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INDUSTRIAL DEVELOPMENT OF MYSORE

INDUSTRIAL DEVELOPMENT OF MYSORE

by

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**TO
THE LOVING MEMORY OF
MY LITTLE SON
CHANDRU**

FOREWORD

IT is a real pleasure to accede to Dr. Balakrishna's request to write a *Foreword* for his pioneer work on Industrial Development and Organization in Mysore.

Hitherto the Indian States have attracted less attention and study than British India, and it has indeed been difficult to obtain detailed and accurate information about them. It has even been hastily assumed that they tend to be economically backward, following at a distance British India's lead. But it is now coming to be realised that some, at least, of the States—although, as yet, less industrialized than certain parts of British India—are by no means "backward", or merely imitative, but are developing along lines of their own, and have much to teach (as well as to learn from) British India.

Dr. Balakrishna's study of economic and industrial development and organization in Mysore—one of the foremost Indian States, culturally and economically—should therefore, receive a warm welcome. The author, whose studies in London I had the privilege to supervise, approaches his subject in a scientific spirit, and attempts, with reference to each topic discussed, to consider first the theoretical aspect, then to apply his theories to the particular case of Mysore, and finally to draw conclusions as to the trend of developments and the wisdom of the policies pursued and to make suggestions for improvements in the future. His wide practical experience of conditions in Mysore and in India generally, his sympathetic understanding of the economic and social problems involved, and his wide knowledge of recent experience and experiments in other parts of the world, enable him to interpret realistically his historical and descriptive material and to gauge wisely what would be the appropriate policy to achieve the desired ends. He concludes, finally, that in Mysore a happy reconciliation has been achieved between the conflicting claims of full-fledged planning and

uncontrolled capitalism. His comments in this connection will be of great interest to all concerned with the controversy which has raged for many years on this subject. Let us hope that Dr. Balakrishna's book may prove the forerunner of a whole series of studies of the economic problems of the Indian States.

DR. VERA ANSTEY,
Sir Earnest Cassel Lecturer in Commerce,
University of London.

LONDON SCHOOL OF
ECONOMICS AND POLITICAL SCIENCE, }
September 22nd, 1940.

PREFACE

THIS work is a study of the industrial evolution of a progressive State in India. It is the result of an intensive investigation of industries in Mysore spread over three years. During the first year the author toured extensively in the Mysore State investigating the actual operation of several of the major industries and handicrafts and collecting the necessary data. The subsequent period of about two years was spent by the writer in England as a research student at the London School of Economics. The systematization and interpretation of the data already collected was carried out in the light of the theoretical knowledge and training in research methods that he acquired in the universities of London and Cambridge. This work, in the form in which it appears here, was accepted in 1939 by the London University as a thesis for the PH.D. Degree in Economics.

An attempt is made to give a Descriptive and a critical account of the industrial organization in Mysore. Throughout the inquiry objectivity and scientific attitude of mind are maintained so that the interpretation of the actual conditions in Mysore in the light of theoretical analysis may yield some useful results. A cross-section of the industrial organization in Mysore has been taken to study its structural evolution. As a result of such an analysis the author has come to the conclusion that, both in respect of the large as well as the small-scale industries, the development in Mysore has taken place on strictly scientific lines and the resultant pattern of industrial organization manifests all the features of a rational growth. A few suggestions are also made wherever adaptations of the existing mechanism are found necessary. The industrial system of the State has been fashioned and brought to a high degree of perfection through the genuine and abiding interest that has been taken by the benign Rulers and far-seeing administrators of Mysore culminating in the endeavours of Sir Mirza M. Ismail, the present Dewan.

In the preparation of this work, the author received invaluable help from Dr. Vera Anstey, of the London University, who supervised and made very useful critical comments at every stage of the investigation. But for the guidance and inspiration of Dr. Anstey the author would never have been able to shape his work as he has done and hence he owes a deep debt of gratitude to her. During his period of research in England the author received abundant facilities for his work at the British Library of Economics and Political Science, London, at the Marshall Library, Cambridge and at the Library of the High Commissioner for India at London. The author is highly indebted to the authorities of those institutions. The Trade Commissioner for Mysore at London was in no small measure helpful to the author in the collection of data. To him also the author is indebted.

The author cannot adequately express his sincere thanks and gratitude to Prof. V. L. D'Souza of the Mysore University for his encouragement and advice at the preliminary stages of the enquiry. The success of the work at its pre-natal stage is in a large measure due to his valuable guidance.

In the collection of data pertaining to Mysore the author has received substantial assistance both while he was in India and while he was in England from the Director of Industries, the Director of Geology and Heads of the various Nation-building Departments of the State. The author takes this opportunity of expressing his thanks to them.

For the publication of this book considerable financial help has been granted by the University of Mysore. But for this encouragement the work perhaps might not have seen the light of day. The author begs to acknowledge his gratitude in particular to *Rajakaryapravina* N. S. Subba Rao, Esq., M.A. (Cantab.), Bar-at-Law, Vice-Chancellor, University of Mysore, for his benevolent interest in the author's pursuit of higher studies in Economics both in India and in England.

R. BALAKRISHNA.

CONTENTS

	PAGES
FOREWORD	vii-viii
PREFACE	ix-x
CHAPTER I. POPULATION AND RESOURCES	1- 27
Population and Occupational Distribution—Mineral Resources—Agricultural and Forest Resources—Power Resources—Economic Outlook.	
CHAPTER II. SMALL-SCALE INDUSTRIES	28-63
Introduction—Declining Industries—Surviving Industries: Cotton Textiles—Wool-spinning and Weaving—Sericulture: General Features—Present Organization—Causes of Decline—Measures taken in Mysore—Tariff Protection—Tanning—Jaggery-Making—Wood Artware—Extraction of Oil—Nakki Weaving—General Features of Small-Scale Units—Comparative Study—Technical Factors Determining Size—Advantages of Small-Scale Units—Existing Defects of Small Enterprises in Mysore—Suggestions for Improvement.	
CHAPTER III. LARGE INDUSTRIES—DEVELOPMENT AND TECHNIQUE	64 103
General Features—Classification of Industries—Mysore Iron Works: Construction of the Plant—Capacity and Capital Cost—Factors Retarding Progress—Marketing Problems—Endeavours to Meet the Situation—Welfare Work—Findings of the Tariff Board—Sandalwood Oil—Soap Manufacture—Silk Manufacture—Quasi-Governmental Concerns: Sugar Manufacture: Early History—Recent Developments—Indian Sugar Industry and Tariff Protection—Paper Manufacture: The Indian Paper Industry—Private Enterprise: Gold Mining—Textile Industry: Cotton Mills—The Indian Cotton Industry—Woollen and Silk Textiles—Conclusion..	
CHAPTER IV. STRUCTURE AND ORGANIZATION	104-128
Problems of Structure and Organization—Theory of Location—Industrial Location in Mysore—Split Locations—Size of a Firm—Size and Efficiency in Mysore—The Cotton Industry—The Sugar Industry—The Iron and Steel Industry—Problems of Integration—Types of Integration in Mysore—Problems of Organization—Structural Dynamics.	
CHAPTER V.—INDUSTRIAL FINANCE	129-162
Introduction—Nature of Industrial Finance—Methods of Raising Corporation Finance—A Study of Existing Practice: The English System—The German Method—The American Practice—Conditions Prevailing in Mysore—Method of Promotion—Organs of Industrial Finance: Banks—Co-operative Credit for Industry—Government Takavi Loans—Earlier Attempts to Improve the Conditions—Suggestions for Improvement.	

CHAPTER VI. PUBLIC UTILITIES	163-206
The Concept of Public Utility—Purpose of Public Control—Forms of Public Intervention—Public Utilities in Mysore—Railways: Construction and Capital Cost—Gross Earnings on All Lines—Policy Regarding Construction and Management—Recent Development—Traffic Handled, Earnings and Expenses—Working Expenses and Net Earnings—Structure of Railway Rates—Railway Rates in Mysore—General Features—Road-Rail Competition—Hydro-Electric Generation—Rate Structure in Electricity Industry—Electricity Rates in Mysore—Further Potentialities and Future Policy.	
CHAPTER VII. STATE AND INDUSTRY	207-231
Sphere of State Action—State Ownership and Management—Part-Ownership by the State—Indirect Support to Private Enterprise: Initial Enquiry—Technical Assistance—Industrial Workshop: Repairs and Renewals—Supply of Materials and Sale of Products—State Loans to Industry—Pioneering and Demonstration Factories—Technical Education—An Appraisal of State Endeavour—Some Early Failures—Conclusion.	
CHAPTER VIII. EXTERNAL TRADE	232-258
Nature of International Trade—Free vs. Restricted Trade—External Trade of Mysore—Composition and Character of Trade—Direction and Distribution of Trade—Trade Organizations—Tariffs and Commercial Policy.	
CHAPTER IX. LABOUR PROBLEMS	259-294
Industrial Population—Immigrant Labour—Organization of Labour—Existing Trade Unions—Economic Conditions of Workers—Scale of Wages—Study of Family Budgets—Indebtedness and Expenditure on Drink—Housing Conditions—Suggestions for Improvement—Earning Capacity and "Scientific Management"—Labour Legislation—Factories Regulation—Workmen's Compensation—Maternity Benefit—Board of Conciliation—Further Machinery and Legislation—Welfare Work—Achievements Elsewhere—Measures Adopted in Mysore.	
CHAPTER X. RESUME AND OUTLOOK	295-305
Region of Economic Significance—Influence of State Intervention—Features of Present Organization—Future Outlook.	
BIBLIOGRAPHY.	307-311
NOTE TO BIBLIOGRAPHY.	312-314
INDEX.	315-319

CHAPTER I

POPULATION AND RESOURCES

MYSORE is one of the premier states situated in the South of India. The political frontier adjoins British Indian provinces on ail sides and thus Mysore has no direct access to the sea. Excepting on the North and the North-West, where the Bombay Presidency is contiguous, Mysore is bounded on ail other sides by the Madras Presidency. The State extends over an area of 29,326 square miles and assumes a shape more or less similar to a triangle, having 230 miles as its greatest length between North and South and about 290 miles between East and West.

Mysore has a population of 6,557,302 persons with a density of 224 persons per square mile.¹ The population of Mysore has shown an increase from census to census from the year 1881 to 1931. As there has been no change in the area of the State since 1881, the figures of all the censuses are strictly comparable. The highest increase in population on record was during the decade 1881-91 and this occurred more or less as a reaction to the terrible famine and loss of life during the previous decade. The lowest accretion to the population was during the decade 1911-21. This was due to two circumstances that synchronized in 1918, namely, the influenza epidemic and the scarcity of food supplies. Otherwise there has been a steady increase in population from decade to decade. In 1881 there were 4,186,188 persons and during subsequent decades there have been proportionate accretions bringing the number to the present figure of 6,557,302. Thus the rate of increase appears to be 56-6 per cent, in 50 years or an average of 11-3 per cent, per decade. These figures compare favourably with the Indian averages. The rate of increase in India has been 34-9

¹ *Census of India, 1931, Vol. XXV (Mysore), p. 3.*

per cent, in 50 years or an average of 6.9 per cent, per decade.¹

The density of population in the State has increased progressively since 1881 and during the past half a century, it has increased by about 50 per cent. Among the Indian states, Mysore stands second as regards aggregate population and takes the fourth place from the point of view of density. It is of interest to compare the density of other countries with that of Mysore. The table given below will indicate the aggregate population and the density per square mile of a few representative countries.

TABLE I

Country	Year	Population	Density
The United Kingdom ..	1931	46,178,884	493
The United States of America ..	1930	122,775,046	33-3
Canada	1931	10,374,196	2-95
Germany	1930	64,776,000	357-9
France	1931	41,860,000	197
Japan	1931	65,366,500	443
India	1931	352,837,778	195-5
Mysore	1931	6,557,302	224

The density averages in the above table do not however seem to reveal any direct correlation with the economic position of the respective countries. The great disparity, for instance, in the density between England and the United States of America does not prevent the two countries from being almost equally advanced in their economic development. Thus we cannot on this basis, deduce any definite conclusions about Mysore's economic condition as compared with some of the Western countries. Still the density conception is useful in revealing the nature of the physical condition and the economic resources of a country. Whenever high density is not accompanied by extreme poverty a clue is offered to the potential wealth of a country. Mysore with

¹ Dr. Vera Anstey, *The Economic Development of India*, p. 39.

its 224 persons per square mile, therefore, indicates its economic resources. Thus Mysore stands, a fair comparison with some of the Western countries and is in a position to command large labour resources. Besides the increase in its industrial population by 105,000 persons out of a total increase of 578,410 during the decade 1921-31 shows that new avenues of employment are being opened. Hence with the diversification of occupations that is now in progress Mysore may be able to bear even a higher density without impairing the standard of life. Even as it is the density of population in Mysore is nearly double that of the average density of all the Indian states taken together. The average density of population for all the Indian states is only 114 persons per square mile.

A further insight into the economic efficiency of the population may be obtained by ascertaining the magnitude and percentage of the active population engaged in various industries. Among the 6·5 million people in the State, nearly 2,350,000 persons are engaged in gainful occupations. Thus about 35·8 per cent, is actively engaged in some pursuit or other. A brief description of the main occupations and the number of people engaged in each of them will throw some useful light on the occupational distribution in Mysore. Production of raw materials is the chief occupation in the State and about 73·2 per cent, of the active population is engaged in it. But the subsidiary groups that constitute the occupation are not well-balanced because 95 per cent, of the earners under Pasture and Agriculture are engaged in ordinary cultivation. Thus ordinary cultivation may be construed to be the chief occupation and the essential mainstay of an overwhelming section of Mysore population.

By special cultivation is meant market gardening, tea and coffee plantations and fruit culture. Among these except coffee plantations the others are of minor importance. It is evident therefore that judging from the standpoint of distribution of the active population there is not as much diversification in agricultural pursuits as is desirable.

Stock-raising is an important avocation in Mysore as the State is famous for some of its breeds of cattle. The Government of Mysore have always maintained a cattle department where breeding of fine animals takes place. Apart from this there is no regular cattle breeding industry in the State.

The mining of metallic minerals is a fairly important avocation under the production of raw materials and a large number of people appear under " Gold " against Kolar Gold Fields which is exclusively a gold mining area in the State. Among the other metals Iron claims the largest number of workers.

The next important occupation claiming a fairly large number of earners is Industry, Transport and Trade. This group provides employment to about 14-6 per cent, of the aggregate number of earners. Among the industries in the State, Textiles figure most prominently claiming about 47,000 workers. There are a large number of other industries such as those relating to Hides and Skins, Wood-work, Metal-work, and Ceramics; but they are functioning essentially on a small-scale basis and provide employment only to a meagre section of the Industrial population.

From the category of Transportation services, air and water transport may be safely deleted because the former is non-existent in the State and the latter is almost negligible. Barring the employment provided by the State Railways, the majority of the people engaged in transportation services are owners of mechanical and non-mechanical vehicles.

The tradesmen in the State may be classified into a large number of categories such as Brokers and Agents, Commercial Travellers and Traders in various commodities. Trading occupations, as a principal avocation, engages about 126,331 persons. Industry on the other hand engages about 201,146 persons showing thereby that the tradesmen bear a proportion of slightly more than 50 per cent, of the people engaged in Industry.

The next group of occupations known as Public Administration and Liberal Arts includes the persons in the Army,

the Police and the Civil Service. This is relatively a small group as compared with the other categories and gives employment to only 3-6 per cent, of the total number of earners in the State.

Finally unproductive occupations and those that are insufficiently described appear as a fourth class comprising about 8-4 per cent, of the aggregate active population. The largeness of this last class is due to insufficient data and difficulties of proper classification. As compared with 1921 the number of earners have increased by 752,000 in 1931 which is a laudable feature. The bulk of this increase has been in the group "Production of Raw Materials"; but what is of interest to note AS that the numbers have fallen relatively as compared with those in the group in 1921. In 1921, 74-8 per cent, of the earners were engaged in the production of raw materials whereas in 1931 only 73-2 per cent, comprised the group. Hence although there was an increase in their numbers absolutely there was a shrinkage in the group relatively to the earners in the State. It is not easy to account for the changes as we cannot attribute it categorically to the growing industrialization of the State because such a conclusion is not fully warranted by the available data. There has been a considerable increase in the number of persons engaged in Industry, Trade and Transport, but the increase is only absolute and not relative. In the year 1921 about 15-5 per cent, were employed in Industries, Trade and Transport, whereas in 1931 there were only 14-6 per cent. Therefore the increase in the group is not commensurate with the total increase in population.¹

The group "Public Administration and Liberal Arts" is equally incapable of throwing much light on the problem as it is not only a small group incapable of absorbing many people but it is also registering an actual fall in percentage. From 5-1 per cent, in 1921 it has fallen to 3-6 per cent, in 1931. The group termed Miscellaneous in the Mysore

¹ See Chapter IX, *Labour Problems*.

Census Report is the one that is showing not only an enormous increase in absolute numbers but has also increased from a relative standpoint. The proportion has nearly doubled itself within a decade. From 4.7 the percentage has increased to 8.4. This seems to offer us a sort of a negative proof for the existing state of affairs. Due to the difficulties in the way of accurate classification large numbers of persons seem to have crept into the miscellaneous group. Such a contingency is bound to arise during the transitional stages of Industrial transference. As Mysore is at present experiencing a rapid industrial evolution it is very likely that an industrial transference is occurring and hence that the workers are not easily amenable for accurate classification. So it is likely that a large part of the persons in the Miscellaneous group may really belong to " Industries, Transport and Trade ", and the re-distribution of population among the occupations in 1931 may, to a certain extent, be attributed to the growth of industries in the State. This situation will find a better depiction in the next census, by which time the occupations should have become crystallized.

The 'distribution of the active population among the various occupations is shown in the following table:—

TABLE II

Class	1921		1931.	
	Number of Earners	Proportion	Number of Earners	Proportion
Production of Raw Materials ..	1,195,000	74.18	1,716,000	73.2
Industry, Transport and Trade ..	247,000	15.5	352,000	14.6
(Industry alone ..	143,000	8.9	201,000	8.6)
Public Administration and Liberal Arts ..	81,000	5.1	85,000	3.6
Miscellaneous ..	75,000	4.7	197,000	8.4
Total ..	1,598,000	99.48	2,350,000	99.8

Note.—The figures of 1911 Census are not strictly comparable with the above as the methods of classification differ.

MINERAL RESOURCES

From a geological point of view Mysore may be classed with some of the richest mineral areas of the world. Both in variety and in content the mineral resources of the State are very valuable. Among the metalliferous minerals available in the State, Gold, Iron, Manganese and Chromium are the most important. The occurrence of gold in Mysore seems to have been known, for many years as traces of old workings are in existence. At the present time though the occurrence of gold is noted in several areas still it is chiefly concentrated in the Kolar District. There are at present five active or producing mines in the Kolar Gold Fields area, and all of them are under the general management of Messrs. John Tayler and Sons of London. The aggregate volume of gold produced in Mysore from 1882 to 1936 is 18,567,050 ounces and its value is reckoned at £84,128,674.¹ Mysore is the most important gold producing area in India. India contributes about 3 per cent, of the world's production of gold and about 98 per cent, of this contribution is from the Kolar Gold Fields. The State has received a royalty of £4,686,603 from the mines until the year 1936. During recent years the income from the gold mines has actually exceeded the budget estimates. The accounts for the official year 1935-36 showed an increase of about Rs. 1 lakh on the expected amount. During the year 1936-37 a further increase of Rs. 2-96 lakhs over the estimate was expected. The increase in revenue was due to two important developments in respect of this industry, namely the new agreement with the gold mining companies and the grant of licenses for further prospecting. The export of gold since 1931 has been on the increase due to the stimulus of high prices. But the increase is due mostly to exports of gold hoards and reserves. The Gold Mining Companies have increased their exports only by about 10,000 ozs. on an average since 1931. On the other hand the private exports of gold have risen on

¹ *Mysore Administration Report, 1936-37, p. 80.*

8 INDUSTRIAL DEVELOPMENT OF MYSORE

an average by about 50,000 ozs. during the four years succeeding 1931. There is a perceptible increase since 1934.

The knowledge of iron metallurgy is of high antiquity in Mysore. Dr. Buchanan describes the processes of iron mining, smelting and forging as they existed in 1800. "The Iron", says he, "is made partly from the black sand which is found in the rainy season in the channels of all the torrents in the country; and partly from an ore which is found in Gettipura, two cosses from Magadi".¹ There is a plentiful supply of iron ore in the State. The chief among the iron ore deposits of Mysore is that which is found on the Eastern ridges of the Bababudan Hills in the Kadur District and some subsidiary deposits in the adjoining Shimoga District. The ore in these places is being converted into pig iron at the Iron Works of the Government of Mysore since 1918. Finished products such as cast iron pipes and ornamental lamp posts are manufactured at the pipe foundry installed in the premises of the Iron Works. Since 1936, the Steel plant erected at the Works has also begun to operate and small quantities of steel products have been put on the market. The total amount of iron ore produced for the Mysore Iron Works since 1915 to the end of 1929 is estimated to be 269,329 tons.

India is one of the leading countries that produce manganese ore and by contributing about 30 per cent, of the total world's production, she stands second only to Russia. Mysore is one among the five important areas of manganese production in India and the proportion of her contribution to the world output was 1.01 per cent, during the quinquennium 1924-28. The total output of manganese ore in Mysore up till the end of the year 1937 is estimated to be 476,704 tons. Practically the whole output of the State is now being exported to foreign countries as the ore is not utilized locally. A small quantity however is used in the charcoal blast furnace at

¹ Dr. Buchanan, *A Journey through Mysore, Canara and Malabar*, Vol. I, p. 118.

the Mysore Iron Works. A major part of the ore that is exported from Mysore is from the Shimoga District. The aggregate export from Mysore bears a proportion of 3-51 per cent, to India's total annual production of manganese.¹

Chromite or chrome iron ore occurs in fairly large quantities in Mysore and Hassan Districts. The ores from the Bhaktarhalli and Bairapur blocks of the Shimoga District are generally of high grade, with a high iron content whereas the other areas in the State yield low grade ores. The mines are for the most part worked by private parties on a mining lease for 30 years. However, in 1927 the Government decided to undertake some mining operations by themselves and the Bairapur area was chosen for the purpose. A Committee was appointed to direct and manage the working of the mines and work was actually started under the supervision of an officer of the Geological Department. Since then Government have undertaken chrome mining in a few more areas, accepting thereby the principle of State exploitation of certain mineral resources which are of an essentially significant character both from the point of view of their industrial utility and the revenue that they yield.

The total quantity of chrome produced in Mysore up till 1928 is 267,460 tons, which is 49-34 per cent, of the aggregate Indian output. The total quantity produced in Mysore up to the end of 1937 is 416,950 tons. The other places in India where chrome is produced are Baluchistan, Bihar and Orissa. The proportion of the Indian output to the total world production is 14-75 per cent. It is of interest to find that Mysore contributes 7-28 per cent, to the world output of chrome. Chrome ore is exported from Mysore to foreign countries to the extent of 87-87 per cent, of the aggregate production as there are no opportunities for the utilization of the ore locally. With the further extension of hydro-electrical schemes in the State certain electro-chemical industries like the manufacture of ferro-chrome and

¹ *Review of Mineral Production in Mysore*, 1929, p. 52.

10 INDUSTRIAL DEVELOPMENT OF MYSORE

ferromanganese may be undertaken. The fruition of these schemes may enable the utilization of the ores locally and reduce their exportation in a raw condition.

Among the other metalliferous minerals available in the State may be mentioned copper, silver, lead, zinc and antimony. The quantities in which they have so far been obtained are not such as to render them economically important. Though traces of old workings for copper ore have been discovered, still the attempts of the Department of Geology to mine copper are unsuccessful. The prospecting licenses obtained by private parties were similarly abandoned in course of time.

There are traditional rumours of silver having been found in Mysore but at the present time there is no trace of silver ore anywhere. The silver that is now produced in Mysore, occurs as a by-product of the manufacture of gold but the quantity is negligible. Up till the end of 1928 the quantity of silver produced in this manner was 188,100-6 ounces.

Lead and Zinc have been found to exist in small quantities scattered over the State. The prospecting work in connection with lead in 1930 proved that no galena was obtained after a certain depth and the quartz vein also gradually thinned out and disappeared.¹ The production of Lead in Mysore was never undertaken on a commercial scale. Small quantities of the ore were mined and distributed as samples. No export or sale of lead was reported and no royalty was ever realised from it. Besides the expense of extraction of the metal was so high that it could not be worked on a profitable basis. Hence further attempts at exploiting the metal have been given up. Occasional traces of Zinc ore have been found in the Kolar Gold Fields but they are only in comparatively small quantities. No further prospecting work has been undertaken to recover Zinc on account of the paucity of the mineral in the State.

¹ *Review of Mineral Production in Mysore*, 1929, p. 95.

The existence of small quantities of Antimony ore in the Chitaldrug District has been known for several years. During the Great War due to the large demand for antimony for munition purposes it was excavated and exported in appreciable quantities. A prospecting license was granted to a private firm of Bombay who undertook the excavation and also built a furnace nearby for refining the ore. After 1919 due to the fall in prices no further work has been done and the Director of Geology found that the cost of extracting the metal was so high that the undertaking was not economically sound.

Certain abrasive materials such as corundum and garnet are available in small quantities. Excepting during 1918 and 1919 when there was an export from the State, during the rest of the years till 1929 there have been only small quantities produced by the licencees. Garnet in Mysore is neither in large quantities nor is it of good colour to be used as gem stones.

Among the refractory materials, Mica is commercially important. Mica of a good variety is usually colourless and flexible but what is produced in Mysore is usually dark coloured. Its chief use is as an insulator for electrical machinery. India is the largest producer of Mica and contributes 70 per cent, to the total output of the world*. More than 50 per cent, of the Mica output of Mysore is for export purposes.

Asbestos found in Mysore has been tested to be satisfactory to serve as covering for boilers. It is being worked in the State by a number of private licencees. An asbestos factory for the manufacture of mill-boards was started in Mysore in 1918 but the concern had to suspend its activities later due to the want of sufficient quantities of the mineral/

The principal deposits of magnesite occur in the Mysore District. An attempt was made locally for the calcination of magnesite on a commercial scale but it was abandoned later as the quantity available was meagre. It is for the most part being exported at the present time.

12 INDUSTRIAL DEVELOPMENT OF MYSORE

The most important among the other refractory materials available in small quantities in the State are potstone, fire-clay and bauxite. Potstone is utilized in the State either for the manufacture of fire-resisting utensils or as an ornamental building stone for delicate and intricate carving. There are also three small factories in Tumkur for making slate pencils with potstone. Fire-clay is used for the manufacture of fire-bricks. Some of the Tile factories and Clay works in Mysore produce fire-bricks. The manufacture of refractory materials, like silica bricks, magnesite bricks and other varieties suited for furnace linings will have to be taken up in the near future in Mysore. Bauxite is used for the manufacture of alumina and the metallic aluminium. Some chemical preparations such as aluminium sulphate and aluminium chloride may also be produced with bauxite. Till now the bauxite material found in Mysore has not proved to be of any direct economic value since its quality is not up to the required standard and hence there has not been much production so far.

A mention may also be made of the abundance of certain materials for building construction in Mysore. Lime-stone, clays, kaolin and felspar are available in fairly large quantities. Clays and kaolin available in the State are of a good quality and a large ceramic industry is growing up for the utilization of the material.

AGRICULTURAL AND FOREST RESOURCES

The area under cultivation in the State is about six million acres which is about 35-2 per cent, of the total area of the State and 72 per cent, of the area classed as fit for cultivation. The soil in the State may be considered as generally poor being deficient in nitrogen and phosphoric acid. Among the food crops that are grown, Ragi is most extensively cultivated as it is the staple food grain of the bulk of the people. The other dry crops in the State are the millets, such as Jola, Thogari and Avare which are important articles of food of the Mysore Raiyat. Rice takes the first rank among the wet crops of

TABLE III

Statement of Production and Value of the Chief Minerals of the State for the years 1930-39

Year	GOLD		SILVER		IRON ORE	
	Output	Value	Output	Value	Output	Value
	Ozs.	Rs. A. P.	Ozs.	Rs. A. P.	Tons	Rs. A. P.
1930 ..	329,133·876	1,86,78,793 13 0	17,843·988	20,894 8 0	30,855·20	1,04,466 9 0
1931 ..	330,437·500	2,07,99,131 0 0	22,605·000	31,867 0 0	18,517·00	67,931 0 0
1932 ..	329,574·899	2,53,43,443 2 6	27,781·139	38,796 3 0	4,392·75	15,257 7 0
1933 ..	335,773·929	2,76,15,477 15 6	26,172·050	38,210 2 0	35,041·55	1,37,247 0 0
1934 ..	321,133·184	2,91,99,074 10 3	25,491·220	41,493 14 0	38,973·85	1,44,625 12 0
1935 ..	326,144·539	3,02,82,269 0 0	24,477·380	38,952 1 0	24,019·65	76,999 0 0
1936 ..	331,856·153	3,04,92,796 5 9	25,344·660	33,618 14 0	41,937·30	1,34,162 12 0
1937 ..	330,710·223	3,03,93,539 5 3	24,642·070	32,342 0 0	32,479·75	1,04,832 10 0
1938 ..	321,114·829	3,04,73,769 11 3	29,295·500	29,877 9 0	34,155·00 1,472·20 }	1,15,052 4 0
1939 ..	314,501·313	3,24,33,188 3 6	22,745·560	33,360 15 0	46,373·50	—

Statement of Production and Value of the Chief Minerals of the State for the years 1930-39—(Contd.)

Year	MANGANESE		CHROMITE		MAGNETITE	
	Output	Value	Output	Value	Output	Value
1930 ..	Tons 18,916.10	Rs. A. P. —	Tons 20,196.00	Rs. A. P. 3,90,255 0 0	Tons 960.50	Rs. A. P. —
1931 ..	973.00	—	4,975.00	96,466 0 0	355.00	5,808 0 0
1932 ..	553.14	3,839 11 0	9,999.00	1,63,283 2 6	372.00	8,273 8 0
1933 ..	275.75	2,248 11 0	5,756.41	80,811 0 9	4,074.65	30,122 12 0
1934 ..	427.85	3,122 0 0	12,240.19	1,82,639 0 0	3,116.50	27,010 0 0
1935 ..	870.60	5,396 12 0	20,087.97	2,42,591 0 0	4,144.50	29,405 0 0
1936 ..	1,459.90	10,160 12 0	21,344.52	2,13,088 0 0	2,501.65	24,948 0 0
1937 ..	5,548.60	25,213 3 0	26,399.97	3,12,916 0 0	2,384.18	23,230 0 0
1938 ..	5,323.90	17,857 3 0	16,968.90	2,55,620 0 0	2,558.94	25,717 0 0
1939 ..	1,067.00	6,980 0 0	30,708.54	3,26,863 0 0	3,665.10	32,671 0 0

Statement of Production and Value of the Chief Minerals of the State for the years 1930-39—(Contd.)

