



WORKING PAPER

Working Paper No.99
State Intervention in Industrialization
Case Study of the Madras Presidency
South India

by
Padmini Swaminathan

MADRAS INSTITUTE OF DEVELOPMENT STUDIES
79, SECOND MAIN ROAD, GANDHI NAGAR, ADYAR
MADRAS 600 020

Working Paper No.99
State Intervention in Industrialization: A
Case Study of the Madras Presidency
South India

by
Padmini Swaminathan

Madras Institute of Development Studies
79, Second Main Road, Gandhinagar,
Adyar, Madras 600 020

January 1991

Acknowledgements

This is part of an ICSSR funded study on the Growth of the Corporate Sector in the Madras Presidency. This paper is a substantially revised version of the paper presented at a Seminar on south Indian Economy c1914-c1945 held at the Centre for Development Studies, Trivandrum, from April 25-27, 1988. I am extremely grateful to the library, Research Officer and staff of the Tamil Nadu Archives for their cooperation during the collection of materials from the Archives,

R.Sumathi who assisted me in the collection of material from the Archives,

S.Ambirajan, C.T.Kurien, S.Neelakantan, M.S.S.Pandian Nirmal Sengupta and Nasir Tyabji for their comments and suggestions,

C.Narasimhan who patiently typed several drafts, and V.Mohan for the cyclostyling of the paper. Needless to add I alone am responsible for whatever errors of omission or commission that still remain.

State Intervention in Industrialization: A Case Study of the
Madras Presidency (South India)

At the macro level the role of the colonial state in the economic development of the country has generated a fair amount of literature. Defenders of the British Raj emphasize the benevolent impact of the colonial rule on the Indian economy namely, the growth of the modern sector, the development of factory industries, the expansion of commerce, and the inheritance of some basic prerequisites for development - rudimentary education, western technology, concept of law and the foundations of a civil service, irrigation and railways. Critics on the other hand have emphasized not only the quantitative insignificance of these growth phenomena and their limited impact on the rest of the economy, but, more important have raised the issue of the character and origin of the specific features of underdevelopment in colonial economies like India - features which continue to inhibit growth.¹) The debates also recognize the limited value of all-India generalizations (given wide regional variations) and the need to capture the process by which the fact of colonial

¹.For a general introduction to the debate, see, for example, (a) Sabayasachi Bhattacharya "Laissez-faire in India", in The Indian Economic and Social History Review, Volume II, No.1, January 1965, p1-22.

(b) Indian Economic and Social History Review, Volume V, No.1 March 1968, especially the articles by Morris D Morris, Bipan Chandra and T.Raychaudhuri.

rule frustrated the potentialities for growth, particularly in the field of industrialization.

This paper aims at exploring at the regional level, in a concrete manner, the attempts made by the provincial government of the Madras Presidency (largely on the initiative of one of its officials, Alfred Chatterton) to foster some form of economic development through a demonstration of the commercial success of certain lines of business pioneered under state patronage, and through its concern for developing industrial education in the state. This initiative on the part of the provincial government brought it into sharp conflict with the European mercantile community of the country in general and of the province in particular who saw in the action of the state, a threat to their own interests. The analysis of the tension created between the provincial government and the mercantile community over state pioneering/promotion of industries brings into sharp relief not only the differing perceptions (over the role of the state) between officials and businessmen (both British) within a province, but also the difference in perception between a provincial government and the imperial authority. The debate at the national level on the issue of what Gerschenkron calls the ideologies of delayed industrializations,² has effectively brought out the

². Gerschenkron, A., Economic Backwardness in Historical Perspective, Harward Union Press, Third Printing 1976, Chapter I.

link between the doctrine of laissez-faire and imperialism³. This case study at the regional level highlights in addition the fact that when a provincial government attempted to depart from the accepted imperial norm of a passive role of 'night watchman',⁴ howsoever small the effort and miniscule the impact', the attempt was soon aborted and the provincial government reprimanded for daring to address the Imperial authority to reconsider its decision.

It is also the proposition of this essay that this intervention of the provincial government cannot be reduced to merely a case of benevolent state action. In the first place the state (and specially its most vocal spokesperson, Chatterton) perceived its action as being primarily an attempt at securing the preconditions necessary for (colonial) capitalist development in the long term interest of the British nation.⁵ Secondly Chatterton, while taking on the combined opposition of the British mercantile community and apparently emerging as the hope of the Indian business and political community, nevertheless symbolized the dominant viewpoint held by the British of Indians as a

³. In this context see Sabyasachi Bhattacharya, "Laissez-faire in India", The Indian Economic and Social History Review, op.cit.

⁴. Term used by Morris D Morris in "Towards a Reinterpretation of Nineteenth Century Indian Economic History, The Indian Economic and Social History Review, Volume V No.1, March 1968.

⁵. In this connection see the Papers Relating to the Industrial Conference held at Ootacamund in September 1908, Government Press, Madras, 1908, especially the papers submitted by the various officials in the Provincial Government and also the Governor's opening address delivered to the Conference (Henceforth Industrial Conference Papers).

backward, superstitious, indisciplined nation, which, therefore, justified the need for rapid enactment of reforms based largely on western political, social and economic theory.⁶

I

It would not be out of order to dwell at this juncture on the question of British attitudes towards India which informed much of the actions of its officials including those, who like Chatterton pursued their tasks with a strong conviction and genuine belief that their programmes of action were for the betterment of the subject population. To be fair to Chatterton, while his opinion about Indians tallied with the mainstream notion, his approach to Indian problems and people differed drastically, which therefore brought him into sharp conflict with most members of the European community.

The essence of British attitude towards India can be summed up in Edward Said's terminology "Orientalism"⁷. The

⁶. A collection of Chatterton's papers presented at various forums have been put together in a volume entitled Industrial Evolution in India published by the Hindu, Madras, in 1912. Among other things, these writings also reflect his views on Indians.

⁷. Irrespective of the debate generated by Said's book Orientalism (Routledge and Kegan Paul, 1978) we reproduce what we feel is relevant and captures the essence of what we are trying to convey as regards western notion of orientals: "Thus, the whole question of imperialism as it was debated in the late nineteenth century by pro-imperialists and anti-imperialists alike carried forward the binary typology of advanced and backward (or subject) races, cultures and societies... The point is that the very designation of

early part of the nineteenth century saw the rise of the Liberals and Humanitarians in England, who in their dealings with India, fixed their attitudes firmly in the structure of British rule in India.^a These reformers generally viewed India as a land of superstition and despotism. The Edinburgh Review had this to say on Indian culture:

"The culture of Oriental institutions was unfriendly to the vigorous expansion of thought. In all ages of the world, Asia has been deprived of the light of freedom, and has in consequence incurred the doom of absolute sterility in the higher fruits of moral and mental culture"⁹

British culture was therefore to serve as the model for India. From the beginning imperial thinkers interpreted the people, institutions and culture of India as decidedly inferior and therefore the aim of policy formulation was to

something as Oriental involved an already pronounced evaluative judgement" (p.206-207).

... "The influence of Bentham and the Mills on British rule in the Orient (and India particularly) was considerable and was effective in doing away with too much regulation and innovation; instead as Eric Stokes has convincingly shown, utilitarianism combined with the legacies of liberalism and evangelicalism as philosophies of British rule in the East stressed the rational importance of a strong executive armed with various legal and penal codes, a system of doctrines on such matters as frontiers and land rents, and everywhere an irreducible supervisory, imperial authority. The cornerstone of the whole system was a constantly refined knowledge of the Orient so that as traditional societies hastened forward and became modern commercial societies, there would be no loss of paternal British control and no loss of revenue either" (p.215).

^a. For an account of British attitudes towards India in the early part of the 19th century see George D. Bearce: British Attitudes Towards India 1784-1858, Oxford University Press, 1961.

⁹. Quoted in Bearce, George, D., op.cit., p.159.

maintain Britain's full supremacy in India and extend British power over an inferior country. The application of liberal attitudes towards India culminated in reforms involving education, liberty, law and 'good' government. As far as education was concerned, Thomas Babington Macaulay, legal member of the Supreme Council of India laid down in 1835 that the first task of the Indian Government was to educate a class of people who had the leisure, social status and wealth to benefit from western knowledge. Since the government had limited funds, it would have to educate the few rather than the masses and then expect this western knowledge to percolate to the rest of India. Secondly Macaulay urged the Indian government to cease encouraging Hindu and Muslim education. He challenged the merits of this traditional learning in a celebrated passage, which among other things emphasized science and utilitarian knowledge as the basis of learning¹⁰. Macaulay's programme was largely approved but could not be put into effect because of political disturbance. During the age of

¹⁰. Macaulay wrote "The question now before us is simply whether, when it is in our power to teach this language, we shall teach languages in which, by universal confession, there are no books on any subject which deserve to be compared to our own, whether when we can teach European science, we shall teach systems which, by universal confession, whenever they differ from those of Europe differ for the worse; and whether, when we can patronize sound philosophy and true history we shall countenance at the public expense, medical doctrines, which would disgrace an English farrier - astronomy, which would move laughter in the girls at an English boarding school - history, abounding with kings thirty feet high, and reigns thirty thousand years long - and geography made up of seas of treacle and seas of butter". Quoted in Bearce, op.cit., p.171.

