the first. So far as substitution is concerned, my present -- opinion is that the Anderson Expeller is unsuitable for use with ground-nuts chiefly for the reason that it cannot deal with decorticated seed and that the shell of ground-nut contains so much sand that the cost of repairs to working parts exceeds the profits. It seems to me however that the expeller may be useful with gingelly and other soft-shelled seeds and I am now starting experiments on this seed.

LARGE MILLS.

Though Mr. Tressler placed an order for the large mill fairly early in 1915 he has not obtained it completely as yet, owing to the fact that the manufacturing firms in England are engaged in making munitions. Though the mill has not yet arrived Mr. Tressler has made preliminary arrangements for the

working

By Mr. 130357 of 29.11.15.
(4) in linked file.

Co. is put up with another
file which has gone to P.W.D.

working of the plant. He has entered into an agreement with a local firm (Messrs. Best & Co.) for the supply of the seed. A site has been selected near the Leather Trade school at Washermanpet for the erection of the machinery. Plans and estimates are under scrutiny in the P.W.D., for the construction of a building at a cost of about Rs.15,000.

SUBSIDIARY INDUSTRIES. (Soap-making).

Experiments in soap-making are carried on by Sir F. Nicholson in the Fisheries Department. Prior to the commencement of the war the manufacture of soaps from fish oils had been undertaken by Sir F. Nicholson with the help of an oil chemist (A.K. Menon) who was temporarily appointed in the Fisheries Department. Last year the Government directed that experiments for the manufacture of all kinds of soaps generally should continue to be carried on by Sir F. Nicholson. He required a sum of Rs.60,000 to set up a factory for this purpose. The Government were then unable to sanction this on the request of Sir F. Nicholson a sum of Rs.6,000 was sanctioned to enable him to continue on a small scale the experiments already undertaken. Recently he stated that

Co. No. 354.25 (H)
26.3.15

Page 164 of 372 (E2)
10.1.16

6)

the sum of Rs.6,000 had been spent and that another Rs.6,000 would be required for the remainder of the year. He showed by statistics that for a gross expenditure of Rs.11,074 there had been a net ^{profit} of Rs.2,000, and the experiments have so far proved a success. The Government have therefore approved the proposal of Sir F. Nicholson to start a soap factory and to purchase the necessary soap-making plant including plant for the recovery of the by-product, glycerine. A sum of Rs.75,000 has been provided for this purpose in the budget for 1916-17.

(2) Scholarships.

Twelve applications have so far been received in this office as well as the Director of Public Instruction's office for State Technical Scholarships tenable in Europe.

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27.1.16.
27/1/16

para 2 + 3 of 27.1.16 (E.2)

by. ibid

working of the plant. He has entered into an agreement with a local firm for the supply of the leather. A site has been selected near the leather Trade school at Washermanpet for the erection of the machinery. Plans and estimates are under scrutiny in the P.W.D., for the construction of a building at a cost of about Rs.15,000.

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to the people in the most practical and instructive manner, namely, ocular demonstration; and universal education in order to produce a higher standard of manual labour. Then, industrial success lies not only in creating products but in studying demand. Here we enter the whole field of economics wherein study is no less essential than in scientific research. We rejoice in the stimulus given to economic studies through the foundation of the Bombay College of Commerce and the more recently established Economic Bureau. In short, we have to make science the handmaid of our industries and of our commerce and to banish empiricism from every branch of both. I have spoken of this as essentially the domain of Government; so it is. But here as in every other field of economic activity the co-operation of our industrialists and men of commerce is demanded. There is an infinite variety of directions, where the careful study of these questions, by private individuals would help. This is especially the case with all those who are associated with the established industries in the country and who can help forward our industrial growth by scientifically educating their sons in every department of them.