Year	MICA		REFRACTORY CLAYS—CHINA-CLAY		ASBESTOS	
	Output	Value	Output	Value	Output	Value
	Tons	Rs. A. P.	Tons	Rs. A. P.	Tons	Rs. A. P.
1930 ..	—	—	2,845.55	18,659 10 0	—	—
1931 ..	—	—	2,613.00	13,800 0 0	—	—
1932 ..	—	—	2,113.30	13,799 10 5	—	—
1933 ..	—	—	2,938.54	19,530 15 0	—	—
1934 ..	—	—	3,785.56	22,913 0 0	—	—
1935 ..	—	—	2,919.05	19,646 0 0	—	—
1936 ..	—	—	2,510.30	16,779 0 0	—	—
1937 ..	1.00	600 0 0	4,217.38	19,066 0 0	—	—
1938 ..	30.00	2,895 0 0	9,565.80	23,149 0 0	23	575 0 0
1939 ..	87.92	7,803 0 0	10,450.95	36,494 0 0	48	1,136 0 0

the State. It requires an abundant supply of water and its cultivation is therefore distributed in the State according to the water facilities available.

The chief commercial crops in Mysore are cotton, oil-seeds, coffee, tobacco and sugarcane. The area under cotton cultivation has reached about 69,888 acres. In addition to the indigenous variety, American cotton is also grown in the State. To supplement the local production about 46,899 bales of raw cotton are imported into the State annually from British India.

A large variety of oil-seeds are grown in the State, the chief among them being Gingelly, Castor and Groundnut. A little more than 475,000 acres are under oil-seeds. There is a brisk export trade and Mysore exports to the extent of Rs. 42,08,252 worth of oil-seeds annually. It promises to serve as the basis of an elaborate industry in the State if the present pace of progress is maintained.

Coffee is an important money crop of Mysore. It is exotic in origin and it is supposed to have been introduced into Mysore from Arabia. It is a plantation crop that is chiefly grown in the malnad areas of the State. The area under coffee cultivation registers a continued decline. Attempts are now being made to improve the quality of Mysore coffee and push it in foreign markets. There is a very large export trade in coffee from the State and since adequate road borne statistics are not available it is not possible to compute exactly the amount of coffee that leaves Mysore.

Tobacco is raised as a dry crop in the State. A little more than 26 thousand acres are under tobacco cultivation. Experiments were made for curing tobacco in the State and a few barns were constructed for the purpose with State aid. Recently a Joint-Stock Company with Government participation has been started for cultivating and curing Virginia type of tobacco in Mysore. The company has taken over the barns that were maintained by the Government previously.

Sugarcane cultivation has been of considerable importance in Mysore since the time of Tippu Sultan. It is one of the lucrative money crops of the State. Sugarcane is gradually displacing paddy in several areas in the State and particularly in places where irrigation facilities have been created. The Irwin Canal has been responsible for a great augmentation of the area under sugarcane. With the establishment of a sugar factory in the State in 1933 the cultivation of sugarcane on a large scale has become a necessity.

Mysore agriculture is well supported by an elaborate scheme of irrigation. There are three systems of irrigation works in the State, namely, wells, tanks and reservoirs. Nearly 24 per cent, of the cultivated area is thus protected by irrigation. The construction of large reservoirs is purely a modern conception. There are two large reservoirs in the State, namely, Vanivilas Sagara and Krishnarajasagara. The Vanivilas Sagara is in the Chitaldrug District and the construction of it was undertaken in 1899. The dam is 1,330 feet long and 172 feet high with a water spread of nearly 34 square miles. The cost of the whole scheme has been nearly Rs. 45 lakhs. The Krishnarajasagara is of a much greater magnitude. The length of the dam is 8,600 feet and it has a height of 120 feet ; the impounded water covering an area of 50 square miles. The reservoir is expected to irrigate 120,000 acres and the entire construction has cost the Government about Rs. 325 lakhs. Besides increasing the area under irrigation the reservoir ensures a constant supply of water for the electric power installation at Sivasamudram. This has not only solved the problem of an unsteady flow of water at the generating station but has actually helped to generate additional power.

The forests of Mysore play an important rôle as the suppliers of raw materials for a large number of industries. A well-staffed forest department sets forth a working plan and manages the forests in a manner most conducive to the interests of the State. The Forest Department was organised

in 1864 when the total area of State forests was 389 square miles. There are now about 4,500 square miles of State forests which work up to about 15-4 per cent, of the area of the State. Timber and fuel form the major forest products in Mysore. A large variety of timber such as sandal, teak and rosewood are available. Mysore sandalwood yields a large revenue to the State both through direct sales and by serving as the raw material for the distillation of sandal oil. Teak wood which forms about 25 per cent, of the total output of timber has been utilized in a number of industries such as railways, gold mining, electrical department and for various rural industries. Rosewood is used for the manufacture of artistic furniture and turnery work in the State. Among the minor forest products may be mentioned tangadi, lac, honey, and bees-wax. Tangadi which is a variety of tanning bark, is the mainstay of the leather industry in Mysore though it has suffered a little during recent years due to the competition of Australian wattle bark. The lac industry in Mysore is being developed. It is no doubt a fact that the competition of synthetic substitutes has affected the Indian lac industry but still with systematic research it is likely to be a profitable industry. At the present times shellac and polishes are made out of Mysore lac at the Lac Factory in Bangalore.

The firewood resources of Mysore forests are colossal. Nearly 50,000 tons of firewood are supplied annually to the Mysore Iron Works and about 8,000 tons of fuel to the Sandal Oil Factory. In addition to this a very large supply of fire-wood is consumed for domestic purposes whilst the practice of using cow-dung cakes as fuel is still widely prevalent in Mysore. There is an equally abundant supply of bamboos in Mysore forests. The yield has been put at about 50,000 tons annually. The Forest Department has undertaken to supply all the bamboos needed for the manufacture of paper by the Mysore Paper Mills. There is no fear of exhaustion as great attention is paid to a scientific conservation of forest resources.

POWER RESOURCES

The essential requisite of modern industrial development is the availability of cheap motive power. The nature of modern mechanized production is such that it places a great premium on external sources of power. No longer is it possible to motivate the machinery of production with human and animal power. The regularity of output and the similarity of the product require a steady and uninterrupted supply of power. Wind and water power which played a significant part during the pre-industrial evolution period can no longer be made to serve the needs of modern industry. Coal, oil and electricity are the significant sources of power during the present industrial era. They have transformed the methods of production, the structure of industry and the nature of the product. Standardization and mass production are the direct consequences of the modern sources of power. The industrial significance of modern countries depends to a very large extent on the power resources that they command. The coal resources of England were largely responsible for its industrial greatness. After the Great War the development of hydro-electrical schemes in Italy is one of the major causes for its industrial progress.

In respect of its power resources Mysore is not endowed with all that a promising industrial country requires. The most significant deficiency is the absence of coal in the State. India no doubt is a great coal producing country. Next to United Kingdom, India produces the largest quantity of coal in the British Empire. But the coal deposits of India are concentrated in Bengal, Bihar and Orissa. The transport factor is a further limitation on an equitable distribution of coal over the industrial regions in India. The cost of railway transportation is so high that it is entirely uneconomic for the South Indian provinces to depend upon the Bengal coal resources. Hence Mysore has had to combat against this serious deficiency.

The oil resources of the State are equally conspicuous by their absence. The most important oil producing areas of

India are Assam and Burma on the one hand and Punjab and Baluchistan on the other. The remoteness of the source coupled with the transport factor has effectively prevented the use of oil in Mysore as common source of power. No doubt a large quantity of petrol and kerosene oil is imported into Mysore for the sake of automobiles and domestic consumption but it has not been utilized for industrial purposes. Even though oil may be transported with greater facility than coal, still a perpetual reliance on an external source of supply is not conducive to a healthy industrial development.

Mysore grows a large variety of indigenous oil-seeds and there is also a brisk export trade in it. The annual exportation of oil-seeds from Mysore is estimated at 1,563,681 maunds. Such an exportation is considered as a loss to the country since the oil-cake which is a source of manure for land and fodder for cattle is irrevocably lost. Hence attempts are being made to extract oil locally. But the extent to which such oil could be a source of power is problematical. Crude oil engines are no doubt an important feature in the present era. They might be utilized for driving agricultural machinery and for purposes of lift irrigation. But it is doubtful if the supply of such indigenous oil could be commensurate with the needs of industry in Mysore. Hence much reliance cannot be placed on this particular form of power.

We may next turn our attention to the utility of forests as suppliers of wood fuel. Mysore abounds with forests and a perennial supply of wood fuel may be expected from them. Hence wood fuel may be considered as a reasonable source of power in Mysore. But there are certain essential factors which need careful scrutiny before wood fuel could be considered as a convenient source of power. The cost of transporting it to industrial centres is bound to be heavy and therefore industries must be localized near the source of power. This may not be always feasible as localisation is the result of various economic factors and all of them may not admit the concentration of industries in the forest areas. Next the

danger of deforestation is so great that unless extensive planting is undertaken it is a dangerous game. Moreover, it is not sound as an economic proposition because the cost of maintaining the forests for purposes of wood supply may have to be debited to industry.

The next grave problem is the method of converting wood into charcoal. This may be done either by the crude indigenous method of burning wood in the forests for obtaining charcoal or by the more scientific process of destructive distillation of wood. The Industrial Commission directed particular attention to the advantages of wood distillation as a method of obtaining charcoal and by-products like methyl alcohol, wood-tar, etc.¹ The Government of Mysore erected a wood distillation plant at the Mysore Iron Works for obtaining charcoal. Wood was felled in the neighbouring forests and was conveyed to the works over a tramway. After seasoning, the wood was subjected to destructive distillation. The process yielded in addition to charcoal a number of by-products such as methanol, methyl acetone, hard wood tar and kreso. Charcoal was utilized for the blast furnace and the by-products were for the most part being exported. An insurmountable difficulty was experienced when the export market for the by-products disappeared. In view of the huge capital expenditure of about Rs. 90,00,000 on the plant, it was found unprofitable to work the plant in the absence of an export market. It is therefore working at present only to 25 per cent, of its installed capacity. Thus the method of destructive distillation has almost proved a failure in Mysore on account of the unforeseen circumstances. The bulk of the charcoal required for the blast furnace is now obtained by the direct burning of wood in the forests. Therefore from the point of view of cost per unit of power the distillation process is uneconomic. The crude process of obtaining charcoal by direct burning of wood is no doubt comparatively cheaper but there is a colossal waste of potential

¹ *Report of the Indian Industrial Commission*, p. 66.

resources as the full value of the wood is not recovered through this process, and there is no chance for the recovery of the by-products. Hence wood fuel also does not appear to be a very promising source of power in Mysore.

Water power as an energy for driving machinery is of considerable importance in the present era. It is at once the best and the cheapest form of power for industry. Water power was directly applied to turn the wheels of machinery during the pre-industrial revolution period. The water wheel, just as the wind mill, was a very common feature of England on the eve of the industrial revolution. Even at the present time in Wales direct water power is the chief source of energy for a large number of industries. It is said, "of the existing woollen factories, ninety-five depend entirely on local streams for power—that is 60 per cent, of the whole number. These include all the small factories and a number of large ones."¹ But for modern industry a direct utilization of water power is not of much economic importance due to the irregularity of the flow of water. Hence during recent times considerable attention has been devoted to the generation of hydro-electrical power. Electricity may also be produced by the use of a fuel like oil or coal but it is relatively costlier as compared with hydro-electrical power. In accordance with the recommendations of the Industrial Commission a comprehensive hydrographic survey was undertaken in India.² The survey revealed great possibilities in connection with the development of hydro-electric power.

The Mysore State was the pioneer in India in respect of the generation of electricity from water power. The power potentialities of the Cauvery Falls were envisaged nearly half a century ago and in 1895 the scheme was thoroughly explored by the Government of Mysore. The impetus for the undertaking came from the demand for power for working the

¹ *The Rural Industries of England and Wales*, by Helen E. Fitz and M. Doriell Hay, Vol. IV, p. 33, 1926-27.

² *Report of the Indian Industrial Commission*, p. 69.

gold mines at Kolar. Gold mining being the largest industrial undertaking at that time, the absence of power resources in the State was keenly felt by it. Therefore the Government of Mysore launched the scheme and in 1902 electric energy was ready to be utilized. The Cauvery power scheme has grown from its humble beginnings to one of the largest hydro-electric power plants in the British Empire. The present output of power is estimated to be 53,000 H.P. and it is likely to be increased to 93,000 H.P. in the near future. There are at present 3,747 power installations in the State of Mysore. An idea of the cost per unit of electric power for industrial purposes may be obtained by perusing the agreement of the Government of Mysore with the newly instituted Paper Mills. They have agreed to supply power to the Mills at the rate of •55 of an anna per unit during day and at -35 of an anna during night.¹ There is no gainsaying the fact that electricity is by far the cheapest and the most convenient form of power for industry in Mysore.

Experiments at long distance transmission in Mysore have met with complete success. At the outset power was successfully transmitted to Kolar which is at a distance of 92 miles from the generating station. Recently transmission lines were laid to Bhadravati, a distance of 150 miles from Sivasamudram, to take power to the newly erected Steel Plant at the Mysore Iron Works. With the development of long distance transmission industrial localization in Mysore has proceeded according to the advantage derived in respect of raw materials and labour supply. An unhealthy concentration of industries, as for instance in the coal producing areas of England, is thus avoided and they are distributed all over the State according to the availability of natural and mineral resources.

The industrial future of Mysore is full of hope and promise. What appeared a deplorable state of affairs has been rendered

¹ For a comparison of electric rates in British India see Chapter VI, *Public Utilities*.

remarkably hopeful by the discovery of electricity as a cheap source of power. Mysore abounds with power potentialities and Cauvery Falls is only one among a number of sources of hydro-electric power generation in the State. The schemes for power development at Jog, Lakkavalli, Krishnarajasagara and Shimsha valley are being gradually undertaken by the Government. At present the construction of a new generating station is reaching completion at the Shimsha Falls. The project is estimated to cost Rs. 62 lakhs, the power expected to be generated approximating 15,000 to 17,000 horse power. Thus even though Mysore has been denied the benefit of black coal it is thriving on white coal.

Finally it may not be out of place to make a mention of alcohol as a source of power in Mysore. It is no longer a matter of theoretical speculation but a problem of great practical importance. Alcohol has begun to claim a place alongside of petrol. At the distillery at Mandya the distillation of rectified spirits has been undertaken. These spirits are being utilized for the motor lorries belonging to the Sugar Factory.

ECONOMIC OUTLOOK

The situation and economic resources of Mysore exert an extraordinary influence on its industrial development. The land locked position of Mysore is a factor of considerable importance in determining the nature of our economy. Since no direct access to the sea is available the exportation of the industrial products is a serious problem. A fairly long distance of land transportation has got to be undertaken before exportation, as the sea-ports of India are not within easy reach of Mysore. This enhances the cost of the industrial products and weakens its competitive power. Switzerland is similar to or even worse than Mysore in this respect. She suffers from a double disadvantage due to the absence of raw materials within its borders and the necessity to transport its finished products over a great distance. Hence cost

of transportation has to be reckoned with in Switzerland both on the importation of the raw products and the exportation of the finished products. This situation has made it necessary for Switzerland to bend every effort towards the manufacture of specialities and high grade articles. The industrial salvation of Mysore has to be engineered on similar lines. The development of her light industries and the exportation of highly finished products will enhance the wealth of the State. This could be achieved by a thorough exploitation of the hydro-electric resources and the skill of the people in the State. A well conceived scheme of technical education will go a long way in creating a bias for a wide range of light industries. Heavy industries may be developed for catering essentially to the home market and the neighbouring provinces. Economic readjustment on the lines suggested above is an easily attainable ideal in Mysore in view of the large resources available within the State, unlike Switzerland which has perforce to depend upon external sources for its raw materials. The Indian market that is external to Mysore is equally inaccessible as the chief consuming areas of Mysore products are in the north and hence the cost of long land transportation has to be borne. The white lead factory in Bangalore illustrates this difficulty in a striking manner. Its products have to bear the cost of the long land transportation from Bangalore to Calcutta which substantially reduces their competitive capacity.¹ Hence Mysore has perforce to confine itself to the catering of its own needs and those of its immediate neighbours so far as its heavy industries are concerned.

The fiscal position of Mysore exerts a powerful influence on its industrial development. An independent tariff mechanism for an Indian state is no doubt inconceivable but the present state of helplessness of Mysore in tariff matters is deplorable. Her industries are often the victims of the tariff policy of the Government of India. The Mysore silk industry for instance has suffered a number of privations due to the

¹ *Proceedings of the Mysore Economic Conference*, July 1926, p. 94.

want of a timely tariff support. Until and unless the Indian tariff policy is made to fall in line with the aspirations of Indian industries irrespective of the political areas to which they belong there cannot be a sound industrial progress. Mysore ought to have a large and sure voice in the manipulation of the Indian tariff in view of her far-reaching industrial schemes.¹ No country can develop its industries with impunity so long as an air of uncertainty and doubt prevails in tariff matters. One more claim that Mysore can put forth is in respect of the customs revenue on imported articles that are consumed in Mysore. If a part of it, at least, is made over to Mysore it could be utilized for the payment of subsidies to deserving industries. But these are high politics and therefore do not legitimately fall within the realm of an economist.

In spite of her fiscal disabilities Mysore has been able to progress industrially on account of the adequate supply of labour and raw materials within its border. The population of Mysore has no doubt an agricultural bias since 73.2 per cent, are engaged in the production of raw materials. Still with the spread of technical education and State enterprise there is a perceptible redistribution of population between agriculture and industry.

In respect of food supply the State is well provided and can be rendered almost self-sufficient. There is a plentiful supply of raw materials and a large part of it still remains unexploited. With the full utilization of raw materials a further development of industries could easily be envisaged. However, industrial development ought to be wisely guided and planned on account of the land locked position of Mysore and the absence of export facilities.

The future of Mysore is economically very promising. The schemes of rural reconstruction sponsored by the State have introduced a reorientation in village economy. Rural

¹ For tariff policy under the New Constitution see Chapter VIII, *External Trade*.

industries have been fostered with as much care and interest as urban industries. Among the urban industries both large and small units are developed according to the needs of the locality and the nature of the industry. Thus it could be asserted with safety that from an industrial standpoint Mysore stands foremost among the Indian States.

CHAPTER II

SMALL-SCALE INDUSTRIES

INTRODUCTION

Mysore has long had a number of useful and flourishing industries, organized on a small-scale basis. The capital invested in each industry was meagre and was mostly indigenous. It was the local craftsmanship that accounted for the progress of the early industries rather than either the organization or the technique among them. Natural resources, and historical reasons, such as the patronage of Royal Courts, were the chief determinants of localization. The market for the products was invariably confined to the State, except in the case of artistic ware which transcended not only the State boundaries but also the national limits.

The indigenous industries of Mysore can be classified into two broad categories according as they are decaying or surviving. Those industries in which capital plays a significant part, and which specially lend themselves to wholesale and associated production are in a decadent or stationary condition. Wherever individual enterprise is most effective or labour costs are proportionately large in the value of an article the indigenous industries have maintained their position.

DECLINING INDUSTRIES

Among the industries that are either defunct or declining may be mentioned, hand spinning, metal industries, gold lace, paper manufacture, manufacture of glass bangles and the wire-drawing industry. The decay of most of the indigenous industries may be attributed to the disintegration of the village economic life, which synchronised with the improvement of the means of communication and the consequent contact with Western civilization. But apart from such an universal

factor each industry has languished due to certain special reasons.

Hand spinning was one of the most important industries of Mysore. Judging from the point of view of volume and value of output, and also considering the number of persons who practised it, the industry was one of outstanding importance till the rise of the Cotton Mill industry in India. It suffered a serious setback with the advent from British India of the mill made yarn in the market. When handloom weavers took kindly to the mill yarn, hand spinning practically disappeared as a cottage industry. During recent years the Government of Mysore with the assistance of the All-India Spinners' Association, has been reviving hand spinning as a cottage industry. It is eminently suited to be a subsidiary occupation for the agricultural classes.

Among the metal industries the manufacture of iron occupied a pre-eminent position. The principal places where iron was smelted were Magadi, Chicknaikanhalli, Malvalli, Heggeddevankote and several parts of Kadur, Shimoga and Chitaldrug Districts. The process in vogue was crude and uneconomical.. Dr. Buchanan's description of it shows that they had a dim perception of the modern blast furnace.¹ Even the manufacture of steel was not unknown to them in 1870. At present the indigenous industry is practically defunct. The manufacture of iron and steel is largely amenable to modern technique and as such the local craft had perforce to disappear. The present needs of the State are largely supplied by the Mysore Iron Works.

Brass casting and steel metal work were carried on at Magadi, Nagamangala and Sravanabelagola. Lampstands, images of gods and elegant utensils were made in these places. A large local demand maintained these industries. They were in a languishing condition in 1914.² The flooding of

¹ Dr. Buchanan, *A Journey through Mysore, Canara and Malabar*, p. 118.

² V. S. Sambasiva Iyer, *The Resources, Industries, Trade and Commerce of Mysore State*, p. 58, 1914.

the country with cheaper substitutes such as aluminium and enamelled wares was responsible for the waning of artistic metal industries.

The manufacture of gold lace was being carried on in Bangalore till about 1870. It was confined to a caste known as *Sarigeyavaru* who lived in the Bangalore District. The process of manufacture required great skill and delicacy in handling. The industry disappeared by about 1870 with the importation of lace from France. There is however a large demand for gold lace by the handloom weavers and as such the industry merits revival.

It is interesting to note that even the manufacture of paper was attempted in Mysore. It was confined to Ganjam near Seringapatam, Channapatna and a few other places. The presence of soda and lime nearby for bleaching purposes might have influenced its localization. Anyhow it is only of an antiquarian interest.

Glass bangles were manufactured in the Chitaldrug District. Several factors conspired to crush the industry, the chief among them being the rise in the rents of land containing soda and a rise in the wages of workmen. Besides, the refined tastes of modern consumers have shown a preference for the imported foreign varieties which are also cheaper. Recent official enquiries have revealed the fact that a revival of the industry is not feasible.¹

The wire-drawing industry has had a hoary antiquity. As early as the reign of Hyder Ali, Mysore had become famous for the manufacture of wires for musical instruments. The superfine indigenous steel was utilized for the making of these wires. The industry suffered a decline with the decay of the local iron and steel industry.

SURVIVING INDUSTRIES : COTTON TEXTILES

We may now proceed to a consideration of those small industries which possess great potentialities even though

¹ *Report of the Board of Industries and Commerce*, March 1937, p. 4.

some of them may at the present time be undergoing certain hardships. Among the surviving industries the chief groups are textile industries, tanning, jaggery making, wood art ware, extraction of oil and *nakki* weaving.

The textile group includes the preparation of cotton, wool and silk fabrics, under cottage industry conditions. Cotton spinning and weaving provides employment for 23,500 men and 700 women.¹ The total area under cotton cultivation is estimated to be 100,000 acres and the quantity of cotton produced annually is about 50 thousand bales of 400 lbs. each. The export of raw cotton from the State amounts to 17,848 bales and there is an import of 44,608 bales of cotton leaving a net balance of 76,750 bales available for consumption. Out of this the Cotton Mills in Mysore consume 48,545 bales per annum. So about 28,215 bales are available for consumption to the hand-loom industry.² There are nearly 30,000 looms in the State engaged in the manufacture of cotton fabrics. About 40 per cent, of the industry is concentrated in the Bangalore District. The yarn used in the hand-loom ranges generally between 20^s and 30[^] for pure cotton fabrics, and 40 for an admixture of silk. It is estimated that approximately 50 lakhs of rupees worth of yarn is annually consumed by the hand-looms. The net balance of home made yarn, after making allowance for consumption by the mills and exportation from the State is 1,468,240 lbs. The aggregate consumption of yarn by the hand-loom weavers is about 3,434,000 lbs. Thus they utilize about 1,965,760 lbs. of imported yarn. Hence about 43 per cent, of the yarn utilized by the hand-loom weavers in the State is produced in Mysore.³ The total value of textile fabrics woven on hand-looms is estimated at two crores of rupees annually, of which woollen and silk goods account for Rs. 18-07 and RS. 74-64 lakhs respectively. Nearly a third of the local

¹ *Mysore Census Report*, 1931, p. 201.

² *Review of the Foreign Railborne Trade of Mysore*, 1935, p. 7.

³ *Ibid.*, p. 9.

demand for piece-goods is met by the production of hand-loom.

The hand-loom industry in Mysore has been experiencing difficult times ever since its competition with the British Indian cotton mills became acute. However even the economic and technical conditions of the industry are not very sound. As a class the weavers are subject to extreme financial weakness. Through perpetual indebtedness some of the weavers have lost their independence and are now employed on a piece wage basis by a handful of financiers. Even those who have retained their economic independence usually depend upon the local yarn dealers, as they cannot buy yarn for cash in the wholesale market. The practice of buying on credit from the local dealer entails a heavy loss on the weavers. Besides, the weaver is also deprived of a free market, as he has to sell the fabrics to the dealer who has advanced the yarn on credit. Very rarely goods are sold to customers directly by the weavers.

On the technical side the existing conditions are equally defective. The persistence of the country slay is an impediment to the increase of the aggregate output. With regard to the preparatory processes of weaving, there is a great scope for improvement. The present system of winding, warping and sizing is most uneconomic and wasteful. From a technical point of view the primitive type of sizing is very defective. Besides the weaver spends relatively more time on the preparatory processes than in actual weaving. Hence mechanization of the preparatory processes is essential for quickening the pace of production and increasing the output.

Ever since the founding in Mysore of the Industries Department at the end of January 1913, the State has been endeavouring to support the hand-loom industry. Through a process of experimentation and research the Government Textile Institute has adapted improved methods to local conditions. The experimental section of the Institute has

designed a new type of "Pit Automatic Loom", whose output is estimated to be double that of the ordinary loom. It can be worked either by hand or power. The cost of the loom is about Rs. 140.¹ To keep alive the improvements effected, looms and loom parts are distributed among the weavers. Peripatetic demonstrations have been from the outset a significant method of popularisation of new devices. Educational work is also organized for training weavers in the use of refined appliances. To improve marketing conditions a few co-operative weavers' societies were started although they ultimately functioned merely as credit institutions frustrating the original intentions. Thus it is obvious that the methods adopted by the State in fostering the hand-loom industry are more or less in conformity with the recommendations of the Indian Industrial Commission.²

A few suggestions may however be made for rendering the industry healthy and granting it another lease of life. Technically the chief defect is that proportionately a much larger time is spent in the preparation of the yarn for the loom than in the actual process of weaving. Hence the remedy lies in the institution of a centralized organization where winding, warping and sizing of yarn may be undertaken. Technical experts like Mr. Amalsad are of opinion that the Dresser sizing machine will ideally suit Indian conditions.³ Therefore the central institution, with adequate mechanical equipment, can supply prepared yarn to the weavers and thus augment their income by increasing the pace of production. The marketing of the products ought to be organized on a co-operative basis as otherwise the weavers' reliance on the local money-lender will continue unabated. Incidentally the societies can study the nature of the market and recommend novel and attractive patterns to the weavers. It is only by the development of the artistic side that the

¹ *Report of the Department of Industries and Commerce*, 1936, p. 7.

² *Report of the Indian Industrial Commission*, p. 161.

³ Amalsad, *Hand-Loom Weaving in the Madras Presidency*, p. 9.

hand-loom can survive in the face of power loom and mill competition.

WOOL-SPINNING AND WEAVING

Wool is an important textile raw material produced in the State. There are two sources of supply of wool namely the shearings from the sheep and the wet wool from tanneries. Sheep breeding has been an important avocation in Mysore and there has actually been an increase in the number of sheep by 53-7 per cent, during the past two decades. The annual yield of wool in the State is estimated at 2-7 millions of lbs. and it is supplemented by a net importation of about 3 million lbs. per year. The quality of the Mysore wool is not easily determinable because there is no process of grading in vogue and the value of the fleece is thereby considerably reduced.

There are about 19,298 persons engaged in wool carding,, spinning and weaving in the State. Most of them appear in Tumkur, Chitaldrug and Mysore districts. It is estimated that there are about 7,505 looms engaged in weaving wool.¹ The total value of woollen goods produced is estimated at Rs. 13-17 lakhs per year. The localization of the wool weaving industry is influenced entirely by the availability of sheared wool. But what is of greater interest is that different types of woollen products are made at different centres and thus there has been a sort of localization of qualities. The situation is explicable only on the grounds of traditional influences.

The economic condition of the wool weaver is deplorable. His problem is not essentially different from that of his fellow weaver in cotton. The indebtedness and consequent dependence of weavers on the middlemen weakens their economic stability. Often the weavers are at an obligation to sell the *Kamblies*² to the financiers for a price much

¹ A *Monograph on the Woollen Industry in Mysore*, 1935, p. 28.

² *Kamblies* are locally manufactured blankets.

lower than what they might fetch in the market. On the technical side the two obvious defects are the pace of production and the quality of the product. A disproportionately large amount of time of the weaver is occupied in the processes leading to weaving, such as carding and spinning. To accelerate the preparatory processes a refinement of the existing apparatus is essential. The quality of the product suffers due to the indigenous processes of milling and finishing which are inefficient and laborious. Adoption of simple mechanical technique for the final processes of finishing will considerably improve the quality of the products.

The year 1918 was a landmark in the history of the wool industry in Mysore. The Indian Munitions Board placed an order with the Mysore Government for the supply of army blankets. Immediately the State organized the weavers through a liberal distribution of finance and supplied nearly 31,000 blankets to the Munitions Board. This was a period of extraordinary prosperity for the weavers. Since then the activities of the local weavers have been at a low ebb. The war experiment revealed the potentialities of the indigenous industry. With adequate organization and finance it could be placed on a more stable basis.

