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[Despatch Abstract.]

Indigenous Industries

Recording, with remarks, a Memorandum
the encouragement of — in India
Mr Chatterton.

The Notes
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ORIGINAL

G.O., No. 40, 24th January 1901.

JANUARY.

Indigenous Industries.

Recording, with remarks, a memorandum on the encouragement of — in India by Mr. Chatterton.

GOVERNMENT OF MADRAS.

EDUCATIONAL DEPARTMENT.

READ—the following paper :—

From A. CHATTERTON, Esq., B.Sc., Officer in charge, Aluminium Department, School of Arts, to the Director of Public Instruction, dated Madras, 15th December 1900, No. 4981-A1.

I have the honour to forward, for the information of Government, a copy of a memorandum I have prepared on the encouragement of indigenous industries in India at the request of Sir Edward Law, to whom it has been sent.

ENCLOSURE.

Memorandum on the Encouragement of Indigenous Industries in India.

The Government of India, I understand, are anxious to render such assistance as is in their power to encourage a revival of the indigenous manual industries. To this end they are willing to provide funds to the extent of four or five lakhs of rupees and to entrust the expenditure and control of this money to a specially selected committee, in whom absolute confidence will be placed that the experiment, for such it must be termed, will be conducted with discreet enterprise and in the way best calculated to afford the greatest prospect of a successful issue. It is thought that, properly organized and skilfully directed, the cheap labour of the millions of India may find profitable employment in the manufacture of articles of commerce which for various reasons are still produced by manual labour, and that, as such forms of industrial enterprise offer little attraction to the ordinary capitalist, Government intervention is desirable in the interests of the workers themselves. Hitherto the policy has been to studiously avoid any course of action that could be regarded as inimical to the perfectly free development of private trade, and the result has in certain directions been far from satisfactory. The capitalist has developed the fields in which capital could be most profitably employed and all his efforts have been concentrated on the saving of labour in manufacturing operations, and the proportion of the population which look to the soil for the means of subsistence has steadily increased in consequence of the success which he has achieved. The old arts of India have gradually deteriorated in competition with the outturn of the modern factory system, and the middleman, through whom all the trade has of necessity passed, anxious only for his immediate profits, has done nothing to assist the artisan but rather the reverse, for by encouraging the production of cheap inferior work he has gradually destroyed the high estimation in which the hand work of India was formerly held. It is now proposed to change this policy of inaction and to take active measures to better fit the artisan of this country to meet the stress of Western competition. He is to remain a hand worker, but his rude hereditary skill is to be trained and developed, he is to strive no longer to compete with machinery but his energies are to be directed into channels where machinery is of little use and he is to be supplied with good tools and taught methods of production in which advantage is taken of our increased knowledge of the properties of matter. He is to be supplied with the best raw materials purchased in the cheapest market and the finished work is to be sent direct to the places where it will be found to be in ready demand. In fact, instead of leaving him severely alone, the highest technical skill and the keenest commercial intelligence are to be devoted to his service in the hope that gradually a new condition of affairs will be brought about and a prosperous and flourishing artisan community established.