Dalhousie a special concern was voiced, namely, the need to prepare Indians in science and industry for the coming modern world. In 1854 the pressure for progress in Indian education led to the President of the Board of Control, Sir Charles Wood, sending a long despatch to India on education incorporating as many of the diverse British views about education as was 'financially possible' and 'politically wise'.¹¹ On the whole

a) imperial thinkers interpreted the people, institutions and culture of India as decidedly inferior, and they formulated political policy in its manifold social and economic aspects to maintain Britain's full supremacy in India and extend British power over an inferior country;

b) in arriving at their attitudes towards India, both public and private, the British relied principally on British prejudices, experience and thought, rather than a knowledge of India or standards derived from Indian experience.¹²

The varying nature of Britain's economic attitudes towards India followed the stages in the development of its own economy; free trade was advocated only after British cotton manufacturing became the most efficient in the world and protective policies were no longer required, never mind, if in the process, Indian manufacturing was virtually destroyed.

¹¹. Bearce, George, D., op.cit., p.228.

¹². Ibid., p.297.

Ellenborough, President of the Board of Control for India wrote extensively on improving the economy of India for essentially imperial objectives.

"He beleived like most imperialists, that the 'real interest' of Britain and India were the same... He would forge a permanent economic connexion between the two lands, based on the idea of India being the producer of raw materials and Britain of manufactured goods. By establishing such 'bonds of mutual interest' the Indian empire might be preserved for ever. He did not consider that India's economic interest might be incompatible with Britain's ... The idea of a permanent empire lay in the belief that India and Britain could supplement each other's economies."¹³

It is in this framework that we hope to analyse Chatterton's role in the functioning of the provincial government as far as the latter's intervention in the industrialization of the Madras Presidency is concerned. Before taking up for examination the specific programmes which Chatterton initiated and developed, it would be pertinent to reproduce some of the observations made by Chatterton in the course of his writings and speeches revealing among other things his notion and attitude towards India and Indians, which, while echoing the general attitudes towards India as mentioned in the foregoing pages,

¹³. Bearce, op.cit, p.188.

also bring out sharply his approach to the whole question of the economic development of India.

Writing about Indian industrial problems Chatterton observed: "In India the vitalising force of nationality is almost entirely absent and centuries of subjection to a foreign yoke or to the endurance of an almost continuous state of internal discord and anarchy have deprived the people of that industrialism which finds its highest expression in collective effort. Social customs and caste restrictions militate against progress and the general prevalence of early marriages handicaps the race, not only by imposing the cares of domestic life upon students and even upon children who ought to be at school but also because such immature unions result in offsprings deficient in physical vigour and lacking force of character"¹⁴

On the burning issue of protection Chatterton, among other things, maintained: "Even if the advantages accruing from a protective tariff in India were enormously greater than I hope to show that they are likely to prove, I cannot concede that India is justly entitled to act entirely in her own interests and without regard to those of Great Britain. In the last 50 years, during the whole of which the country has enjoyed, for the first time in history, profound peace and internal security, British statesmanship has been devoted to developing the resources of the country and

¹⁴. Chatterton, A. Industrial Evolution in India op.cit., p.14.

increasing the material wealth of its people. Vast changes have taken place and in the development of trade and commerce enormous vested interests have been created which must now be respected. A sudden change in fiscal policy would ruin thousands in England and cause widespread misery and destitution and it is more than problematical if it would prove of ultimate benefit to anyone in India".¹⁵

Elsewhere he asserts "we have imposed free trade on India because we have adopted it ourselves, and the majority of the British nation hold that in the long run, it is the best policy any nation can pursue".¹⁶ He sincerely believed that the people of India would not benefit by protection since they lacked experience of manufacturing operations on a large scale, since the level of their technical knowledge was low and also since they had limited command over capital. On the other hand, he felt, that protection would attract capital from abroad which in turn would bring in foreign technical experts; as a result, in course of time protection would only serve in enabling foreigners to exploit the country.¹⁷

Chatterton strongly asserted that India must recognize that there was no short cut to industrial well-being, that state action in some form or other was necessary. In the absence of a central coordinated effort, and, given that

¹⁵. Ibid., p.44

¹⁶. Ibid., p.364.

¹⁷. Chatterton, A. Industrial Evolution in India, op.cit., p.364.

private enterprise in Madras Presidency was very weak, state intervention was legitimately called for and undertaken. He came down heavily on the Chambers of Commerce who had attacked the provincial government's pioneering of new industries as being unsound in principle and uncalled for. Chatterton however felt that "the arguments adduced might be justly applied to countries where private enterprise is active, but in Madras they savour somewhat of a dog-in-the-manger policy that is not consonant with British traditions in the East".¹⁸

Chatterton's true character and the motive for the missionary zeal with which he went about organizing his tasks are revealed in the following statement he made: "The welfare of Great Britain is intimately bound up with the prosperity of its great Indian Empire, and to put the matter on no higher ground than that of purely selfish considerations, it is of vital importance to the expansion of our trade with India that industries should be developed out there, that labour should be properly trained and efficiently employed so that the low standard of living that now prevails may be gradually raised".¹⁹

For convenience of analysis the rest of the paper is divided into separate sections, each dealing with a specific activity, which was either initiated, developed and/or in which Chatterton had a major role to play. This

¹⁸. Ibid., p.368

¹⁹. Ibid. p.369

segmentation enables discussion of the individual and peculiar problems of each of the activities, the depth of Chatterton's understanding of the problems and his reaction to each, the degree of state intervention and concomitantly the degree of controversy surrounding each (given the strong opposition of the European mercantile community to what was termed state-sponsored industrial activity). We have dealt with the development of the aluminium, chrome-tanning and handloom weaving industries. These by no means exhaust the entire gamut of activities undertaken by Chatterton and/or by the provincial government.²⁰ However, precisely because the latter was able to successfully demonstrate in these areas how state intervention could benefit the local population, the controversy that such intervention generated was the maximum and hence our focus on these industries. Again, our discussion of the subject of industrial/technical education is limited to the extent that the provincial government stressed the need to (a) link education to the existing industrial needs of the Presidency and (b) pioneer industries in new areas for demonstrating the viability of such ventures and to enable students to get practical training. The subject of industrial/technical education as such has not been exhaustively studied. The final section highlights the controversy at the national level leading to

²⁰. For a rough idea of the range of activities undertaken by the government (in most of which Chatterton had a large say) see "Memorandum on the Department of Industries in the Madras Presidency", Appendix J. Indian Industrial Commission 1916-18, (Main Reports Calcutta, 1918 p.402-424).

the eventual closure of the industrial department of the Madras Presidency. The period covered in the paper spans two and a half decades (1890-1915) roughly from the time of Chatterton's active involvement in industrial activity of the province upto the loaning of his services to the Mysore Government and the setting up of the Indian Industrial Commission. We begin with a brief note on Chatterton's official position and on the creation and closure of the Department of Industries in the Presidency.²¹

II

In December 1897 the Superintendent of the School of Arts in Madras fell ill, and Chatterton, who was then Professor of Engineering at the Engineering College was placed in charge of the school. In 1899, the Provincial Government applied to the Secretary of State for permission to employ Chatterton for a term of three years for furthering the progress of technical and industrial education in the Madras Presidency. This was sanctioned in February 1900. During this period Chatterton's major preoccupation was with the aluminium industry along with experiments in handloom weaving, oil engines and centrifugal pumps for lift irrigation and chrome tanning. Chatterton went on leave in 1904 and on his return was again placed on

²¹. What follows has been summarized from the "Memorandum on the Department of Industries in the Madras Presidency", op.cit.

special duty for the purpose of exploiting and developing technical trades and industries in the Presidency.