Carpet manufacture is an important branch of the woollen industry in the State. Bangalore carpets are known all over India and they have a large demand in foreign markets. There are about 224 carpet looms, engaging 730 persons. The total annual production of druggets in the State is computed to be 107,000 sq. yds. Sir George Birdwood paid a glowing tribute to the excellence of the Bangalore carpets.¹

SERICULTURE : GENERAL FEATURES

Sericulture has been in existence in Mysore for about a century. Climate and soil conditions are the chief natural factors for its development in Mysore. It is not practised

¹ *Mysore Gazetteer*, by Lewis Rice, Vol. I, 1897, pp. 537-38.

as a main industry but is subsidiary to agriculture. Hence its economic importance consists in providing occupation and supplementary earnings to a large number of agricultural families. Sericulture fits in admirably with the agricultural economy and a perfect dovetailing of labour between the two is feasible. It provides occupation to the members of the family who are prevented from working on the field and it also employs that part of the time of the farmer which is left unoccupied by cultivation of the soil. The sericulturist unlike the pure agriculturist adds to his income more frequently as he raises four or five crops of worms during the year and this incidentally increases his credit-worthiness.

The extent of the industry can be measured by the number of families engaged in it and by the acreage under mulberry cultivation. About 45,000 families are directly engaged in silk-worm rearing and mulberry cultivation. If we include the groups that are engaged in silk reeling, trading and other incidental occupations there are about 117,000 families who are benefited by sericulture. Approximately it contributes towards the livelihood of nearly a sixth of the total population. In 1937-38 the area under mulberry cultivation was 26,500 acres which recorded a shrinkage of about 50 per cent, as compared with 1926-27 when it was 53,000 acres. Since then there has been a progressive decline in the acreage due to the depression in the industry, but it has emerged successful, though smaller in extent, due to the parental care of the State.

PRESENT ORGANIZATION

The Sericultural industry comprises three types of operations, namely, mulberry cultivation and silk-worm rearing, silk reeling and trade. Silk-worm rearing is done by the same class of people who grow mulberry. Silk reeling and trade in silk are carried on by two separate groups of people. In Mysore the bush variety of mulberry is cultivated and the principal capital investment in sericulture is on the mulberry

garden. The initial investment varies from Rs. 75 to Rs. 100 per acre.¹ About 75 per cent, of the cost of producing cocoons is due to the cost of providing mulberry leaves. Mysore has a distinct race of indigenous silk-worms. They belong to the multivoltine species which is different from the univoltine and bi-voltine varieties of Europe and Japan. Mysore silk-worms feed on mulberry leaf, and the silk that they yield is of excellent quality. Pure foreign varieties are reared only in Government farms for obtaining hybrids between them and the indigenous species. The first generation of hybrids are also reared by the sericulturists along with the indigenous species but they form only 25 per cent, of the total supply. The hybrids yield 40 per cent, more silk than the pure Mysore worms.

Silk reeling is done by professional reelers with the use of indigenous spinning wheels known as "charkas". There are about 4,000 such appliances in the State. They turn out the major part of the raw silk output of Mysore. In the year 1937-38 out of about 795,000 lb. of raw silk produced in the State only about 10,000 lb. were reeled by power-driven machinery.² There is a filature with 34 basins maintained by Government whose annual output is about 8,000 tons. The reelers sell the raw silk through big merchants who maintain silk *Kotis*, or depots at the silk centres. On deposit of the raw silk the merchants give an advance to the reelers and undertake to market it for a commission. They also charge interest on the advances. There are intermediary brokers between silk worm rearers and reelers and between reelers and merchants. About 30 to 40 per cent, of the Mysore raw silk is consumed locally and the rest is sold outside the State, but for the most part within India. It is estimated that there are 8,000 silk looms working in Mysore.

¹ Memorandum to Tariff Board: Sericultural Industry, 1938 ; *Note on Sericulture*, p. 3.

² Replies to Questionnaire: issued by Indian Tariff Board: Silk Industry, 1938, p. 14.

CAUSES OF DECLINE

The most important reason for the decline of the industry is the aggressive nature of the competition of Japanese and Chinese silk in India. Since 1932 there has been an enormous increase in the importation of raw silk into India. The imports rose from 1.5 million lbs. in 1931-32 to 3.1 million lbs. in 1932-33. Since then it has stood at an average of about 2.3 million lbs. In 1937-38 the import of raw silk stood at 2.5 million lbs. Till 1934-35 China held the greater part of the Indian market but since that year Japan has contributed the major part of the Indian imports. Imports into Mysore are usually from merchants in Bombay and Madras and not direct from the country of origin. The imports into Mysore have risen from 1.69 lakhs in 1932-33 to 3.79 lakhs in 1936-37 and to 5.01 lakhs in 1937-38. The position is similar with regard to the imports of silk piece-goods and artificial silk yarn. The imports of silk piece-goods into India rose from 1.9 million yds. in 1931-32 to 41.1 million yds. in 1933-34. Thenceforward there was a gradual decrease and it was 22.8 million yds. in 1937-38. There has been an enormous increase in the importation of artificial silk yarn. It has risen from 11.0 million yards in 1932-33 to 31.5 million yds. in 1937-38.

In analysing the causes of the weak competitive power of the Mysore sericultural industry as compared with Japan, three important factors stand out in clear relief, namely, the relative cost differences, the efficiency of organization in Japan, and the dumping of Japanese silk in the Indian market. From the point of view of cost, Mysore has certain inherent disadvantages which she is trying to overcome gradually. The pure Mysore silk-worm takes a longer rearing period and yields a lower percentage of silk than the Japanese worm. The Mysore worm has a total rearing period of 30 days and yields only 12.3 per cent, of silk content and the Japanese worm takes only 27 days and yields 14.6 per cent, of silk content. The longer rearing period

involves higher expenditure on mulberry leaves. This deficiency is overcome in Mysore by the introduction of hybrids which take only 26 days and yield 14.6 per cent, of silk. But the preparation of hybrid layings is a difficult process and is hence undertaken only in Government farms. It will take some time before the private grainages can undertake to supply the hybrid layings. The second item of extra expenditure in Mysore is due to the mulberry leaf. In Mysore almost the entire supply of leaf is from the bush variety of mulberry which is more expensive to maintain than the mulberry tree. Whereas the cost of mulberry leaf from bush plant is 2.5 pies per lb. it is only 1.2 pies per lb. of leaf from mulberry tree. It is no doubt not possible to eliminate bush leaf altogether because they are more tender and are necessary for the young worms. But it is the older worms that consume more and they can thrive on tree leaf. Besides the initial expenditure on a bush garden is greater than on a tree plantation and the trees last for 30 years whereas the bush plants yield leaf only for 15 years. In Japan, unlike Mysore, bush cultivation depends on rainfall due to its even distribution-and no expenditure is incurred on irrigation.¹ The Government of Mysore are encouraging the planting of mulberry trees but it will take a few years before they can add appreciably to the supply of bush leaf.

From the point of view of organization the conditions in Japan are far superior to those in India. In 1931 the raw silk industry law was promulgated in Japan introducing a collective control over the industry.² The guild system exists on an extensive scale in Japan. There are silk-worm rearers' guilds in every village, for standardization of varieties and for co-operative sale and purchase. They are affiliated to the Prefectural League of Rearers' Guild. Similarly there are guilds of silk-worm seed makers, cocoon brokers, etc. All of them are ultimately affiliated to their respective

¹ *Note on Sericultural Industry in Japan* (Mysore Government), 1930, p. 1.

² Mitsubishi Research Organization : *Japanese Industry and Trade*, p. 267.

Federations which comprise the whole of Japan. Raw silk for export is subjected by law to inspection and grading of quality at the State Silk Conditioning House. The certificate issued by the Conditioning House is the basis of transactions between the dealer and the exporter. The fact that all phases of the sericultural industry have been brought under guild organization has facilitated the spread of knowledge in all branches. The results of researches and other measures of standardization and price control reach the sericulturists very easily. The guilds have been responsible for a great deal of improvement in the sericultural industry in Japan. Thus both from the standpoint of cost differences and efficiency of organization Mysore has to make up a great leeway. The extent to which dumping is responsible for the aggressive competition will be discussed in a later section.

MEASURES TAKEN IN MYSORE

The Government of Mysore is endeavouring to reduce the cost of production of Mysore silk. There is a separate department of sericulture since 1920 whose annual expenditure amounted to Rs. 2,18,105 in 1937-38. Since 1927-28, when the industry first showed signs of decline, the Government have spent about Rs. 22 lakhs on its rehabilitation. The supply of disease-free layings to the sericulturists is one of the most important contributions of the Department. This has reduced the loss of crops due to bad seed which was very frequent formerly. Pure foreign races are reared in the Government farms for obtaining hybrid seeds. Nearly 25 per cent, of the total seed distributed are now of the hybrid variety. They yield 40 per cent, more silk than the pure Mysore species. In course of time they hope to increase the percentage of hybrid worms by associating the aided grain-ages with them in their seed campaign. Endeavours in this direction will be very effective in reducing the cost of production. There is already some evidence of the improvement

effected. In 1933-34 the area under mulberry was 32,869 acres and the quantity of silk produced was 788,800 lb. In 1937-38 though the area fell to 26,500 acres the production of silk has risen to 795,000 lb. During the past decade some 25 aided grainages, subsidized by the Government, have been started for the supply of disease-free layings to the rearers. Improvements have also been effected in the method of rearing and the yield of silk has been increased from 25 lb. to 50 lb. per 100 layings during the past two decades. Research in mulberry growing is conducted in the experimental farms and the most suitable fertilizers are distributed to the farmers. The planting of mulberry trees is subsidized by Government. Better methods of reeling silk are encouraged by the popularization of the "Mysore Domestic Basin". A Joint-Stock Company called the Mysore Silk Filatures was started in 1937 with Government assistance and they hope to start a few filatures with 200 basins which is considered as the optimum unit. With an increase in the production of filature silk, conditioning houses may be started with great advantage because unlike the Charka silk which is not amenable to quality tests, filature silk can be certified for sale. There are ten sericultural co-operative societies in the State for the promotion of collective action among the silk-worm rearers. Cocoon markets have been started by Government in the important silk centres in order to introduce open transactions on the lines of cocoon markets in Japan. Sericultural education, research and demonstration are some of the other activities of the Department of Sericulture in Mysore. A draft bill on the lines of Japanese legislation for penalising unexamined seeds has been prepared and sericulturists are educated to realise the advantages of it. Thus all that could be done has been attempted in Mysore and if still the results are not spectacular it is either because sufficient time has not been allowed for the schemes to mature or because the dumping operations of Japan have been too severe to withstand.

TARIFF PROTECTION

Before claiming any protection for the industry it is necessary to emphasize a few factors which entitle sericulture to special treatment. The analysis of some of the factors responsible for cost differences between Japan and Mysore has made it clear that the difference is not due to forces which are rigid and unchangeable but are due to certain features which are amenable to modification and improvement. The methods of mulberry cultivation and the yield of silk have both been improved during the past decade and there is ample evidence of the efficacy of the methods adopted by the Government. So if the present methods of research are pursued for a few years more a further reduction in the cost of production may be expected. Therefore the industry is working its way in the direction of decreasing cost even though the pace is rather slow. Efficiency of organization in Japan is not a regional difference. Mysore can improve its organization on the lines that she has already chalked out. So the claim for protection can be based on the fact that an industry showing tendencies of decreasing cost deserves temporary assistance. Prof. Viner concedes certain aspects of Graham's argument that an industry operating under decreasing cost has a claim for protection even though there may be a comparative disadvantage in costs. Viner says "Decreasing marginal costs are not necessarily or typically a short-run phenomena, and it is Graham's contention that if an industry is operating under decreasing costs it may pay to protect it even if it has a permanent and irremovable comparative disadvantage in costs."¹ So the claim for protection that we are trying to establish is based on considerations which are conceded even by some of the free traders. The usual protectionist fallacies are not applicable in this case. Besides the benefits of such protection are not appropriated by a class of capitalists. It is distributed among a large class of sericulturists who are also agriculturists. In so far as the

¹ J. Viner: *Studies in the Theories of International Trade*, p. 482.

agriculturists are the backbone of the economic organization in Mysore there is also a social justification for their maintenance through protective measures.

The Tariff Board on Sericulture in 1933 took the price of cocoons as the basis of their calculations. They decided after great deliberation that a price of five annas per pound of cocoon would be sufficient to remunerate the rearer and to encourage him to improve the quality of the worms by good feeding.¹ Having that as the basis, they determined the fair selling price of first quality silk at Rs. 6-2-6. Since the ex-duty price of imported silk at that time was Rs. 3-12-0 they decided that the difference of Rs. 2-6-6 ought to be the extent of protection. They accordingly recommended a specific duty of Rs. 2-6-0 per pound or an *ad valorem* duty of 50 per cent, whichever was higher. By the time the Government of India took action the ex-duty price of imported silk had fallen to Rs. 3-11-5. In spite of it the Government of India granted only a duty of 25 per cent, *ad valorem* plus a specific duty of 14 annas. This worked out to a duty of Rs. 1-10-0 per pound which fell short by 12 annas of the rate recommended by the Board. Thus it was inadequate even when it was granted. It has become worse since then due to the continued fall of the average declared values of foreign silk in India. In 1933 when the Board recommended, the average declared value of imported silk was Rs. 3-3-5 per pound. It fell to Rs. 2-12-4 in 1934 when the Government imposed the existing protective duty. In 1935 it reached the low figure of Rs. 2-4-6. It stood at Rs. 2-12-11 in 1938. Thus the fall has been almost continuous since the recommendation of the Board. In the meanwhile the Chinese currency depreciated enormously. In 1933, 100 Shanghai Taels were worth Rs. 117. In 1938 it was worth only Rs. 54. Hence the price of 5 annas per pound of cocoons which was considered as fair by the Tariff Board was never realised by the Sericulturist.

¹ *Report of the Indian Tariff Board: Sericultural Industry, 1933*, pp. 151-152.

Another extraordinary circumstance conspired to dislocate the Indian market still further. In 1929-30 the Japanese Government had stored 112,000 bales of silk in order to stabilise silk prices.¹ Later, as the object with which it was stored was not realised, it had to be released on the market. But there was a protest in Japan against its release in the local market. The Government could not export it to their European and American markets for fear of dislocating their large consuming centres. Hence in 1934 the Government decided to export the bonded silk to India. So between 1934 and 1936 there was an enormous export of Japanese silk into India, displacing China from the Indian market. This was a period when the dumping of Japanese silk in India was rampant. Evidence of such dumping can be obtained by a comparison of cost of production in Japan or the spot prices in Yokohama with the actual selling prices in India. In 1935 the cost of production in Japan was Rs. 4-5-7 per lb. and at that rate it should have sold in India at Rs. 6-11-0 after paying duty. But the actual selling price of Japanese silk at Bombay stood at an average of Rs. 4-9-2. The spot price at Yokohama was on an average Rs. 4-7-3. The price in India on that basis should have been Rs. 6-13-1,² but as we have seen it was actually far below it. In 1936 the cost of production was Rs. 4-7-1, and the price in India after paying duty should have been Rs. 6-12-10 but it was actually Rs. 5-7-7. The spot price in Yokohama was Rs. 4-4-2 and even on that basis the price in India should have been Rs. 6-9-0 but it was much less. Thus there is clear evidence to show that there was deliberate dumping during that period. Neither the spot prices in Yokohama nor the cost of production in Japan can account for the low prices in India.

So all salient considerations go to show that the claim of protection for the industry is well founded. The extent of

¹ (Mysore Government) Replies to Questionnaire issued by Indian Tariff Board : Sericulture, 1938, p. 22.

² The market prices given above are averages for the year.

protection at present has perforce to be much higher than Avhat was envisaged in 1933. * If the ideal of 5 annas per pound of cocoon set up by the Tariff Board is to be achieved the fair selling price of Rs. 6-2-0 has to be retained. Since the ex-duty price of imported silk is now in the neighbourhood of Rs. 2-8-0 the measure of protection should be to the extent of Rs. 3-10-0 per pound. The period of protection ought to be fairly long, as otherwise none of the measures adopted by the Government for reducing the cost of production can bear fruit. However even though there is a clear case for protection the part that the respective Governments and the industrialists have to play under the shelter of the protective duty should not be overlooked. Tariff protection alone cannot be expected to improve the situation because of the wide disparity between the foreign and domestic prices and the consequent futility of protective measures. Hence to bridge the gulf the local cost conditions have to be examined further and substantial economies ought to be effected. Such a two-sided action appears to be the only reasonable method of saving an industry which is threatened with extinction.

TANNING

Tanning as a cottage industry was of considerable importance in Mysore in the past, but at the present time the industry consists of a few tanneries operating on a medium scale. There are about 40 tanneries in the State and the value of their output for export purposes is estimated to be Rs. 98 lakhs per annum. Most of these are bark tanneries and the chrome process of tanning is not in vogue, except at the "Mysore Tanneries Ltd." started on a fairly large scale, but which has not achieved any real measure of success.

There are immense possibilities for the development of the industry. An indefinite amount of tanning bark is available in the State and the local supply of raw hides and skins is supplemented by importation from other parts of India. Recently there has been some competition between the

Australian wattle bark and the *Tangadi* bark of Mysore, but the industry has not suffered consequently. Hence the factor equipment for the progress of the industry is adequate. But the organization and the processes in the industry have not been modernised. The indigenous process of tanning is inefficient and liable to much waste. Most of the by-products such as fleshings, are allowed to go to waste. Attempts are now being made to manufacture glue from the fleshings available in the tanneries.

The industry needs a thorough reorganization. In view of the fact that a revival of bark tanning under cottage industry conditions has not been found feasible,¹ it is necessary to stabilise the industry in its existing form. The quality of the tanned leather is in need of considerable improvement. Since it has to sell in an outside market a proper standardisation of its quality will go a long way to render the industry prosperous. Finally it can be suggested that the preparation of tannin from the indigenous bark may be attempted. The use of tannin is expected to reduce the time required for tanning leather. Besides an export trade in it may also be developed as its transportation is easier than that of tanning bark.

JAGGERY-MAKING

There is a fairly large cultivation of sugarcane in Mysore. Nearly 50,554 acres are under sugarcane cultivation. The agricultural department has introduced new varieties of cane and improved the methods of cultivation by popularising the use of oil-cakes and chemical manures. Irrigation facilities are very essential for sugarcane cultivation and as such the bulk of it is grown near large tanks and wells. Till the Irwin Canal area was brought under cane cultivation most of it was being cultivated in small patches all over the State.

¹ See *Report of the Board of Industries and Commerce in Mysore* : 1935-36, p. 16.

Till recently sugarcane was being converted mostly into jaggery. The indigenous appliance used was the primitive wooden roller worked by a pair of bullocks. This was a very wasteful process as a large percentage of juice was left in the megass.¹ The Department of Industries has introduced a number of technical changes both in the extraction of the juice and the conversion of it into jaggery. The three roller iron mills have largely replaced the primitive wooden rollers. The Department also started a number of power crushing plants in order to facilitate the conversion of cane into jaggery. These were in the nature of pioneer institutions to be eventually handed over to private enterprise. They have, however, not met with success. Either the cost of conversion has been found heavy by the farmers or the yield of jaggery less than what they obtain by the indigenous method. These fears were for the most part unfounded. Power crushing installations are the only panacea for improving the economic condition of the small sugarcane growers. Even the establishment of the sugar factory at Mandya is not expected materially to affect the indigenous jaggery making. Jaggery has an exclusive market which cannot be appropriated by sugar. As Adarkar points out "The exclusion of the Java sugar cannot have widened the market for gur, because gur always has a more or less independent market which was never encroached upon either by the Java or the local sugar".² Hence the industry is bound to continue and the future line of ameliorative action consists mainly in the perfection of the process of extraction of juice and the conversion of it into jaggery.

WOOD ARTWARE

Mysore shares in the artistic talent of the Orient and there has been from time immemorial an indigenous industry in wood artware.. Sandalwood carving is done by a class of

¹ Megass is the fibrous residue, after expression of sugar from cane.

² B. N. Adarkar : *The Indian Tariff Policy*, p. 93.

people known as "Gudigars" in Shimoga. They make images of deities, caskets and occasionally imitate nature by making figures of animals. They indulge in a very intricate interlacing of foliage which often appears grotesque. If only they are taught to observe a little more fidelity to facts and impart to their products greater realism they would sell better in foreign markets. Their present economic difficulty is the absence of a steady demand and consequently they rarely keep a good stock. What they need is a central organization which could supply them with novel designs, finance them and ultimately take over the finished products.

Inlaying in ebony and rosewood with ivory is another artistic craft claiming hoary antiquity in Mysore. The gates of the Mausoleum of Tippu at Seringapatam are proud specimens of this extraordinary skill in Mysore. It is now being practised by a class of Mohammedans in Mysore. They prepare tea trays, soap boxes and paper weights. These artisans do not lack skill but they lack ideas. There is a dull uniformity in their design becoming almost monotonous. This ought to be relieved by the provision of a variety of new designs.

Mention may also be made of the manufacture of musical instruments and lac turnery as other varieties of wood artware. Lac turnery is an old indigenous industry of Mysore. Different kinds of toys are made with various shades of pleasant colours. The Government Arts and Crafts Depot is a useful institution to the workers in wood artware. It finances them and displays their products for sale. The creation of a suitable agency for the distribution of new designs and for the supervision of the work of the artisans is desirable. Otherwise there can be no co-ordination between the workers and the Sales Depot, which will largely frustrate the objects of the institution.

EXTRACTION OF OIL

The indigenous industry for the extraction of oil is in a state of transition. The primitive method of extraction,

though still widespread, is being gradually displaced by oil mills designed on modern lines. But there are only about a dozen mills in the State having mechanical methods of extraction.¹ It is obvious that in view of the large exportation of oil-seeds there is a possibility for further development. Locally there has been a growing demand for vegetable oils with the expansion of industries such as soap factories. Besides the exportation of oil-seeds is economically unwise as a potential source of food for cattle in the shape of oil-cake is irrevocably lost. The attempts made to improve the indigenous technique of extraction of oil may prevent the disintegration of a class of ancient craftsmen. But the larger problem of providing the home market with an adequate supply of oil can be solved only by pursuing the mechanical methods of extraction a little further. There appears to be a scope not only for an increase in their numbers but also the scale of their operations.

NAKKI² WEAVING

A brief account may be given of the *Nakki* weaving industry in Bangalore. It is difficult to give reasons for the origin and existence of the industry in the State. The finished product is not consumed in the State but finds a market in Northern India. As a matter of fact it has to compete with similar products made in places like Delhi, Jalander and Ajmer. On the other hand the chief raw material namely lametta, which is a kind of silvered copper wire is imported to the extent of 60 per cent, from France, the rest being obtained from other parts of India. Skill and climatic conditions do not seem to play a very significant part in its manufacture. It is therefore not easily explicable how in spite of a distant market and paucity of factor equipment, the industry could have got localised in Mysore. There are about 650 looms engaged in it and their output is valued at

¹ *Return of Large Industrial Establishments in Mysore*, 1935.

² *Nakki* is a kind of silver lace.

Rs. 35,000 per month. The occupation is confined to a group of 400 families belonging to the same community. At the present time the industry is experiencing a slump due to North Indian competition.

Apart from the few indigenous industries which have been mentioned above there are several other minor cottage industries in the State, each of which is being followed by a handful of persons. Among them, the industries which belong to the rural type such as poultry farming and basket making, are followed as subsidiary occupations by the agricultural classes. The urban group is constituted by industries such as the manufacture of perfumery and the making of scented sticks, and they provide occupations to women in urban areas.

Thus a very large range of industries are suitable for cottage economy in Mysore. They provide occupation to 156,406 workers out of a total industrial population of 201,000 people. That shows that nearly 77.8 per cent, of the industrial workers are engaged in cottage industries. The magnitude of these domestic industries can be better imagined

Table showing the Size of Establishments and the Distribution of Workers Among them—1935

Size of Factories	Number of Factories	Percentage of Factories	Number of workers engaged in each type	Percentage of workers
Large: Employing 200 or more workers ..	26	8	16,743*	57
Medium: Employing 30-199 workers ..	135	40	9,856	33
Small: Employing 10-29 workers ..	174	52	2,695	10
Total ..	335	100	29,294	100

*About 23,338 workers belonging to the Kolar Gold Mines have been excluded from this, as they cannot be treated as factory workers.

when a comparison is instituted between the total "occupied" population of Mysore and the cottage workers. About 6.6 per cent, of the total "occupied" population belong to the cottage industries. The number of small and medium sized establishments in the State employing from 10 to 199 workers is enormous. A glance at the table given above will show that nearly 92 per cent, of the total industrial establishments are of the small and medium size. They provide occupation for about 43 per cent, of the total factory workers. Thus in the scheme of industrial organization in Mysore the small industries occupy a pre-eminent position.

GENERAL FEATURES OF SMALL-SCALE UNITS

Small-scale industries have certain distinctive features. They involve, in general, a relatively small capital equipment and operate with only a few mechanical appliances. The unit of efficient organization is small with a high degree of personal supervision. The processes of production entail a large proportion of labour cost and a high premium is placed on efficiency in skill and craftsmanship. These characteristics are entirely alien to the trend of industrial development in the modern world. The small units represent an earlier phase in the evolution of industrial organization. Still, curiously enough, they persist and even loom large in the economic structure of modern countries. An enquiry into the reasons for their survival may be commenced with an examination of contemporary conditions in some of the highly industrialised countries.

COMPARATIVE STUDY

Switzerland is one of the European countries where the small-scale industries play a very significant part. On account of its land-locked position Switzerland has developed a system of industry peculiar to its circumstances. Its industrial products are unique for the amount of labour

incorporated in them. It is said that in the Swiss machinery industry, the labour factor represents 70 to 80 per cent, of the final cost.¹ She bends every effort towards the manufacture of specialities and high grade articles and has thus maintained her position in foreign markets.

Switzerland, therefore, places a high premium on the artistic talent of its labour. A scientific exploitation of such talent is possible only under small-scale organization. Hence her home industries are holding their own. The embroidery and lace industry of Switzerland owes its prominent position on the world market to the maintenance of a high standard. The Swiss knitting and hosiery industry occupies more than 10,000 home workers. At the present day watch making and its allied branches, namely jewellery and the manufacture of musical boxes, occupy about 67,000 hands. These are industries where machinery has failed to replace skilled workmanship.

Japan, which is considered a portent of the East and which is no less an enigma, has within the course of three decades achieved the impossible. It has come to the forefront as a great industrial country shaking off its feudal economy. Since the Meiji restoration a tremendous industrial upheaval has occurred and both the face and mind of Japan have undergone a transformation. To-day it takes rank with the greatest industrial countries of the world. Still the structure of its industry is not entirely of the large-scale variety. A very large share of its output is turned out by the small and domestic industries. Moulton says that a large portion of the manufacturing activity is still under the quasi-handicraft system of small-scale enterprise.²

In Japan the manufacturing industries on a medium and small scale cannot be ignored because 98.2 per cent, of the factories, 60.7 percent, of the workers and 55.2 per cent.

¹ *Economic and Industrial Switzerland*: published by Swiss Office for the Development of Trade, p. 33, 1931.

² Moulton : *Japan: An Economic and Financial Appraisal*, p. 347.

of the output are theirs and these industries are progressing as a whole.¹ Chief among those that are run on a small scale are the food, lumber, furniture, bicycles and rayon textile industries. They cater not merely to the local market but produce the greater part of the staple export goods such as bicycles, rayon textiles, and knitted goods. It is estimated that nearly 65 per cent, of the total volume of exports is contributed by the small-scale industries.² Thus a considerable proportion of the total manufactured output of Japan is produced by the small-scale enterprises.

France was the pioneer in the act of artistic creation in industry and the conception is even now kept alive by some of its small-scale enterprises. The French cutlery, worsted and silk ribbon industries reveal the grace and beauty of skilful manipulation. In the worsted industry the handloom has survived on account of the specialities in women's fabrics that are produced for exportation. France has always been the home of artistic trades and small workshops. Clapham points out that in 1896 there were 575,000 establishments having on an average only 5.5 workmen each and there were only 151 units with a thousand or more workers.³ In the twentieth century the introduction of the electric motor has given permanent vitality to the small-scale producers in France and they are not likely to disappear so long as there is a premium on artistic creation in industry.

In Germany the small-scale industries have played an equally important part in its economic development. To mention only a few, the toy industry of Nuremberg and the clockmaking in the Black Forest have made significant contributions to the industrial vitality of Germany. "The export trades of Germany," says Clapham, "had in many

¹ *The Asahi*: English Supplement: 1935, p. 24 (Small 5-29; Medium 30-199; Large 200 and more workers).

² Takahashi's estimates: See Mitsubishi Research Bureau: *Japanese Industry and Trade*, p. 63.

³ J. H. Clapham: *Economic Development of France & Germany*, p. 258.

cases been founded on these peasant industries."¹ The small-scale industries of Germany are for the most part concentrated in Prussia, Saxony and Bavaria. Their products constitute a large part of the total output of German industry. Speaking of toy-ware Dawson says " In 1913 the exports alone exceeded five million pounds, and the value of the output of this industry was estimated at several millions more".²

The conditions in Germany during recent years also reveal the fact that handicrafts have in no way suffered any serious decline. On the other hand they have established themselves alongside of large-scale industry with a special status and importance peculiar to themselves. Schindler, in comparing the data of 1933 with that of 1925 points out that the proportion of small establishments in Germany, employing not more than five persons rose from 89.4 per cent, of the total in 1925 to 91.9 percent, in 1933.³ They provide employment to nearly 40 per cent, of the workers in Germany. On the whole the small establishments weathered the depression much better than the large ones.

Even in Great Britain the small industries occupy no negligible place. There are a number of rural industries scattered all over England and Wales. Hand-loom weaving is flourishing in the Lake District and in Sussex.⁴ Lace making survives in England as a cottage industry. It is carried on by part-time workers in East Midlands. Glove making, straw plaiting and toy-making are some of the successful handicrafts taken up by the Women's Institutes in England. The potteries of Devonshire claim an unbroken tradition of fifteen hundred years.

¹ J. H. Clapham: *Economic Development of France and Germany*, p. 300.

² W. H. Dawson: *The Evolution of Modern Germany*, p. 74.

³ E. Schindler : " Handicrafts in Germany," *International Labour Review*, January 1937, p. 58.

⁴ *The Rural Industries of England and Wales* : Vol. III, by Helen E. Fitz and M. Doriell Hay, p. 7.