In carrying out what is partly an educational and partly a commercial scheme, it is desirable that the action of Government should as far as possible be confined to the educational work and should only be extended to commercial matters in so far as it is necessary to ensure complete efficiency in the exercise of their proper functions. Dealing with the matter in its broadest aspect, it is proposed to establish what in reality are industrial schools, to give the best available instruction in the industries carried on in the neighbourhood, to collect in these schools certain members of the artisan classes who are already experts at the trade in the local estimation, to train them to work with better tools and consequently greater efficiency, and, above all, to practically demonstrate to them the directions in which they can most profitably employ their labour. To do this satisfactorily a comparatively large amount of work must be done and a market must be found for the goods manufactured. To work on a small scale would be of little practical use and would prove exceedingly expensive. Not only is it necessary to raise the standard of industrial skill and provide efficient instructors, but above all things it must be demonstrated that under the new conditions the industry or industries can be made to pay and will yield to the artisans a better wage than they have ever before received. With the exception of the general charges due to the employment of an expensive directing staff these industrial institutions must be made to pay their way and yield a fair return on the capital invested in them. Unless this result is achieved, private enterprise is hardly likely to be attracted into channels which Government, with all its resources, cannot work on a profitable basis. The difficulties that will be met with in carrying out this scheme will resolve themselves into two groups—(1) those connected with the development of the Indian hand industries on modern lines but in sympathy with the poverty of the workers and their very marked idiosyncracies; (2) those attending the disposal of the manufactured goods in such a way that the consumer shall not pay an undue proportion of the total cost of an article to the salesman or agent. The former group do not appear to be very serious and already there is a large amount of experience available throughout the country which could easily be obtained for the guidance of the managing committee, should that body ever obtain a corporate existence. The commercial difficulties on the other hand are the crux of the whole matter, and even a partial solution of them would probably lead to an industrial expansion in India which would materially contribute to establish her prosperity. Exports from India must always be greater than imports, and the rapid increase in the population is gradually absorbing the surplus of raw materials which at present forms the bulk of the outward trade. It is desirable that the raw materials in the country should be converted into finished products in the country and their value enhanced by the expenditure of labour upon them. In this way both exports and imports will be increased in value and the foreign trade will measure the commercial activity of the Empire. On the other hand, the country may be made to supply its own requirements and the internal trade fostered at the expense of the external. Hitherto this has not been largely done and mainly because, in the absence of protective tariffs, it has been very difficult to set up an industry against the competition of the highly organized and splendidly equipped manufactories of England, America and the Continent. The United States of America and Japan afford excellent examples of what can be done in this direction under initially adverse circumstances. Protection of home industries has been the key-note of their policy, and it would be an easy matter to follow in their footsteps if such a remedy were possible in India. It is true that local manufacturers enjoy the advantages due to freight on imported goods and a five per cent. duty on the bulk of the imports, but the assistance is not sufficient. Government is by far the largest importer of manufactured goods and by far the largest purchaser in local markets. Of late years a more favourable policy has been adopted towards country-made goods and the effect has been satisfactory, but much more might yet be done to encourage the investment of capital in industrial undertakings in India. The iron trade is probably the most important industry which can be established in any country, and in India abundant stores of the raw materials are known to exist though unfortunately they are not favourably situated. Much has been written about this trade, many projects have been mooted, but, with the single exception of Barakur iron works in Bengal, nothing practical has resulted. The old native iron trade was very important, and

there are some who yet believe that it might be resuscitated if efforts were made to place at the disposal of the iron smelters the results of modern advances in chemistry, physics and mechanical knowledge. How this could be done is a question which might well be discussed when considering in what way Government can contribute to the advance of industrial progress.

Passing from the general aspect of the question to the consideration of how effect can best be given to the wishes of the Government of India, I regret that my scanty knowledge of the conditions under which village industries are carried on in most parts of India renders it impossible for me to contribute any information which is likely to be of practical value, except in regard to the results of my experience in the Madras presidency where for the last fifteen years some attempt has been made to foster and encourage industries somewhat in the manner it is now proposed should be adopted throughout the country. I have read certain papers and letters written by Mr. S. J. Tellery, in which he claims that his firm has met with considerable success in selling the products of Indian handicraft in America and London and states that he could do an enormously greater business if he had more capital invested in it. In his final proposal he suggests that, if Government will undertake to get goods manufactured, he will find a market for them *at his price*. I am very nearly certain that the *limits* of cost fixed by Mr. Tellery would be such that the goods would have to be sold to him at a loss, and that gradually the initial capital provided by the Government of India would melt away and nothing tangible would be obtained in exchange. It is suggested that $4\frac{1}{2}$ lakhs of rupees should be devoted to opening up a trade in certain industries (five in number). As Messrs. Tellery & Co. would pay for the finished goods by drafts at six months, either these would have to be discounted at a heavy loss or the capital provided would not permit of a turn over of more than 7 lakhs of rupees per annum. An average outturn of Rs. 60,000 per mensem would mean that Rs. 3,60,000 of the capital were in the hands of Messrs. Tellery & Co. and Rs. 90,000 only would be available for the industry. Looked at in this light it is obvious that the scheme would benefit no one but Messrs. Tellery & Co.

I have formed no very strong opinion on the point, but so far as my own experience goes I am not inclined to think that very much can be done by Government to establish an export trade.