A Word to the Young

Before leaving the subject of technical and scientific education, may I venture to say a few words to our young men who after undergoing a course of special education in foreign countries are anxious to embark on industrial careers? They are entitled to much credit for their enterprise in leaving the beaten tracks of literary education with a view, while earning an honourable livelihood for themselves, to increase at the same time the wealth of the country. It is the duty of, as I am sure it is pleasing to, Indian employers to utilise their services to the fullest extent and to accord them every encouragement. From my knowledge of the early careers of most of the highly-paid employees of the Tata Iron and Steel Works and of the Tata Hydro-Electric Works, I can say that everyone, European or American, who is filling a position of trust and responsibility, began his career at the very bottom of the ladder, doing hard and arduous work under trying conditions with the labour of his hands and the sweat of his brow. Many of these men began—and I say "began" advisedly—their education at a University, continued it in the hard school of the workshop, and finished it in the factory. You will thus see that the man who aspires to rise to the highest places in an industrial concern has to work his way up from the lowest rung, so that he may have first hand knowledge of every part of the organisation which he hopes to control. I am sorry to note, in many of our young men who have undergone technical training in foreign countries, a certain impatience at having to begin at the bottom. They conclude at once that Indian employers are unmindful of their duty to their aspiring countrymen. What I have said to-day must convince you that this is not

with China. It is common knowledge that we are losing ground rapidly in that market, and here again we rest satisfied with the parrot cry of "bounties and subsidies" which prevents our going to the real defects and remedying them. What we should do to find out by a careful study of the facts what the Japanese do to overcome the great disadvantage of having to bring their raw material thousands of miles, and next what they are doing to improve the quality of their output and to meet the tastes and requirements of Chinese buyers.

Next to cotton goods, the imports from Japan that most attract attention are glassware and matches, and attempts are being made to provide ourselves with these almost necessities of every day life. The Telegaon Works have shown how this can be done for glassware, and a leaf may well be taken out of their book for new works elsewhere. The fundamentals that we have to bear constantly in mind are that

1. The consumer we have to appeal to is the masses.
2. The income of these masses is extremely small.
3. Consequently it is low price and not good finish that is the most important consideration.

The same applies to matches. I have noticed that papers have been read before this Conference giving elaborate estimates of machinery, plane, etc. These are all adapted to the costly but very efficient European labour. Our capital, labour, and other conditions approximate far more to Japan than to Europe, and intending promoters should turn not to Europe but to Japan for a model and for expert workmen to train our own labour in these directions.

Tariff—A Comparison

There is another factor besides the above fundamentals that should help us to rapid success in the development of the match and glassware industries. I mean here what is termed "Natural Protection." A great deal has been said on this and other platforms of the need for us of a Protective Tariff and of what such a tariff has done for Japan. It will therefore come as a surprise to many of you here to learn that Japan had no fiscal autonomy till about 1898, but only a Conventional Tariff with a 5 per cent. duty which did not come even to 5 per cent. where it has been fixed specifically instead of *ad valorem*. Japan's early efforts between the inauguration of the new regime in 1868 and the recovery of fiscal autonomy in, say, 1898 were therefore all made not under a protective tariff but a 5 per cent. tariff. We have this same 5 per cent in India, particularly on matches and glassware with which Japan flooded our markets even before 1898, while we are even to-day—20 years later—without any glassware or match industry to speak of. What is wanted is not to dump down a factory in the first town we can think of, but to study

Confectionery of the value of	26,33,000
Cheese and bottled provisions	56,69,000

1915.

Educational DEPARTMENT.

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Y DECEMBER 24, 1915

of the Government is freely given; once the right kind of article is produced—of a quality and at a price which will stand competition with the imported article—the custom of Government is immediately forthcoming. That is the help which the Iron and Steel Company received from Government, and we are glad to have been able to repay it with interest by providing shell steel, rail and structural materials so as to help in the prosecution of the War.

One other aspect of the relation of the State to Industry demands attention—the venerable topic of “free trade versus protection.” I am afraid my knowledge of the question is confined to the fact that I know very little of it. By education no less than by association, I am a free-trader. But I admit, as has been shown at previous sessions of this Conference and elsewhere, that no industrial nation except Great Britain has adopted free-trade as its policy and that Great Britain herself did not discern its merits until she had so far outdistanced all possible competition as to be able to dispense with any protection to her industries without the least fear of injury to them. If, therefore, anybody proposes that a moderate protective duty should form an integral part of our fiscal system, I do not feel called upon to oppose the suggestion and will be content to “take the goods the gods provide.”