A depiction of the small-scale industries of England would be incomplete without an adequate description of the activities of Birmingham and the Black Country. Birmingham has been the home of an innumerable variety of small industries such as the manufacture of guns, locks and jewellery. In spite of vicissitudes and radical transformations of the structure of industry in Birmingham, the small units have emerged successfully on account of their inherent vitality. Allen says "In many industries the representative factory is still the small factory and that opportunities for the shop-owner and even for the outworker are still afforded by certain sections of trades in which the large factory is the rule".¹

Recent tendencies in the industrial development of England also point to the potential value of the small units. It is mentioned in the *Social Survey of Mersey Side*, that on the Liverpool side of the Mersey a large variety of small enterprises have sprung up, some of them since the War.² Unlike the large industries they have not shown any signs of collapse during the depression and some have even been flourishing. In fact the census of production of Great Britain reveals the interesting feature that the relative importance of small enterprises had actually increased in 1930 over the greater part of the industrial field.³ The proportion of the total number of workers employed by firms with less than ten workers has increased from 8.5 per cent, in 1924 to 9.6 per cent, in 1930. There has also been a corresponding increase in the contribution of small firms towards the total net output from 7 per cent, in 1924 to 8 per cent, in 1930.⁴ For the census of 1935, figures are so far available only for Textile trades, Leather trades and Clothing trades.⁵ In

¹ G. C. Allen : *The Industrial Development of Birmingham and the Black Country*, p. 422.

² *The Social Survey of Mersey Side*, Vol. If, p. 357.

³ *Census of Production* : Great Britain, 1930, p. 11.

⁴ *Ibid.*, p. 13. Small establishments are those that employ not more than ten persons.

⁵ *Report on the Census of Productions* : Great Britain, 1935, pp. 32, 62, 330, 391.

cotton weaving, firms employing less than ten persons were 103 in 1935 as against 111 in 1930. But still the optimum seems to be at firms employing 100-199 workers. That was the largest individual group with 315 firms out of a total of 1,057 firms. In woollen textiles there were 788 firms employing less than ten persons in 1935 as against 572 in 1930. In leather trades 534 firms out of 841 employed only between 11 and 49 workers in 1935. In the clothing trades about 5,041 firms out of 6,221 employed only between 11 and 99 workers in 1935. It is therefore clear that the small and medium firms are a factor of considerable importance in British industry.

In the United States of America the small-scale enterprises are of considerable importance in industries engaged in Printing and Publishing, Textiles and the manufacture of food and forest products. The number of establishments employing twenty and less workers constituted 74 per cent, of the aggregate in 1929 and they provided employment to about 10 per cent, of the working population in U.S.A.¹ The importance of small and medium sized enterprises in America can be realised if it is observed that establishments with less than 100 workers provide employment to 30 per cent, of the total wage earners. As a matter of fact during the decade 1919-29 plants employing more than 1,000 workers record a decrease in the number of wage earners employed by them from 26.7 per cent, at the beginning of the decade to 24.5 per cent, at the end of it. So it is obvious that even in a highly industrialised country like the U.S.A. the small enterprises are not merely of an antiquarian interest.

TECHNICAL FACTORS DETERMINING SIZE

In the preceding pages an attempt has been made to indicate the place held by small-scale enterprises in the industrial organization of some of the modern countries. We may examine some of the technical factors which influence them

¹ *Census of Manufactures: U.S.A., 1929*, p. 61, Decennial Report.

to continue on a small scale. The factors determining the scale of production are the nature of the product, the methods of manufacture and the conditions of demand. These three forces may be analysed into their component parts to see the influence they exert on the scale of organization.

The products of small-scale enterprises have some peculiar features which preclude them from being manufactured under conditions of mass production. Among them there is a large variety in design and the quantity of output in any one pattern is relatively small. They claim an individuality for themselves so that a mere replica of it cannot satisfy a specific demand. As an illustration of it the sporting-gun trade of Birmingham may be mentioned.¹ Usually the products are specialities and they are of a high grade, so that they are not easily amenable to standardisation. The proportion of labour incorporated in them is large and hence the scope of mechanical operations is limited. Finally, what emerges from a small-scale enterprise is not a composite product but a small and simple article, so that there is no economy in cost in subjecting it to a complicated process of production.

The methods of manufacture employed to produce the type of articles that have been described above are such that they are most economically operated under a small-scale organization. Skilful labour plays an important part in manufacture and as such the scope for machinery is limited. Associated production involving the co-operation of a series of semi-skilled workers is not feasible. Therefore integration of processes is absent and hence no large and varied labour force need be employed. A prompt adaptation to changes in taste and a quick adjustment of output is an essential quality of its manufacturing methods. Such a flexible productive mechanism is more easily conceivable under a small rather than a large-scale organization. The raw materials of these industries are not bulky in nature and do

¹ G. C. Allen : *op. cit.*, p. 187.

not vary much in quality. To take an extreme example the gold sovereign which is the raw material of the jewellery industry is of a standard quality and can be purchased in convenient units. Hence there are no economies in a large-scale purchase of raw materials. The manufacturing processes sometimes need a little power but it has not been an integrating factor. In Birmingham the system of hiring of power was in vogue and as such the necessity for power did not increase the size of the unit.³ In modern days the electric motor has obviated the difficulty. Sometimes the processes of production could even be split up and executed in separate establishments on a small scale. As an illustration of this we can cite the brass trade of Birmingham.² Thus integration of processes is conspicuously absent here, unlike in large-scale industries.

The conditions of demand also necessitate a small-scale organization. There is a fluctuating and a limited demand for certain articles so that their output has got to be small and capable of variation. In the case of many specialities the demand for any one variety of product is limited even though in the aggregate there may be a considerable consumption of such products. Hence the output in each variety has perforce to be small. In the absence of a large and steady demand, therefore, large-scale production is not possible.

ADVANTAGES OF SMALL-SCALE UNITS

We have so far been considering some of the empirical evidence and scientific reasons for the continuance of small-scale enterprises in spite of rapid transformations in industrial organization. The benefits of resuscitating them may now be examined. At the outset a clarification of a common misapprehension is of great value. It is often thought that a simultaneous development of small and large industries is

¹ G. C. Allen : *op. cit.*, pp. 151-152.

² *Ibid.*, p. 123.

inconceivable. The two types of industrial organizations are considered incompatible and it is thought that the development of each could only be at the expense of the other. But neither theory nor practice has proved the mutually exclusive nature of each other. As a matter of fact the two types of units may be dovetailed with great advantage to both of them. The cutlery of France, the toy of Nuremberg and the Finished Leather industry of Birmingham are examples of such successful dovetailing. Dawson says, "An interesting industry which combines both the factory and the house system and which gives employment to an enormous amount of male and female labour is the toy industry of Nuremberg".¹ There can be a concurrent and parallel development of the two types of industry without in the least impairing the soundness of the economic organization of a country. It is also of interest to observe that at the present moment the small organizations are developing as subsidiary to the large factories.

The existence of small firms preserves qualities of flexibility and adaptability for the industrial structure. Besides they increase the resisting capacity of the economic mechanism to depression and bring about a quicker revival. In Japan the impact of the great depression was not felt with the same severity as elsewhere because of its large proportion of small enterprises.² To a certain extent, the small enterprises can also maintain competitive conditions in a country. They retard the combination movement and thereby preserve the competitive structure. There is ample evidence of this in the industrial history of Birmingham and the Black Country. Finally the small enterprise offers an opportunity for men without large capitals, to exercise qualities of leadership.

Improvement of agriculture largely depends upon the resuscitation of small-scale rural industries. In a place like Mysore particularly, where agriculture is the mainstay of

¹ W. H. Dawson : *op. cit.*, p. 74.

² Mitsubishi Economic Research Bureau : *op. cit.*, p. 63.

the population, provision of subsidiary occupations is a great necessity. In the absence of these auxiliaries there will be an exodus of rural population to industrial centres during periods of enforced inactivity in agriculture. This will put out of gear the tranquillity of rural economy. It will also deteriorate the quality of industrial workers as a migratory tendency is prejudicial to the morale and efficiency of industrial labour. Thus what agriculture loses industry will not gain. The poverty of the peasantry will become far more acute. Writing about the conditions in Germany Dawson says, " The poverty which prevails in these centres would become far acuter and life of the small peasantry less endurable if these occupations were to be extinguished."¹ Thus not only in a scheme of rural reconstruction but also in that of industrial development should the resuscitation of the small rural industries find a prominent place.

The preservation of the artistic side of human culture is a further consideration for the revival of small-scale industries. The products of the handicraftsman bear the impress of his personality and claim an individuality for themselves, unlike the soulless products of a modern factory. The decay of the small industries will mean the loss of the most skilful handicrafts and the aesthetic side of our culture. Alfred Marshall while speaking about the prejudicial effects of the extended use of machinery on skilled workmanship says that it would be well to put some check on the rapid supersession of human skill ; even at the expense of delaying the increase of material comforts and luxuries.² There are glorious specimens of art in Mysore which bear eloquent testimony to the aesthetic sense of its handicraftsmen. The sculptural perfection of the temples of Belur and Halebid, the Oriental splendour of the ivory inlaid gates of the mausoleum of Tippu in Seringapatam and the sublimely simple designs and colouration of Bangalore carpets speak with an unequivocal voice

¹ W. H. Dawson: *op. cit.*, p. 73.

² Alfred Marshall : *Industry and Trade*, p. 212.

of the long tradition of artistic talent in Mysore. To preserve them it is essential to resuscitate the small-scale enterprises.

EXISTING DEFECTS OF SMALL ENTERPRISES IN MYSORE

It does not follow *ipso facto* that an unco-ordinated development of the small units would be of much avail. Their present condition is so deplorable that a definite human effort ought to take charge of their economic destiny and direct it deliberately to a proper channel. They suffer at present from a number of drawbacks. Owing to lack of organization, uniformity of products cannot be secured and often inferior articles are produced. The appliances in use are antiquated and crude. There is a large scope for refining them without involving any fundamental alterations. The waste of time, energy and material is colossal due to the want of a rationalised technique of production. Finance, the *sine qua non* of sound business is conspicuous by its absence. The handicraftsmen are invariably in debt and they rarely extricate themselves from it. The lack of efficient sales agencies render them a prey to the exploitation of the jobbing merchants. Hence there is no chance of a reasonable profit for them.

SUGGESTIONS FOR IMPROVEMENT

A few suggestions may be made for the rehabilitation of small-scale industries in Mysore. The chief source of weakness among the small enterprises is their unorganized condition. Hence even though the technical defects are gradually rectified, the benefits do not accrue to the small producers. Therefore the primary task is to organize the handicraftsmen in voluntary associations for their mutual benefit. In this respect Mysore can learn a few very useful lessons from what has been done during recent years in Japan and in Germany. In 1931 the Industrial Association Law was passed in Japan with the object of encouraging the

formation of associations to promote rational management and to facilitate the joint and economical installation of modern equipment in medium and small-scale industries.¹ In Germany since 1933 legislation is being introduced for the creation of compulsory guilds for all handicrafts.² If a similar attempt is made in Mysore it will bear ample fruit. A certain amount of moral pressure must be brought to bear upon the handicraftsmen at the initial stages. When once they take kindly to the idea, the formation of associations representative of different crafts will not be difficult.

The associations will be instrumental in effecting far-reaching improvements in the organization of the small-scale industries. Rationalization on a modest scale may be attempted within each group of industries. Improvement in the technique of production, specification of commodities produced and economising in the purchase of raw materials will be feasible through a joint deliberation of the representatives of the industry. An intelligent study of market conditions can be undertaken and appropriate designs of products distributed among the workers. The onerous function of marketing the finished products ought to be the sole responsibility of the associations. It is also conceivable that the joint installation of certain types of plant could be effected. For instance a plant for preparatory processes in cotton textiles can be installed in a weaving centre for the common use of the members of the association. Thus as far as internal economies are concerned all that is within the reach of the small producers can be achieved through associated activity.

In respect of finance, the small enterprises of Mysore may have to depend upon external sources of support for a fairly long time. Their financial position is so precarious that it will vitiate all the technical improvements that may be introduced. Hence it is necessary to continue for some time the

¹ Mitsubishi Economic Research Bureau: *op. cit.*, p. 115.

² E. Schindler: *Handicrafts in Germany, op. cit.*, p. 65.

existing system of distribution of industrial *tackavi* by the State. But after the formation of the manufacturers' associations they may be made the mediums for the distribution of finance. The advantages of such a system would be a more appropriate allocation of the earmarked amounts and a better supervision of their utilization. Besides, the repayments of the loans would be more regular due to the collective and moral responsibility of the association as such.

The supply of cheap electric power to cottage industries in the rural areas is another very effective method of developing small-scale production in the State. This is a device that could be followed with great facility in the Mysore State due to the existing hydro-electric resources. A well conceived scheme of rural electrification has already been adopted in the State and it has made great strides during the past decade. A liberal supply of electric energy to cottage industries is a very healthy endeavour and it has great possibilities in it for the future of small-scale production.

In conclusion, it may be said that small-scale industries are not a misfit or an anachronism in a scheme of industrial regeneration. Throughout the world they are functioning with remarkable vitality. The *raison d'être* of small industries is their capacity for precise adaptation to certain needs of our society. They are not only capable of an independent existence but as adjuncts to large industries they are of immense value. As Allen thinks, it is not inconceivable that in the future the old distinction between raw material producing and manufacturing countries may be replaced by a division between countries producing bulk goods by large-scale methods and those turning out specialities and quality products.¹

¹ G. C. Allen: *British Industries and their Organisation*, p. 302.

CHAPTER III

LARGE INDUSTRIES—DEVELOPMENT AND TECHNIQUE

GENERAL FEATURES

During the past three decades the industrial history of Mysore has been one of modernization. Within this short space of time a large number of industries worked on modern lines have been brought into existence. They have been the outcome of both private initiative and Government endeavour. The resulting industrial structure has been as much an organic growth as a deliberately designed scheme. Private enterprise has therefore flourished under the fostering care and direction of the State. This is a feature seldom enjoyed by private enterprise in an unplanned economy. Still this conscious direction and initiative by the State authority has not been superimposed on an unwilling community with any degree of coercion. On the contrary it pervades the atmosphere so imperceptibly that private enterprise has been almost unconscious of the centralized guidance in existence. It is a feature that is really laudable, as private enterprise is left unhampered. This happy compromise of planned and unplanned economy has been responsible for the large measure of success achieved within the short space of time. Private initiative has continued unimpaired as the society has been capitalistic, while at the same time the wayward career of industry has been guided through proper channels by State authority. Thus the economic organization in Mysore has been in great part capitalistic only in form, but it has been very different from it in spirit. That is perhaps the reason why the economic structure in Mysore does not lend itself to an easy analysis.

CLASSIFICATION OF INDUSTRIES

Taking ownership as the basis of classification the industrial establishments of Mysore may be classified into three

categories, namely, Government, Quasi-Government and Purely Private. All those industries in which the Government is solely responsible for the initial finance, original construction and subsequent management belong to the first category. The criteria of selection of industries for such treatment by the Government have been various. Certain key industries such as the manufacture of iron and steel have been undertaken by the Government on account of their economic importance. The utilization of certain existing raw materials and other factors of production, wherever private enterprise is not forthcoming, has been an equally significant reason for selection by Government. The manufacture of soap and porcelain ware may be cited as examples of such a criterion. Finally, in the event of a monopoly, production has been undertaken by the State with a view to earn a revenue. The sandalwood trees of the State are a monopoly of the Government and the distillation of the oil thereof has been a fruitful source of income. It is therefore obvious that the choice of industries for Government management has been the outcome of several well-conceived scientific notions. It has been done with a minimum amount of interference with private enterprise and in a manner most conducive to the economic welfare of the community at large.

To the second category of industries which are quasi-Governmental in nature belong such concerns as the sugar factory and the paper mills. These undertakings reveal a rather uncommon characteristic. It is not usual for a Government to be a part owner in a private concern. The motive of such participation is not profit but on the other hand the inculcation of business enterprise among private people by extending a large measure of moral support and a visible amount of material help. In short, with regard to these concerns, the Government has undertaken a very rare function, namely, the promotion of public Companies and their subsequent guidance. This is a method by which the

Government infuses confidence in the public by associating itself with them as a party in an industrial venture. Apart from the financial participation of the Government, the public enjoy several incidental advantages due to the co-operation of the Government with them. The preliminary survey and investigation are undertaken by the appropriate Government Departments before the Company is actually floated. Later the concern's interests are closely watched by the Government directors and all facilities are granted with the utmost ease and facility.

Last though not least are the purely private establishments organized and worked by private initiative and enterprise. The largest individual organization belonging to this group is the Gold Mining Company of Kolar. An English Company is in possession of a lease for extracting gold from certain regions of the Mysore State. The textile industry is the pioneer endeavour of local enterprise. Cotton, wool and silk textiles are organized on modern lines entirely through private finance and enterprise. Among the other voluntary attempts are cotton gins, oil mills, rice mills and tile factories spread all over the State. Even these private organizations are recipients of a large number of benefits from the State as occasions arise.

MYSORE IRON WORKS : CONSTRUCTION OF THE PLANT—CAPACITY AND CAPITAL COST

The general pattern of industrial organization in the State has been presented in the previous section. Proceeding further with the analysis, a more detailed consideration of the chief industries may be undertaken. Among the Government industrial establishments the manufacture of iron and steel takes easily the first place both on account of its magnitude and its significance. The construction of the Mysore Iron Works at Bhadravathi, originally known as Benkipur, was started in the year 1918. The construction was completed towards the end of 1922 and the operations commenced on

the 18th January 1923. The original plant of the firm consisted of a Blast Furnace and a Wood Distillation Plant. Subsequent additions of auxiliary plant have taken place, such as the Pipe Foundry and the Machine Shop. In 1926 the Pipe Foundry commenced to manufacture Cast Iron Pipes. A Steel Plant with a Rolling Mill was added in 1934, thus completing the mechanical equipment of the concern within the course of a decade.

Bhadravathi is surrounded by thickly wooded regions and the State possesses large forest reserves in the neighbourhood from which supplies of wood at the rate of about 400 tons per day could be furnished. There is a scientific conservation of resources by the Forest Department and as such there is no fear of exhaustion. About 700 sq. miles of forests have been allotted to the Works but supplies of wood are drawn from only 350 sq. miles of forests. Large supplies of wood are a primary necessity for the industry in Mysore because the absence of coking coal in South India has necessitated the use of charcoal for smelting purposes at Bhadravathi. The bulk of the iron ore deposit lies 20 miles to the south of Bhadravathi on the slope of the Bababudan range of hills known as Kemmangundi hills. Limestone, which is used as flux, is also available in the vicinity. The river 'Bhadra' supplies the Works and the town with the necessary quantity of water. These are some of the economic factors which have determined the location of the Iron Works at Bhadravathi.

The blast furnace is of modern design with a rated capacity of 28,000 tons per annum. During the three years ending March 1933 the average annual output of iron was approximately 14,000 tons only, due to a shrinkage in demand. The charging of materials, namely ore, flux and charcoal to the furnace is done electrically and the molten metal that is tapped is drawn once in four hours and led through sand runners, into pig beds.

Charcoal is obtained by the destructive distillation of wood with the plant specially erected for the purpose. It has a

capacity to carbonise 320 tons of wood daily, yielding 80 tons of charcoal. The requisite wood is conveyed from the neighbouring forests by a network of tramway lines owned by the Works. The distillation process yields incidentally a number of marketable by-products such as acetate of lime, methanol and wood tar. The wood distillation plant however is now working only to 25 per cent, of its original capacity due to the disappearance of the export market for the by-products as a result of the advent of cheaper synthetic products. The bulk of the charcoal required for the blast furnace is now obtained by direct burning of the wood in the forests.

The pipe foundry which was erected in 1926 has a capacity to produce 15,000 tons of cast iron pipes. This auxiliary plant was installed in order to put the raw product on the market in a more finished form. It has actually enabled the sale of pig iron on a large scale even though the market for cast iron pipes is not in any way secure.

The object of erecting a steel plant in Mysore was primarily to raise the output of pig iron to the rated capacity so as to reduce overhead and other standing charges. The plant has a capacity of 20,000 tons of finished steel and it is estimated to have a metallic charge of 13,500 tons of pig iron, the rest being steel scrap.¹ Thus it is expected that with the steel plant in full operation the rated capacity of pig iron production in the blast furnace could be reached. The plant consists of an open hearth furnace and a rolling mill. The capital cost amounted to Rs. 23 lakhs up to the end of the year 1936.² The construction of the electric transmission line for the steel plant over a distance of 150 miles has been completed at a cost of Rs. 12 lakhs.

The demand for the products of the Iron Works has continued to be poor and hence all sections of the plant are being operated on a restricted scale. In 1937 there was a slight temporary improvement and the operations resulted in a

¹ Report of the Indian Tariff Board : *Iron and Steel Industry*, 1934, p. 145.

² *Mysore Administration Report*, 1935-36, p. 7.

small surplus of Rs. 1-35 lakhs. The great depression with its unprecedented fall in the price of products has been one of the major factors in retarding the progress of the industry. Occurring at a time when the establishment was just reaching its maturity the depression was largely responsible for the hibernation of the concern for a number of years. As a matter of fact the concern has all along suffered from excess capacity.

However it must be admitted that financially the concern has not been a thorough success. The construction work extended beyond the anticipated time and the cost also exceeded the estimated outlay, mainly on account of abnormal rise in the prices of materials and equipment. The total capital of the Works is nearly 150 lakhs of rupees although the nominal capital was reduced by about 50 per cent, in 1929. The Tariff Board on the Iron and Steel Industry maintains that the capitalization of the Mysore Iron Works is still excessively high.¹ They compare the capital cost of the Indian Iron and Steel Company with that of the Mysore Iron Works and show that the latter is relatively over-capitalized considering the capacity of two plants. With a capital expenditure of Rs. 270 lakhs the Indian Iron and Steel Company has a capacity of 450,000 tons whereas Mysore Iron Works has a capacity of only 28,000 tons for a capital expenditure of Rs. 130 lakhs, which has already been reduced by nearly 50 per cent. The Tariff Board calculates that if a commercial return is to be expected the capital valuation of the Mysore Iron Works ought not to be higher than Rs. 100 lakhs inclusive of the Steel Plant and the Pipe Foundry.

The argument of the Tariff Board is based on two important considerations, namely, that there is no longer a premium on charcoal iron in the market, and that the demand for the by-products of wood distillation has suffered a permanent decline. Consequently the heavy capital expenditure on the wood distillation plant is no longer of much value

¹ Indian Tariff Board : *Iron and Steel Industry*, 1934, pp. 148-149.

and as such it should be written down. Further, the Tariff Board takes the Works cost as their criterion in determining the possible yield. By capitalizing the estimated yield at 4 per cent, they reach at what ought to be the present capital of the concern as set forth above. Their method of approach is quite sound and is perhaps the only way of arriving at the commercial value of a going concern. But in this connection two observations may be made which may be worth some consideration. In the first place the loss in capital value is the outcome of certain fortuitous circumstances. They have rendered certain sections of the plant obsolete. Whether loss in capital value due to this kind of obsolescence is the same as excessive capitalization is a matter of opinion. Usually excessive capitalization savours of a wilful act of extravagance either with a private motive, as in the case of promoters of Companies, or due to negligence. To that extent there will be water in capital at the time of promotion. The only reason for water in capital in the Mysore Iron Works is due to the fact that the concern was launched when prices of materials were ruling high and that the work was not expeditiously executed. Therefore the subsequent loss of capital value could only be attributed to obsolescence.

In the second place it is necessary to realize that even now the capitalization of the Mysore Iron Works is not strictly comparable with any coke iron plant in India. The Mysore concern has a special type of plant which has been necessitated by regional conditions. Coke is not available in Mysore and as such a wood distillation plant is necessary even though it may be worked at present only to 25 per cent, of its capacity. If the iron resources in the Mysore area have to be exploited, the higher capitalization on the plant which is inevitable has to continue to a certain extent. Besides, it may be argued that the wood distillation plant cannot be scrapped completely because it is the only one in the British Empire and the acetate of lime it produces is an essential requisite of national

defence.¹ As such the plant will be a national asset in times of war for the whole of the British Empire. These considerations lead us to some important conclusions. Firstly, a reduction of capital to the extent that the Tariff Board suggests is not feasible, even though further reductions may be advisable. Next, the relatively higher capitalization of the concern which is inevitable has to be compensated by a system of bounties in the interest of national defence and an optimal exploitation of natural resources in India.

FACTORS RETARDING PROGRESS

There have been several causes retarding the prosperity of the Iron and Steel Industry. Some of them are general factors affecting the industry all over the world and others are special causes which have particularly affected the industry in Mysore. The Balfour Committee on Industry and Trade point out that the output of pig iron in Great Britain during post-War years had been on a much smaller scale than in the years immediately preceding the War.² The Steel Industry in England had increased its capacity so much during the War that it could work only to 70 per cent, of its capacity during the post-War period. This situation was similar in all countries and practically all over the world there had been a phenomenal fall in the demand for iron and steel ; and plants had to work very much below capacity. It was only in 1936 that the production of pig iron in Great Britain reached the pre-depression post-War maximum of 1929.³ The output of pig iron in 1936 was 7.7 million tons as against 7.6 million tons in 1929. It increased to 8.5 million tons in 1937. The output of steel in Great Britain reached the pre-depression post-War maximum one year earlier. The output of steel in 1935 was 9.8 million tons

¹ Indian Tariff Board: *Statutory Enquiry : Steel Industry*, 1933, Vol. III, p. 371.

² Balfour Committee: *Further Factors in Industrial and Commercial Efficiency*, 1928, p. 161.

³ *Britain in Recovery* : By the British Association, 1938, p. 364.

as against 9.6 million tons in 1929. It increased to 13 million tons in 1937. This expansion of output in Great Britain during recent years is due to three factors, namely, the normal economic recovery following a slump, the protective tariff on iron and steel products, and the rearmament programme.¹ In India even in normal years the demand for pig iron is not commensurate with the output. The situation has been accentuated by a contraction of Government demand for cast iron sleepers and cast iron pipes. The result has been a scramble for orders and a severe competition in the Indian market.² The effect of the depression has been particularly severe in India due to the lack of proportion between the output of pig iron and steel. Besides, Japan, which has been the principal market for Indian pig iron, has been introducing measures to restrict its import. In 1933 an agreement was reached between the pig iron producers in Japan and Kishimoto Shoten, the largest importer of Indian pig iron, with the object of prohibiting the importation of Indian pig iron into Japan.³ So the overseas market for Mysore pig iron was estimated in 1933 to be only 1,000 tons, whereas it was 8,000 tons in 1930.⁴

In addition to these difficulties the Mysore Iron Works is the victim of a few more special factors. The charcoal iron produced in Mysore has a low phosphorus content of 0.1 per cent, and is next in quality only to the Swedish Iron which has a content of .02 per cent. Charcoal iron is superior to coke iron on account of its close-grained structure, freedom from oxides and low sulphur and phosphorus content. It generally commands in the world markets a premium of Rs. 10 to Rs. 15 per ton over coke iron and can profitably be used for the manufacture of chilled castings, malleable

¹ *Britain in Recovery*: By the British Association, 1938, p. 371.

² Indian Tariff Board: *Statutory Enquiry : Evidence*, Vol. III, 1933, p. 360.

³ *Ibid.*, p. 361.

⁴ Indian Tariff Board: *Statutory Enquiry: Steel Industry, Evidence*, 1933, Vol. IV, p. 290.

castings, special steels and generally when high strength is required such as in the manufacture of ordnance material. But for all practical purposes there is no longer a special market in India for charcoal iron as such because as a result of certain technical discoveries coke iron can now be used for special castings also, and therefore it has to be sold in competition with ordinary coke iron. This is a serious disadvantage because there is no compensating increase in price for the higher unit cost of pig iron in Mysore. The sudden expansion of the European synthetic industry in 1931 led to the collapse of the market for wood distillation products. Not only did it dry up an important source of revenue but it rendered the Wood Distillation Plant unworkable, because the overhead expenses could not be completely covered merely by the production of charcoal. Thus Mysore Iron Works has been severely affected not only by the general world causes but by causes which are peculiar to it.

MARKETING PROBLEMS

The Mysore Iron Works has had a very precarious market for its products from the outset. The foreign market has been comparatively insignificant. In the year 1930 when the Indian Tariff Board reported on the pig iron industry it was mentioned that there was an overseas market for Mysore pig iron only to the extent of 8,000 tons.¹ Even this has now been largely reduced due to the Japanese agreement. Regarding the local market, Mysore has had to contend from the beginning with the Indian Combine of pig iron producers in the North. In fact the Tariff Board has remarked that the existence of the Mysore Iron Works outside the Combine has been an important factor in keeping prices at a low level.² As a result the market in which the Mysore pig iron could be sold got circumscribed to a special area comprising Madras Presidency, Southern Mahratta country and to

¹ Indian Tariff Board: *Pig Iron*, 1930, *Evidence*, p. 69.

² *Ibid.*, Report, p. 4.

some extent Bombay, according to the freight advantage available. However, this unhealthy competition had ultimately to be stopped and an agreement was reached with the Combine during 1931-32. Understandings were reached in regard to prices and markets between the Mysore Iron Works and the Bengal Iron Company in regard to pipes, and the Tata Iron and Steel and Indian Iron and Steel Companies in regard to pig iron.¹ This agreement ensures a sale for the Mysore Iron Works of about 6,000 tons of pig iron and 8,000 tons of pipes a year. According to the agreement Mysore Iron Works has the exclusive privilege of selling in the whole of South India, Bombay, Hyderabad, Madras and Deccan but with the proviso that it should not exceed a maximum of 7,000 tons of pig iron. But by experience it is found that Mysore has a market on an average only for 6,000 tons in that area. Mysore can sell in North Indian markets also provided it quoted Rs. 5 more per ton than the prevailing coke iron prices.² The arrangement that has been arrived at by the Combine resembles that of an area allocating cartel with a stipulated maximum sale.

The Indian market for Mysore steel products comprises the Madras Presidency up to Bezwada, the Mysore State and the Southern Mahratta country. This is an area in which the Tatanagar concerns cannot compete due to freight disadvantage unless they choose to sell at less than their fair selling price in view of the surplus they obtain elsewhere. But we have to set off against the freight advantage in this area, the increase in cost of steel in Mysore due to the use of charcoal iron in its production. So the margin of advantage is considerably reduced. Further the potential competition of the re-rolling mill at Negapatam, which was proposed in 1934, is a factor of equal importance. Thus the Mysore Iron

¹ Indian Tariff Board : *Statutory Enquiry : Steel Industry*, 1933, *Evidence*, Vol. III, p. 360.

² *Ibid.*, *Evidence*, Vol. IV, p. 292.

Works has had to experience very insecure market conditions throughout.