The Indian hand industries are all in a more or less decadent condition and any serious revival will take many years and must be a gradual process. Skilled workers, whether in wood, metal or the textile trades, are commercially not very numerous and additions to their numbers can only be made very slowly. I would, therefore, begin rather by attempting to supply local demands, and only when some measure of success has been attained in this direction do I think it would be desirable to extend the field of operations and attempt to establish an export business.

To manufacture in India goods which are now imported into the country will have the same effect on the balance of trade with foreign countries as to manufacture goods for export. The difficulties connected with the attempt to resuscitate the native hand industries are likely to be so very great that it would seem to be desirable to adopt a line of policy which would not involve placing the proposals at the mercy of middle-man or as an alternative the creation of an expensive staff of commercial correspondents and foreign agents. Export trade from the outset must be on a comparatively extensive scale; a home industry with a local market on a much more satisfactory basis can be worked with limited means and with much greater chances of success and much less risk of loss.

Cottage industries flourish in the silk districts of France and in the mountainous region of Central Europe for very special reasons, but the efforts made to establish similar industries among the poor peasantry of Ireland or the cottars of the Western Highlands have not met with much success although there is a market near at hand and much influence has been exerted in their favour. India is in my opinion too far away to hope to achieve any success in those textile trades where hand work is employed on account of the frequent changes which must be introduced into the patterns to obtain any continuous demand for the fabrics.

Into Madras alone upwards of two crores of rupees worth of piece-goods are annually imported, and it seems to me a much more hopeful matter to try and regain the local market in cotton fabrics than to attempt to create new markets in distant countries. It is easy to find out what is wanted, and the price an article will fetch is well known. Of the amount paid by a purchaser in England for anything of Indian manufacture probably less than half goes to pay for the materials and labour, the rest is swallowed up in interest on capital, freight, insurance and the profits of middle men or commission agents. In India from 10 to 15 per cent. will suffice to cover all these charges.

I fully recognise that there is an export trade in hand-made goods from India which may be greatly increased, but I do not think that the intervention of Government in the matter would do any good. The European and Native mercantile community are keenly alive to their own interests, and if anything is to be done by Government in this Presidency, it must be by developing the work of the industrial and technical schools which have been established of late years, some by Government, some by district boards and municipal councils and others by missionary bodies. For a long time they were regarded as institutions for providing an elementary training in various industries, and, as such, did good work though they had no appreciable effect on the artizan classes. Now, however, the principles upon which they are managed are changing and more attention is beginning to be paid to the improvement of the skill of the artizans. This necessitates working on a much larger scale and with an outturn of finished goods which requires that special arrangements should be made for their disposal in suitable markets. As yet little has been actually accomplished, but we are working with a fairly definite object in view and in time the results will be considerable.

For the last twelve years I have at irregular intervals inspected these schools for the Educational department, and during the last three years I have been in charge at times of the whole of the School of Arts in Madras and at times of only part of it. In November 1897 I commenced some experiments on working in aluminium, and in April 1898 I started a special department of the school to carry out the work on an avowedly commercial basis. A brief account of the origin and aim of this department and of the methods employed in developing it may possibly prove a practical and therefore useful contribution to the discussion, the more so as it has proved to some extent successful.

In 1891 I made certain proposals to the Madras Government for the utilization of water power in the manufacture of aluminium, and they were referred to the Secretary of State who appointed a committee of experts to report on them. The committee presented a report and this was published and the matter left to private enterprise. Whilst at home on furlough in 1897 I took the matter up again, and from the enquiries I made it seemed evident that nothing would be done in India unless a local market for the metal produced could be found in the country. I therefore proposed to the Director of Public Instruction to make some attempt in this direction through the medium of the School of Arts in Madras and the Madura Technical Institute, in both of which there were metal-work classes and competent maistries in charge of them. No great difficulty was experienced in manipulating the metal, and from the outset all the work done was sold, but at first it was very rough and deficient in finish. Coppersmiths and bell-metal founders were employed and the indigenous ways of working were adopted. Very slowly and at convenient opportunities changes were made and improved methods of working introduced, the benefit of which the workmen themselves recognise and appreciate. The metal-workers of Southern India are a skilful lot of men, but they were slowly being pushed on one side for want of technical assistance by the productions of metal factories of Western India where drawn and spun work was turned out. We can, I think, fairly claim to have arrested this decline and to have placed the hand-metal workers of Madras on a better footing than they have ever before enjoyed. My idea at the outset was to introduce aluminium in place of brass, copper and tin and to some extent this has been done, but in actual fact the bulk of our work has been such as to displace imported goods and the aluminium industry has affected the imports of enamelled ironware and tin