The Excise Duties

The cotton Excise Duties, of course, stand outside any general discussion of the merits of Free Trade versus a Tariff. My own views, and those of my firm, are sufficiently well known; we were amongst the first to demonstrate the unfairness and oppressive character of this impost. However, inasmuch as a protest against the Excise is to form the subject of a specific resolution to be submitted to you, I will content myself now with expressing my entire sympathy with the demand for the withdrawal of the duties. But I would point out that a protective duty by itself can be of little use in stimulating the growth of home industries. Our experience of countervailing duties on imports of bounty-fed sugar imposed in Lord Curzon's time conclusively shows that in the absence of other conditions, a manipulation of the tariff alone cannot create industries. I would, therefore, give precedence to the creation of those other conditions in our programme for the industrial regeneration of India. There are numerous ways, other than the introduction of a protective tariff, in which the State can, in my opinion, materially help the growth of industries, and I, for one, would immediately, at any rate, concentrate on them.

Capital

Of the three other factors of industrial progress, the most important, in the sense that it is most wanted in India, is Capital. Capital, of course, is not the aggregate of wealth in a country, but that portion of it which is seeking investment in the bus-

vanities and disadvantages of the introduction of foreign capital into the country. But that question is to-day far less urgent than it used to be. The enormous destruction of wealth which is going on in consequence of the war will of necessity considerably curtail the supply of foreign capital, and India will have to rely in the years almost entirely on her own resources. It is, therefore, especially incumbent on promoters of industrial and commercial enterprises to ensure by the closest preliminary investigation of their prospects as well as by competent management of their affairs the confidence of the investing public. Any dereliction of duty in these respects is a crime against the nation and the country.

Raw Material

I need not say much as to the capacity of India in respect of raw materials. It is not perhaps so bounteously provided by Nature with the staples of every possible industry as it is sometimes represented to be; but it is only necessary to glance at a list of our imports and exports to see that we have or can easily raise many of them in this country.

Labour

As regards the factor of labour, just as all wealth is not capital, so the numerical strength of a community does not necessarily represent its labour strength. A true idea of the supply of labour in a country can only be had by ascertaining what proportion of the population is able and willing to turn its hands to industrial pursuits and what amount of work it is likely to put into them. I should be the last person to bring a general charge of indolence or improvidence against the people of India as a whole. They are, no doubt, industrious and frugal in their own traditional way; but that way is, in many respects, not the one suited to a modern industrial community. In agriculture, which is the oldest as well as the largest industry of the country, the Indian ryot is probably no slacker. According to his lights—and they are by no means as dim as they have been sometimes assumed to be, witness His Excellency Lord Willingdon's recent admission that the Indian cultivator's knowledge of his business is unexceptionable so far as it goes—the ryot is a hard, patient and persevering worker. But he is essentially a villager, with the easy-going instincts of one, and does not readily take to the conditions of life in a modern factory. Added to this is the fact that his highest ambitions are confined to his caste or group. Things will, no doubt, improve with the spread of education and of more expansive views of social and national life. There is already some improvement visible. It is, nevertheless, the case that in India a factory hand turns out on an average much less work than his *confrère* in European countries. It has been remarked by competent observers that a Lancashire mill-hand, for instance, does as much as four or five Indian mill-hands. The Chief Inspector of Mines in India in his last annual report gives the following averages as the output per work-

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extent removed, but the neglect of metalliferous minerals is as yet an outstanding feature of our industrial activities. The reason for this neglect, as has been repeatedly pointed out, lies in the fact that in modern metallurgical and chemical developments the bye-product has come to be a serious and indispensable item in the sources of profit, and the failure to utilise the bye-products necessarily involves neglect of the minerals that will not pay to work for the metal alone. It is in the field of metallurgical and chemical industries that Germany laid the foundations of her industrial progress, and now that she is out of the field and likely to be there for many years, the occasion is favourable for Indian industrial leaders, and the Indian Government, to make a determined attempt to develop metallurgical industries. It seems to me that the assistance of Government will be more useful and can be best afforded in respect of industries which are required to complete an economic cycle. Sir Thomas Holland in one of his illuminating quinquennial reviews of Mineral Production in India has given a striking description of the most important of such cycles. Sulphuric acid, he points out, is the key to most chemical and many metallurgical industries. "Although sulphuric acid and the alkalies are essential to so many other industries," he remarks, "the conditions of their profitable manufacture will balance the 'protective' effect of transport charges only when there is a market in the country for the bye-products which are now essentially parts of the cycle of operations in a chemical industry. These conditions, as shown by the import statistics, are rapidly ripening, but the enterprising capitalist should remember also that the present requirements of India represent but a fraction of the consumption that will follow any material reduction in prices by local production."