ENDEAVOURS TO MEET THE SITUATION

It is thus obvious that the Mysore Iron Works has to take arms against a host of troubles. One of its essential pre-occupations has been to reach the rated capacity of the pig iron plant. The Steel Plant has therefore been erected as it is estimated to absorb 13,500 tons of pig iron. In connection with the Steel Plant two observations may be made, namely, the use of hot metal directly from the furnace, and the elasticity of substitution of scrap and pig iron. Since the two problems are closely interrelated they may be considered together. At the present time the Steel Plant in Mysore is designed to be charged with cold pig iron, though it is assured that in course of time arrangements will be made to charge the furnace with hot metal.¹ It is fairly obvious that the fuel economy in using hot metal is considerable and particularly in an integrated plant like the Mysore Iron Works there is not enough justification for the use of cold pig iron. It is no doubt a fact that in this respect there is no uniformity in the practice of Western countries. Allen says, "Whereas on the Continent the continuous process of steel production enables great fuel economies to be obtained, in Great Britain many blast furnaces operate in situations remote from steel works, and the practice of using cold metal is still very common."² But the English practice is due to certain peculiar circumstances which do not exist elsewhere. The wide dispersion of ore and coal mines has disintegrated the plant. Besides scrap is less expensive in England than on the Continent. Still the relative efficiency of British and foreign methods in the future will depend upon the abundance of scrap which is an uncertain factor.

¹ Indian Tariff Board: *Statutory Enquiry*: 1933, *Evidence*, Vol. III, p. 366.

² G. C. Allen : *British Industries and their Organization*, p. 116.

The second aspect of the situation namely the utilization of scrap along with pig iron is a problem that demands greater attention by the Works. A theoretical study of the practice of substitution of scrap for pig iron in the manufacture of steel has been made by Mr. R. F. Fowler, in an illuminating article in the *Quarterly Journal of Economics*. The Mysore Iron Works envisage a combination of 13,500 tons of pig iron and the rest scrap for a metallic charge of 25,000 tons. The assumption of fixed proportions between the two is untenable because the elasticity of substitution of scrap and pig iron will vary considerably as the relative prices of scrap and pig iron change. Besides, the elasticity of substitution between scrap and pig iron is not perfect because wastage is higher when more scrap is used and will therefore involve greater fuel costs. Again scrap is not as homogeneous as pig iron and hence removal of impurities would involve expenditure. Further, pig iron could be used in the form of hot metal whereas scrap has to be melted necessitating fuel costs. Hence there is no determinate proportion in which the two ought to be combined. The elasticity of substitution is normally above unity meaning thereby that a reduction in the price of scrap relatively to the price of pig iron leads to a greater proportion of raw material costs being incurred for scrap as compared with pig iron.¹ Such automatic substitutability of the two is feasible when scrap is available in abundance. But in this respect conditions in Mysore do not appear to be entirely favourable. The Works estimated in 1933 that 8,000 tons of scrap could be purchased at Rs. 27 per ton. The Tariff Board of 1934 pointed out that the price of scrap was likely to be higher than the estimate. Besides they also feared that scrap might not be available in the required quantities.² Since then there has been a serious shortage of scrap in the market and it necessitated in the

¹ R. F. Fowler : The Substitution of Scrap for Pig Iron in the Manufacture of Steel. *Quarterly Journal of Economics*, Nov. 1937.

² Indian Tariff Board : *Iron and Steel Industry*, 1934, p. 148.

United Kingdom a drastic reduction of the tariff and certain other emergency measures.¹ These are matters worth serious consideration since the steel scheme of Mysore is based on them. Viewing the two aspects of the problem together it appears from a purely theoretical standpoint that in Mysore an integrated plant with the use of hot metal is highly desirable.

Among the other measures of adaptation to changing external conditions may be mentioned the system of burning charcoal in the forest instead of in the Wood Distillation Plant. It has become unremunerative to work the plant to its full capacity in the absence of a market for its by-products. In order to maintain the quality of the charcoal and to avoid wastage, cast iron kilns modelled after the steel kilns of France have been installed in the forest areas. However some of the retorts of the Wood Distillation Plant are still being worked to ensure a constant supply of charcoal for the blast furnace. The pyroligneous liquor that is obtained thereby is converted directly into acetic acid for which there is a demand in India.

The introduction of hydro-electricity into Bhadravathi in 1935 is expected to reduce the expenditure of the works by about a lakh of rupees. Besides there are also possibilities of producing electric pig iron and electric steel in the future. There has also been in recent years a perceptible economy in the management of the concern. Thus the industry has evinced extreme flexibility of structure and a capacity for quick adaptation to changing circumstances.

WELFARE WORK

An appreciable amount of Welfare work has also been undertaken in order to provide the necessary amenities to the industrial population. A new town with up-to-date sanitary arrangements has been built and every precaution has been taken to maintain healthy conditions. Facilities for health,

¹ *Review of the Trade of India, 1937-38*, p. 87.

education and recreation have been provided by the creation of free hospitals, schools and club houses.

In spite of its vicissitudes the industry is being amplified and developed on account of its extraordinary importance to the State. It is one of the key industries supplying the chief basic material to an industrially expanding country like India. Though there are gigantic organizations in India as its competitors, still by virtue of the facilities it enjoys in respect of raw materials, power and State initiative, it has a fair chance of success. Moreover, apart from the achievement of other objects of the concern, it provides employment to a large number of workers. There are at present 1,600 men employed in the plant at Bhadravathi, some 500 men in the iron ore mines and about 5,000 men in the forests. The 5,000 people who are employed in the forests are for the most part peasants who do fuel collection and charcoal burning as a supplementary occupation during the off-season.

FINDINGS OF THE TARIFF BOARD

This discussion about the Mysore Iron Works may be concluded with a few remarks about the findings of the Tariff Board of 1934 on the Iron and Steel industry. In formulating their ideas they have definitely rejected Mysore conditions as their criteria on two grounds, namely, that the costs of charcoal pig iron are high and that the capacity of Mysore for the production of pipes is not more than 20 per cent, of the total Indian capacity.¹ If the object of the Tariff Board is to develop the industry as such, the size of individual firms ought not to be a disability for protection and variations in cost conditions ought not to deter the Board from coming to reasonable conclusions. The 'optimum' industry cannot be reached through one firm alone, particularly if the latter has already reached its own optimum. If the Tata Iron and Steel Company has reached its optimum, protection should not be such as to encourage it to develop on the wrong side of

¹ Indian Tariff Board: *Iron and Steel Industry*, 1934, p. 144.

the optimum.¹ In that case the cost conditions of more marginal firms should be taken into consideration by the Tariff Board. Hence if the object of the Tariff Board is to foster the industry and develop it, some other firms instead of Tatas should be taken as their criterion and assistance could be granted to them in the shape of bounties. Besides excessive centralization of the Iron and Steel Industry is not desirable. On the other hand an exploitation of the resources in all parts of India should be encouraged. Such a policy would justify fostering of smaller firms and decentralization of the industry.

SANDALWOOD OIL

Sandalwood is a small ever-green tree flourishing in certain elevated regions of Mysore and it has been the monopoly of the State from time immemorial. Nearly three-fourths of the entire output of India is obtained in Mysore. The remaining one-fourth is produced in Coorg, some districts of the Madras Presidency and in Bombay. Prior to the outbreak of the Great War sandalwood was collected by the Forest Department and periodically auctioned to the public. It was purchased and exported to Germany for purposes of distilling sandalwood oil from it. The export ceased with the outbreak of the War and with it a very fruitful source of revenue to the State automatically dried up.

This practically gave the impetus for the distillation of the oil within the State. The Director of Industries, Sir Alfred Chatterton, took up the matter for investigation and caused certain experiments to be conducted at the Indian Institute of Science, Bangalore. The result of the research was so favourable that it was expected that oil of a quality equal to that produced in Europe could be distilled in Mysore. So the scheme for the erection of a factory for the purpose was accepted by Government. As the necessary plant could not be imported from abroad due to War conditions the whole

¹ See P. S. Lokanathan: *Industrial Organization in India*, p. 128.

machinery was manufactured in India. The factory was started in Bangalore in 1916 and immediately commenced distillation. In the course of a couple of years the output rose to about 6,000 lbs. of oil per month. Another factory was erected at Mysore in 1917 having an ultimate capacity of 20,000 lbs. of oil per month. The sandal oil factories commenced operations under very favourable circumstances. The price of sandalwood oil rose from 2\sh. per lb. of oil in 1914 to 50 sh. in 1917. The yield of oil was approximately 100 lb. per ton of wood. Between 1916 and 1918 the industry became firmly established in the State. In 1920, however, the post-War depression restricted the market for the oil and hence the two factories were amalgamated at Mysore and the premises of the Bangalore factory was converted into a sandal 'koti' or depot. The factory at Mysore works throughout the year with a rated output of more than 120,000 lbs. of oil per annum. During recent years there has been a decline in the net receipts from sandal oil sales due to a fall in prices and an increase in the cost of production. Whereas in 1929-30 the net receipt was Rs. 23-33 lakhs, it was estimated to be only Rs. 12.59 lakhs in 1937-38.¹

The sandalwood oil produced in Mysore is noted for its purity and its essential organic properties. It satisfies the requirements of the pharmacopoeia of all the important countries. The oil is used in perfumery, in the manufacture of high grade toilet soaps and for various medicinal purposes. The industry has been a remarkable success ever since its inception. The oil that is produced is being readily sold in Europe and it has been a very fruitful source of revenue to the State. Attempts at concerted action with the other producers of sandalwood in India have somehow been unsuccessful so far. The wood in British India continues to be exported to France and Germany for purposes of distillation, with the difference that the producers in British India

¹ Address of (he Dewan of Mysore: Representative Assembly, June 1937, p. 5.

are now having the full benefit of the enhanced prices of sandalwood due to the cessation of the practice of auctioning in Mysore.

The sale of sandalwood oil in Europe and America was at the outset effected by means of agents. As this arrangement was found unsatisfactory the Government decided in 1929 to appoint an official for the purpose. Hence the appointment of a Trade Commissioner for Mysore in London whose functions however have subsequently been amplified.

SOAP MANUFACTURE

The impetus for the manufacture of soap in Mysore was provided by the Government by starting a factory for the purpose. The necessary plant which was ordered from Messrs. George Scott & Sons, England, arrived in the year 1917.¹ It was immediately erected and operation commenced forthwith. The history of the concern has been a rosy one from the very outset. Even during the first few months of its inception it yielded a good profit.

The object of launching the enterprise was to utilize some of the existing raw materials and to demonstrate the feasibility of the proposition. The ingredients used for the manufacture of Mysore soap have been for the most part vegetable oils such as cocoanut oil, groundnut oil and *ippey* oil.² The chemicals used are caustic soda, rosin, and salt. In respect of the raw materials required for the factory more than 50 per cent, has got to be imported from elsewhere. With the exception of groundnut oil and *ippey* oil which are supplied locally, the rest have to be obtained from outside. Cocoanut oil and caustic soda are imported from the Cochin State and the Bengal Pharmaceuticals respectively. Madras supplies the necessary salt.

The soap factory has proved a phenomenal success. The total output of soap during 1935-36 was 356 tons. The

¹ *Report of the Department of Industries and Commerce in Mysore.*

² *Ippey* is a variety of indigenous oil-seed.

factory now manufactures toilet soaps, perfumes and a large variety of medical preparations. A laboratory has been attached to the factory for research work and a large number of experiments are being carried on. The laboratory has now been converted into the Industrial and Testing Laboratory of the Government. Glycerine, which is a very valuable by-product in the manufacture of soap, was not being recovered till recently but was allowed to go to waste. In fact in the year 1921 the glycerine recovery plant was actually received from England but was not erected due to the inadequacy of the raw materials for its economic operation. Its installation was deferred till the year 1924 when the proposed expansion of the soap factory was expected to materialize. In spite of the expansion of the factory during the year it was however still found that the scope of the operations was too limited to allow the glycerine recovery plant to be set up. Until a number of soap factories spring up in the vicinity the economic utilization of the glycerine by-product will not be feasible. The capital expenditure and the working cost would be justifiable only when an adequate supply of the by-product is available. However the plant has been recently installed.

The factory is run on strictly commercial lines. During the nineteen years of its existence the plant and the equipment have more than quintupled. The factory has not only paid its way but is yielding substantial profits. The soaps made in the factory are in demand all over India, and the total sales amounted to Rs. 4.40 lakhs during the year 1937. During recent years the concern is experiencing competition from local and foreign manufacturers of soap. A network of agencies has been built up all over India and all of them have been effecting good sales. Trade agents have been appointed even in East and South Africa for the sale of Mysore soaps. Elaborate and scientifically designed advertisements have been undertaken both by the publicity section of the Government and by the respective agents for pushing the sale of Mysore soaps in India and elsewhere.

Apart from the profits it has made the Soap Factory has fulfilled an important purpose, as a pioneering plant. A large number of private concerns producing soaps have been brought into existence. They are being gradually modernized by the advice and direction of the Department of Industries and Commerce. It has been the wish of the Government to transfer the Soap Factory to private ownership as it has amply served its purpose as an object lesson. But so far there has been no appropriate offer for the concern. Perhaps one of the methods of effecting a transfer would be by organizing a combine among all the soap manufacturing concerns in Mysore like the Lever Brothers of England.¹ That would inculcate confidence and the public would readily subscribe to its capital.

SILK MANUFACTURE

Sericulture is one of the premier industries of Mysore. The production of high grade raw silk in all its aspects has already been considered in an earlier section. The filature silk produced by the Government was being used along with the Charka-reeled silk for the manufacture of sarees and other silk fabrics on the hand-looms and power-looms of the State. In order to find a more appropriate use for the superior silk produced by the filature in Mysore, a Silk Weaving Factory was started in 1931 by Government. With the inception of this institution the silk industry in the State attained its natural and full growth from the production of silk cocoons to the manufacture of fine silk fabrics. Very high grade fabrics such as Georgette, Crepe-de-chine, Satin and Crepe-satin are being produced, utilizing pure Mysore silk. The capital cost of the concern is 3½ lakhs of rupees and it has an average annual production of 40,000 yds. of cloth. The Silk Factory is the first of its kind in India and it produces fabrics which were not being made anywhere else in India prior to its establishment.

¹ A. F. Lucas: *Industrial Reconstruction and the Control of Competition*, p. 191.

The factory is equipped with the most modern appliances for weaving, dyeing and finishing silk fabrics. In the weaving section there are re-reeling and silk throwing machines, a warping machine and about twenty looms for weaving fine fabrics. The dyeing and finishing section of the factory is of immense utility not only in putting on the market silk fabrics with most pleasing colours but also in undertaking dyeing work for private weavers which has been a keenly felt need all along. The institution provides employment to one hundred locally trained persons. The production of easily marketable fabrics in the factory has alleviated the suffering of the sericulturists due to a shrinking market. The cocoons of the sericulturists have found an outlet and have thus partly withstood an abnormal competition from foreign raw silk. The factory has a capacity to utilize almost all the raw silk produced in the State for conversion into finished products. Besides, the successful working of this institution has fully demonstrated the possibility of producing fine fabrics out of the locally available raw materials and has given an impetus to the rest of India for starting such institutions.

The disposal of silk waste has been a serious problem for several years, affecting the sericultural industry of Mysore. It was for the most part being exported to foreign countries to be spun into yarn and returned to Mysore for the preparation of spun silk fabrics. Since 1930-31 the export of silk waste from Mysore has been considerably reduced. It fell from Rs. 2.27 lakhs in 1929-30 to Rs. 0.59 lakhs in 1930-31. Since then it has not recovered. As the Indian market was flooded with cheap Japanese silk the foreign importers did not find it profitable to manufacture spun silk yarn for India. The disappearance of demand for silk waste has largely curtailed the profits of the silk reelers in Mysore as the realization from silk waste was the chief constituent of their profits. It has undermined the economic position of the silk reelers and has incidentally affected the sericultural industry of the State.

In order to find a way out of the impasse the Mysore Government have initiated a scheme to utilize the silk waste in Mysore and the adjoining provinces of British India. The Mysore Spun Silk Mills Ltd., has been started as a Joint Stock Company, with private and Government participation. The authorized capital of the concern is Rs. 10 lakhs, of which Rs. 8½ lakhs has so far been issued. The plant and the necessary buildings are expected to cost Rs. 7½ lakhs and a lakh of Rupees will be earmarked for working expenses.

The Mysore Spun Silk Mills is the first of its kind in India. The raw materials for the industry consist of silk waste and pierced cocoons.¹ There is an abundant supply of silk waste, skilled labour and electric power in Mysore to render the institution profitable. In addition to the other auxiliary facilities that the concern enjoys the Government have financially participated to the extent of 10 per cent, of the capital outlay, receiving the same treatment as private capitalists. The chief objective of the concern is to help the sericultural industry. The management rests with a Board of nine Directors, of whom three, including the Chairman, are Government representatives. The Government also reserve the power of inspection of accounts whenever necessary. The plant has been designed to produce about 150,000 pounds of yarn per annum and it can find a ready market because the annual consumption of Spun Silk Yarn in India is about 2 to 2½ million pounds, all of which is now being imported from abroad. It is expected that with the successful operation of the spun silk mills the present plight of the sericultural industry may be greatly improved. These two large concerns, namely, the Silk Weaving Factory and the Spun Silk Mills, are expected to aid and stabilize the small-scale but widely scattered sericultural industry.

Pierced Cocoons are those out of which the moth has emerged prematurely, rendering it unsuitable for reeling purposes.

QUASI-GOVERNMENTAL CONCERNS : SUGAR MANUFACTURE. EARLY HISTORY

To the second category of industries which owe their origin both to private and Government initiative belong, among others, the Sugar Factory and the Paper Mills. The history of sugar manufacturing in Mysore may be traced to a distant past. Dr. Buchanan in his travels in Mysore seems to have come across a family of "Linga Banijigaru" at Channapatna, who had known the art of making very fine white sugar.¹ Sugar in those days was made for the sole use of the Court and the privilege of making it was granted as a monopoly to a chosen family. The process of making sugar was kept a profound secret by the head of the family. The mechanical appliance in use was a crude contrivance made out of wood and it was set going with the help of a pair of bullocks. Chickaballapur was also famous in those days for the preparation of sugarcandy of crystal-like purity. They were being made for presentation to guests at marriages and such occasions. Dr. Buchanan mentions Palhally as another important place for the manufacture of sugar in 1800. The 'Mahasura Ashta-gram' district in which Palhally was situated raised a good deal of sugarcane and attempts were being made to convert it into sugar in 1800. The 'Ashta-gram Sugar Works' were established at Palhally in 1847 for refining into sugar the jaggery produced by the raiyats. It is mentioned that the factory was the recipient of a medal for its crystallised sugar at the Great Exhibition held at London in 1851.² The ruins of a large sugar factory are even now to be seen near Palhally. In fact a particular variety of sugar bearing the name of the district 'Ashta-gram' is common at the present time. At Goribidnur the Arbuthnot Industrials Ltd., established a sugar refinery in 1893. It was

¹ Dr. Buchanan: *A Journey through Mysore, Canara and Malabar*, Vol. I, p. 109.

² H. K. Rama lyengar: *Methods and Processes of Disappearing Industries, Mysore Census Report*, 1931, Appendix IV, p. 345.

converting palmyra jaggery into sugar and was selling the molasses to the Government distillery.

Sugar manufacturing however appears to have been practically given up subsequently. It is very difficult to account for the disappearance. It might have been due either to the competition of imported cane and beet foreign sugar towards the end of the 19th century or to the ignorance of the later generation of the process of making sugar, which was kept a close secret by the manufacturers in 1800. The sugarcane grown in the State came to be converted for the most part into jaggery. Thus sugar making as an industry completely disappeared towards the close of the 19th century. Even the Department of Industries and Commerce has been busy till recently in introducing better methods of converting sugarcane into jaggery than in the making of sugar. However, investigations were being conducted by the Department for the institution of a sugar factory in Mysore as there were a number of suitable areas available for the cultivation of sugarcane on a large scale.¹

RECENT DEVELOPMENTS

The real impetus was furnished with the opening of the Irwin Canal through which the water of the Krishnarajasagara was led to irrigate one of the driest areas of the State. The most economic use of the water consisted in the growing of a commercial crop like sugarcane. But it was an unfamiliar crop in the area and the Government had to extend a large measure of support to encourage and educate the rural population of the district. Besides the establishment of a sugar factory became an absolute necessity, as the cane grown on such a large scale could not be converted into jaggery in the usual way as there was no adequate market for the product. The time for starting the factory was not altogether inopportune as the Government of India had just then imposed a protective duty of Rs. 7-4-0 per cent, of imported

¹ *Mysore Economic Conference*, 1920, p. 35.

sugar. The Government of Mysore took time by the forelock and decided to associate itself with private enterprise in floating a concern. The Mysore Sugar Company Ltd. was started as a Joint Stock Company in the year 1933 with a share capital of Rs. 20 lakhs, out of which Rs. 12 lakhs was contributed by the Government and the rest was subscribed by the public. The necessary plant was obtained from Glasgow and the factory commenced operations early in 1934. At that time sugarcane grown on about 3,000 acres of land was available for the factory and it started with a crushing capacity of 400 tons per day. By the year 1936 about 9,354 acres were planted to provide cane for the factory.¹ The factory has been subsequently enlarged by raising a debenture loan of Rs. 16 lakhs and it has at present a crushing capacity of 1,400 tons of cane per day.

The concern is managed by a Board of Directors, of whom four are Government representatives. The Company has under its direct control about 700 acres of cane cultivation. About 200 acres of land constitute Government farms and the rest are cultivated by private farmers. There are about 6,838 people engaged in cane cultivation in the area. The Company provides the cultivators with several accessories such as implements, fertilizers and even cash. Cash advances however have been suspended since 1936. Till the year 1936 about Rs. 7 lakhs had been advanced by the Company to the cultivators in the form of cash and materials. As a result of the researches of the Agricultural Department there has been a remarkable increase in the yield of cane per acre of land in the Irwin Canal area. It has risen from 16 tons in 1933 to 26 tons in 1936.² The average expenditure per acre of land ranged between 175 to 200 rupees. Sugarcane is available to the factory at about 11 rupees per ton, the cost of transport being 3 annas per ton mile. The sugarcane area is

¹ Dewan's Address to the Representative Assembly, October 1936.

² Traill Board Enquiry: Sugar Industry, 1937. Mysore Evidence, *Hindu*, July 13, 1937.

within economic distance of the factory and it takes about 48 hours for the cane to reach the factory after it is cut, not involving much deterioration.

The sugar produced here finds a ready market in the State and in the neighbouring Provinces of British India, such as certain parts of Malabar, Deccan and Madras. Some of the by-products of the industry are being profitably recovered. The distillery attached to it recovers spirit from molasses and a good business has also been built up in denatured spirits. Power alcohol, which is confined to the Company's use, is utilized in large quantities. The concern has been a financial success from the outset and a dividend of 15 per cent, was declared for 1936. But the enhancement of the excise duty on sugar from Rs. 1-5-0 to Rs. 2-0-0 per cwt. is likely to have an adverse effect on it. Besides the keen competition of other Indian factories is now being felt. Still, the exceptionally favourable conditions of the Mysore industry may help maintain its position in the future as well.

INDIAN SUGAR INDUSTRY AND TARIFF PROTECTION

The sugar industry in India has been the recipient of a progressive measure of protection during the past decade. Between 1925 and 1931 the revenue duty on sugar was raised from Rs. 4-8-0 to Rs. 7-4-0 per cwt., so that the virtual protection given by the duty rose from 50 per cent, of the c.i.f. price in 1925 to 190 per cent, in 1931.¹ The duty has since become protective and with the revenue surcharge amounts to Rs. 9-1-0 per cwt. Economists are not inclined to champion the cause of the industry, and they expose the vulnerability of the protective policy with regard to it.² Some of the arguments advanced in favour of protection are that an extension of sugarcane cultivation would lead to intensive cultivation and that it would alleviate the condition of the farmer, as sugar prices could be maintained by Government,

¹ B. N. Adarkar: *The Indian Tariff Policy*, p. 117.

² Cf. Dey, H. L.: *The Indian Tariff Problem*; and B. N. Adarkar, *op. cit.*

unlike the prices of other agricultural products. Besides, it is a profitable money crop coinciding with the inactive season in agriculture so that employment could be provided for the farmers at a time when it is scarce. These arguments have been refuted by Dr. Dey and he points out that sugar-cane is not the only crop involving intensive cultivation and even if it is so, protective tariff is not the most appropriate method of promoting it.¹ It is also pointed out that the industry in India is not in its most favourable setting as it is in Java. Nearly 87 per cent, of the cane area in India is outside the tropics and are not within reach of any extensive irrigation schemes. The majority of the factories have no control over cane-growers and they have to buy from a large number of small growers with the result that the working season is considerably reduced. Hence the rapid development of the industry under the artificial stimulus of high tariff is considered to be morbid and would inevitably come to grief.

It may not be inappropriate at this juncture to examine the prospects of the sugar industry in Mysore as against the sombre picture that is drawn about the Indian sugar industry. Conditions in Mysore are much more favourable for sugar production than in the North. From the point of view of climate the Mysore area is most suitable for cane cultivation and whereas the yield per acre is 15 tons in U.P. and Bihar, it is 26 tons in Mysore. The Department of Agriculture in Mysore has contributed much through its researches and as Adarkar says, the problems of the sugar industry are essentially problems of research.² There are extensive irrigation facilities with the result that cultivation is more concentrated and the required amount of cane is available within good economic distance. The Mysore Sugar Company with the co-operation of the Government has instituted a system of control over the cultivators so that the supply of cane is

¹ Dey, H. L.: *op. cit.*, pp. 255-256.

² B. N. Adarkar: *op. cit.*, p. 135.

ensured and a longer crushing season is available, which lightens the burden of overhead expenses. Another advantage for Mysore is that in the south of India there are relatively few factories and the demand for refined sugar is greater than the output. The most important factor is the co-operation of the Government Departments with the concern. It is therefore obvious that the industry in Mysore is not suffering from all the disabilities from which it does in the north and its prospects are relatively brighter.

PAPER MANUFACTURE : THE INDIAN PAPER INDUSTRY

At the time of its report in 1925 the Tariff Board revealed the essential weakness of the Indian paper industry in its extreme dependence upon " sabai " grass as its raw material. The industry could not have a bright future so long as it depended upon sabai grass because the cost of the raw material was very high due to internal competition and the great distances over which it had to be transported. So the Board envisaged a progress of the industry only with an adequate development of bamboo pulp manufacture. In 1931 when the Tariff Board again conducted an enquiry it was evident that the consumption of paper in India had increased considerably and that the Indian mills had kept pace with the increase. But the greater part of this increase in local production was due to imported wood pulp. So the chief expectation, namely, the development of bamboo pulp industry, had not materialised except for some useful research which was being conducted. The Tariff Board in 1931 therefore recommended a protective duty of Rs. 123 per ton of paper and Rs. 45 per ton of wood pulp imported into India.¹

This was a great impetus for the manufacture of paper in Mysore because the State abounds with bamboo forests and the facilities for making pulp are immense. The Mysore Paper Mills, Ltd., was started as a Joint Stock Company in

¹ Indian Tariff Board: *Paper and Paper Pulp Industries*, 1931, pp. 92, 93.

92 INDUSTRIAL DEVELOPMENT OF MYSORE

the year 1936 with a share capital of **Rs. 25 lakhs.** The object of the concern is to manufacture pulp and paper so that a large part of the existing demand for paper may be met out of local production. The paper mills in India are able to meet only 45,000 tons of the present demand and the balance of 68,000 tons is imported from abroad. Nearly 11,000 of the imported quantity is subjected to protective duty and it is hoped that the Mysore Paper Mills can replace an appreciable quantity of the imported material.

The Paper Mills have been located at Bhadravathi, due to the exceptional facilities available in the region for the establishment of a pulp and paper plant. The large quantity of water required for the plant is easily available from the perennial river Bhadra. The raw materials, especially bamboo, exist in the surrounding forests. Besides the conveyance of the raw materials is not expected to involve much expense, due to the existence of a network of tramways at Bhadravathi which runs for a total length of 100 miles through dense forests where wood and bamboo are available. The Paper Mills are proposed to be located close to the Mysore Iron and Steel Works to take advantage of the railway siding and other workshop facilities. Bhadravathi also forms a convenient distributing centre for the State as well as the neighbouring Provinces of British India which form the chief market for the products.

The plant that is proposed to be installed is designed to manufacture 17 tons of chemical pulp daily which will be utilized for the manufacture of 15 tons of paper of different varieties. The small surplus of 2 tons of pulp is intended to be sold in India. The plant however is so designed as to admit further extensions and employments as occasions arise.

The Government share in the concern is to the extent of 10 per cent, of the share capital. In addition to the financial co-operation the preliminary investigations for the industry were carried on through the Board of Industries and

Commerce and the Government have granted to the Company a large extent of land free of cost in the vicinity of the Mysore Iron Works. Substantial concessions have also been extended by the Government regarding the supply of electric energy, raw materials and railway facilities. Electric power will be supplied to the Mills at •55 of an anna per unit during day and at .35 of an anna during night. The Forest Department has agreed to sell the requisite amount of bamboo to the Paper Mills at Rs. 12 per ton delivered at the factory siding. Adequate railway facilities in the form of permission to use sidings of the Mysore Iron Works and concession freight rates have been granted. The Government have also held out a promise to purchase paper from the Mills to the extent of their requirements.

On account of the innumerable facilities granted by Government the capital expenses of the enterprise have been amply curtailed. Out of the capital outlay of Rs. 25 lakhs about Rs. 21 lakhs have to be expended on plant and the erection of necessary buildings, while Rs. 4 lakhs have been earmarked to serve as working capital. The cost of production of a ton of paper including depreciation is estimated to be Rs. 250, while the net selling price is about Rs. 350 a ton. Assuming a total output of 4,000 tons of paper there will be a margin of Rs. 4 lakhs a year which should yield a handsome dividend.

The management of the Paper Mills rests with a Board of Directors consisting of nine members, of whom three, including the Chairman, will be nominated by the Government of Mysore. Thus the interests of Government will be adequately safeguarded. The concern has immense potentialities and one can safely count on its financial success.

PRIVATE ENTERPRISE : GOLD MINING

Having studied in the previous sections the Government and quasi-Government industrial organizations, we may now pass on to a description of the purely private establishments

in the State. Though, even the purely private organizations have been the recipients of a number of indirect facilities from the State, still they are for the most part the outcome of private enterprise and capital. The rise of private capitalistic enterprise in Mysore may be traced back to the middle of the 19th century. It was during the reign of Chamaraja Wadiyar that gold mining, which is one of the largest private enterprises in the State, took its origin. In 1873 an ex-Army Officer of Bangalore applied to the Government of Mysore for the exclusive privilege of mining gold in the Kolar District. His request was granted with the condition that 10 per cent, royalty should be paid on all the ore raised by him. He sunk a shaft in 1875 near Oorgaum but later realised that the capital expenditure was beyond his means. Hence all the concessions granted by the Government were transferred by him to a small syndicate who took up the matter in earnest. In 1881 the syndicate obtained the help of Messrs. John Taylor and Sons, a firm of Mining Engineers in London which became the managing agent. In the meanwhile a thorough geological survey of the State was conducted and the position of Mysore as a gold producing country had become assured. After great vicissitudes the Gold Mining Company began to achieve success by 1885 and the first royalty of Rs. 33,368 was paid to Government in 1885. During the decade 1886 and 1896 the total output of gold was 1,056,945 ounces and the Government earned a revenue of Rs. 31,68,872 in the shape of royalty at 5 per cent, on the gross income. By this time the Kolar Gold Fields developed into a flourishing town and a branch railway line was constructed in 1893 between Bowringpet and the mining area.