goods to a much greater extent than the imports of raw brass or copper. The most encouraging feature of the situation is the fact that we have more than held our own against aluminium manufacturers in Europe and America. Our export trade so far is very small mainly because no serious effort has yet been made to find markets other than those around us, but we have supplied orders from England, Australia, Cape Colony, Uganda, Persia and the farther East. I have always regarded the Indian market as that to which the whole of my attention should be paid, and I am certain that when that has been properly opened out the export trade, especially to the Straits Settlements, Java, China, Japan and Australia, will be a natural sequence. With ten times our present consumption of aluminium it would pay well to manufacture the metal in India, and that would mean a saving of imported metal to the extent of at least fifteen lakhs a year. India now pays more than two crores per annum for imported copper, brass, tin and zinc, and the evidence before me points to the fact that, without being very sanguine, we may expect internally produced aluminium to displace at least 25 per cent. of these metals. An industry of this magnitude will command a good deal of capital and part of it will, in the natural course of events, be devoted to the opening up of foreign markets. At the School of Arts we started the aluminium industry without any clear idea of what would happen. It was an experiment and the results have led us to work in directions originally never contemplated. Private enterprise has been encouraged to the fullest extent possible, but our start was so great that no rivalry of any kind has yet sprung up, and the assistance we render to these infant undertakings is far more important to them than are the ill-effects of the competition they have to endure. The market is so enormous and so little has as yet been done to secure it that every addition to the number of firms engaged in the trade strengthens the position of the whole trade.

The most important conclusion that this aluminium venture has demonstrated is this, that if Government through industrial schools want to raise the status of the Indian artizan, they must be prepared to work them on a sufficiently large scale to be able to supply any equipment or machinery that experience may show is desirable and to be able to give the men employed in them practical training in every branch of the trade. If in an industrial school better work is not done than anywhere else in the neighbourhood the *raison d'être* for its existence disappears and the sooner it is closed the better. In this instance our difficulties were wholly outside the school. We could have done much more than we have done, but the opening out of the markets for the sale of our manufactures has proved a slow and tedious business. However what has been accomplished is of permanent value and would grow of its own accord though we shut our doors. The sales in the School of Arts since work was first started have been as follows:—

										Rs.
1898	..	..	..	..	..	..	..	..	..	30,000
1899	..	..	..	..	..	..	..	..	..	92,000
1900	..	..	..	..	..	..	..	..	..	1,50,000

* Nine months only.

Besides this the outturn of other factories is increasing in an even greater ratio, and there is no doubt the progress would have been much more rapid had it not been that for the last twelve months high prices for food stuffs have greatly diminished the spending power of the middle classes. It will be generally admitted that a Government factory can never be run so cheaply as one under private management, yet, owing to the fact that we were pioneers in a new field, we have been able to make a very considerable profit. On the 30th of September our accounts were made up and our stock valued and it was ascertained that from the beginning there was a surplus profit of Rs. 25,000. So long as we can run at a profit it is pretty evident that private enterprise has not been firmly established. Practically the controlling factor in the price of aluminium goods in India is the rate at which English, American and more particularly German firms can sell and on the whole we have succeeded in keeping them out of India.

In regard to private enterprise the question has naturally received serious consideration as to how far it is justifiable to carry on the commercial development of a department of a Government institution. To maintain an efficient industrial school

a certain minimum outturn is necessary and that amount of work must be done and placed on the market for sale. The aluminium department of the School of Arts now forms part of the school of metal-work, and so far as I am able to judge at present a turn over of about 4 lakhs a year will be sufficient to make the school a successful training institution, and, instead of arbitrarily closing the school or allowing an indefinite development of its business to take place, I think it will be feasible to put a limit on its output and to decline any further business. In this case we should first abandon retail transactions, then close our agencies and finally only do so much wholesale work as with Military and Government orders will maintain our output at the amount necessary to keep up a high practical standard of efficiency as an industrial school. The most important part of our work now is the encouragement of private enterprise in the trade. With the funds placed at my disposal by the Madras Government I am able to keep in the country large stocks of suitable sizes and sections of metal, and I am able to buy them at favourable rates. These are sold in small quantities and often on credit with the result that people starting in the industry enjoy in this direction all the advantages of a large capital. From us they get most of their workmen, and the workshops of the school are open to their inspection at any time, and any improvements we may introduce in the way of working or new designs for vessels or other articles are always communicated to them so that they may enjoy any benefit to be derived from them. Personally I have found no serious difficulty in carrying on this work under Government control. It has added materially to my correspondence and establishment questions have sometimes been a source of trouble, but in the management of the workshops and the expenditure of funds I have been allowed a very free hand, and I am convinced that the Government of India will have to adopt a similar policy with regard to the person to whom they may entrust the carrying out of any scheme they may finally decide upon.