An Appeal

May I take this opportunity of appealing to the Indian public to pay more attention to industrial matters than it has done hitherto? I have already admitted that there has been some improvement in this respect. But mere sentimental expressions extolling the importance of industries are of little avail, though even they are of some use. What is wanted is more by way of practical demonstration. The experience of the Agricultural Department is that if a new machine, not beyond the means of the average cultivator, is actually shown to produce more satisfactory results than his ancient implements of husbandry the Indian ryot is not slow to take to it. In the same way, in the domain of manufactures also, demonstration will work wonders. We must be constantly dinging into the ears of the people the remarkable things they have been achieved in other lands, much less favoured than ours by the application of science to industry. The application of science to industry reduces, among other things, the disparity arising from muscular development between one race and another, and the disadvantages of climate. It is in fact a great leveller. But even more than to the ears, our appeal must be to the eyes of the people, because impressions gained through the eye are proverbially more potent than those derived by any other means. I strongly commend to the Conference and all friends of industrial advancement, the great importance and utility of holding exhibitions and industrial museums in as many cities as possible, to demonstrate to the public the vast possibilities of a combination

of science and industry. More than lectures and more than museums and exhibitions are of course the concrete examples of great industries raised and worked on the soundest lines. I have more than once in the course of my observations to day laid stress on careful and preliminary investigation by the best experts of the prospects of any industry which it is proposed to be started. Even if such an investigation leads to no results, it will be a valuable education not only to those actually concerned with it, but to a much larger circle of inquirers and students.

What is Nationality

And now may I conclude with a confession of faith? Every Indian worth his salt must ask himself "How best can I serve my country?" I have chosen the path of industrial development, because I am passionately convinced that it is to our industrial progress that we must look for the future regeneration of India. I am glad to find powerful support for this lifelong conviction in an article which was given the leading place in the January number of "The Edinburgh Review." There Mr. Alis Phillips made an interesting analysis of the constituent factors of nationality with reference to the general view that no settlement after the War would be lasting which did not rest on the principle of Nationality. He rejected one by one all the elements usually supposed to constitute nationality as non-essential, and fixed upon the community of economic interests as the starting point. "It may be said indeed," he wrote, "that this sense (a sense of community of material interests) is the strongest and most essential factor in the absence of which nothing else will serve to maintain a common sentiment. Any origin of common language and common tradition of culture will not avail to preserve the unity of a nationality when the material interests of its part come into violent conflict." More even than political rights whatever true Indian patriot longs for is the growth of an Indian nationality, firm and united in its love for and honour of the Motherland. The road to that nationality is economic progress.

Toward Home Rule

A country's position in the scale of nations depends chiefly upon its industrial development. For instance, Germany is what she is mainly owing to the great advance she has made in her iron, chemical and other industries, and it is in this direction that I trust that India will try to advance in the future. I am as ardent an advocate as any one inside or outside this assembly of an adequate share being given to the people of this country in governing themselves. I think everyone who helps to bring about "this consummation devoutly to be wished" is rendering not only a great service to his Mother country, India, but to the British Empire, whose honour and whose interests are bound up in giving India equal political and civil rights with her other children. India is now acknowledgedly the brightest gem in the Crown of England, and I have no doubt that the change in much-talked of "angle of vision" is bringing about a better claim to her recognition as a welcome member of the intimate family circle, with an established seat by the hearth. Cinderella is bound to come to Court at last. But she must get the right kind of horses to pull her coach and take her quickly to her proper place in the palatial family mansion perched upon the hill. It seems to me that up to now the only horse harnessed to the magic coach is "Political Aspirations."