During 1901 negotiations took place between the mining Companies and the Government for a renewal of the lease as the enterprise was progressing well. The lease was renewed for a further period of 30 years from 1910 on condition of a payment of 5 per cent, royalty on the gross output together

with 2½ per cent, on all dividends declared by the Companies, The working of the mines during this period was a record of unbroken success and in the year 1934 they applied for further renewals of the leases, as they were to expire in 1940. In granting the renewal the Government made a significant change regarding its share of the profits by making the percentage vary from 2½ to 40 according to the dividends declared. The original 5 per cent, royalty on all gold produced remained as heretofore. The benefit of the fresh terms of the new lease was made to accrue to the extent of two-thirds of the scale during the interim period between 1934 and 1940.¹ This was responsible for an increase of revenue from the gold mines to the extent of Rs. 9.8 lakhs in 1935.

The four dividend paying mining Companies which are functioning successfully at the present time are : The Mysore Gold Mining Co., Ltd.; The Oorgaum Gold Mining Co. of India Ltd.; The Nandidurg Mines Ltd. and the Champion Reef Gold Mining Co. of India, Ltd. They provide employment to 23,338 persons daily.² The mine workers were originally Moplahs from the Western coast, but in course of time local labour was also encouraged by the liberal wages paid by the mining Companies. The superior staff employed are either Englishmen or Italian miners. The nominal capital of all the gold mining Companies in 1936 was £1,744,846. The major part of this capital was raised in England and almost all the gold produced in Mysore is conveyed to England. Though the country has naturally benefited immensely due to the gold mining operations, still it is a matter for regret that one of the most valuable resources of the State is being exploited by foreign capital and enterprise. However, considering the risky nature of the enterprise, the inadequacy and shyness of local capital and the want of enterprise and technical knowledge, one cannot

¹ M. Shama Rao: *Modern Mysore*, Vol. II, p. 397.

² *Return of Large Industrial Establishments in Mysore*, 1935.

doubt the wisdom of the State policy in granting concessions to a foreign Company.

TEXTILE INDUSTRY—COTTON MILLS

Next to gold mining the textile industry is the largest private enterprise in the State. There are 62 concerns employing approximately 10,509 workers daily. The industry comprises spinning and weaving in cotton, wool and silk. The acreage under cotton has risen from 57,000 in 1921-22 to 87,384 in 1935-36, and the cotton textile industry has kept pace with this development. About 52,663 bales of cotton are consumed annually by the mills in the State. The total capital employed in the cotton industry of the State is reckoned at Rs. 93 lakhs and about 8,520 persons are employed in the industry as a whole. There are 140,000 spindles in all with an output of 19,713,000 lbs. of yarn. About 9,403,000 lbs. of piece-goods are manufactured in the mills of the State annually.

There are four principal cotton weaving and spinning mills in the State. Most of the cotton mills are situated in Bangalore on account of its cool and equable climate throughout the year. Besides Bangalore is one of the most important distributing centres for the textile trade in Southern India. The first cotton mill that was started was at Bangalore in the year 1884. It is now known as the Mysore Spinning and Manufacturing Mills. It started with a nominal capital of Rs. 4,50,000 and a debenture loan of Rs. 4,00,000. It sustained a heavy loss in 1893 and had to be resumed the next year with a change of management. Messrs. Crystle and Co. became the Managing Agents who worked it for another short period with an enhanced capital of Rs. 7,00,000 and a capital debt of Rs. 4,83,500. However the Mills encountered bad times in 1901 and the Company had to go into voluntary liquidation. At this juncture the Government offered to supply the necessary working capital and the Mills resumed work with Messrs. Sirur & Co., as their Managing

Agents. After a few more vicissitudes the concern began to work satisfactorily. In 1937 the total number of looms and spindles in use in the Mysore Spinning and Manufacturing Co. were 500 and 46,000 respectively. The authorized capital of the concern was Rs. 15 lakhs in 1935, out of which Rs. 12,44,900 was paid up. They provided employment to 2,204 persons daily in the year 1935.

The second large textile mill of the State was started in 1887 at Bangalore. It is now known as the Bangalore Woollen, Cotton and Silk Mills Ltd. The Company was originally floated with a capital of Rs. 10 lakhs, out of which Ordinary Shares were issued to the extent of Rs. 6 lakhs and the balance was in the form of Preference Shares. The capital was gradually enhanced and it stood at Rs. 26,25,000 paid up, in the year 1936.¹ The capital contribution has been made partly by local citizens and partly by outsiders. The Mills obtained large concessions from the Government in the form of a suitable site and facilities for obtaining water. In the year 1937 the total number of looms and spindles in the Mills were 1,320 and 80,000 respectively. Binny and Co. of Madras are the Managing Agents of the Mills. There is a large foreign market for the products of the concern and the Mills have been enjoying prosperous conditions during recent times. In the year 1937 they provided employment to 3,950 persons.

The post-War boom in the cotton textile industry was responsible for the inception of two more mills in the State. The Sri Krishnarajendra Mills was registered as a Joint Stock Company in Mysore with an authorized capital of Rs. 50 lakhs, towards which Rs. 5 lakhs was subscribed by His Highness the Maharaja of Mysore. The present paid-up capital of the concern is Rs. 18,34,850. The required machinery was imported from England and the Mill started work in 1924 with about 25,000 spindles. However the concern was the victim of the cotton industry slump in India and

¹ *Report of the Joint Stock Companies in Mysore*, 1936.

consequently suffered heavy losses. A hosiery department was subsequently started with a view to reducing the burden of the overhead expenses and to putting a finished commodity on the market. Recently a weaving section with 260 looms has been added at a cost of Rs. 4 lakhs. The object of the development is to utilize the yarn produced, which is not easily saleable in South India. The Mills provide employment to 1,469 persons daily. The concern was under a quasi-Governmental management for some time due to its organizational instability. At present it is managed by D. N. Sirur and Co., who are the Managing Agents of two other cotton mills in Mysore State.

The other cotton mill that was started during the post-War boom was the Minerva Mills. It was started in Bangalore with a capital of Rs. 30 lakhs under the managing agency of Messrs. Sirur and Co. The Government of Mysore had to specially acquire 70 acres of land and sell it at cost price to the Mills. The Mill is equipped with 20,000 spindles and provides employment to 1,610 persons daily.

THE INDIAN COTTON INDUSTRY

In this section an attempt may be made to briefly survey the vicissitudes of the cotton industry in India and determine its landmarks. There was a rapid progress of the industry from the eighties of the 19th century and by the year 1914 India had come to hold the fourth place among the cotton manufacturing countries of the world. The War period provided another spell of prosperity which continued during the post-War period and merged with the boom of 1920. The year 1921 is an important landmark in the development of the Indian cotton industry, because certain far-reaching re-adjustments in trade and manufacture commenced to take place thenceforward. It is more appropriate to term the changes as re-adjustments because there was neither a definite set-back to Indian production nor a proportionate increase of foreign competition in the home market. On the other

hand, as Dr. Anstey points out, Indian mills have increased their output and sales both absolutely and relatively to imports since 1913-14 and they hold a predominant position in the home market.¹ Further, there is also no evidence to show that the degree of external competition has increased. The fundamental changes that have actually occurred are a relative increase in the proportion of Japanese imports as compared with that of Lancashire and a serious decline in the output of Bombay Mills, fully compensated by an expansion of the output of up-country mills. "Thus," as Dr. Anstey says, "what has to be explained, and if possible remedied, is not so much a depression in the Indian cotton mill industry as a whole, as the depression in Bombay".² Whatever might have been the costs and consequences of such re-adjustments, it is fairly obvious that the Indian cotton industry as a whole has not been on the decline.

This interpretation of the situation is useful in instituting a comparison with the development of the cotton industry in Mysore. There has been an unparalleled development of the industry in Mysore during the past 25 years and every landmark has recorded a progress. All relevant data concerning output and trade reveal the potentialities of the rapidly expanding industry. In 1913-14 the output of the mills in Mysore was 4-6 million yards and it increased to 12.3 million yards by 1922-23, recording thereby an increase of 300 per cent, within a decade. Within the next 13 years the output of the industry more than trebled with a gradual and steady increase every year. From 12.3 million yards in 1922-23 the output increased to 37.6 million yards in 1935-36. During the same period the imports of cloth into the State have rapidly declined, faithfully representing the reaction of the growing local industry. From 40.6 million yards in 1913-14 the imports declined to 20.1 million yards in 1935-36, registering thereby a fall of more than 50 per cent.

¹ Vera Anstey : *The Economic Development of India*, p. 267.

² *Ibid.*, p. 268.

But the proportion in the increase of output is very much higher than the decline in imports. This is accounted for by two important factors, namely the rise in the *per capita* consumption of cloth in the State and an increase in exports. The *per capita* consumption of cloth was 13.4 yards in 1935-36, which was the highest level of consumption ever reached in Mysore.¹ In 1913-14 the *per capita* consumption in Mysore was 11.0 yards.² The pre-War figure was exceeded in 1927-28 when the consumption reached 12.8 yards. The year 1932-33 recorded a high consumption of 13.3 yards. But even that was exceeded, as we have observed in the year 1935-36. These features in Mysore serve as a good contrast to the rates of consumption in India as a whole. In 1913-14 the *per capita* consumption in India was 16.50 yards. In India this was not exceeded till 1932-33, that is five years later than in Mysore. In 1932-33 the consumption in India was 16.70 yards, which was not very much higher than the pre-War level. Besides the *per capita* consumption in India has again declined after 1932-33. It stood at 15.54 yards³ in 1936-37 which is lower than the pre-War consumption.³ Hence the cotton industry in Mysore has kept pace with the rising standard of life of the people. Regarding the exports of piece-goods from Mysore, there are definite signs of further increase in them in the near future.

The prospects of the cotton mill industry in Mysore are very bright on account of certain decentralizing factors that are operating at present in India with regard to the cotton industry. Dr. Lokanathan emphasizes two essential factors among them, namely, the cost of distributing the product for a scattered population, and the development of hydro-electric power.⁴ As railway rates are now being adjusted more in proportion to the cost of service rendered, distance

¹ *Review of the Foreign Railborne Trade of Mysore*, 1936, p. 8.

² *Ibid.*, 1927-28, p. 8.

³ *Review of the Trade of India*, 1936-37, p. 43.

⁴ Dr. P. S. Lokanathan : Recent Trends in the Distribution of the Cotton Mills Industry in India : *Hindu*, September 13, 1936.

becomes an important factor and industry tends to be decentralized. The development of hydro-electric power in the south of India has favoured the establishment of textile mills in those provinces, with the advantage that they can cater to the special tastes of the consumers around them. Thus India has no longer a unified market depending on a concentrated industry and so Mysore can reasonably hope to carve out a place for itself in the South Indian market.

WOOLLEN AND SILK TEXTILES

The manufacturing of woollen blankets and carpets has been an important industry in Mysore. There are altogether four woollen mills in the State. The annual production of woollen goods is approximately $2\frac{1}{2}$ million lbs. and a paid-up capital of about Rs. 35,33,000 has been invested in the woollen industry of the State. The total number of looms and spindles engaged in the industry are 227 and 7,794 respectively. The Bangalore Woollen, Cotton and Silk Mills Ltd. have a large plant for the manufacture of blankets. During the Great War a substantial amount of Army blankets required by the Military Department was supplied by them. The Kaiser-i-Hind Woollen Mills was started at Bangalore in 1922 as a private Limited Company with a capital of Rs. 5 lakhs. During the next year it was converted into a public Joint Stock Company with an authorized capital of Rs. 50 lakhs. The Mahalakshmi Woollen and Silk Mills Ltd. was started at Yeswantpur near Bangalore with a nominal capital of Rs. 20 lakhs. The mills manufacture blankets of good quality and also aim at supplying mill-made yarn to the "Kambli" weavers.

Mysore takes a high rank among the manufacturers of silk fabrics in India. There are two silk filatures in Mysore. One of them was started by Government with 12 basins as an experimental measure. The other is a private concern known as the Bangalore Silk Filature and Throwing Mills. They produce silk of a very fine quality which is used for the

manufacture of superior fabrics. The total annual output of silk materials in Mysore amounts to 1 million lbs.

CONCLUSION

Among the other industries- which owe their origin to private initiative and capital may be mentioned Cotton gins, Tile factories, Rice mills, etc. Details regarding the number of units in each group and the total employment provided by each industry may be found in Table ' I' given below. The foregoing description explains the development and technique of the industries in Mysore. Problems of structure and organization will be examined in the next chapter.

TABLE I

Showing the number of concerns in each industry and the total employment provided by each group, 1935

Industry	Number of concerns	Number of persons working daily	Percentage labourers in each industry
1. Textiles: Spinning and Weaving (Wool, Cotton and Silk) ..	66	10,988	20.8
2. Manufacture of articles of food, drink and tobacco ..	69	3,845	7.3
3. Oil Mills	10	434	•8
4. Engineering Works	37	2,204	4.1
5. Printing	17	956	1.8
6. Cotton Ginning and Pressing ..	21	1,113	2.1
7. Brick and Tile Factories ..	15	1,033	1.9
8. Chemical Industries	10	514	•9
9. Hides and Skins	23	1,812	3.4
10. Gold Mining	4	23,338	44.3
11. Others	63	6,400	12.1
TOTAL ..	335	52,637	100

TABLE 11

Showing the regional distribution of the industries and the approximate number of persons working in industrial concerns in each region
1935

District		Number of concerns	Number of persons employed daily	Proportion of industrial workers in each district
1. Bangalore		152	15,288	29.0
2. Mysore		83	6,823	12.9
3. Kolar		19	24,350	46.2
4. Chitaldrug		30	1,569	2.9
5. Shimoga		11	2,362	4.4
6. Kadur		14	1,730	3.2
7. Tumkur		14	312	.5
8. Hassan		12	233	-4
TOTAL		335	52,637	100

CHAPTER IV

STRUCTURE AND ORGANIZATION

IN this chapter the course of our discussion will be set in a different direction. The treatment will be more analytical than descriptive. A cross-section of the industrial organization of Mysore will be taken in order to study its structural evolution. To provide the necessary mental background, a short theoretical discussion will precede the examination of each aspect of industrial development. Certain permanent structural changes that are taking place as a reaction to world economic conditions will also receive adequate treatment, so that the flexibility of the mechanism may be appreciated. In fine, both the static organization and the dynamic development of industrial structure will be critically examined.

PROBLEMS OF STRUCTURE AND ORGANIZATION

So far no clear-cut demarcation has been made by economists between problems of structure and of organization. Often, the line drawn between them gets blurred. However, as a working hypothesis we may adopt the analysis of Sargent Florence regarding the problems of structure.¹ According to his own terminology industrial structure involves three features namely, site, size and scope. In other words, every plant must have a certain location, a certain size and a certain type of integration. These are problems that essentially concern the individual firm regarding its productive activity. Whereas "structure" refers to the units, "organization" refers to the whole industry. Problems of organization are therefore wider in scope. They consist, as Hermann Levy says, in obtaining a control over as wide as possible a field of production and distribution in a particular industry.²

¹ P. Sargent Florence: *Economic Research and Industrial Policy: The Economic Journal*, December 1937.

² Hermann Levy: *The New Industrial System*, p. 27.

Hence industrial combinations legitimately belong to the latter category. Without doing much violence to precise classification we could apply the above analysis to the industrial conditions in Mysore. Structural problems may be examined with reference to location, extent of operations and the diversity of products of an industry. Industrial control, in respect of the relation subsisting between different firms for reducing competition and determining prices, should form the subject-matter of problems of organization.

THEORY OF LOCATION

Till recently no systematic theoretical analysis of the problem of location of industries was available. English economic theory has been particularly deficient in this respect. Though the English economists have devoted much thought to the subject, still the approach has not been sufficiently scientific because their own essential preoccupations were something different from a systematic presentation of a theory of location of industries. It was Thunen who for the first time attempted to present a theory of location, but his conclusions lacked general applicability due to the limitation of his assumptions. The most significant contribution that has been made during recent years to the theory of location is by Alfred Weber, a German economist.¹ He adopts a purely deductive method and discovers the operation of certain general factors which influence the location of manufacturing industries.

Weber attempts to determine at the outset the forces that operate as economic causes of location. Through a process of cost analysis he arrives at certain elements of cost which vary geographically and others which do not. It is only the geographically determined differences of cost that can influence location. Hence he overlooks the others and selects only three forces as general regional factors of location, namely, the cost of raw materials, of labour and of transportation.

¹ Alfred Weber: *Theory of Location of Industries*.

Since difference in the cost of materials is caused by the distances over which they have to be transported, they could also be expressed in terms of transportation costs. Thus ultimately there remain only two general regional factors, namely, costs of transportation and of labour. All the other elements of cost which have no regional significance can yield benefits through an "agglomeration" of the industry. Hence the general pattern of location will be at the optimal points of transportation costs. Any deviation from such a point of orientation may be caused either by the differences in the costs of labour in other regions or by the advantages of agglomeration at particular centres. Thus the apparatus with which the details of location have to be worked out has been extremely simplified.

The basic elements of costs of transportation are the weight to be transported and the distance to be covered. It is no doubt a fact that the process of rate making is influenced by the type of transportation system, the nature of the road bed and the quality of the goods. But still in its ultimate analysis it is an expression of the two predominant factors of weight and distance. Hence there is no real danger of distorting the picture of reality by an abstraction of this nature. Obviously industries would tend to locate themselves at places where the total transportation costs are at their minimum. Since material deposits are not always contiguous to the places of consumption, each industry has to choose for itself a " locational figure " of least transportation cost. The actual basis on which production will get oriented within a locational figure depends upon two conditions, namely, the type of materials used and the nature of their transformation into products. Raw materials may be either " ubiquities " or " localized materials". Ubiquities like brick-clay and water are available everywhere, whereas localized materials like cotton and minerals are confined to certain regions. Evidently the latter exert a greater influence on the location of the industry than the former. Further, the

localized materials may behave in the process of production either as "pure materials" or as "gross materials". A pure material imparts its total weight to the final product. On the other hand a gross material may either add none of its weight to the product, or add only a part of it. Coal for instance adds none of its weight, whereas iron ore adds only part of its weight to the final product. Hence the latter are known as weight losing materials. The nature of transformation of the materials is of great importance in determining the location of the industry because the total weight to be transported depends upon it.

The final conclusions regarding transport orientation may be deduced from the foregoing analysis. It is the proportion of the weight of the localized material to that of the product that exerts a determining influence on location. If this proportion which is known as the "material index" is high, production is attracted to the place of deposit. In other words the relation between the gross weight of localized materials and weight of final product is important. Next, the relation of weight of localized to ubiquitous materials have to be considered. Ubiquities can attract production¹ towards the place of consumption only when they add to the weight of the product. Pure materials on the other hand can never bind production to their places of deposit because their "material index" is negligible. Therefore the basic answer to the problem of location either at places of consumption or at material deposits is provided by the type of materials used in each industry and the nature of their transformation during the process of production.

Deviations from points of least transportation costs may be caused by more favourable labour locations. In as much as labour costs vary from place to place, a change of location may take place if the additional transport cost is more than compensated by the economy in the expenses for labour. The extent to which labour deviations may occur depends upon the "index of labour", which is in other words the

proportion of labour embodied in the product. But the actual deviating force is provided by the "labour coefficient" which is the proportion of labour costs per ton of weight to be moved inclusive of the localized materials.

Another form of deviation from a minimum transportation point may be caused by the advantages of agglomeration. If the economies of concentrated production are overwhelming, location will be at points of agglomeration rather than at places of low labour costs. But all industries will not react to this tendency with equal vigour. It depends upon the "coefficient of manufacture", which is the value added through manufacture per ton of weight to be moved. Hence industries with high coefficient of manufacture show strong tendencies to agglomerate and those with low coefficient of manufacture show weak tendencies to agglomerate.¹

However, the deductive approach of Alfred Weber has been criticised by Sargent Florence for its unreal assumptions and its over-simplified argumentation.² Florence adopts the inductive method and calculates, with the help of the data provided by the censuses of occupation and production, the propensity of a particular industry for localization. He calls the degree of concentration of each industry as its "coefficient of localization". Industries like cotton-weaving have a high coefficient, whereas the production of aerated waters and beer have a very low coefficient. Though the inductive inquiry may have a great verification value, still it does not nullify the fundamental deductions of Alfred Weber. The variation in the coefficient of localization of different industries is explicable in terms of Weberian analysis. If the manufacture of aerated waters has a low coefficient, it is because of the use of ubiquities in its production. Obviously it is scattered among the places of consumption. Conversely the use of a localized material in cotton weaving

¹ Alfred Weber: *op. cit.*, p. 166.

² P. Sargent Florence: *op. cit.*, pp. 621, 622; also see S. R. Dennison: *The Theory of Industrial Location: Manchester School*, Vol. VIII, 1937.

is responsible for its high coefficient of localization. Hence from the point of view of pure theory the technique provided by Weber appears to be quite adequate and useful. Even if the assumptions are simplified, which is inevitable in a deductive approach, they have not seriously distorted the picture of reality.

INDUSTRIAL LOCATION IN MYSORE

Having defined the concepts, we may proceed to interpret local conditions in Weberian terminology. The location of the Iron and Steel Industry at Bhadravathi is an interesting instance of transport orientation. The two important raw materials are iron ore and wood, the latter being necessitated by the charcoal blast furnace. Both of them are localized materials having a high "material index". For each ton of pig iron produced, 1-65 tons of ore, 4-50 tons of wood and .25 tons of limestone are required.¹ Thus they are highly weight-losing materials. All the raw materials are available within a radius of 30 miles and hence the industry is most advantageously located at the material deposit. No ubiquities are used which add to the weight of the product and so location is not attracted towards place of consumption. Besides the points of consumption are also widely scattered. With the addition of the steel plant the "material index" has increased further because the proportion of raw materials in relation to a unit of steel is even higher than to that of pig iron.

Certain structural changes at the Mysore Iron Works during recent years provide an opportunity for a study of locational dynamics. The Wood Distillation plant at Bhadravathi has to draw its supply of wood over a distance of 30 miles from the forests. The plant yields one ton of charcoal to every four tons of wood. In spite of the high "material index" of wood it was transported to the distillation plant on account of the recovery of the by-products.

¹ Indian Tariff Board : Pig Iron: 1930, *Evidence*, p. 35.

Since the cessation of the recovery of by-products the high "material index" of wood has asserted itself and therefore cast iron kilns are installed in the forest areas for the carbonization of wood. This is an interesting example of a change of location consequent on a reduction in the value of products manufactured in relation to the locational weight transported. Such a locational separation of the stages of industrial production has also been characteristic of the British Iron and Steel industry. With the importation of ore from Spain and Sweden it has become advantageous to smelt the ore at the sea-coast and therefore the stages of production have been separated.¹

The manufacture of sandalwood oil in Mysore offers an extreme example of a product whose weight bears a negligible proportion to that of the materials utilized. The two essential raw materials are sandalwood and fuel wood. Water is an important ubiquity needed for the generation of steam, but it adds no weight to the product. The "material index" of the two localized articles may be calculated by the yield of oil in the process of production. During the year 1934-35 about 735 tons of sandalwood and 8,703 tons of fuel were required to produce 72,453 lbs. of sandalwood oil.² That shows one ton of sandalwood and 11.5 tons of fuel are necessary to produce approximately 100 lbs. of sandal oil. Hence the "material index" is enormously high. Since the product is mostly sold in European markets the place of consumption can have no influence on location. Therefore the industry has to orient itself at the material deposits. Its location at Mysore is appropriate because the most abundant supply of sandalwood is on the borders of the Cauvery and along the chain of hills which run from Kankanhalli to Maddagiri.³ Besides the fuel wood that is necessary for the industry is also available in the outlying

¹ Hermann Levy : *The New Industrial System*, pp. 82, 83.

² *Report of the Sandal Oil Factory in Mysore, 1934-35.*

³ *Mysore Gazetteer*, Vol. I, p. 67.

parts of Mysore district. Hence the location is based on the principle of minimum transportation cost for the raw materials.

The cotton industry presents an altogether different problem. Raw cotton may be considered as almost a "pure material". There is not much difference in weight between the raw material and the finished product because it enters the product without losing much of its weight. According to the Weberian conclusions therefore cotton which is a "pure material" cannot bind the industry to its place of production. Nor is there a compelling motive for the industry to be located at the place of consumption because consumption is not concentrated and no ubiquities are added which increase the weight of the product. Hence the location is mobile and it could be anywhere on the line between raw material supply and the place of consumption. The actual place of location will be chosen on the availability of other productive forces such as enterprise, capital and labour. Even distance is no consideration because it is the "transport" relations that are more important. Particularly in the cotton textile industry the cost of transportation does not make an appreciable difference in the total cost of the product. These are some of the theoretical explanations for the seemingly incongruous locations of the cotton industry. Mr. Robertson almost exclaims when he says that it is doubtful whether a disinterested visitor from another planet would approve of the queer dispensation by which American cotton is spun and woven for Indians in Lancashire.¹

None of the cotton mills of Mysore are located in the cotton growing areas. On the other hand three out of the four mills in the State are located in Bangalore because it is a good distributive centre for South India. Bangalore also enjoys the best "transport" relations both for securing the raw material and for distributing the finished product. Labour and capital are more advantageously available there

¹ D. H. Robertson : *The Control of Industry*, pp. 28, 29.

relatively to other parts of the State. Among the special factors that have induced the location of the industry at Bangalore are the degree of humidity of the air and the availability of fresh water. Thus the orientation of the industry, though based on the transportation framework, is away from both the corners of the locational figure, namely, the place of consumption and the place of cotton production.

However, the location of one of the cotton mills at Mysore needs explanation. There are two important reasons for the slight scatter of the cotton industry in the State. In the first place, Bangalore began to experience certain "deglomerating" tendencies due to the excessive concentration of not only the cotton industry but of other industrial concerns. The rise in the costs of land, of internal costs of transport and of labour, counteracted the advantages of further "agglomeration". Secondly the promoters of the mill were in Mysore and they had other industrial concerns under their management in the same place. So naturally they preferred its location within a convenient radius of their activities. It is no doubt a fact that Mysore does not enjoy the same "transport" relations as Bangalore, but still the subsequent difficulties of the mill cannot be attributed to a wrong location. As we have already observed, the location of the cotton industry is perfectly mobile and it can choose any place provided its advantages outweigh the consequent increase in transport costs. Hence to ascertain the relative weakness of the concern we have to look elsewhere than at the appropriateness of its location.

The cement industry is invariably oriented at the place of consumption. Cement is produced in almost all industrial countries and it is everywhere market localized and not material localized. This is because the materials required for the industry are either absolute or relative ubiquities and they are universally available. Hermann Levy says "As the raw material for the making of cement can be supplied in almost any part of the world, it is in general the regional

demand which dictates the location of the industry, and the principal consuming centres have become the principal sources of supply".¹ The location of the cement factory at Bhadravathi is due to the utilization of the blast furnace slag which is in the nature of a localized material attracting production to the place of its own origin. Since the other materials required are ubiquities they are available in the vicinity. Though Bhadravathi is not the principal place of consumption, still on account of its good transport relations the product can bear the cost of distribution within the State.

So far three types of industrial location in Mysore have been considered, namely those at material deposit, some that are indifferently located, and others at points of consumption. It now remains to be seen how labour orientation takes place among industries. The ivory inlay work of Mysore and sandalwood carving at Sagar and Sorab are good examples of labour orientation. The proportion of labour cost in the value of these artistic products is so considerable that the "labour coefficient" is very high. Hence the production of these artware is concentrated at places where the skilled workmen have been living from time immemorial.

SPLITLOCATIONS

Throughout the foregoing discussion we have assumed a single place of location for an industry. But this is not always necessary, because productive processes are not indivisible. Some are technically independent of each other and can therefore be located at different places. A split in location will occur when a considerable loss of weight takes place after the first stage of production. In such an event the early stage of production will be located near the material deposit and the later stages at the point of consumption. Paper-making offers an appropriate illustration of the tendency of regional separation of

¹ Hermann Levy: *op. cit.*, p. 76.

the processes of production. The production of pulp is territorially disintegrated from the manufacture of paper. While the former attaches itself to the regions of wood supply, the latter chooses points of vantage for its most economic operation. In Sweden the manufacture of paper amounted to 624,000 metric tons only, while her production of wood pulp stood at 2,200,000 metric tons in 1931.¹ Swedish pulp is imported by paper mills all over the world.

There are several instances of such locational separation in Mysore. The cotton gins in the cotton growing tracts and the saw mills in the forest areas are the first stages in their respective industries. Their separation from the final stages of production results in great economies in transport costs. Production of charcoal in forest areas instead of at Bhadravathi is once again a consciously brought about split in location. It is relevant to the issue to enquire why the paper industry in Mysore has not been disintegrated and located in different places. The production of bamboo pulp could have been at Bhadravathi and the manufacture of paper at Bangalore. But the scale of the operations is not large enough to permit such a separation. If they are separated, the "technical optimum" would fall short of the "managerial optimum".

SIZE OF A FIRM

In an analysis of industrial structure the size of a firm claims as much importance as its location. An elucidation of the conception of an "optimum" firm in modern industry would be an appropriate beginning for an enquiry into the relation of size and efficiency. The optimum firm is defined by Mr. Robinson as that firm which in existing conditions of technique and organizing ability has the lowest average long period cost of production per unit of commodity.² It is brought into being by the free play of economic forces

¹ Hermann Levy: *op. cit.*, p. 80.

² E. A. G. Robinson: *Structure of Competitive Industry*, p. 15.

under conditions of perfect competition. According to Mr. Robinson there are five forces which determine its size, namely, technical factors, managerial requirements, financial conditions, marketing influences and the forces of risk and fluctuation. These forces do not by any means yield a determinate size because the optima reached individually by them may not harmonize with each other. But still through a reconciliation of the differing optima the firm can reach its equilibrium position. Therefore in actual practice an approximation to the ideal position is reached by a balancing of forces which may not always yield an identical size.