Nearly a year ago the Secretary of State accorded sanction to a proposal of the Madras Government that I should be placed on special duty for three years to initiate measures for furthering the progress of technical and industrial education in the presidency. Although I have not yet been relieved of my ordinary educational work, I have during the past year availed myself of such opportunities as presented themselves for making enquiries and drawing up a preliminary programme. The School of Arts is a convenient centre for such a work and circumstances have so shaped themselves that early in the new year I shall, temporarily at any rate, be in charge of the whole school and it will then be gradually remodelled on lines which I will briefly describe as embodying my ideas for carrying out the wishes of the Madras Government. There will ultimately be four departments of schools each under the charge of a qualified assistant—(1) Art, (2) Metal-work, (3) Wood-work, (4) Textile fabrics and there will also be a fifth branch devoted to miscellaneous industries and experimental work.

The first section will deal with fine art and will be under the superintendence of a trained artist. Commercial considerations will in no way enter into the management of this branch, and beyond the fees paid by students the funds for its support will be provided entirely from the educational budget. All the industrial pupils and apprentices will attend suitable courses of instruction in drawing, and special provision will be made for such of them as show marked artistic talent. Indian art industries flourished in the past and under sympathetic and critical supervision I see no reason why they should not be revived. At present I propose to try the experiment of placing this department under the Assistant Superintendent of the School of Arts who is a native—an artizan by caste—of great originality and talent.

The school of metal-work is already in existence and has for some time past been under my charge. The aluminium work dwarfs the rest for the time being, but I am endeavouring to secure sufficient work in brass, copper and other metals to provide adequate means of training artizans. Madras repoussé work, which was brought prominently to notice by Mr. E. B. Havell, now the Superintendent of the School of Arts in Calcutta, is very good and we have a lot of it on hand though no orders for it. I hope to be able to send some of it to England, and I think that a small but

steady demand for it might be secured if we can only maintain a sufficiently high standard of artistic excellence. At present I cannot help feeling that there has been considerable deterioration during the few years that have elapsed since Mr. Havell left Madras. So far as I am able to judge the natives here show skill in modelling which promises to come to something if suitable instruction can be provided, and I have been for some time experimenting in a small way with bronze casting. As yet I cannot say much for the work, but I am hopeful that in time we shall be able to turn out work which will fetch good prices anywhere. Of utilitarian work we have plenty in hand and are gaining experience which should enable us in time to oust from the Indian market the not inconsiderable quantity of brass and gun metal that is now imported for engineering work. Cocks and valves and water-supply fittings are largely used out here and are almost all imported, and I am sanguine that with suitable machinery we shall be able to train men to do equally good work in this country and at prices which will pay. In this and other similar directions an enormous impetus would be given to local industries if the Government of India could see their way to issuing orders that the public works in this country are to be carried out with locally manufactured stores whenever it is possible to do so. At first the expense may be slightly greater and the work perhaps not so good, but still it will be good enough, and in time there is every reason to hope that these disadvantages will gradually disappear. I am strenuously endeavouring to avoid taking work which can be equally well done elsewhere, and so far as I am able to judge the metal work department has in no way interfered with private enterprise. As an example of what we are doing in one direction in a small way I may cite the manufacture of copper stamps and dies for printing trade marks on piece-goods. These have always hitherto been procured from England but we can make them out here without difficulty and equal in quality to those imported. To the managers of weaving factories this is a great advantage as the delay in sending Home for them is a serious matter. In this department the most important matter for future consideration is the resuscitation of the native iron industry. To go into details would be a very lengthy matter and I would only now state that I think a few thousand rupees might be judiciously spent on the experimental manufacture of high quality iron and steel on native lines but with such simple and comparatively inexpensive improvements as would suggest themselves to any engineer who takes the trouble to study the indigenous metallurgical process. No great industry, I am certain, could be established on these lines but a certain amount of success would encourage further efforts and from simple beginnings I think we are more likely to ultimately attain large results than from the adoption at the outset of the huge scale of working in iron which prevails in Western countries. At any rate by beginning at the very bottom and proceeding step by step no expenditure need ever be incurred without previous experience to completely justify undertaking it. The manufacture of high class steel suggests the possibility of making knives and tools and the success which the late Arunachellum of Salem achieved in this direction might again be repeated and on a much larger scale. In silver work and jewellery nothing needs to be done as such firms in Madras as Messrs. P. Orr & Sons and Runganatha Tawker & Sons and in Bangalore as Messrs. Barton Son & Co. have already attained a pre-eminent position throughout India. In the development of this department modern tools and machines must be employed as I am convinced that the full value of the skill in hand metal work of the Madras artizan can only be obtained when it is supplemented by suitable mechanical aids. My chief idea is to try and make in Madras the articles which are now imported, and I feel certain that if we attain any measure of success in this direction private enterprise will take the matter up and will do anything there is to be done in the way of export trade. The aluminium industry must necessarily occupy most of our attention for a year or two, but when it becomes evident that we are hindering rather than helping the growth of private business it will be easy to gradually turn to some of these other branches of metal trade which I have mentioned and find out what can be done to improve them.