In 1905, a scheme was submitted to the Government of India for the further advancement of the industrial development of the Presidency by creating a department that would make a survey of existing industries and investigate the possibility of creating new ones. Lord Morley, (the Secretary of State for India) by way of experiment, sanctioned the creation of the new department and the appointment of Chatterton to the charge of it with the title of Director of Industries and Technical Enquiries. In September 1908 an Industrial Conference was held in Ootacamund, a hill station in the Presidency, which was attended among others, by the European mercantile community. The latter, in a minute of dissent, recorded their displeasure at the Government's active involvement in the creation and promotion of new industries in the State. The resolutions passed at the conference were sent to (the Secretary of State for India), Lord Morley, for approval. Lord Morley however differed fundamentally from the views expressed at the Conference as contained in the resolutions, and, in his despatch dated 29 July 1910, he, among other things, negatived the proposal to establish a department of industries. He, however, sanctioned the appointment of a Superintendent of Industrial Education working under the Director of Public Instruction, as also the recruitment of dyeing, weaving and leather experts, but on the condition

that that they should be employed for instructional purposes only. As a result of these orders, the Department of Industries, which on the recommendation of the Conference had been created in October 1908 in anticipation of sanction was abolished and Chatterton was placed under the control of the Education Department as Superintendent of Industrial Education. In July 1912, his services were requisitioned by the Mysore Durbar, a neighbouring Princely State after which he did not return to the Madras Presidency in any official capacity.

III

The Aluminium Industry²²

The first reference to aluminium in Madras that appeared in the records was in 1891 when Chatterton approached the Government for help in the utilization of water power in the manufacture of aluminium. His proposals were placed before the Secretary of State who appointed a Committee of experts to report on them. The Committee's report was published and the matter left to private

²². The material on the aluminium industry has been put together with the help of the following sources: i) G.O. = Government Order;

- | | | |
|--------------------------------------------------------------------------------------------|----------------------|------------|
| a) Revenue Department | G.O. Nos. 1626-1627, | 1.5.1899 |
| b) " " | G.O. No. 563 | 11.3.1901 |
| c) Educational Dept. | G.O. No. 200 | 10.5.1900 |
| d) " " | G.O. No. 675 | 20.12.1900 |
| e) " " | G.O. No. 40 | 24.1.1901 |
| f) " " | G.O. No. 330 | 17.6.1901 |
| g) " " | G.O. Nos. 522-523 | 16.9.1901 |
| h) " " | G.O. Nos. 167-168 | 24.3.1902 |
| i) Memorandum on the Department of Industries in the Madras Presidency, op.cit. p.406-408. | | |

enterprise. During his furlough in 1896 Chatterton consulted the offices of the British Aluminium Corporation who informed him that commercial success in the manufacture of aluminium depended on the existence of a large local market for the metal. Initially at his own expense, and later with the help of a small grant²³ from the provincial Government Chatterton began his experiments which subsequently became an integral part of the work of the School of Arts. Copper-smiths and bell-metal founders were employed; indigenous ways of working were initially adopted with changes being introduced very slowly and at convenient opportunities. From the outset there was a good demand from the military authorities and from Europeans for aluminium vessels, and, by establishing agents and subsidiary workshops at various places, the Indian demand was also stimulated.

Some of Chatterton's observations on the declining state of the Indian metal industries, the helplessness of the Indian artizan class in the face of imports and on the role he perceived the School of Arts could play in arresting to some extent this phenomenon are indeed revealing; they display not just his concern for the growing misery of the mass of the population; his approach towards a solution, which had the object of encouraging private enterprise through first strengthening the hands of the subject population in order to be able to deal effectively with

23. Amounting to 3800 Indian rupees.

foreign competition differed diametrically from the general imperialist attitude of non-intervention so as not "to take the bread out of the mouths of workers in England and France"²⁴.

Chatterton observed: "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".

"...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"²⁵.

The work and the fair amount of success achieved by the Aluminium department of the School of Arts brought forth protests from all over the country including the company

²⁴. See Notes connected with Educational G.O. No.523, 16.9.1901.

²⁵. Chatterton, A. "Memorandum on the encouragement of indigenous industries in India", in Educational G.O.No.40, 24.1.1901, p.5-6.

that Chatterton helped to set up, namely, the Indian Aluminium Company.²⁶ The Secretary of the Punjab Trades Association in North India in a letter to the Chief Secretary to the Government of Madras accused the Madras School of Arts of having injuriously entered into direct competition with private enterprise. "However laudable the object for which the department was started may appear at first sight, it assumes a different aspect when, instead of fostering private enterprise, it injuriously enters into competition with it".

"...it appears to the Committee that the object for which the department was started has been attained and that sales to consumers among the outside public ought to be discouraged the work of the school being restricted to teaching only"²⁷

Eardley Norton, Chairman, Indian Aluminium Co.(Ltd.), while acknowledging and appreciating the work done by Chatterton for the aluminium industry in general and the Indian Aluminium Company in particular, nevertheless took the credit for saving the industry from foreign competition.

²⁶. See Chatterton's letter to the Director of Public Instruction dated 17 July 1901, No.A1/1639, wherein he has given an account of the formation of the Indian Aluminium Company in the growth of which he had, had a major hand - Educational G.O. Nos. 522-523, 16.9.1901.

²⁷. Letter from C.O.Ardwise, Secretary, Punjab Trades Association, to the Chief Secretary to the Government of Madras, dated Simla, 28 June 1901 - Educational G.O. Nos. 522-523, 16.9.1901.

"The Directors [therefore] emphasise that while the business on which the company was formed owed its existence to the advice and assistance rendered by Mr. Chatterton, yet it is the company that has done far more than the School of Arts to keep out foreign competition, and, that, while the School of Arts has had the cream of the business, the company has done the really difficult work.²⁸"

The company also protested against the proposal of the Government of India to establish additional institutions similar to the School of Arts in Madras as being exceedingly detrimental to the interests of the Indian Aluminium Company and of others engaged in metal working industries and as being opposed to the declared policy of government of non-interference with private enterprise.²⁹

C.B. Simpson of Binny and Company, at a later date while submitting a note expressing his reservations on government assistance to industry and starting of factories, had this to say: "As regards the aluminium industry, government are accused of displacing by aluminium goods, the work of brass workers, whose goods many consider to be as serviceable as

28. Letter from Eardley Norton, Chairman, Indian Aluminium Company Ltd., to the Secretary to the Govt. of India, Finance and Commerce Department (through the Chief Secretary to the Government of Madras) Madras,, 8.5.1901 - Educational G O No.330, 17.6.1901.

29. Letter from Eardley Norton to the Secretary to the Government of India, Finance and Commerce Dept., dated 30.11.1901 - Educational G.O. Nos. 167-168, 24.3.1902.

aluminium. There can be no doubt that the one industry has been developed at the expense of the other".³⁰

Chatterton's reply to each of the above was not only just scathing but backed by perceptive observations and a sense of supreme confidence in the correctness and usefulness of the approach he had undertaken. He emphasised the need to maintain an efficient industrial school for which a certain minimum outturn was necessary, which "amount must be done and placed on the market for sale"³¹ to keep up a high practical standard of efficiency as an industrial school. Tracing the origins of his venture into the aluminium industry, Chatterton stated that after preliminary experiments he had brought the matter to the notice of every firm in Madras but one and all except M/s Best and Co. had declined to have anything to do with the business. However, after the School of Arts had commenced the movement, the Madras Aluminium Factory and the Indian Aluminium Company and M/s Murugesu Butcher and Co. had followed on exactly the same lines, testifying to what Chatterton considered a sound procedure adopted by him in his attempt to build up the indigenous industries of the Presidency.³²

³⁰. Note dated 8 September 1908 by C.B.Simpson on 'Government assistance to Industry and starting of Factories by Government' - Industrial Conference Papers, op.cit., p.185.

³¹. Letter from Chatterton to the Director of Public Instruction dated 17 July 1901, Educational G.O. Nos.522-523, 16.9.1901, p.7.

³². Ibid.

To the charge that the aluminium industry had been developed at the expense of the brass and other metal worker, Chatterton pointed out that if the manufacture of aluminium goods had not been started in India, "there is unquestionable evidence that they would have been imported from Germany and other countries. To take a single example, thousands of German water-bottles were brought into India, but we succeeded in manufacturing by hand in Madras a more serviceable water bottle and completely stopped the importation of the foreign article. Already, considerably more than 100,000 such bottles have been made in Madras and a plant has recently been obtained whereby as many as 500 per day can be produced."³³

Being merely an Officer-in-charge of the Aluminium department of the School of Arts, Chatterton obviously could not take a decision on the demand for the cessation of manufacturing activities in the School of Arts given by the Punjab Trades Association and others; he, nevertheless, gave a vehement justification for the need and continuance for such work at the School of Arts.