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and though he is a good and mettlesome animal, I am afraid he is not powerful enough to pull the heavy load of our hopes and aspirations quickly enough to the top. But if we harness with him another horse, which, if not mettlesome and showy, is in my opinion more steady and powerful—I mean “Industrial and Commercial Progress”—I have no doubt that the coach will succeed in reaching the palace on the hill-top long before midnight. Both horses are well matched half-brothers sired by “education” out of different dams and warranted to move well in double harness. Personally I think that while one horse will by his showy action catch the popular eye, it will be the other who will go best up to his collar and do most of the pulling.

A Message

If, following an illustrious example, I may venture to give a message to this Congress, and through it to my countrymen, it is “Educate, Organise, Co-operate.” Scientific, technical, economic education is the function of the State, but we must take our share of the burden. If we really want higher scientific education and are determined to profit by it, we shall get it; we shall establish such an atmosphere of desire that it will irresistibly drive the chariot wheels forward. Organisation is our weak point, I have shown you that organisation is at the root of much of the successful industrial and commercial success of Japan and it is the foundation of Germany's industrial greatness; organisation, efficiency and thoroughness must be our watchwords. I assure you from the experiences of our own firm that once Indian capitalists give proof that they are in earnest, the active co-operation of the State is assured. When we are treading the industrial path we are walking hand in hand with the official class and when common ends are being pursued there is little chance of the differences of opinion that may otherwise retard progress.

Let no man leave this pandal under the impression that the path of industrial progress will be made easy by the War. The very destruction of capital which warfare on such a scale involves will stimulate the producer nations of the West to greater activity when normal relations are restored. But the War has given us our chance. It has given India a new place in the Empire and in the world. It has induced a closer harmony between Englishmen and Indians which will wax with the years, strengthen the bonds of that sympathy for which His Majesty the King Emperor has appealed, and tighten the spirit of co-operation which is beneficial to both peoples. If, placing our foot in the stirrup of opportunity and our hands on the reins of confidence in our destiny, we meet these conditions with courage, energy, thoroughness and probity, we shall win our place amongst the peoples of the world as surely as night follows day.

DRAFT RESOLUTIONS
RESOLUTION NO. 1

LOYALTY TO THE KING EMPEROR

This Conference, consisting of representatives of the Industrial interests of the land, begs respectfully to express its deep and abiding sense of loyalty to His Imperial Majesty the King Emperor and to assure the British Government of the active support and co-operation of all industrial classes in this great War and their readiness to bear any burdens for the sake of the Empire, realising that the peaceful progress of the country and its industries is dependent on the continuance of the British connection.

RESOLUTION NO. 2

TECHNICAL AND INDUSTRIAL EDUCATION

(a) Having regard to the fact that the progress and prosperity of every nation depends in these times on Industrial and Technical Education, this Conference earnestly recommends to Government the establishment of a technological faculty at principal Indian Universities and the development of the already existing Technical Institutions and the opening of new ones.

(b) Recognising that no system of Industrial and Technological Education, however developed it may be, can be successful without a sufficient encouragement being given to persons who have received such education, this Conference appeals to men of capital and industry to help young Indians, technically trained in finding practical work and employment.

RESOLUTION NO. 3

DEVELOPMENT OF INDIAN INDUSTRIES

This Conference desires to place on record its opinion that in as much as stimulation of old and fostering of new industries is highly essential for the greater progress of India, it is the duty both of Government and the public to encourage such an establishment and, while appreciating all that has been done by Imperial and Provincial Governments in this direction, recommends for the same the following measures:—

(a) Fiscal autonomy should be granted to India in regard to the levying of duties both imports and exports;

(b) Departments of Industries should be established in all the Presidencies and Provinces, wherever practicable;

(c) Industrial survey should be taken of industries possible to be developed in the country.

RESOLUTION NO. 4

COTTAGE INDUSTRIES

This Conference is of opinion that it is in the interests of the progress and well being of the country that efforts should be made both by Government and the public for the starting and reviving of various minor and cottage industries, which have proved so very helpful in the advancement of industries abroad.

RESOLUTION NO. 5

BRITISH CONSULAR SERVICE AND INDIA

This Conference is of opinion that Indian commercial attaches should be appointed to principal British Consulates to look after Indian commercial interests, and that standing museums of Indian products should be maintained at these Consulates and also at London. The Conference welcomes the creation of the post of trade commissioner for India in London and hopes that it will be a permanent one held by persons, preferably Indian, fully conversant with Indian Commercial and Industrial conditions.