The wood-work has been a separate department of the School of Arts for many years and from time to time many excellent specimens of art furniture have been exported. It is now in a very decadent state, not so much because the artizans have

deteriorated in skill as that there has been no one competent to furnish good designs. If these can be procured or the services of a competent English art furniture designer engaged it is not improbable that a very large foreign business could be gradually built up. A serious difficulty in the way is the lack of good timber in the Madras market. Practically there is nothing but teak (*Tectona grandis*) and blackwood (*Dalbergia latifolia*) available, and the bazaar supply is always unseasoned. I have made furniture for my own use with several other timbers with satisfactory results and there is no doubt that many others could be procured which would be serviceable. There is no doubt, however, that the Indian cabinet-maker will always have to work at a great disadvantage in respect to the timber which he can use unless it became possible to import timber from other countries. Some experiments in this direction would be of great value. I do not anticipate that there would be much trouble in securing a foreign market for almost any quantity of Indian work if the difficulties I have mentioned can be surmounted. Every year a certain amount is sent to England and the quantity would increase rapidly if the cabinet work were better done and the carved ornamental work more sparingly applied. It is perhaps questionable if modern tastes in the matter of furniture have improved, but if business is to be done and an industry created, these things must be attended to. Undoubtedly the best productions of the School of Arts have been combinations of wood and metal work and it was unfortunate that the huge show cases made last year for the Paris Exhibition were such crude examples of Madras joinery and wood carving and that the opportunity was not availed of to produce something fairly representative of the state of these industries in the country. In other parts of the Presidency, as Madura, Mysore and Vizagapatam, there is much available skill in wood work and the carved tables of Madura, the sandalwood boxes of Mysore and the fancy inland work of Vizagapatam are well known and the dealers export considerable quantities. Whether any thing could be done to improve matters I do not know, but the artizans are badly off and with the trade in the hands of dealers they get few opportunities of doing good work. The value of collections in museums is often doubtful, but I am certain that if it could be arranged to form a commercial show-room in Madras and that if Government could provide sufficient funds to give commissions for the manufacture of some of the best and only the best examples of native art, wood and metal work, and place them on public view, they would help to bring out the latent resources of the country, and if they were sold whenever any one desired to purchase them it would be possible to go on giving out such commissions indefinitely. Eventually the difficulty would probably be to keep a sufficient stock always on hand if only the best work was allowed to be exhibited. Occasionally I have seen fine specimens of native work and I know they have always fetched good prices; often I have been asked if such work could be purchased, and it is simply the delay and worry attending the advance system that has prevented a good many orders from being given to artizans for high class work. If a large collection of the best native art work were made under Government direction and if it were widely known that everything was for sale, there is every reason to believe that it would be patronized by the class of people who spend money on such things. Undoubtedly either Bombay or Calcutta would be a better centre than Madras for the display of such collection and a little attention to the details of packing and forwarding the goods to Europe would greatly add to the prospects of doing business. Some time ago I put forward a proposal of this kind on a smaller scale for the benefit of the industrial schools of the Madras Presidency and it received the sanction of Government, but hitherto nothing has been done to give practical effect to it. The institution of such a commercial show room would in no way interfere with existing private enterprise and might, I think, do much to take the place—long vacant—of the wealthy people of the country who formerly fostered the arts we so much admire. Two or three lakhs of rupees judiciously spent in various parts of India would form a fair collection to start with and though I am not sanguine that from the outset it would pay its expenses, yet in the long run I think it would and might ultimately prove the means of doing more for Indian art work than any measure that could be devised. The highly skilled artizan does not understand how to dispose of the products of his labour and the dealers and middlemen take advantage of this and prevent him from doing his best and force him to turn out what is cheap and inferior.