"The Aluminium department of the School of Arts is an experiment in industrial education on lines which I think are suited to the country. I started work in a perfectly fresh field; it has been so far successful, and I think it

³³. Note dated 12 September 1908 by Chatterton in reply to C.B. Simpson's note, Industrial Conference Papers, op.cit. p.189.

would be a great pity not to allow the experiment to be carried right through. It is the first time any assistance on a scale commensurate with the necessities of the situation has ever been rendered to Indian artizans, and it seems to me desirable that the principles on which the aluminium business has been developed should have a fair trial. The fact that the Aluminium department costs government nothing, and that it returns a fair rate of interest on the capital invested is a result that has never been achieved in any industrial school before and indicates how much it is possible may be accomplished to better the position of indigenous Indian industries if, government will provide the artizans with suitable scientific and commercial assistance".²⁴

In 1903, it was decided by the Imperial Government that the time had arrived when private enterprise could be left to carry on the business unaided. Accordingly in September 1903, the Indian Aluminium Company took over the aluminium department of the School of Arts purchasing all the tools, plant and stock after valuation.

The Chrome-leather tanning industry²⁵

²⁴. Letter from Chatterton to the Director of Public Instruction dated Madras 31 July 1901, A1/1881 - Educational G.O. Nos.522-523, 16 September 1901, p.8.

²⁵. Sources for this section include:

- a) Chatterton, A. A Monograph on Tanning and Working in Leather in the Madras Presidency, 1904.
- b) Chatterton A., Agricultural and Industrial Problems in India, G.A. Natesan and Co., Madras, nd. p.103-119.
- c) Chatterton, A. Industrial Evolution in India, op.cit., Chapter VIII on Chrome Tanning, p.163-202.

Chatterton's major contribution in this field, among other things include a comprehensive monograph on tanning and working on leather in the Madras Presidency -- a monograph which traces the historical growth of the industry, the communities that dominate the industry, the process of tanning and the inputs that go into it, the leather goods that are manufactured and prospects of the trade -- and a lengthy article on chrome tanning detailing the advantages and emphasising the need to introduce chrome tanning in the Madras Presidency in order to arrest the decay of the industry. Repeatedly Chatterton stressed the need to direct attention to the manufacture of goods for the local market.

The question of intervention by government in the Madras tanning industry was taken up in January 1903 when the Chamber of Commerce was consulted as to the causes that had led to the decline of the industry in Madras and as to whether government could do anything to assist the industry. The Chamber ascribed the decline to a natural reaction of over production in the previous years and opined that the industry would revive in the natural course without interference by government. The Chamber also felt that

-
- d) Educational Department G.O. No. 434, 12.9.1903.
 - e) Revenue Department G.O. Nos. 650-651, 22.5.1906.
 - f) Revenue Department G.O. No. 820, 22.8.1906.
 - g) Notes to Revenue " G.O. No. 641, 8.3.1909.
 - h) Revenue Department G.O. No. 1160, 30.4.1909 (Confidential)
 - i) Revenue Department G.O. Nos. 2392-93, 30.8.1909
 - j) Revenue Department G.O. Nos. 2768-69-70, 8.10.1909.
 - k) Revenue Department G.O. No. 3346, 4.12.1909.
 - l) Revenue Department G.O. No. 3322, 2.12.1909.

chrome tanning was not feasible in Madras owing to climatic difficulties.

Chatterton however was convinced that chrome tanning had to be introduced in India if the industry was not to disappear altogether. He classified the difficulties in the successful establishment of an export trade in chrome leather from India under 3 heads:²⁴-

(a) Want of capital: Chrome tanning with the accompanying leather dressing shops required a large amount of machinery and apparently could only be successfully worked on an extremely large scale. Chatterton knew that, given the dubious prospects of success in the industry and the deplorable condition under which the industry was then being carried on in the country, it was quite hopeless to expect capital to be forthcoming for investment in the industry.

(b) Want of skilled labour: Chatterton observed that only the lowest castes did manual work in a tannery and even they as a rule, only took it up after failing to obtain employment elsewhere. Any improvement would mean the installation of machines for certain kinds of work and the employment of skilled labour, which would in turn mean the education and training of the existing labour or the supply of labour from other sources both of which were not feasible propositions in the short term.

²⁴.Chatterton, A. Monograph on Tanning... op.cit., p.206.

(c) Climatic conditions: The hot climate was cited as a deterrent but Chatterton felt that the evidence offered in this case was by no means conclusive and felt that the failure to turn out a marketable article was more due to defects in finishing rather than anything being wrong in the process of tanning itself.

Chatterton devoted his time and energy to one class of leather goods which were in very large demand namely, kavalais or buckets for lifting water from wells. According to his estimate the Presidency used not less than a million hides every year for this article alone. Though the buckets were made of well tanned leather, constant immersion in water and exposure to a hot sun caused them to deteriorate very rapidly putting the ryots to a lot of inconvenience. The introduction of chrome tanned leather for these buckets promised to be a great improvement and offered very considerable prospects of commercial success.

Chatterton then approached the government for a small grant³⁷ to defray the cost of a series of experiments on tanning hides with chromic oxide.

Chatterton's experiments placed beyond any reasonable doubt the fact that chrome leather could be manufactured in Madras and that it was well adapted to the needs of the country. From the making of kavalais, the industry diversified to the making of boots and shoes and in the

37. Amounting to 2000 Indian rupees.

process the business attracted considerable attention among the local tanners with the number of applications for admission to work in the tanning department rising considerably. Chatterton attributed the initial failure of those people who attempted to start chrome tanning units of their own to the inadequate appreciation of the fact that chrome tanning being a chemical industry and required the possession of requisite scientific knowledge. He was convinced that before any very large business in this leather could be secured it would be necessary first of all to train a sufficient number of local chemists to carry on practical work in the tanneries and at the same time to bring the products of the latter prominently before the agricultural population.

The demand for water buckets was not great at first and this necessitated the need to go into the manufacture of boots, shoes and sandals, partly in order to popularise the use of chrome leather and partly to dispose off the leather cuttings not utilisable in the making of water buckets. The increasing scale of these operations necessitated the removal of the department from the School of Arts, and in March 1908, the department moved over to a tannery of its own at Semblam near Madras.²⁸ Chatterton's work in connection with chrome leather was not confined to merely promoting its use. Students from all parts of the country

²⁸. "Memorandum on the Department of Industries", Industrial Conference Papers, op.cit., p.409.

were admitted to the Government Tannery where they were given training and instructions in the processes carried on in it. Encouragement was also given to the starting of private chrome tanneries under the management of men trained in the Government Tannery.

The commercial side of the venture began to attract a lot of attention with protests being registered by not just the members of the European business community in Madras but also from outside the province, namely the Upper India Chamber of Commerce. C.B. Simpson of the Madras Chamber of Commerce, in his note to the Government wanted the Madras government to confine their efforts to research and experimental work (such as can be carried on in a laboratory) and to technical training. "I think", he added "the same attention devoted to the improvement in the quality of cattle which would benefit the quality of the hide would prove a much more valuable asset to the country as a whole and to the tanning industry in particular".³⁹ Another member of the Madras Chamber of Commerce, A.J. Yorke's contention was that private tanners could be trusted to prove the success of chrome tanning without Chatterton playing around with tax-payers money to no useful end.⁴⁰ The loudest and longest protests came from G.A. Chambers of M/s Chambers and Company engaged in the leather export trade

³⁹. Note dated 8 September 1908 by C.B. Simpson, - Industrial Conference Papers, op.cit, p.185.

⁴⁰. Note dated 14 September 1908 by A.J. Yorke on Industrial Development - Industrial Conference Papers, op.cit., p.195.

of the Presidency for more than 25 years. In his letter to the Governor of Madras, Chambers emphatically stated: "I view with decidedly antagonistic feelings the growth of the output of the government tannery which is already a disturbing element in the trade. .. I have a great admiration for Mr.Chatterton's energy and enterprise but nevertheless I am very strongly of opinion that as a government institution the establishment of such a commercial undertaking as the government tannery is a mistake".⁴¹ Giving details of his business he admitted

that five years back he had started work in chrome tanning in Madras but suspended the same for a time in order to develop the more remunerative export branch of his business.

A few paragraphs later, however, he accused the government tannery of selling at prices which did not make it sufficiently profitable for him to take up the business of chrome tanning seriously⁴². He also felt that undue prominence had been given to government efforts while those of private enterprise had been comparatively unknown, and therefore he wanted public attention to be drawn to his efforts and to the fact that he was prepared to develop

chrome tanning provided the production of the government tannery was limited to the minimum quantity sufficient for practical demonstration purposes⁴³. The Upper India Chamber

⁴¹.Letter from G.A.Chambers, proprietor M/s Chambers & Co., Madras to the Governor of Madras, dated 19 September 1908 - See Notes to Revenue G.O. No.641, 8 March 1909.

⁴².Ibid.