From the technical point of view the scale of operations has to be fairly large so that several "indivisibilities" are overcome and efficiency in production is achieved. Obviously technical forces set a minimum output below which production is uneconomical. But they do not fix a corresponding upper limit to output because there are no resulting diseconomies through an increase in the scale of operations. If however one of the stages of production has to be conducted on a much larger scale than the others the solution is through a process of "vertical disintegration".

The managerial forces on the other hand indicate both a minimum and a maximum limit. Though with an increase in output greater efficiency in management is available, still after a stage the cost of co-ordination will overtake the economies of large scale. As Mr. Kaldor says, the supply of co-ordinating ability for the individual firm is fixed and this limitation is of far-reaching importance because unless at least one of the factors in the production-function is fixed the optimum size cannot become determinate.¹ The other factors could be applied to it in varying proportions till the law of non-proportional returns operates.

Financial considerations lead invariably towards large units. They can borrow more easily and more cheaply.

¹ Nicholas Kaldor: The Equilibrium of the Firm: *Economic Journal*, March 1934.

Hence even though a firm is technically less fitted to expand, still it does so on account of financial reasons. The marketing optimum is often at variance with the optima of other forces. Wherever sales costs are much, it is economical to increase the amount to be sold. But under certain circumstances the small producer can overcome the difficulty through a process of vertical disintegration in selling. If the goods are sufficiently standardized they could be marketed through wholesale depots. But in the case of goods which are sold by name and trade mark such a disintegration is not feasible. Therefore where a firm has to market its own goods, it will benefit by further expansion after all the technical economies have been secured and the limits of efficient management approached.

The forces of risk and fluctuation distort normal calculations. Therefore the optimum firms will be different under constant and under fluctuating outputs. The test of efficiency of a firm during a depression is not its survival because those who survive are not necessarily the most economic firms. A firm with the lowest average cost of production taking bad and good years together will bear the vicissitudes of depression better than the most efficient firms under normal circumstances. Hence the size of the firm tends to be smaller than it otherwise would be under the influence of risk and fluctuation. But monopolistic action to mitigate the effect of risk is feasible, in which case the size of the firm will be large.

It is not unlikely that all the forces may lead to an approximately similar optimum size. But usually all the forces do not reach their optimum at the same output. Hence a reconciliation of the forces, by placing each one of them as near as possible to their optimum level, is essential. However, it is very important to recognize the fact that the conception of an optimum is always relative to the environment to which it refers. In an article in the *Economic Journal* Mr. Robinson says that the optimum is not an optimum independent of the environment in which industry must be

conducted.¹ It depends upon the progress of technique and management, the rate of interest and the market conditions in each place. Hence in applying these theoretical conclusions to actual conditions an adaptation of the principle in the light of local influences is essential.

SIZE AND EFFICIENCY IN MYSORE

An investigation of the size of industrial concerns in Mysore bristles with difficulties. The most obvious deficiency is the paucity of industrial units so that no useful comparison is possible. Size is after all a relative conception and unless there is a long range of firms with varying sizes it is difficult to establish a correlation between size and efficiency. Though there are certain objective criteria which may be applied in examining whether a concern is at its optimum level or not, still an inductive verification of the results of actual operation at different sizes is valuable. In Mysore except the cotton industry, in which there are four important mills, the other industries such as iron and steel, sugar and paper manufacture are represented by individual firms. So the only way of overcoming this difficulty is to compare the Mysore units with those that are in other parts of India and place them in their respective size groups. It is of course assumed that in any such comparison due allowance ought to be made for the difference in local conditions.

The next onerous decision is with regard to the choice of a suitable standard of measurement. This depends upon the nature of the industry and the type of data that is available. A criterion that may serve the iron and steel industry may not suit the cotton industry. Again what may be adequate for Mysore concerns may not stand comparison with similar concerns in British India. In the cotton industry for instance the amount of paid-up capital may be a sufficient test of size in Mysore, but it will not yield accurate results while

Austin Robinson: The Problem of Management and the Size of Firms: *Economic Journal*, 1934.

comparing them with the Ahmedabad cotton mills where the system of financing is entirely different.¹ A comparison of average and marginal costs of a concern with that of another would be the most appropriate method for establishing a correlation between size and efficiency, but such useful data is seldom available. Hence we are often compelled to adopt a mediate approach and to apply as many standards of measurement as may be relevant for the purpose.

THE COTTON INDUSTRY

The cotton industry of Mysore comprises four large mills. Two of them have a spindleage of between 30,000 and 45,000, one of them has slightly above 45,000 and the other has 25,000 spindles. Comparing them with the classification of British Indian mills according to spindles we find that the tendency in Mysore is towards large units. Taking India as a whole, out of 277 mills, 3 belong to the group with 15,000 to 30,000 spindles and 60 belong to the higher group of 30,000 to 45,000.² In Mysore two out of four belong to the higher group and the third goes to the still higher group of 45,000 to 60,000 spindles. From the point of view of workers also the average size in Mysore is relatively higher. Two of them have between 1,000 and 2,000 workers, one of them has between 2,000 and 3,000 workers and the other has more than 3,000 workers. Taking India as a whole, out of 277 Mills, 124 have less than 1,000 workers and only 97 have between 1,000 and 2,000 workers. And very few of them have more than 2,000 workers.³ Taking paid-up capital as a standard of measurement, we find that two of the Mysore mills have a paid-up capital of between 20 and 30 lakhs of rupees, which is higher than even the Bombay average and of course very much higher than that of

¹ See chapter on Industrial Finance.

² P. S. Lokanathan: *Industrial Organisation in India*, p. 108, Table II.

³ *Ibid.*, p. 109, Table III.

Ahmedabad.¹ But as already observed, this is not a reliable method of comparison because the method of financing in those places is different. However, it is obvious that the tendency in Mysore is towards large units.

Before we conclude as to whether the large units are appropriate or not for Mysore conditions it is necessary to inquire into the efficiency of their operation. In the absence of data regarding cost conditions we have to fall back upon the profits yielded by the concerns in spite of the obvious deficiencies of such a method. Profits are the resultant of so many factors among which an appropriate size is only one. A glance at the table given below will show that the concern with more than 45,000 spindles is yielding 10 per cent, dividend, whereas the others are yielding less. The one with less than 25,000 spindles has yielded practically no profits ever since its inception. Its size may be one of the factors among others for its bad results. Therefore it is fairly obvious that there is a tendency for large units in Mysore and that they also seem to yield good results.

It is very difficult to assign accurate reasons for the relatively large size of the cotton mills in Mysore. One of the possible reasons may be that the mills in Mysore are widely subscribed public Joint Stock Companies, whereas the Ahmedabad mills in particular are mostly family concerns. Secondly, in South India there was a wide potential market when the Mysore mills started and hence a rapid growth was remunerative. Besides, till recently there were very few cotton mills in South India and consequently there was an element of monopoly for the existing firms. Lastly, the cotton industry in Mysore has been from the outset an integrated industry and as such the incentive for large-scale production is pronounced.

¹ P. S. Lokanathan : *Industrial Organisation in India*, p. 3, Table V.

Statement showing the paid-up capital, spindles and looms, workers engaged and the dividends declared among the cotton mills in Mysore, 1937

	Bangalore Cotton, Woollen and Silk Mills	Mysore Spinning and Manu- facturing Co., Ltd.	Minerva Mills, Ltd.	Krishna- rajendra Mills, Ltd.
Paid-up Capital .	Rs. 26,25,000	Rs. 12,44,900	Rs. 26,61,779	Rs. 18,34,850
Spindles .	40,000	47,000	34,016	25,000
Looms .	1,170	500	440	260
Workers .	3,950	2,204	1,610	1,469
Share value	165 100	95 8 50	59 100	—
	paid-up	paid-up	paid-up	
Dividend { 1934 .	2%	5%	2%	—
1935 .	7%	10%	2%	—
1936 .	8%	10%	2%	—
1937 .	4%	—	3%	—
	half-year			

"ata regarding dividends and share value have been taken from the *Investor's India Year Book* and from *Commerce*, a weekly financial journal of India.

THE SUGAR INDUSTRY

The task of determining the optimum size of a sugar factory has been very much facilitated by two important pronouncements on the subject. The Indian Industrial Commission estimated that a minimum crushing capacity of at least 250 tons of cane was necessary for a plant to operate successfully.¹ On the other hand the Tariff Board has remarked that under Indian conditions a factory could be considered to be of efficient size if it produces about 4,000 tons of sugar per year, crushing about 13 lakhs maunds of cane.² In other words it must have a crushing capacity of approximately 500 tons of cane per day. The development of the Indian sugar industry since 1932 is in conformity with the optimum of 500 tons capacity prescribed by the Tariff Board. Among the 27 factories that have been established since 1932 nearly 20

¹ *Indian Industrial Commission*, Appendix C.

² Indian Tariff Board: Sugar Industry: 1931, *Report*, p. 64.

have a crushing capacity of 400 tons and more per day, and only 7 factories fall short of the optimum output.¹

The Mysore Sugar Factory started with a crushing capacity of 400 tons per day but was subsequently enlarged to a capacity of 1,400 tons per day. It is necessary to examine if this development has been on the wrong side of the optimum and whether it would involve the concern in diseconomies of operation. Ever since its inception the financial achievement of the concern has been brilliant. The rates of dividends declared have been 10 per cent, in 1934, 11¼ per cent, in 1935, 15 per cent, in 1936 and 10 per cent, in 1937.² Obviously the concern does not seem to be suffering from any excess capacity. The only explanation that could be offered is that the optimum in the case of the sugar industry in particular should not be considered as a rigid conception. The most appropriate size of the plant depends upon the availability of cane in each area. It also depends upon the length of the crushing season because the weight of the overhead charges could be regulated according to the period over which it could be spread. In Mysore not only is there a large sugarcane area under the control of the Company but also the length of the crushing season is extended due to the irrigation facilities. Thus in both respects conditions in Mysore are more favourable than those in North India. Besides competition is relatively less acute in South than in North India. This appears to be the reason for the relatively large size of the Mysore concern as compared with those in British India.

THE IRON AND STEEL INDUSTRY

In the case of the iron and steel industry the output capacity of the plant may be taken as a basis of comparison. The Tata Iron and Steel Co., Ltd., is of course the biggest concern in India, with a capacity to produce nearly a million tons of pig iron annually. The Indian Iron and Steel Co.,

¹ P. S. Lokanathan: *op. cit.*, p. 131.

² *Commerce*, 8th January 1938.

Ltd., comes next with a capacity to produce 450,000 tons per annum. As compared with these two concerns the Mysore concern's capacity of 28,000 tons is extremely small. But this does not warrant us to any conclusion as to whether the size of the Mysore Iron Works is appropriate or not. The Mysore Iron Works is not directly comparable with the other pig iron producing concerns in India, but on the other hand it ought to be compared with charcoal pig iron producing plants elsewhere in the world. On such a comparison it is found that the Mysore plant has been enlarged very near the maximum capacity of similar plants. In answer to the questionnaire of the Indian Tariff Board on pig iron in 1929 the Mysore Government say "There are very few plants of a larger capacity than ours even in America. Ours is the biggest plant for this industry in the East and even in the British Empire."¹ Therefore if we base our calculations on the difference that subsisted originally between charcoal iron and coke iron in the market, then the size of the Mysore plant is justifiable. If on the other hand it is judged from the present standpoint, when the premium on charcoal pig iron in the market has disappeared, the concern may appear small for efficient operation.

With regard to the production of steel, the Tata Iron and Steel Co., Ltd., has an enormously high capacity of 600,000 tons of finished steel per annum. In fact it has exceeded the limit of 400,000 tons which the Tariff Board considered as appropriate for an efficient steel plant.² The Tata steel plant is suffering from excess capacity even normally and the actual production did not exceed 450,000 tons per annum till 1935.³ It is only during the recent boom that the output increased enormously. In 1936 the output of steel was 604,000 tons and it rose to 640,000 tons in 1937.⁴

¹ Indian Tariff Board : Pig Iron : 1930, p. 43.

² Indian Tariff Board : Steel Industry : 1934, Chapter IV.

³ P. S. Lokanathan : *Industrial Organisation in India*, p. 128.

⁴ *Indian Finance Year-Book*, 1937, p. 246.

However, the Mysore steel plant with its capacity of 20,000 tons falls far short of the efficient output prescribed by the Tariff Board. The steel plant in Mysore was not erected for its own sake but to restore a balance between the capacity of the blast furnace and the manufacture of products that could be easily sold in the market. It absorbs 13,500 tons of pig iron which is the surplus capacity of the blast furnace measured by the market demand for pig iron. Hence the size of the steel plant is appropriate for the purpose for which it is intended. It is only in the event of a further shrinkage in the market for pig iron that an increase in the size of the steel plant would be necessitated.

PROBLEMS OF INTEGRATION

The scope of activities of an individual concern influences the character of its structure. A plant may take up a new process so that there may be a continuity in the processes that are already performed by it or it may choose to produce a new product out of the materials in use with it. It may also provide itself with an auxiliary product which bears very little relation with the main product. Such extensions of a plant's activities represent different types of integration and they are described by appropriate economic terminology. When a plant is performing consecutive processes upon any one commodity such as carding, spinning and weaving, it is said to be integrating vertically. What Mr. Robertson calls "lateral integration" consists in the manufacture by the same plant of dissimilar things such as scents, medicines and explosives.¹ Such an extension takes place either because the products diverge from the same process or because they converge upon the same market. The provision within a plant of certain auxiliary products and services such as power and repairs is called by Sargent Florence "diagonal integration".²

¹ D. H. Robertson: *The Control of Industry*, p. 36.

² P. Sargent Florence: *The Logic of Industrial Organization*, p. 22.

There are limits to the degree of integration beyond which it turns out to be uneconomical. Hence it is necessary to conceive of an optimum scope of integration similar to the optimum size of a plant. Measures for narrowing the scope of operations are adopted when the profitable limits of integration are transcended. Thus it is obvious that the scope of a firm and its size are two independent conceptions. The range of articles produced by the firm may be broadened or narrowed without necessarily affecting the size of the firm.

TYPES OF INTEGRATION IN MYSORE

The industrial structure of Mysore presents illustrations of several types of integration. In the iron and steel industry there is a vertical integration from the mining of ore to the manufacture of finished steel. All the stages of production are closely integrated and finished products are available at each stage of manufacture. The industry also provides itself with its own charcoal for the blast furnace, thus making itself independent of all the intermediate markets. There is a lateral integration in the concern in so far as the by-products of the wood distillation plant are recovered and converted into marketable products. Recently the manufacture of cement, using the slag of the blast furnace, has also been undertaken. There is some evidence of diagonal integration. The machine shop at the iron works undertakes all repair work and makes the necessary tools. Besides, a small brick-making plant has been erected to supply the works with the necessary amount of bricks. Thus the scope of the Mysore Iron Works has extended in all directions.

The cotton industry of Mysore is vertically integrated, unlike that of Lancashire. From the spinning of yarn to the finishing stages all the processes are undertaken by each of the plants. Of course there is no technical necessity for such integration in the cotton industry. It all depends upon the nature of the market and the type of the products

emerging from the industry. If there is a large market for yarn, spinning could be a final stage of production, or if the weaving mill has to use a wide range of yarns, spinning ought to be carried on as a specialized independent process. In Mysore vertical integration has been profitable due to the large South Indian demand for a finished cloth of uniform quality. To a certain extent lateral integration is also discernible. The hosiery section at one of the cotton mills and the manufacture of carpets from the waste materials of that section are evidences of lateral integration.

The Mysore Sugar Factory is laterally integrated with the distillery which is under its control. At the distillery alcohol is recovered from molasses which is a by-product of sugar manufacture and different types of liquors are produced. Besides denatured spirits and power alcohol are also produced, extending thereby the degree of integration of the sugar industry.

PROBLEMS OF ORGANIZATION

In the words of Macgregor, industrial combination does not consist merely in the production on a large scale but in the organization of firms already producing at maximum efficiency.¹ Hence the emphasis has to be placed not on the size but on the readjustment of relations between the combining firms. It is the concentrative element and not the quantitative aspect which is the chief objective of the movement.

Each country has developed its own typical form of industrial combination according to its historic traditions and legal enactments. In Great Britain the favourite form has been the "terminable associations". Though the "trust" form of organization is favoured in certain industries, still it has been the exception. German law and tradition have positively encouraged the formation of industrial combinations. The typical form of it in Germany is

¹ D. H. Macgregor, *Industrial Combination*, p. 4.

the "selling syndicate" which is a variety of the general "cartel" organization. It is a selling organization of independent producers which maintains prices and allots the participation of each independent producer in the aggregate output.¹ In America the law has been against industrial agreements in restraint of trade. The Sherman Anti-trust Act of 1890 and the Clayton Act of 1914 were intended for the suppression of the combination movement. Still the movement has proceeded unabated except that it had very often to change its form. The "voting trust" and the "holding company" are important types in the evolution of the movement.

The industrial organization of Mysore offers very little scope for a study of the combination movement. The industry is still in its infancy and besides the internal competition among the industrial units is very limited. A mention may however be made about some of the tendencies towards larger industrial control that are discernible in the State. In the cotton industry three out of the four mills in the State are under the control of one firm of managing agents. This type of administrative integration as opposed to mere technical management is typical of the Indian cotton industry. In the iron and steel industry an agreement was effected between the Mysore Iron Works and the Indian Combine of pig iron producers. As a result of it, understandings were reached regarding the prices and markets between the Mysore Iron Works and the other iron producing companies in British India regarding cast iron pipes and pig iron. The agreement that has been arrived at by the Combine resembles that of an area allocating cartel. With the growth of industries in the State and an increase in their relations with others in British India there will arise a greater necessity for industrial agreements in the future.

¹ (Balfour) Committee on Industry and Trade: *Factors in Industrial and Commercial Efficiency*, p. 94.

STRUCTURAL DYNAMICS

We may observe in conclusion some of the structural changes in Mysore industries that have taken place in response to "trade cycle" influences. The phases of a trade cycle leave certain permanent impressions on the structure of industry apart from the temporary reactions of the latter to the changing business conditions. The Mysore Iron Works has been compelled to introduce certain structural changes in order to adapt itself to the changing market conditions resulting from the prolonged depression. The development of the synthetic industry in 1931 and the consequent collapse of the market for wood distillation products rendered the wood distillation plant unworkable. Hence an entire re-orientation of the structure of industry was effected by the installation of cast iron retorts in the forest areas for converting wood into charcoal. This appears to be a permanent change because a revival of the market for by-products is unlikely. Another structural change is the addition of a new plant for the conversion of pyroligneous liquor directly into acetic acid. Since the foreign market for wood distillation by-products disappeared, acetic acid, for which there is a demand in India, had to be manufactured, necessitating thereby the discarding of certain old plants and the installation of some new ones. In fact the addition of the steel plant is itself a permanent reaction to the depression in the pig iron market. Since steel had a comparatively better market than pig iron due to a more severe depression in the latter, a forward integration of the industry in the direction of steel manufacture has been effected.

The cotton industry slump in India necessitated certain structural changes in the Krishnarajendra Mills, Mysore. This was the only concern in Mysore that was not integrated but was specializing only in the spinning of yarn. The depression in the cotton industry in India affected the spinning mills to a greater extent than the weaving mills because

there was relatively a greater decline in the yarn market than in the market for finished products. Hence in 1937 the Krishnarajendra Mills started a weaving section in order to avoid the depressed intermediate market and to approach the more promising final market. With this structural change the concern is expected to have a more prosperous future.

The analysis of structure and organization made in the foregoing pages reveals several aspects of industrial development in a young and promising State. Each one of them could be the theme of a special study. But in an extensive survey like the one that is attempted here, only the general features of the development could be presented.

CHAPTER V

INDUSTRIAL FINANCE

INTRODUCTION

A CONSPICUOUS merit of modern industrial organization is the high degree of flexibility in the choice and utilization of the factors of production. The *entrepreneur* is perpetually engaged in the process of adapting and readjusting factor combinations in a manner most conducive to the yield of maximum net returns. Among the factors involved in the industrial development of a country one of the most important is finance, more especially in the form of credit. As Lavington says, "In the absence of the banks and other machinery for the transport of capital, business undertakings would be formed only when the ownership of capital and business ability happened to coincide; but with the development of this machinery for joining together capital and business ability each can be separately produced; the resources of the capitalists who have no aptitude for business management are joined to the ability of the *entrepreneurs* who lack Capital; consequently the supply of each of the two agents becomes increasingly specialised with great advantage to the productive capacity of society." ¹ Thus through a process of dissociation of the factors of production in their origin, a more profitable application is attained in their subsequent combination. Hence business ability always stands in need of an adequate and flexible supply of industrial finance.

NATURE OF INDUSTRIAL FINANCE

The volume and composition of industrial finance is a matter of great technical importance. Every prospective industrial concern is primarily in need of an amount of initial capital commensurate with the investment that is necessary on its plant and buildings. This portion of the total

¹ Lavington: *The English Capital Market*, p. 3.

capital of a concern is known as 'block' capital. All mechanical and non-mechanical equipment that is necessary to provide the initial motivation to the concern have got to be met out of the block capital. Besides this, the industry is in need of a perpetual stream of a relatively smaller quantity of capital known as working capital, to provide itself with raw materials, and to meet the wages bill. The chief characteristic of the latter form of capital is its extreme fluidity; unlike block capital which becomes crystallized in the form of machinery appropriate for each type of industry. However, at this stage, a word of caution which is of great significance is necessary. It should not be construed that the entire part of the working capital can claim the fluidity that has been attributed to it. A certain proportion of it which represents the stocks held by a concern is relatively less fluid than the other portion which finances the flow of raw material and labour costs. A recent writer states that the stock of raw materials and manufactured or semi-manufactured commodities never falls below a certain minimum and the capital required for holding these is in the nature of permanent capital.¹ Hence this part of the working capital partakes of the nature of long-time finance akin to block capital, whereas working capital over and above this basic minimum belongs to the category of short-term finance.

Another issue equally pertinent to the problem is the proportion between the amount of block capital and that of working capital in an industry. There is no determinate ratio between the two types of capital. On the other hand the proportion of fixed to working capital is a function of the 'roundabout' nature of the processes of production involved in each industry. "It will be clear, therefore," says Dr. Lokanathan, "that the amount of working capital required will vary enormously between different products corresponding to variations in the length of process -from next to nothing

¹ Karin Kock: *A Study of Interest Rates*, p. 9, quoted by the Indian Central Banking Enquiry Committee Report, p. 268.

in the case of personal services up to the equivalent of a year's output or more in certain cases."¹ However a scientific differentiation between the last two types of capital is of primary importance. A non-recognition of the fact has often given rise to serious errors in corporation finance.

METHODS OF RAISING CORPORATION FINANCE

The investment process may be performed in a variety of ways. Capitalization of personal savings by individuals or groups of them is feasible. This method of investment gives rise to the singleman business or the partnership which have now grown relatively unimportant as compared to the corporations in the field of industry. Hence it is germane to our investigations to inquire into the methods involved in financing a corporation.

The lack of technical knowledge among modern investors incapacitates them from taking an active interest in discovering, for themselves, avenues of investment. Therefore, an exploration and presentation of investment opportunities to the investors is the *sine qua non* of an ordered industrial progress. Such an investigation and formulation is usually known as the process of promotion. Mead says that promotion involves three stages, namely, discovery, assembling, and financing of the proposition.² On conceiving the idea of a prospective industry a handful of capitalists constitute a syndicate to investigate the proposition in all its aspects. At this stage they can consult a firm of specialists who will furnish expert advice. If the information obtained is promising, the proposition will have to be assembled, which consists in bringing the various instruments of production together, either by means of actual purchase or by securing an option³ over them. After demonstrating the feasibility of the

¹ Dr. P. S. Lokanathan: *Industrial Organization in India*, p. 157.

² Mead: *Corporation Finance*, p. 4, seventh edition.

³ To secure an "option" is to buy a right to purchase a certain property. In the event of the right not being exercised the option money is forfeited. See Mead, *op. cit.*, Chapter II.

proposition in this manner, an appeal is made to the public for finance.

The Corporation is capitalized for the amount of money which is required for the industry and those who desire to participate in the enterprise purchase the shares or stock issued by it. The initial capital raised in this manner is expected to cover long-time finance to the full extent and to partly meet short-time finance. The shares and stocks issued by a Corporation may of course vary in their respective rights regarding the distribution of profits and regarding their lien on the assets of the Company according as they are Ordinary or Preference Shares. To supplement the initial capital, Debentures are also occasionally issued by a Corporation. The Debenture-holder is a creditor of the Corporation being entitled to a stipulated rate of interest. Industries whose future earnings are expected to be fairly high may supplement their capital by the issue of debentures if they find that all their capital requirements cannot be raised by the issue of ownership securities alone. However, a very judicious policy is necessary with regard to the issue of debentures as otherwise it will entail the breakdown of a sound financial plan. Even in finding new capital for an expanding concern stock financing is now favoured as against the issue of bonds or debentures. Mead says, "As between bonds of any kind, and stock, if the condition of the market permits, the standard practice now favours stock."¹

It would be entirely germane to the foregoing reasoning if the policy of self-financing is mentioned at this juncture. This is otherwise known as "ploughing in" of profits, which is a characteristic feature of British industry. The system consists of a reinvestment of a certain portion of the profits in the business without distributing it among the shareholders. Though the system of self-financing secures financial independence to a concern, still it has serious repercussions on the capital market and is hence decried as an

¹ Mead: *Corporation Finance*, p. 418, seventh edition.

tinuous policy. Von Beckerath says, "Not being fed with industrial profits, the capital market is gradually starved under such a business policy, and the market for industrial stocks, in particular, loses attraction for capital from other than industrial sources."¹

Finally, what remains to be explained is the process of short-time financing. As an exact computation of its magnitude cannot be envisaged at the outset it is not provided for in the initial financial plan. Working capital is therefore invariably secured from the commercial banks. The advantage of depending upon an outside agency for this part of the capital requirements is the capacity to vary the amount of working capital according to business demands. It also obviates the necessity of carrying a large dead weight of working capital throughout the financial period. The most effective mechanism through which an accommodation from a bank can be operated is by means of the self-liquidating trade bill. The system not only secures cheap credit to the borrower but also offers perfect safety to the lender by means of the automatic reimbursement of the loan on the maturity of the bill.

A STUDY OF EXISTING PRACTICE : THE ENGLISH SYSTEM

In the foregoing pages a brief description of the general canons of industrial finance was attempted. It would be of advantage at this stage to study the actual practice in some of the leading countries so that we may perceive to what extent traditional influences have created different systems in different countries according to their respective requirements. England being the pioneer in the field of industrial development, a study of its financial structure can precede that of other countries. It may be mentioned at the outset that there has never been a very close alliance between British industry and British financial machinery. As the Committee on Finance and Industry have said, "The

¹ Von Beckerath: *Modern Industrial Organization*, p. 73.

relations between the British financial world and British industry as distinct from British commerce, have never been so close as between German finance and German industry, and American finance and American industry."¹ This situation is an outcome of certain historical reasons. "In England commercial and trading activities preceded industrial development and hence the banking structure of the country had to adapt itself to the needs of commerce.", Besides industry in the beginning was on a small scale and could therefore find most of its capital privately. The later expansion and development of the industries were effected through accumulated profits which is otherwise known as the practice of "ploughing in" of profits. Hence even though it has availed itself of whatever facilities were offered by the joint-stock banks, British industry has maintained its independence of any financial control because it has grown and flourished on its own resources. As Thomas says, "The fact that our bankers have fostered the tradition of short-term loans and non-interference in industry is largely due to the development of industry in this country on purely individualistic lines."² Such a tendency was greatly favoured by the existence of a large class of investors who exercised their own judgment in choosing fields of investment.

The banking system of England is therefore characterised by extreme specialization in the direction of short-time finance, resting on the liquidity of its assets. "British banking", says Thomas, "is essentially pure banking ; it depends on short period loaning and leaves to other financial agencies the provision of long period funds for capital as opposed to revenue purposes".³ It is obvious that this tendency is due to two reasons, namely, the influence of commerce in shaping Banking policy and the complete self-reliance of industry. Hence except in so far as they

¹ (Macmillan) Committee on Finance and Industry: *Report*, p. 162.

² S. E. Thomas: *British Banks and the Finance of Industry*, p. 116.

² *Ibid.*, p. 117,

provide temporary credit/the joint-stock banks have, till recently, effectively dissociated themselves from industry! Further even in the promotion of joint-stock companies neither the banks nor the Issuing Houses take any responsibility. While foreign issues are vouched for, by an Issuing House, the investors are without a guide with regard to home industry. Foxwell observes, " But the issue houses fight shy of ordinary home industrial propositions. They prefer those put forward by foreign governments, municipalities, or the very largest transport companies."¹ The attitude of the joint-stock banks is even worse in this respect. They are not at all interested in the issue of domestic securities. As the Macmillan Committee remark " None of the ' Big Five' regard themselves, except in very rare cases, as fathering the issue or in any way responsible for it beyond seeing that the prospectus complies generally with the law and that the issue is on the face of it respectable".²

But there is a significant feature of the financial mechanism in England which is often overlooked. The English Capital market which comprises most of the Investment Houses and Finance Companies provides all the long-term facilities that are normally required by British industry. Whereas on the Continent the banks are the only institutions constituting the financial machinery, in England the Capital market is an useful adjunct. Hence even if an English bank does not undertake all that a German bank does it should not be construed as a flaw, because it consciously refrains from doing it as there are other institutions for the purpose. However, speaking about the English capital market Foxwell says that excepting for a certain amount of informal co-operation there is no systematic co-ordination of their operations and that the system suffers from an almost complete lack of organization.³

¹ H. S. Foxwell: *Papers on Current Finance*, p. 128, 1919.

² (Macmillan) Committee on Finance and Industry: p. 167.

³ H. S. Foxwell: *op. cit.*, p. 126.

During recent years it is being increasingly realized that a closer association between finance and industry would be mutually beneficial. The knowledge of financial experts should be brought to bear on industry so that re-organization and rationalization of industry may be effected more easily. In other words the tide of international competition could be stemmed only by an adaptation of the mechanism of finance to suit modern conditions. It is even feared that if British industry is not to be stranded in a backwater¹ a re-orientation of English banking policy is incumbent.

However, a mention may be made of two new institutions that have recently come into existence, namely, "The Securities Management Trust" and "The Bankers' Industrial Development Co." These institutions may with a certain amount of justification be construed as liaison factors with industry because their chief objective is to bring about a closer relationship between industrial and financial interests. All the joint-stock banks have participated in the constitution of "The Bankers' Industrial Development Co." and its creation is a healthy line of departure in the English banking system. It may be the nucleus for closer co-operation between finance and industry in future.