The State might justly intervene and give the men a fair chance and show them that manual skill and artistic ability can command at least as fair a reward as the mediocre talents of the average clerk or subordinate official. It must be recognised in these days when the mechanical arts have reached such a high degree of perfection that manual labour can only be profitably employed in such directions as machinery cannot reach, and that when it is applied to art and decorative work a man must always be doing his best or his productions meet with no appreciation and are compared unfavourably with those of the factory.

Beyond the setting up of a few carpet looms in the School of Arts, no attention has ever been paid to the textile industries. Weaving is the most important of all the indigenous industries, and though it has suffered severely from the competition of imported piece-goods and the production of the weaving sheds attached to many of the cotton mills, yet it is by no means in a very bad state. The fine fabrics must all be made on hand-looms and the depraved condition of the weavers is due to the fact that the wealthy classes no longer use or buy so many fine cloths as they did formerly. I have no technical knowledge of weaving, and I am unable to say with certainty that anything can be done to improve the status of hand weavers. It has occurred to me, however, that the European hand-loom might with advantage be used for much finer counts than is customary in this country, and I have lately, with the assistance of Mr. J. P. Lewis, the Deputy Superintendent of the Chingleput Reformatory, started some experiments in this direction. Shortly I propose to set up some looms in the School of Arts and to make an attempt to produce piece-goods of the type now imported in such large quantities. This will also necessitate dyeing and printing, and I hope that the earlier experiments will prove sufficiently successful to justify an application to Government for the services of an expert from home. If, in other parts of the world, there is any demand for cotton fabrics of higher quality, there would not, I think, be any difficulty in meeting it, as the native weavers retain all their old skill and only complain of the few opportunities they now get for exhibiting it.

The development of the industries and the improvement of the condition of the weaving artizans is, I recognise, by far the most important part of the work that Government can undertake through the medium of its technical and industrial schools. Both in cotton and silk spinning and weaving as conducted by natives requires to be carefully studied in every branch, and it is possible that improvements might be effected in many details which it would be quite within the range of the weavers to adopt and which would enable them to earn a fair living in competition with machinery. Unfortunately in our industrial schools weaving, although largely taught because it is a paying trade to a school, has been entirely left to native maistries who, for all that they know of the trade that is not purely indigenous, are indebted to the Basel Mission establishments on the West Coast. In industrial education in the South of India enterprising missionaries have always taken the lead and that they have succeeded to the extent of making their communities self-supporting and have contributed materially to raising the social status of the Native Christians. The market for hand-made cotton goods of the commoner soil is ready at hand and will easily absorb the whole production of the country at a price. The problem in this case is to render native labour more efficient, so that it may produce at the price and regain the enormous trade lost to Manchester. From this account of what is being done and what it is proposed to do at the School of Arts it will be seen that I consider that the successful revival of native industries is more likely to be accomplished by endeavouring to supply the local requirements and by developing the internal trade of the country than by seeking to establish markets abroad. That I think should be almost entirely left to mercantile men, and I am certain that if the flood of imported manufactures can be fairly stemmed in any trade or branch of a trade it will not be long before the ebb sets in and the foreign markets will feel the effects of Indian competition. The hand labour of India is a most valuable asset if full use is made of it, but it must be remembered that in the open markets of the world Japanese and Chinese competition have to be faced and in many ways the advantages are with them. The expenditure of a few lakhs of rupees will not revive the Indian industries that are suffering from competition with the West, but judiciously spent it should serve to bring out the latent skill and capacity of the people in those branches of handicraft that