⁴³. Demi-official from Chambers to Chatterton dated 21 October 1908 - Notes to Revenue G.O. No. 641, 8 March 1909.

of Commerce protested against a circular issued by Chatterton to Commanders of Regiments inviting their attention to the advantages of chrome leather for marching boots. Three factors formed the basis of the complaint:-

- (a) The issue of the circular
- (b) Competition of chrome leather with the bark tanning industry
- (c) Competition of boots and shoes made by the chrome tanning department with chrome leather boots made by the Cawnpore firm.

The Upper India Chamber of Commerce also queried as to whether the Chrome leather industry was not sufficiently well established to be made over to private enterprise.⁴⁴

Chatterton's replies to each of the above protestors, substantiated with facts and very often backed by supportive arguments from his superiors, exposed very starkly the selfish motives of the European mercantile community in preserving intact their monopoly of the trade in the garb of saving private enterprise from state interference. In replying to the protests from the Madras Chamber of Commerce, Chatterton referred to the circumstances under which the government had started the chrome leather industry, namely, after the Chamber of Commerce had clearly stated that chrome tanning was not commercially feasible in Madras owing to climatic conditions. The process, according to the Chamber, had already been tried in Madras by a thoroughly experienced tanner brought over from England for the purpose but was found to be impracticable. Further, the Chamber was not hopeful of finding an outlet for the product even if the chrome tan process had succeeded. In the Chamber's opinion, therefore, no government assistance was necessary.

"It will thus be seen" replied Chatterton, that our experiments were only started after the Chamber of Commerce had definitely stated that the manufacture of chrome leather was not

44. Protest contained in letter from the Government of India Dept. of Commerce and Industry, No.1498-11, dated 18 February 1909 to the Madras Government - Revenue G.O. No.1160, 30 April 1909 (confidential).

commercially feasible in Madras"⁴⁵ . Deprecating the attitude of the Chamber of Commerce, Chatterton maintained that the latter had no idea beyond tanning skins for export; "the tanners of Madras are mainly engaged in the export trade and care little or nothing for the internal trade, and I think I may fairly claim that it is entirely due to our efforts that the local demand for leather has received such meagre attention as has recently been bestowed upon it; - if government had not embarked in the manufacture of chrome leather the condition of things would have been the same as they were five years ago".⁴⁶

In his reply to the Upper India Chamber of Commerce, Chatterton justified the issuance of the circular to the Army Commanders on the ground that the business was conducted on commercial principles and that the circular which invited a trial of chrome leather was only a modest effort to make known the merits of chrome leather. Chatterton admitted that to change from bark-tanning to chrome-tanning would be a costly business for the big tanneries in Cawnpore who would naturally prefer to keep intact their practical monopoly and would therefore resist any attempt to divert the military orders in another direction; "but that can scarcely be a sufficient reason for the troops of the Indian army being supplied with inferior boots if better ones can be obtained. The circular issued by this department simply invites a trial of chrome leather and offers to Commanding

45. Demi-official from Chatterton to A.G.Cardew, Secretary to Govt., Revenue Dept., dated 6 October 1908 - Notes to Revenue G.O. No.641, 8 March 1909.

46. Ibid.

Officers an opportunity of testing its merits".⁴⁷

The threat to competition with private enterprise repeatedly alluded to by the Chambers of Commerce had no basis since the internal trade of leather in India amounted to many crores of rupees while the sales of the chrome leather made by the Department of Industries in Madras amounted to slightly over a lakh of rupees in 1908-09. "The value of boots and shoes turned out may perhaps therefore be taken roughly at one-fifth of the work of the department and considering the enormous demand for boots and shoes which must exist all over a continent like India the work of a department which turns out such articles to the value mentioned above can have very little effect, it is submitted, on the general trade".⁴⁸

In 1905 when Chatterton had visited Cawnpore, he was told by the representatives of M/s Cooper Allen and the North West Tannery that there was no future for chrome leather in India; but after the work and fair success of the chrome tanning department in South India "they had so far changed their opinion to put forward the proposition that the industry is now sufficiently well established to be made over to private enterprise".⁴⁹ In

47. Letter from Chatterton to the Secretary to the Govt., Revenue Dept. dated 10 March 1909, No. 80-G.
-Revenue G.O. No.1160, 30.4.1909 (Confidential).

48. Letter from the Govt. of India, Dept. of Commerce and Industry No.1498-11, dated 18 February 1909 - Revenue G.O. No.1160, 30.4.1909 (Confidential).

49. Letter from Chatterton to the Secretary to Govt. Revenue Dept. dated 10 March 1909, No.80-G, op.cit.

Chatterton's opinion, which was endorsed by his superiors in the government, the time had not yet arrived to stop the experimental work in the government tannery or to hand the tannery over to private enterprise.

However, following the Secretary of State for India's despatch disallowing the setting up of a department of industries and/or the active promotion of industries in the Province, the Government had to withdraw from the venture; in the beginning of 1911 the government tannery was sold to the Rewah Durbar, a Princely State in Central India.

50

Handloom weaving

As in the case of the tanning industry, Chatterton's extensive writings in the field of handloom weaving reveal the depth and range of his observations on a number of issues connected with the industry - the condition of the weavers, the influence of the climate of the locality where weaving was carried on, the problems associated with introducing an improved loom to suit the climate and the indigenous varieties of cloth being used.

50. Sources for this section include:-

- a) Chatterton, Industrial Evolution in India, Op.cit., Chapter VIII.
- b) Chatterton, Agricultural and Industrial Problems in India, op.cit., p.120-129.
- c) Revenue Dept. G.O. No.1088, 6 November 1905.
- d) Revenue Dept. G.O. No.863-864, 12, April 1907.
- e) Revenue Dept. G.O. No.961, 24 April 1907.
- f) Educational Dept. G.O. No.406, 11 May 1912.

In 1901 Chatterton added an experimental weaving department to the School of Arts, Madras, with the object of improving the methods of handweaving in the South of India. In the Basel Mission weaving establishments of the West Coast, the European handloom was employed with considerable success for a great variety of fabrics all of which, however, were of European style and mainly for European use. Chatterton's idea was to try the European loom or simple modifications of it for weaving indigenous varieties of cloth. The results of the experiments undertaken in Madras (based on successful field results in the Basel Mission workshops and Bengal) were not really satisfactory. "It was found that though the rate of weaving could be more than doubled by the use of the fly-shuttle, yet at the same time the threads of the warp were broken so frequently that the final result did not show an advantage sufficient to induce the average native weaver to take to the fly-shuttle loom. It was evident that if it was to come into extensive use it would be necessary to materially improve the warps and a great deal of attention has since been paid to them both in respect to sizing and to the mechanical arrangement of the threads".

51

Initial failures only strengthened Chatterton's resolve to pursue his experiments more vigorously. Collecting more information from other parts of the country was one part of his programme; more important he tried to analyze why looms which had

51. Letter from Chatterton to the Secretary to the Commissioner of Revenue Settlement and Director of the Dept. of Land Records and Agriculture, dated 19 September 1905 - Revenue G.O. No.1088, 6 November 1905.

succeeded in one place were not effective in Madras. He was convinced that weaving could be best carried on in a damp climate and that it was climate which had, had a considerable influence over the success which the fly shuttle loom had met with in different parts of India -- "there is no question whatever that the finest and best work has always been the product of damp districts."⁵²

While accepting that government assistance would hardly be necessary where financial prospects were good, he pointed out that in the Madras Presidency there were few people who knew anything at all of weaving and fewer still who understood the problems of the handweaver. Therefore to make capital flow easily into the handweaving industry it was essential to demonstrate on a fairly large scale that the work could be carried on in a profitable manner. "At the outset the main difficulty to be overcome is the organization of a hand weaving factory and the training of a sufficiently large number of hand weavers, so that they may fully avail themselves of the possibilities of the new hand loom. All this work requires considerable initial outlay and as there is no possibility of making a corner in handweaving which might induce capitalists to invest considerable sums of money on the chance of ultimately getting a big return on their investments, it is not likely to be forthcoming and hence the necessity of government intervention and assistance".⁵³

52. Ibid.

53. Ibid.

At first the manufacture of Madras handkerchiefs was taken up, and though at the beginning it was not much of a success, gradual improvements were effected. Experiments with Madras kerchiefs and subsequently with other class of indigenous goods such as saris and dhoties yielded results that left no doubt that it was practicable to turn out a much larger percentage of cloth on a fly shuttle loom, that a cloth of even better texture could be produced and that if the sizing processes could be improved there seemed to be some hope of the fly shuttle loom coming into general use throughout the country. According to Chatterton, want of success was partly due to trying to do too many things at one time but mainly to the difficulty of getting good weavers to work regularly in the weaving shed.