RESOLUTION NO. 6

EXCISE DUTY

This Conference accords its warm support to resolutions passed at the previous sessions of the Indian Industrial Conference and by Mill-owners' Association and different public bodies praying for the repeal of the Excise Duty on cotton goods, which is an equitable tax on the indigenous industry, and considers it very desirable, in the interests of Indian industries, to levy countervailing duties against importation of bounty fed and protected goods from foreign countries.

RESOLUTION NO. 7

UNIFORMITY OF WEIGHTS AND MEASURES

This Conference approves generally of the report of the Weights and Measures Committee.

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tee appointed by Government and begs to recommend that Government will be pleased to take action on the suggestions made in the report to secure uniformity of weights and measures.

RESOLUTION NO. 8
RAILWAY RATES

This Conference respectfully draws the attention of Government to the prevailing complaints about existing Railway freights, and suggests that an inquiry should be instituted into their effect on indigenous industries, especially in their competition with imported goods from foreign countries, and further submits that the rates should be reduced where their effect may be proved to be injurious and in retardation of the trade of the country.

RESOLUTION NO. 9
INDENTURED LABOUR

This Conference tenders its respectful thanks to H. E. Lord Hardinge, Viceroy of India, for all he has done for Indian labour outside India and submits that, in the highest interests of the country, the system of Indian indentured labour is undesirable and urges its abolition looking to the highly injurious and immoral effects of the same, as revealed in the report issued recently.

RESOLUTION NO. 10
PURCHASE OF STORES

This Conference appeals to Government to purchase all their requirements as far as practicable from this country and to put their resolution of 1909 regarding the same more and more into effect.

RESOLUTION NO. 11
INDIAN STUDENTS ABROAD

This Conference, while recognising the efforts made by the Secretary of State for India for the better training of Indian technical students in England and on the Continent strongly recommends him to obtain apprenticeship for Indian students at such factories where Indian Government indents are placed.

RESOLUTION NO. 12

This Conference is of opinion that the following constitution as originally brought forward at the Madras Session and submitted to a Sub-Committee and amended by the Executive Committee of the XI Session should be adopted for the Indian Industrial Conference and thanks the members of the Sub-Committee for their work in connection therewith:—

1. The objects of the Indian Industrial Conference shall be attained:—

- (1) by the holding of an annual Conference on Industries and Industrial progress in India.
- (2) by the establishment of Standing Provincial Committees for the co-ordination of efforts directed to the promotion of Industrial progress under a Central Committee.
- (3) by the publication of periodical bulletins and reports on the work done and results achieved and by such other means as may be deemed advisable.

2. The Council of the All-India Industrial Conference shall consist of (1) the President of the previous Conference, (2) the General Secretary and (3) Treasurer of the Con-

ference and two representatives from each Provincial Committee and the duty of carrying on the work of the Conference shall vest in the said Standing Committee, who shall be placed in possession of funds for the purpose in accordance with these rules.

3. The All India Council and Provincial Standing Committees may recognise other organisations sympathising with the object of the conference on payment of an annual fee of Rs. 10, and thereupon the said institutions

shall be entitled to elect Delegates in such numbers and such manner as may be decided by the Council to the Conferences held by the Provincial and All-India Committees. That the Provincial Standing Committees may arrange for the holding of provincial and District Conferences and the publication of their reports and also for the holding of exhibitions from time to time.

4. That half the amount of the delegation fees shall be placed at the disposal of the All-India Council for carrying on the work now being done by the Secretary on behalf of the Conference and that further amounts may be similarly raised, whenever necessary.

5. That a duly audited account of the monies received and spent by the All India Council shall be rendered by them at the annual Conference, which, after adoption, shall be published.

6. That the business of the All-India Council may, if necessary, be transacted by correspondence and by a majority of votes recorded in each case.

7. That the work of holding the annual sessions of the Conference and the exhibition, if any in connection therewith, shall be performed by Reception Committee organised annually by the several Provincial Committees of the Provinces where the Conference is to assemble.

8. The headquarters of the Indian Industrial Conference shall be at one of the Presidency towns to be fixed by the Conference.

9. The All-India Council shall be responsible for the publication of the annual report of the Conference.

28-12-15

DEPARTMENT

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