have become hereditary occupations in the most rigid sense. In Madras industrial schools did little good except to Native Christians till the attempt was made to supply the deficiencies of the caste people, and though but little has so far been done, yet that little is full of promise for the future. In this Presidency the existing machinery for industrial education offers facilities for industrial experiments which, I think, it would be better to make use of than to create an entirely new organization under a committee well provided, though it might be with funds. For other parts of India I cannot speak, but I feel certain that, in my present position, I could in a comparatively short time and with only a small amount of capital arrange to supply export dealers with any quantity of stuff they could find a market for outside India, provided a fair price is paid for the labour and material employed. I have never come across any evidence which would lead me to think that there is any possibility that Government can materially assist in providing the people of India with work except upon lines such as I have endeavoured to sketch. The development of this system is much retarded by the direction being in the hands of men who, however capable they may be as Educational officers, have no technical knowledge and are generally completely out of sympathy with the commercial spirit. Everything is referred to committees for report, and compromises are devised from the conflicting opinion which are offered. No merchant could conduct his business on such lines and it would, I think, be a move in the right direction to make a separate department of technical and industrial education. Whilst local interests are best developed by leaving the control of them to the Provincial authorities, yet I am inclined to think that it would probably save much useless expenditure and enable the Government of India to render more effective aid to the different parts of the country if an officer were appointed to exercise a general supervision over all the work. In technical and industrial education very little experience is available, and what has been accumulated is to a large extent hidden away. A central authority would know what is being done in every part of the empire, and the records of successes and failures in one part would be in his possession to be communicated to other provinces as occasion might arise. In general education we are able to utilize the experience of Western nations and the same sources of information are open to all; but in industrial matters there is nothing to guide us, and the problem of how to provide India with a system of technical and industrial education suited to her needs must be solved from within.

SCHOOL OF ARTS,
15th December 1900.

(Signed) A. CHATTERTON.

Ref. on C. No. 16298.

Submitted to Government.

(Signed) G. H. STUART,
Director of Public Instruction.

24th December 1900.

ORDER—No. 40, Educational, dated 24th January 1901.

Recorded.

2. The Government has read Mr. Chatterton's memorandum with much interest.

(True Extract.)

M. HAMMICK,
Ag. Secretary to Government.

To the Director of Public Instruction.

Revenue Dept.

Ed. W. D'Moss.

EDUCATIONAL DEPARTMENT.

NOTES CONNECTED WITH G.O., No. 40, EDUCATIONAL, DATED
24TH JANUARY 1901.

*From the Director of Public Instruction, Ref. on C. No. 16298, dated 24th
December 1900.*

[SUBJECT.—*Indigenous Industries.*]

Mr. Chatterton has written a note which should be of great value to the Committee at Calcutta. It is a most sensible and excellent contribution to the literature on this subject.

Honourable Member and Circulate.

M. HAMMICK.
15-1-01.

We might add: "The Government has read Mr. Chatterton's memorandum with much interest".

A. T. A[RUNDEL].
16-1-01.

H. M. W[INTERBOTHAM].
16-1-01.

A[MPHILL].
21-1-01.

Please let me have these papers back to read at leisure after the issue of the Government order.

A[MPHILL].

Better print the Government order and then let His Excellency have a copy.

M. HAMMICK.
24-1-01.

The Government order has been printed. A copy of it may now be submitted to His Excellency.

P. T. THARYAN.
11-2-01.

A. T. PRINGLE.

Private Secretary to His Excellency the Governor u.o.

Thanks.

A[MPHILL].
16-2-01.

Educational (190⁸) Department.

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SUBJECT.

*Submitting for the information of Government a
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indigenous industries in India by Mr. Chattopadhyay*

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T

The Secretary to Government,
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Sir,

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24 190

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[We might add]

The Govt has read Mr
Chatterbox's Memo ^{cautiously} with
much interest. ~~A~~

22

7.19
12-1-01

To The D.P.G. 85/62

Mr Chatterton has written a note
which sh^d be of great value to the
Committee at Calcutta. It is
a most sensible and excellent
Contribution to the literature on
this subject. 1

PM

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