54

In 1905 Chatterton made a tour through Bombay the United Provinces and Bengal. Passing orders on his report, the Govt. of Madras expressed their willingness to establish a handloom weaving factory for experimental work either in Salem or Madura. For a variety of reasons the former town was selected and in February 1906, the looms and apparatus situated in the School of Arts were transferred to Salem and a new start was made. In Chatterton's words, the Salem Weaving Factory was an experiment to ascertain "whether it was possible to improve the conditions of handweavers in Southern India --

(1) by substituting for the country handloom an improved handloom which would enable the weaver to produce a greater

length of cloth in a given time without in any way sacrificing the essential characteristics of the country handwoven goods;

(2) by introducing the factory system among weavers so that they might work under the management of men with commercial and manufacturing experience and so that capital and organisation might be introduced into the industry; and

(3) by introducing, if possible, improved preparatory processes to diminish the cost of the preliminary warping and sizing".⁵⁵

Chatterton was convinced that the amelioration of the condition of the handweavers in India depended upon the introduction of the factory system and the organisation of the labour available in a more efficient manner. "In India industries are not dying because they have become so complicated that the old methods of training men to direct them have become inadequate; on the contrary they are gradually being extinguished because the methods of working continue in their primordial simplicity, and no attempt whatever has been made to take advantage of modern developments".⁵⁶

For a number of reasons it was difficult to get a sufficient number of capable handweavers to keep the handloom factory going. Few of the weavers were free agents. Most of them were in the hands of the cloth merchants who viewed the factory with suspicion and directed their influence against it. By sheer persistence, however, improvements were effected with the

55. Ibid., p.226.

56. Ibid., p.210.

financial results each year showing considerable progress. The most useful work done at the factory was in connection with the first of the problems which Chatterton set out to solve, namely, experimenting with the fly shuttle loom. The type of loom ultimately adopted at the Salem Factory was the old English fly shuttle loom modified in the direction of simplicity so as to make it suitable for the manufacture of indigenous cloths. Numerous other types of improved looms were kept under observation and trial and in 1908 a weaving competition was arranged at Madras with the object of procuring definite data regarding the merits of various types of loom which then were being offered to the Indian weaver. The results of the competition was to confirm the conclusions of the Salem Factory - the looms which did the best all round work were those manufactured at Madras on the lines of the old English handloom.

Efforts were made to spread the use of the fly shuttle loom; the Salem Weaving Factory did arouse considerable interest and was the direct cause of numerous small private factories being started. A census of fly shuttle looms in ordinary use taken in 1911 revealed the existence in the 89 towns and villages visited of not less than 6528 looms with fly shuttle slays. Practically all these villages were in the coast-districts north of Madras and it was estimated that in these districts roughly 40 per cent of the weavers had adopted the new method of plying the shuttle.

57

57. See (a) Letter from Chatterton to the Secretary to Government Revenue Department 18 January 1912, in Educational G.O. No.406, 11 May 1912...

b) Notes connected with Educational G.O. No.406, 11 May 1912.

As in the case of the other industries, the Salem weaving factory also came in for criticism at the hands of the European mercantile community. But Chatterton defended the weaving factory as one meant to experiment with various forms of handloom on the market and as a possible way of getting handloom weavers to work under factory conditions. "If the hand weaving industry is to be materially improved, a great deal has to be done not merely in connection with the technical details of the weaving processes, but also in connection with the training and education of the weaver himself."⁵⁸ "The commercial viability of the factory was demonstrated through the range of cloths produced and the increasing sale receipts. But this fact proved the factory's undoing. The Chamber of Commerce protested, Lord Morley's ultimatum followed shortly and the factory was closed in September 1910."⁵⁹

Notwithstanding the Secretary of State's drastic action, what stands out are the perceptive observations made by Chatterton about the weavers and the conditions of their work and living. "It must be admitted that the prospect of effecting any great change is not a very hopeful one and I think we must look to the operation of indirect measures, such as the spread of education and to the pressure of general economic forces rather than to direct attempts to effect any great change in these matters"⁶⁰. Emphasising the necessity of organisation in the hand

58. Chatterton; Industrial Evolution in India, op.cit., p.226.

59. "Memorandum on the Department of Industries in the Madras Presidency", op.cit., p.112

60. Letter from Chatterton to the Secretary to Govt., Revenue Department, dated 18 January 1912 - Educational G.O.No.406, 11 May 1912.

loom weaving industry, Chatterton stated: "Everything seems to point to the fact that for any permanent amelioration in the condition of the weaver the first step is to get him out of the hands of the sowcar (moneylender) and provide him with an agency for marketing his goods on fair commercial terms. In the case of the export trade this has been done, but the difficulties in connection with the domestic trade seem to be almost insuperable".

61

Industrial/Technical Education

The modern development of technical education in Madras owes its origin to Sir Mounstuart Grant Duff who was Governor of this Presidency from 1881 to 1886. In September 1884 he called on Grigg, then Director of Public Instruction to submit proposals for the encouragement of scientific and technical education in the Presidency. Grigg's proposals set out a comprehensive scheme of development divided into three main sections. The first place was given to the establishment of a system of higher examinations in technical subjects; the second part of his scheme included the provision of grants-in-aid to institutions providing facilities

62

61. Ibid

62. Sources for this section include:

- a) Educational Dept. G.O. No.695, 28.11.1901.
- b) Educational Dept. G.O.No.41, 29.1.1902.
- c) Educational Dept. G.O.No.114, 29.1.1902.
- d) Educational Dept. G.O.No.313-314, 12.5.1905.
- e) Educational Dept. G.O.No.274, 12.5.1911.
- f) Educational Dept. G.O.No.765, 22.8.1912.
- g) Educational Dept. G.O.No. 798, 26.8.1913.
- h) "Note on Technical Education in Madras", Industrial Conference Papers, op.cit, p.7-20.

63. What follows has been summarised from the "Note on Technical Education in Madras", Industrial Conference Papers, op.cit.

for industrial and technical education and the grant of scholarships to pupils undergoing such instruction, besides grants for machinery, plant apparatus and chemicals. Thirdly Grigg proposed the development of the College of Engineering, the School of Arts, and the Agricultural college into institutions dealing with the several connected branches of technical works.

Grigg's proposals were favourably received by Government. Though by 1906-1907 some twenty five lakhs of rupees had been spent on technical education, the result was, as the Director of Public Instruction remarked in his report for 1906-07, still far from satisfactory. "Out of the large population of this Presidency", he wrote: "less than three thousand children were receiving technical instruction in the various handicrafts and of these less than nine hundred were non-Brahmin Hindus, the class of the community to which the bulk of hereditary workers in wood and metal and textile fabrics belong. There is as yet little demand for technical education, and the little advance that has been made has practically left unaffected the great mass of the industrial population".⁶⁴

The causes which led to the failure of Grigg's scheme of 1884-85 are not far to seek. The attempt to create examinations without first providing qualified teachers and adequately equipped training institutions was to reverse the true order of progress. But the most important of all was the neglect to bring the scheme of technical education into relation with the

64. Ibid, p.14

industrial needs and conditions of the country. "It was not sufficient to draw up syllabuses ranging from copper plate engraving to embroidery. Some effort was necessary to connect the new system of technical education with existing industries, the great handloom industry, the indigenous dyeing industry, the nascent cotton factory system and so on. Even in providing scholarships for the encouragement of handicrafts sufficient care was not taken to see that they were reserved for members of the artisan classes. The caste system of the country being thus ignored, the scholarships too often fell to youths who had not the least intention of following industry as a livelihood and who merely drew the scholarship while it lasted and then betook themselves to the role of clerk, peon, policeman, or whatever the customary occupation of their class might be. It is thus not surprising that though a large number of persons have passed the technical examinations which Mr. Grigg established, the general effect of the scheme on the industrial progress of the country has been slight".

65

A Commission on Industrial Education was appointed in 1901-02 to report on the whole subject of industrial education. This Commission made a tour of India and Burma in the course of which they held conferences with the local authorities in each province and made enquiries regarding the state of industries, visiting a large number of workshops and industrial schools. Acceptance of the Commission's report and recommendations would have meant a massive involvement by the government in the industrial

development of the country which the government evidently wished to avoid.

Chatterton, offering his comments on the report of the Commission on Industrial Education, remarked that nearly all the authorities who had made a careful study of the question and specially those who had been practically engaged in fostering industrial education and occupied in improving and developing indigenous industries were of opinion that "but little progress will be made unless government are prepared to embark upon a series of industrial experiments which to be successful must in most cases, be worked on a comparatively large scale. The Government of India fully accept the fact that experiments are necessary but evidently wish to avoid if possible, and upon a realisation of the difficulty which government must inevitably experience in effectively controlling any commercial undertaking which may be carried on in their name. The machinery of government is ill-adapted to such work and government would, I consider be ill-advised to create any department to carry on such a work. Yet in the south of India, at any rate, industrial enterprise is almost non-existent and it is therefore useless to provide for technical and industrial education unless, at the same time, efforts are made in some way or the other to improve the status of existing industries and provide for the introduction of new ones".

66

66. Letter from Chatterton dated 13 November 1903 to the Director of Public Instruction - Educational G.O.No.313-314, 12.5.1905.

A number of people from various walks of life and connected in some capacity with the functioning of the economy of the Presidency sent in their opinions, among other things, on the subject of industrial/technical education in the Presidency, and also participated in the Industrial Conference held at Ootacamund in September 1908. Spring, Chairman Port Trust Board, felt strongly that the "proximate cause of India's present failure to adopt industrialism on a scale anything like adequate to alleviate the poverty of her population is that her upper classes stand coldly apart from all interest in such development, partly or chiefly because of their pathetic belief that we are even now offering them the kind of education that has made us western nations great and wealthy. Education in India must change its character radically if ever it is going to help the educated classes to guide, direct and govern the labour of future mills and factories, as in the western countries they are directed by the better educated"⁶⁷. Spring quotes in extenso the Gaekwar of Baroda's (head of an Indian Princely state) speech from the Madras Mail to hammer the point that industrialism in India could never be developed on a scale adequate for the needs of the country unless and until it was developed under the superintendence of qualified Indians.⁶⁸

Govindaraghava Aiyar speaking on behalf of the South Indian Association submitted that the "country's industrial regeneration

67. Spring, F.J.E., Chairman, Port Trust Board, Madras, note dated 31 July 1908 - Industrial Conference Papers, op.cit., p.103.

68. Ibid., p.107.

depends for its solution on a modification of the present system of general education. . . . The history of the present system of literary education has shown that it has produced in its recipients a sense of false dignity, and what is worse an utter lack of the sense of the dignity of labour"⁶⁹ . The editor of the Indian Textile Journal, John Wallace traced the cause of the deplorable state of technical education in India to the "constitution of the educational department which is controlled by university men, whose ideas of education are so built upon reading and writing as a foundation that they have overlooked the true relation of technique to science in a country whose industrial training is still in a very backward condition. In every other country which has reached any industrial eminence, the knowledge of handicraft preceded by many generations, that of reading and writing"⁷⁰ . The Director of the Indian Institute of Science, Morris Travers, cautioned against the "transplanting of European industries into an exotic soil, where the aid of cheap labour will counterbalance rule-of-thumb management. It is necessary in almost every case to investigate the effect of the changed conditions, the variation in the raw material, and the effects of climate on the processes involved, and this is work⁷¹ which requires highly trained managers."

69. Diwan Bahadur, L.A. Govindaraghava Aiyar, Hon. Secretary, South Indian Association, Madras, 25, August 1908, - Industrial Conference Papers, op.cit., p.125.

70. Note on "Technical Education for the Workman", submitted by John Wallace, Editor, "Indian Textile Journal" - Industrial Conference Papers, op.cit., p.138.

71. Note dated 8 September 1908 by Morris W. Travers, Director of the Indian Institute of Science, Bangalore - Industrial Conference Papers, op.cit., p.182.

As contrasted with the above, the observations of the European mercantile community revealed starkly their total insensitivity to the gravity of the situation. Adhering to the single policy of government non-intervention in the industrialization of the Presidency their only recommendation as far as education was concerned was that government should not go beyond giving or helping to give men their training in technical schools on the lines of English Technical Colleges⁷². Chatterton disagreed with the European mercantile community and drew attention to the fact that the failure of the efforts made by government in the last twenty years to promote technical education "has demonstrated the futility of attempting to promote industrial development by providing technical instruction for non-existent industries and it is only as a last alternative that government have been compelled to accept the policy that industrial development must precede technical education."⁷³

Chatterton also lamented the fact that, thus far, the system of education given to India had produced excellent government officials, good lawyers, and fair traders, but it had not turned out manufacturers or men capable of re-organizing the artisan labour around them on a new basis - on one which would enable India to withstand the pressure of external competition.⁷⁴ He also realized that much of development in the country was

72. Note dated 8 September 1908, C.B.Simpson - Industrial Conference Papers, op.cit., p.186.

73. Note dated 12 September 1908 by Chatterton - Industrial Conference Papers, op.cit., p.191.

74. Chatterton, A. Industrial Evolution in India, op.cit., p.352.

actually being accomplished by outsiders with people of the country claiming a small share "so that today they are nearly as dependent on imported technical skill and experience as they were when first they began to realize their differences" ⁷⁵.

It must be recorded here that right through the literature on education in colonial India there runs the recurrent theme of the "natives being indolent by nature and disinclined to physical exertion". Chatterton himself believed that Indian engineers did not possess "in any very large measure the grit and common sense which mark the engineer" ⁷⁶. This is a difficult subject to evaluate but as Crane points out this official viewpoint dampened official zeal for the extension of technical or industrial training. Further this 'cliche' operated to bias English entrepreneurs against risking the employment of Indians who had technical training with the often reported result that English foremen and technicians were imported to fill the slots in industry which required trained personnel. ⁷⁷

75. Ibid., p.362.

76. Chatterton A., Industrial Evolution in India, op.cit., p.359.

77. For an account of the development of technical education in India before World War I see Robert I Crane, "Technical Education and Economic Development in India before World War I", in Anderson, C.A. and Bowman, M.J. (eds), Education and Economic Development, Aldine Publishing Company, Chicago, 1965, p.167-201.

What emerges from the above account is the near unanimity among most of the officials in the provincial government as regards the express need for state assistance in fostering indigenous industries and in helping in the encouragement/development of new industries. Every little success achieved by the government strengthened this belief and led them to seek the sanction of the Government of India not only to make the provincial department of industries permanent but also to extend the scope of its functioning. The provincial Government not only concurred with the resolutions passed at the Industrial Conference that was held at Ootacamund in September 1908, but also forwarded the resolutions and other papers connected with the Conference to the Government of India. Among the more important of the resolutions accepted by the Governor in Council and put forward for the "favourable consideration and support of the Government of India" was the principle that "for the satisfactory development of industries in the directions indicated by the Conference it is desirable that the appointment of Director of Industries should be made permanent". Soon after the Conference the provincial Governor appointed Chatterton as the Director of Industries pending approval of the Government of India.^{7a}

In their dealings with the European mercantile community and more so during the deliberations of the Conference the officials of the provincial government did not hesitate to point out the contradictory postures adopted by the former and in the process exposed the European

^{7a}. Letter from L.M.Wynch, Acting Secretary to the Government of Madras, Revenue Department, to the Secretary to the Government of India, Home Department (Education) dated 3 March 1909 - Revenue G.O. No.3446, 27 October 1910.

mercantile community's "selfish exploitation of the country"⁷⁹. Deprecating the attitude of the Chamber of Commerce, Madras, towards government involvement in the chrome tanning industry, Chatterton stated vehemently:

"It seems to me obvious that from the strong opposition offered by the Chamber of Commerce and from the European mercantile community to the policy of Government assisting in the development of new industries they fear that the fostering of indigenous industries will place Madras in the same position as Bombay and that the Indians will gradually acquire a commanding position in the mercantile and manufacturing industries of the Presidency. This, I submit, is eminently desirable ... It seems to me impossible that the present state of things should be allowed to continue indefinitely. In the past the European mercantile community have displayed no great amount of energy and ability in building up the industries of the Presidency and there is less hope in the future that they will be able to achieve a better result... Only a few years ago the Chamber of Commerce advocated a laissez-faire policy. Now that it has been demonstrated that something can be done and that some practical results have been achieved, they say we are going too far and all that is necessary is to establish technical institutions for the training of workers for non-existent industries."⁸⁰

The other officials in the Government agreed with Chatterton's contention that the opposition of the European

⁷⁹. See Notes to Revenue G.O. No. 641, 8 March 1909, specially the observations made by A.G. Cardew and G. Stokes, senior officials in the provincial government.

⁸⁰. Demi-official from Chatterton to A.G. Cardew, Secretary to Government, Revenue Dept. 6 October 1908 - Notes to Revenue G.O. No. 641, 8 March 1909.

merchants of Madras to any attempt by Government to assist the industrial development of Southern India was due to their not wishing to see the country developed for fear it should injure their export trade of raw material. While they felt that this was a natural attitude of businessmen, the Government on its part could not "hold back from its duty of trying to lead the people on to industrial development which is the only hope in the future"^{a1}. It needs to be recorded here that the provincial government saw its policy of intervention as one necessitated by the need to promote and establish private enterprise on a firm footing in the Presidency underlying the motive that "the well-being of India will promote the well-being of England"^{a2}. This was made very clear to the mercantile community at the Conference thus by Chatterton:

"Manufacturing enterprise in the Madras Presidency is at the present time very weak and I am not prepared to assent to the proposition put forward that government has no right to start a factory in India to demonstrate the advantages of improved methods of working in any particular industry. If they can be introduced in any other way I would gladly adopt that procedure but as a last resort I think it will be in the best interest of the country at large that government should be at liberty to demonstrate those advantages in a practical way provided always it is willing to retire from business as soon as that object has been accomplished".

^{a1}. See observations of A.G.Cardew and G.Stokes in Notes to Revenue G.O. No.641, 8 March 1909.

^{a2}. Bearce, British Attitudes Towards India, op.cit., p.224.

"...After carefully perusing not only Mr.Simpson's note, but also the notes submitted by the Chamber of Commerce and the Hon'ble Mr.A.J.Yorke, I cannot help thinking that they have to some extent been under a misconception as to the attitude of government so far as I understand it, in regard to industrial enterprise. I think I am absolutely correct in saying that the policy which it is proposed to pursue is directed to the encouragement of every legitimate form of private enterprise and that it is the desire of government in such work as may be undertaken to associate themselves as far as possible with the mercantile community".⁸³ (emphasis added)

The proposals forwarded by the Government of Madras to the Secretary of State for India found favour with the Finance Department of the Government of India. The latter in a letter to the Secretary of State for India stated: "...we concur with the local government in their view that the valuable results which Mr.Chatterton has so far achieved justify the hope that the constitution, under his direction, of a permanent department having for its principal objects the fostering of industrial development, within the limits laid down by the Conference and the control of industrial instruction as defined by them, will prove highly beneficial".⁸⁴

In his despatch dated 29 July 1910, the Secretary of State, Lord Morley, took exception to the policy of creating new industries by state intervention and declared that the

⁸³. Note dated 12 September 1908 by Chatterton - Industrial Conference Papers, op.cit., p.191.

⁸⁴. Despatch from the Government of India, Finance Department to His Majesty's Secretary of State for India dated 28 October 1909 - Revenue G.O.No.3446, 27 October 1910.

funds required for the extension of industrial and technical education ought not to be diverted to state-managed commercial enterprise. "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. 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. I accept the view of the Madras Government that a special officer is required to supervise and extend industrial education in the Presidency, and I agree to Mr. Chatterton being so employed; but am not prepared to sanction a separate Department of Industries with a separate Director"⁵⁵.

⁵⁵. Despatch from His Majesty's Secretary of State for India to the Governor General of India in Council, dated India Office, London, 29 July 1910 - Revenue G.O. No. 3446, 27 October 1910.

Accordingly an order was issued stating that the Department of Industries would cease to exist with effect from 1st January 1911.

Lord Morley's orders prohibiting the employment of state funds in the pioneering of industries gave rise to a very widespread feeling of disappointment among large sections of the educated classes of southern India. It was widely felt that the interests of a microscopic minority of traders had carried more weight with Lord Morley than the welfare of the people of the country. Evidence of people's resentment could be gleaned from repeated articles that appeared in the Indian press; at the Sixth Indian Industrial Conference which was held at Allahabad in December 1910, a resolution was passed expressing the deep regret of the delegates there assembled, who came from all parts of India, at the action of the Secretary of State in directing the abolition of the Department of Industries and in prohibiting state pioneering of new enterprises. In February 1911, a resolution was passed in the Legislative Council of Madras inviting the Secretary of State to reconsider his decision. In pursuance of this resolution, the provincial government again addressed the Secretary of State in May 1911⁸⁴. They referred to the general disappointment which Lord Morley's orders had occasioned and laid stress between the industrial condition of India and those prevailing in Europe, pointing out how difficult it was in a region like Southern India "to bridge the gulf that exists between mere scholastic

⁸⁴. Details provided in letter from A.G. Cardew, Secretary to the Government of Madras, Revenue Department to the Secretary to the Government of India, Department of Education, dated 8 May 1911 - Revenue G.O. No.3851, 30 December 1912.

instruction and the practical application of industrial teaching, unless factories under state management are founded". And they asked for authority in special cases and subject to safeguards suggested by the Industrial Conference to undertake the experimental introduction of new industrial processes. They also asked for a reconsideration of the decision regarding the creation of a separate Department of Industries, independent of the Director of Public Instruction⁸⁷. These proposals were supported by the Finance Department of India and sent to the new Secretary of State for India, Lord Crewe.⁸⁸ Lord Crewe reaffirmed Lord Morley's decision against the extension of the activities of a department of Industries to trading on a commercial scale, but had no objection to the creation of a separate department of industries provided that its functions were confined to certain limits, namely:

(i) to collect information as to existing industries, their needs and the possibility of improving them or of introducing new industries;

(ii) to carry out and direct experiments connected with such enquiries;

(iii) to keep in touch with local manufacturers to bring the results of his experiments to their notice and to obtain their cooperation in the conduct of operations on a commercial scale;

(iv) to supervise the training of students, and

⁸⁷. Ibid.

⁸⁸. Despatch from the Government of India, Finance Department, to His Majesty's Secretary of State for India, 21 September 1911 -- Revenue G.O.No.3851, 30.12.1912.

(v) to advise government with regard to technical matters involving legislation²⁹.

Lord Crewe's sanction for setting up a Department of Industries did not substantially contravene any of the orders contained in Lord Morley's despatch of 1910. Infact it left the Government of Madras in a considerable degree of doubt as to the precise lengths to which they were justified in going when dealing with proposals for demonstration plants, financial assistance and other forms of direct aid to industries.

That the Secretary of State for India took strong exception to a resolution passed in the provincial legislative council asking for reconsideration of his earlier decision to abolish the Department of Industries can be seen from the following order subsequently passed to all provincial governments.

"His Excellency in Council is doubtless aware that official members of the Imperial Legislative Council are not entitled to vote in favour of any measure which is at variance with the declared policy of the Secretary of State, with whom it is incumbent upon the Government of India to preserve solidarity. It is no less incumbent on a provincial government in the conduct of the business in its Legislative Council to avoid disclosing a difference of opinion in an administrative matter between the Imperial and Provincial Governments and doing anything to foster an impression that there may be opposition between the

²⁹ See despatch from His Majesty's Secretary of State for India to the Governor General of India dated India office, London, 15 March 1912 and Extract from the letter from M.W.Travers to the Secretary to the Government of the United Provinces, Industries Department, dated 4 March 1910 -- Revenue G.O. No.3851, 30.12.1912.

constitutional responsibilities of those governments when no such opposition either does or can exist. There is for India but one system of administration and one alone and it is only by bearing steadily in mind this fundamental principle that the solidarity of the administration can be kept unimpaired. Consequently, when a resolution, the tenor of which is admittedly contrary to the views held on the subject by the Government of India is discussed in a Provincial Legislative Council the only correct course which is open to the heads of the province and the official members of the Council is not to reiterate the views of the local government in support of the resolution nor to follow the line of passive acquiescence, but to give a full and temperate statement of the views of the Government of India and to emphasize that in the face of the decision taken by the Supreme Government any official support to the resolution is out of the question".⁹⁰

While developments subsequent to the abolition of the Department of Industries in the Madras Presidency and the requisition of Chatterton's services by the Mysore Government in 1912 do not strictly fall within the scope of this paper, it would not be out of place to record here the fact that the rumblings generated by Lord Morley's 1910 despatch did not die a natural death⁹¹. On the contrary, it

⁹⁰. Letter from H.Wheeler, Secretary to the Government of India, Home Department (Public) to the Secretary to the Government of Madras, Legislative Department G.O. No.156, 2 October 1913 (confidential).

⁹¹. A confidential note submitted by a group of prominent for India (dated 26 November 1915), among other things, states:-"The main lines of Lord Morley's despatch became known to the Indian public and have frequently formed the subject of protest and adverse criticism. The view was often expressed, however unfairly, that the veto formed part of the plan of stifling Indian industrial development, which is often made a charge against the British Government in

had a significant impact in forcing the Government of India to constitute the Indian Industrial Commission in 1916. Incidentally Chatterton, who was then Director of Industries and Commerce in Mysore was made a member of the Commission.

India... We desire to examine the whole question abinitio with the help of a specially selected committee... we have been led to recognize the paramount necessity, both on political and economic grounds, of framing a policy of state-aid to Indian industries... We desire, therefore, your approval to our proposal that a properly qualified committee should be appointed as soon as circumstances permit, to examine the whole question; that in order to enable them to do so to the fullest advantage they should not be precluded from a consideration of the methods of which disapproval was expressed by Lord Morley and in a lesser degree by Lord Crewe" -- Educational G.O. No.46, 12.1.1916.