THE GERMAN METHOD

As opposed to the functional specialization of English banking the German Banks have developed mixed banking to a remarkable degree. Their activities have evinced that fit is possible for banks to play a considerable part in promoting and sponsoring industrial organizations. From the outset the primary aim of German banking was to promote industrial development. The reason for this motive was the paucity of industrial finance in Germany during the first half of the nineteenth century. German industry therefore had a late start and had to compete with gigantic pioneers like Great Britain. Hence the Credit Banks which came

¹ Committee on Finance and Industry: p. 165.

into existence during the middle of the nineteenth century had the onerous task of mobilising the available resources and placing them at the disposal of industry.

It has become the accepted practice of German banks to shape the industrial organizations even from their embryonic stages. The promotion of public companies has virtually become one of the functions of the credit banks. The investing public will not take kindly to a proposition unless it is associated with one of the important banks. The banks have therefore to take over the shares of the Company in the first instance because they act as its promoters. But eventually the shares have to be placed amongst the investing public which, in other words, compels the bank to act as an issuing agency. The function of issuing is usually discharged by the formation of a syndicate among banks known as a "Konsortium", so that the risk may be evenly distributed. As Barret Whale says "In order to reduce the risk borne by a single bank and to create a wide interest in the success of an issue. It is very common for several banks (or bankers) to make themselves responsible for the issue collectively. For this purpose they come together in a loose, elastic association called a 'Konsortium'." ¹ If the issue is successful the banks sever their connection with the concern. On the other hand where the market is not responsive the securities may have to be held for a longer period which is entirely involuntary and incidental. Therefore it is of fundamental importance to clear the common misconception that Banks in Germany identify themselves with industry and to point out that they have no intention of a lasting participation in the enterprises which they sponsor. On the other hand, "Beyond finding a safe and liquid investment for part of their own resources in first-class securities, the functions which they seek to perform in the investment market are those of middlemen."²

¹ P. Barret Whale: *Joint Stock Banking in Germany*, p. 45.

² *Ibid.*, pp. 46, 47.

It should not however, be construed that when once an issue has been successfully made the credit bank with draws itself from industry and relapses into a pure commercial bank. On the other hand, through what is known as a "current account connection " there is a remarkable degree of interdependence between industry and the banking mechanism. The current account with a German credit bank is very much different from the usual connotation of the expression. It means that the Bank is prepared to act on behalf of its customer in various financial transactions involving both short- and long-term financing. As Barret Whale says, "The point of importance to be noticed here is that the average German firm has always depended to a remarkable degree upon obtaining current account advances, and that not merely to provide itself with working funds but also for the purpose of extending its permanent equipment (construction of buildings, acquisition of machinery and the like) in anticipation of recourse to the investment market."¹

During the post-War period, however, the German banking policy has been characterised by a certain amount of conservatism. They are becoming more cautious in their relationship with industry. This change of attitude may be due either to uncertain trade conditions or to their depleted resources as a result of the post-War currency chaos in Germany. However there seems to be a change of outlook both in England and Germany bringing the banking policy of the two countries closer to each other. While the opinion in England is leading towards closer association between industry and finance, the German banks are drawing back their tentacles to a considerable extent from industry.² It may therefore be envisaged that ere long the policies in the two countries may meet each other half-way.

¹ P. Barret Whale: *Joint Stock Banking in Germany*, p. 38.

² See P. Barret Whale: *op. cit.*, p. 277; Regarding the cautious nature of German banking during the post-War period.

While describing the German method we may be permitted to say a few words about conditions in France because German banking in its broad outlines is more or less typical of Continental banking. The investor in France is usually a small capitalist who is unwilling to exercise his own judgment in making an investment.¹ The big banks therefore made all the industrial issues and were morally responsible for them towards the public. Besides some of the banks functioned as " Banques d'affaires " having a very close relationship with industrial development.² Thus in France although the relationship is less intimate than in Germany, still it has been very much closer than in England.

THE AMERICAN PRACTICE

Although industrial traditions in America have been very different from elsewhere and the vitality of American industry is very great still there is a remarkable reliance of industrial corporations on the banking houses. The initial development and the subsequent expansion through mergers have all been effected through one or other of the American banking houses. Almost all the industrial issues of important corporations are sponsored by banking houses of high reputation like J. P. Morgan & Company. This mode of procedure assures the investors regarding the soundness of the proposition. But incidentally it increases the responsibility of the issuing house and compels them to keep a close and continuous watch over the issues that they have sponsored, as otherwise their reputation is at stake.

It is of great interest to note at this juncture that the *modus operandi* adopted by the American banks in an Industrial issue is more or less similar to the German " Konsortium". In America what is known as an " Underwriting " or " Subscription " Syndicate is formed by the association of a large number of bankers in order to spread out the risk more

¹ (Macmillan) Committee on Finance and Industry: 1931, p. 163.

² S. E. Thomas: *op. cit.*, p. 104.

evenly. As Mead says, "In underwriting the securities of a new company, or in purchasing them outright, the banker who undertakes the responsibility of the transaction usually associates with himself a number of other individuals and banking houses in an organization known as an Underwriting or Subscription Syndicate."¹ The leader of the syndicate, usually a strong banker, will undertake to market the securities on behalf of others but in the event of any loss it is distributed among the associates in proportion to their¹ respective participations.

Thus although the circumstances are different in America as compared with Germany still the spirit of American banking towards industry is fundamentally the same as in Germany. (Even though the association between industry and finance may be looser in America, still the general tenor of their policy is identical.) Hence in conclusion it might be said that the trend, of public opinion and expert advice is definitely on the side of a closer co-operation between industrial development and the financial mechanism of a country.

CONDITIONS PREVAILING IN MYSORE

The foregoing discussion of the general technique of industrial finance and the existing practice in western countries provides us with a scientific background for reviewing the conditions in Mysore. The institutions in existence and the customary methods of financing industry in Mysore may be looked at in their proper perspective and examined in the light of prevailing practice in Western countries. Besides such a procedure simplifies greatly the offer of suggestions, because, by a juxtaposition of general principles and local conditions the adaptability of the former and the shortcomings of the latter may be visualized with a scientific precision. The ultimate re-orientation of the existing financial mechanism in Mysore could be effected with the least disturbance

¹ Mead: *Corporation Finance*, p. 182, seventh edition.

to the present structure, if our armoury of ideas is sound and ready for application.

A rough idea of the industrial development of Mysore may be obtained by an investigation of the rate of growth of Joint-Stock Companies in the State. There has been a steady increase in the number of joint-stock companies since 1895. At the close of the year 1894-95 the total number of companies in the State excluding those incorporated in British India and foreign countries but at work in Mysore amounted to 92 and their aggregate nominal and paid-up capital amounted to Rs. 43,40,282 and Rs. 25,66,742 respectively. At the close of the year 1921-22 there were in all 101 companies limited by shares and 16 companies limited by guarantee, besides 23 companies incorporated outside but at work within the Mysore State. The total authorized, subscribed and paid-up capital of all these companies amounted to Rs. 7,72,55,214-11 and 126-55 lakhs respectively.¹ At the end of the year 1936 there were altogether 154 companies of which 19 were limited by guarantee and 135 were limited by shares. The total number of public and private companies were 103 and 32 respectively. The aggregate amount of authorized, subscribed, and paid-up capital in all the companies were Rs. 5,92,56,285; Rs. 1,83,13,460; and Rs. 1,67,50,821 respectively.² Besides these, there were 80 companies in the State which were registered outside Mysore. Thus there has been a marked increase both in the number of Joint-Stock Companies and in the capital invested in them.

A further insight into the allocation of Joint-Stock capital to different kinds of business activities in the State may be obtained from the table given below. The table classifies the aggregate amount of capital raised locally, into different groups according to the purpose for which they are being

¹ *Mysore Gazetteer*: Vol. III, p. 303, New Edition, 1929.

² *Report on the Workings of the Joint Stock Companies in Mysore*, year 1936, statement on p. 4.

utilized. Thus we could see that the manufacturing industry claims for itself only Rs. 98,42,610¹ of paid-up capital which is about 58 per cent, of the aggregate Joint Stock capital raised in the State. The above computation excludes the amount of foreign capital invested in the manufacturing industry in the State. Such an exclusion has been consciously made for obvious reasons, namely, that the creation of any special financial machinery in the State for the provision of block and working capital should only be in relation to the amount of local capital invested in industry.

TABLE I
1936

Serial Number	Nature of Business	Number of Joint Stock Companies	Amount of Paid-up Capital
			Rs.
1	Banking and Insurance	56	44,02,765
2	Transit and Transport .. .	5	8,14,265
3	Trading and Manufacturing .. .	48	26,21,865
4	Mills and Presses .. .	5	52,20,745
5	Plantations .. .	2	2,00,000
6	Mining and Quarrying .. .	8	12,89,481
7	Estates, Lands and Buildings	4	1,74,900
8	Sugar Manufacturers	2	20,00,000
9	Hotels, Theatres, etc.	3	26,800
10	Companies other than those specified above	2	---
	Total ..	135	1,67,50,821

The table has been compiled from data available in the Report on the Working of the Joint Stock Companies in Mysore for the year 1936.

Further the whole of the industrial capital that has been mentioned above cannot with any impunity be attributed to private enterprise because government has made large contributions towards the block capital of certain industries which are essentially private in character. Thus over and above the industrial concerns which have been entirely financed by

¹ This amount is the total of columns 3, 4 and 8 in the table.

government, the latter has also entered the field of private enterprise by providing some of the initial capital. Hence it is obvious that the amount of private capital invested in industry is very meagre and is not commensurate with the potential resources of the country.

METHOD OF PROMOTION

The paucity of private industrial capital in the State cannot be attributed to the inadequacy of the capital resources of the people because there has always been a ready response from them for every government loan raised internally. Besides they have also subscribed ungrudgingly to every industrial concern that has been sponsored by the Government. Hence it is obvious that due to certain defects in the institutional framework, company promotion has not been able to invoke the confidence of the investing public.

Company promotion is an art and it can be efficiently executed only by specialists who are primarily interested in the pre-natal stages of a corporation. Unfortunately Mysore has no such professional promoters. It is no matter for surprise because their existence depends upon the volume of work that is available. In countries like America the frequency of promotion and trustification of corporations is so great that a band of specialists will be amply fed with work. Similarly special institutions like "Issue Houses" which vouchsafe the securities of a concern to the public are conspicuous by their absence in Mysore. Even with regard to these institutions Mysore has no reason to be surprised at their absence because they are the outgrowth of a fairly advanced economic structure. Hence to wish for such specialised institutions for Mysore is to lose a sense of proportion.

In the case of India however the above defects have been overcome by the presence of the "Managing Agency" firms, though at a disproportionately high cost. The "Managing Agents" performed services in India which the

" Issue Houses" were doing in other countries. As Dr. Lokanathan observes they had even a deeper interest in the concern than a mere promoter.¹ Industrial enterprises were actually nursed by them before converting them into public companies. Hence whatever might have been the consequence of an abuse of their position they filled a vital gap in the institutional framework of Indian society. In Mysore there has not been in existence any indigenous firm of Managing Agents. It may appear rather ironical that we should be regretting their absence in Mysore while earnest endeavours are being made to eradicate them in India. However, even though they might have given rise to other onerous issues they would have rendered company promotion easy.

The banks in Mysore do not undertake either the promotion of joint-stock companies or the issue of corporation securities. The mention of a banker's name on the prospectus of a company only means that payment for shares could be made through that bank. It does not in any way indicate that the issue is sponsored by the bank whose name is mentioned on the prospectus of a company. This is because banks in Mysore as in India have taken the English banks as their prototype. They specialise in deposit banking and are essentially commercial banks.

Promotion of companies therefore is usually undertaken by individuals or groups of business men who have a permanent interest in the company that they promote. In other words they invariably become the directors of the concern which they create. Though this may be an advantage from the point of view of greater stability among the corporations that are brought into existence, still the qualities needed for efficient promotion are different from those that are required for subsequent management. Under the present circumstances a class of people who are promoting a company may be doing it for the first time and may perhaps be

¹ Dr. Lokanathan: *Industrial Organization in India*, pp. 36-38.

doing it for the only time, unless their concern fails to succeed and they are forced to start a new business in which case also their claim to start successful concerns is not well founded. Thus it could be seen that they do not have the same opportunity for specialisation as a class of professional promoters. Hence they are bound to commit initial errors, the dead weight of which has got to be borne by them subsequently.

Another peculiar feature of Mysore is the part played by the Government in the promotion of joint stock companies. It sponsors the issue of a concern by making the necessary investigations and actually floating a joint-stock company having a lasting participation in its capital. There are a number of instances of such paternalistic action, as for instance the Mysore Sugar Factory, the Paper Mills, and a host of other organizations which have been brought into being during the last decade. The chief incentive for such a course of action is obviously to accelerate the growth of industries while at the same time not fully undertaking concerns which legitimately belong to the field of private enterprise. The policy of promotion and financial participation by Government in private industries is one of the recommendations of the " Indian Industrial Commission ". They say, " There may be a few industrial ventures which Government may consider of importance to national safety, but does not desire to undertake by its own agency, though it thinks it necessary to have a continuous and effective voice in their management. In such cases, especially where sufficient private capital is not forthcoming, Government might contribute directly towards capital resources as a shareholder."¹ It is obvious therefore that it is on high authority that the Government of Mysore has chosen to follow a line of procedure which tantamounts to industrial partnership.

In the process of promotion another very important requisite is the existence of certain specialised institutions for

¹ *Indian Industrial Commission Report*, p. 220.

investigating the technical aspect of a prospective concern. The Syndicate of promoters may seek their technical advice on payment of a fee. Such institutions are very common in Western countries, and they are a very important link in the chain of processes involved in company promotion. In Mysore there is no opportunity for the existence of such an institution because the expense involved will be out of all proportion to the receipts; and hence no private organization can be expected to function profitably. But such an organization would serve a useful purpose and prevent a large number of industrial failures because most of the failures are due to inadequate knowledge of technical conditions. This vital gap has so far been filled up in Mysore by the Board of Industries and Commerce which is a Committee of official and non-official experts. The idea of a permanent board of this type is as old as the Economic Conference in Mysore. It was in the year 1911,¹ when the Economic Conference was inaugurated, that the Industries and Commerce Committee came into existence. The Committee was reconstituted in the year 1924 and under the new appellation of the Board of Industries and Commerce it has continued to discharge a useful service to industry.

Any prospective industrial undertaking, whether private or Government, can apply to the Board of Industries and Commerce for investigation and advice. The Board will consider the proposal through its sub-committee and also by applying to the appropriate technical departments of the State. Several schemes have so far been considered by the Board² and invariably every important industrial concern has sought the help of the Board. Hence the idea of Government in creating this body is laudable. But the Board needs a slight adaptation and the reader is referred to a later section where a few suggestions have been made to reconstitute the Board.³

¹ *Mysore Gazetteer*, Vol. Ill, p. 1.

² See *Reports of the Board of Industries & Commerce*.

³ *Vide Infra*, p. 158.

ORGANS OF INDUSTRIAL FINANCE—BANKS

In financing industry the institutions which are of primary importance are the banks. They are of various types and are classified according to the structural and functional differentiation subsisting between them. On the basis of the time element involved, we discern two broad categories according as they employ their finances in short-term or long-term transactions. To the former group belong the Commercial banks which cater essentially to trading activities and to a certain extent to the short-term requirements of industry. The Co-operative banks may be included in this group without doing violence to our classification. The latter class comprises Industrial and Agricultural banks which specialise in long-term financing. There are structural differences between the two categories arising out of their functional differences. Further, on the basis of a difference in functions two more classes of banks appear, namely, the central banks which act as bankers' banks and those that specialise in operations auxiliary to banking such as Acceptance Houses. Finally, there is a miscellaneous group comprising savings banks, banks catering to particular classes in social economy, and the Investment and Finance Trusts. However, these delicate lines of demarcation get blurred as the banks imbibe the national characteristics of the countries of their origin.

There is neither structural differentiation nor functional specialization among the banks that are in existence in Mysore. There is a course of natural evolution in the development of banking organism and Mysore is still at the amœbic stage in this respect. As the Seal Committee observes, " While we are yet in this matter on the lowest rung of the ladder, fumbling with short-term deposits and long-term loans, and not unoften resorting to pre-banking methods of *nidhis* and deposits for finding industrial capital, the enterprising people of Japan with an equally enterprising lead have gone on to the next higher stage, with specialized industrial banking and underwriting business and bid fair to follow in the footsteps

of Germany in a national campaign of concentration and expansion culminating in the formation of Syndicates for export and foreign trade."¹

In Mysore there are altogether fifty joint-stock banks limited by shares and sixteen banking institutions limited by guarantee.² The latter are purely for agricultural purposes and may therefore be omitted from further consideration. The aggregate paid-up capital of the fifty joint-stock banks in the State is Rs. 41,69,725. But nearly 50 per cent, of the total banking capital belongs to one bank, namely, the Bank of Mysore, Ltd. Therefore, the remaining banks have very meagre financial resources to be of much importance individually, though collectively they might have contributed their quota to mobilize the resources of the State. Hence it would suffice if we analyse the activities of the Bank of Mysore and see if it can bear the strain of adaptation to bring it in conformity to the industrial requirements of the State. In addition to joint-stock banking there is no doubt a considerable amount of financing undertaken by the indigenous bankers but neither their capital resources nor the volume of their transactions is easily amenable to computation.

The Bank of Mysore was founded in the year 1913 at the initiative of the Economic Conference. In the words of the President of the Economic Conference, "One of the first fruits of our work has been the establishment of the Bank of Mysore which is already benefiting the public."³ Its authorised capital is Rs. 20,00,000 consisting of 20,000 shares of Rs. 100 each fully paid up. The Government placed a deposit of ten lakhs of rupees of which half the amount was free of interest to give the Bank an impetus at the initial stages.⁴ The Bank of Mysore is purely a commercial bank specializing

¹ *Committee for Organizing Financial Assistance to Industries in the State*, 1928, p. 32.

² *Report on the Working of the Joint-Stock Companies in Mysore*, 1936.

³ *Proceedings of the Mysore Economic Conference*, 1915, p. 4.

⁴ *Ibid.*, 1919. D. 42.

in short-term finance and resting on the liquidity of its assets. It takes short-term deposits and lends invariably for short periods. Still it ought not to be presumed that the Bank of Mysore has done nothing to further the interests of industry in Mysore. The Bank has very often lent liberally to industry even at the cost of finding its credits frozen on several occasions. The table given below furnishes some useful information regarding the financial help rendered by the Bank of Mysore to industry.

TABLE II

Statement showing the financial help rendered by the Bank of Mysore to the various industries in the State for a period of five years

Name of Industry	1932	1933	1934	1935	1936
	Rs.	Rs.	Rs.	Rs.	Rs.
1. Coffee ..	19,28,700	24,02,450	22,48,860	18,88,530	20,31,370
2. Cotton, Woollen and Silk Mills	15,01,500	15,01,000	15,01,570	11,01,670	9,01,640
3. Oil, Oil Seeds and Oil Cake	11,04,488	9,55,383	7,10,193	12,84,655	15,11,786
4. Rice, Oil and Flour Mills ..	2,92,560	2,67,150	4,10,940	4,45,200	6,51,940
5. Koppas, Cotton and Cotton Seeds ..	2,61,592	3,81,164	3,70,745	5,18,832	5,96,936
6. Lacquer Works and Wooden Toys ..	5,168	4,700	3,900	4,900	7,785
7. Matches ..	—	30,000	30,000	30,000	30,000
8. Silk ..	90,370	1,01,235	84,500	92,500	60,200
9. Sugar ..	1,880	2,000	6,175	7,800	1,38,000
10. Tannery ..	51,378	52,197	51,763	51,079	43,709
11. Carpets ..	3,900	8,400	10,700	8,750	8,200
Total ..	52,41,536	57,05,679	54,29,349	54,33,916	59,81,166

The greater part of the accommodation granted by the Bank to industry is in the nature of cash credits and short loans. It is not the adequacy or otherwise of such financial help that is questioned at the present juncture but the nature of help that is being extended. The great need of the moment is the provision of block capital and additional finance for extensions and improvements. The Bank of Mysore, by

the very nature of its constitution, is precluded from granting long-term loans. A commercial bank can lend only for a short period and industry may avail itself of such short-term finance to the extent that it needs it. It is therefore no stigma on the Bank of Mysore if it has not so far provided long-term finance to industry.

CO-OPERATIVE CREDIT FOR INDUSTRY

The Co-operative Movement is essentially an organization of those that are financially weak and whose scale of operations is small. The originators of the rural and urban societies had in mind the interests of the small-scale producers, and were hence fashioning the societies accordingly. Therefore, large-scale industries have very little to expect from them in the shape of financial help either for short or long periods. It could, however, be noticed to what extent small-scale industries are benefited by co-operative finance, particularly in Mysore.

The non-agricultural credit societies were among the earliest co-operative societies that were started in Mysore. There was a steady progress in the growth and development of these urban credit societies ever since their inception. By the end of the year 1934 there were 277 societies with a total membership of 52,588 members. In the same year the paid-up capital of all the societies together amounted to Rs. 24,97,000. But a very disquieting feature of the situation is that those who constitute the major portion of membership in these societies are Government officials. The proportion of members who are either artisans, traders, or other business men who require capital for carrying on their business, is small.¹ The ideal of Schulze-Delitzsch was to help such people and they alone formed the major portion if not the whole of the membership of his banks. Hence the Urban Credit societies of Mysore have rendered very little help to industry and trade.

¹ M. N. Bangareshwami: *The Co-operative Movement in Mysore*, Chapter IV, (Type script).

Mention may also be made of some of the special types of societies started in Mysore for providing credit facilities to artisans. By the year 1918 there were 26 weavers' societies at work for providing credit facilities to weavers and to purchase and sell the articles manufactured by them. It was also the object of these societies to popularise the use of improved looms. But most of these societies were working only as credit institutions at the neglect of their other legitimate duties. The Chatterton Committee which was appointed to investigate the conditions of weavers recommended the organisation of co-operative societies on a large scale to ameliorate their condition. At the end of the year 1934 there were 87 weavers' societies with a membership of 2,144 and a total working capital of Rs. 1,39,204. Still on the financial side these societies are weak and they have to surmount great difficulties such as illiteracy and want of mutual trust before they can be a success in Mysore. Besides a central organization to co-ordinate the activities of the local societies as recommended by the Samaldas Committee¹ is necessary.

The Sericultural Co-operative Societies are another type of special societies in Mysore. Sericulture, which is the agricultural concomitant of the silk industry, was found to be in need of co-operative support in the year 1914. By the end of 1930 there were 20 societies with a membership of 422 and a working capital of Rs. 7,777. Still there is a great need for further elaboration of the scheme. In Japan "The co-operative principle is now applied to the various processes of the silk industry from the culture of the cocoons down to the sale of the silk fabrics."² The potentialities of co-operation to help the cottage and domestic industries in the State are immense. Through the agency of the co-operative organization the Government can extend their financial help to the small-scale producers. However, so far even the fringe of the problem has not been approached.

¹ *Samaldas Committee Report*, para 100.

² *Co-operative Movement in Japan*, Kyoshi Ogata, p, 195.

GOVERNMENT TAKAVI LOANS

In Mysore perhaps the chief fountain-head of industrial finance is the Government itself. Financial assistance to industry is rendered by the State either in the shape of "Takavi" loans or through the hire-purchase system. The Mysore State was the pioneer in framing rules for putting this measure into practice and it has won the encomium of the Indian Industrial Commission for the effectiveness of its scheme.¹

The policy of giving financial aid to industries was inaugurated by Government in the year 1913. Loans not exceeding Rs. 2,500 are sanctioned directly by the Director of Industries and Commerce whereas those that exceed it require the sanction of Government. In the case of larger loans that exceed Rs. 10,000 the opinion of the Board of Industries and Commerce is obtained before they are sanctioned by Government. Interest is charged at the rate of 6 per cent, per annum since 1926. The loans are repayable by fixed annual instalments discharging both principal and interest analogous to amortization. The time of repayment and the amount of instalments are determined by the Director of Industries having regard to the nature of industry.² Default or delays in repayment are penalised by enhancing the rate of interest. In addition to loans, a system of hire-purchase is also in vogue according to which on the deposit of a moiety of the value of a machine, it is purchased and supplied to the party by the Government. Both in the case of Takavi loans and hire-purchase adequate enquiry is made by an expert investigator.

The table given below will indicate the exact position regarding the financial help rendered by Government in the shape of loans and advances for hire-purchase.³

¹ *Indian Industrial Commission*, p. 222.

² *Committee for Organizing Financial Assistance to Industries in the State*, p. 10.

³ The data for the table is taken from the departmental report for the year ending 1936.

TABLE III
1913-1936

Nature of Financial Aid	No. of Loans	Amount of Loan Advanced	RECOVERIES		WRITES OFF		Balance
			Principal	Interest	Principal	Interest	
		Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Takavi Loans ..	189	8,55,206 13 3	5,68,137 12 4	1,26,643 5 8	98,849 3 0	41,379 14 10	1,88,219 13 11
Hire Purchase Loans ..	348	7,33,932 10 1	6,23,896 0 1	1,20,508 2 6	38,694 5 6	9,157 15 7	71,342 4 6
Total ..	537	15,89,139 7 4	11,92,033 12 5	2,47,151 8 2	1,37,543 8 6	50,537 14 5	2,59,562 2 5

A few general conclusions may be deduced from the data given above so that an appraisal may be made of Government endeavour in this direction. Out of an aggregate amount of Rs. 15,89,139-7-4 advanced in aid of industrial enterprise from the inception of the scheme till the end of 1936 a sum of Rs. 11,92,033-12-5 has been recovered leaving a balance of Rs. 3,97,105-10-11. A sum of Rs. 1,37,543-8-6 has been written off by Government as irrecoverable and hence the actual amount outstanding is Rs. 2,59,562-2-5. It is further necessary to reduce the outstanding balance by Rs. 81,303-14-0 which represents special loans sanctioned to two large industrial concerns¹ and does not therefore legitimately come under the Takavi loan system. Hence the actual amount outstanding is Rs. 1,78,258-4-5.

Now we may try to estimate the loss sustained by Government for having worked the scheme for a fairly long period. A sum of Rs. 2,47,151-8-2 has been realised in the shape of interest whereas the irrecoverable amount written off is only Rs. 1,37,543-8-6. Even if a portion of the balance outstanding turns out to be irrecoverable, still there will be an excess on this account to set off the loss. Hence it is obvious that the financial cost to Government is roughly equal to the interest on the money advanced as loans.

It could be construed that Government had to forego the interest on the amount that it lent, which is not too high a price to pay for accelerating industrial development. On the other hand the readiness with which private capital is now invested in industrial enterprise is a sufficient justification of the policy pursued by Government.

EARLIER ATTEMPTS TO IMPROVE THE CONDITIONS

In spite of the efficacy of the financial measures in vogue there has all along been a lurking discontent on the part of the Government regarding the existing mechanism. Several endeavours were made to place the scheme on a more

¹ The Premier Metal Factory and the Thirthahalli Tile Factory.

scientific basis. The earliest attempt was in the year 1919¹ when it was proposed to constitute two separate funds one of which was to be known as the Industrial Investment Fund and the other as the Industrial Development Fund. The Industrial Investment Fund was to be utilized for granting financial assistance to those industries in which the amount given may be expected to be reimbursed without loss. The public were allowed to contribute to this fund by depositing money and by taking shares and debentures. On the other hand all expenditure which was not of a productive character but which might be necessary for the development of industries had to be defrayed from the Industrial Development Fund, for which an annual contribution was made from Government revenues. In the case of the former fund the Government had to be a party to an Investment Trust whereas with regard to the latter fund they had to act as the custodians and arbiters of a fund created out of public revenues and earmarked for industrial development. The scheme was laudable but did not attain fruition. Though Government sanctioned the proposals the measures could not be brought into force due to the apathy of the investing public² and the financial stringency that prevailed in those years.³

The need for organising a bank that would extend support to industries in a larger measure was keenly felt even two decades ago. Several attempts have so far been made to investigate the feasibility of reorganizing the Bank of Mysore to enable it to meet the increasing demands of industry. In the year 1920 a Committee was appointed to ascertain the capacity of the Bank of Mysore to finance industry and to recommend if any funds should be placed at their disposal for the purpose by the Government. The rates of interest to be charged and the apportionment of risk between the

¹ *Proceedings of the Mysore Economic Conference*, Birthday Sessions, 1919, pp. 5 and 6.

² *Proceedings of the Mysore Economic Conference*, 1920, p. 46.

³ *Ibid.*, August 1927, p. 70.

Bank and the Government had also to be determined by the Committee.¹ The deliberations of the Committee does not, however, seem to have reached the final stage, perhaps due to the financial crisis that was darkening the clouds at that period.²

An important landmark in the history of early attempts at improvement is the appointment of an expert Committee in 1928 for organizing financial assistance to industries in the State. The report of the Committee is a piece of research and in the words of the President of the Economic Conference, "It is, as you will no doubt agree, a most interesting and I may add, instructive document, containing as it does not only weighty recommendations as to our future industrial policy but a masterly review of the progressive stages in the evolution of ideas in regard to the duties of the State in the domain of industries and the principles which govern and the conditions which limit State action for aiding industrial development."³ They put to the acid test the existing practice regarding State-aid to industries in Mysore and have evolved a scientific and comprehensive plan from *a priori* principles. Among the defects in the existing scheme which are pointed out by the Committee are the lack of initial and working capital and the uncertainty and insufficiency of Government grants. Further, they point out that the preliminary investigation is defective and there is no provision for an 'after care' when once an industry is established. Finally, the administrative machinery is said to be inadequate to carry out efficiently the system of State-aid that has been devised in Mysore.⁴

The Committee offer a number of suggestions regarding the methods by which financial assistance to industry can be

¹ *Proceedings of the Mysore Economic Conference*, 1920, p. 46.

² *Ibid.*, 1921, p. 35.

³ *Proceedings of the Meeting of the Mysore Economic Conference*, March 1929, pp. 5 and 6.

⁴ *Committee for Organizing Financial Assistance to Industries in the State*, pp. 12 and 13.

rendered by the Government. In the case of granting loans they have devised a formula according to which Government can lend to Joint-Stock Companies up to 25 per cent, of their assets subject to a maximum of a lakh of rupees to any single establishment. Private companies and partnerships are entitled to a loan up to 50 per cent, of their assets. A Government director ought to be appointed whenever the loan exceeds half a lakh of rupees. It is suggested that assistance to cottage industries should be through the medium of Industrial Co-operative Societies.

To remedy the lack of current finance they recommend that the Government should guarantee the cash credits that are granted by the Bank of Mysore. The principal as well as interest have to be guaranteed and the Committee endorses the views of the Indian Industrial Commission in this respect.¹ They also contemplate the creation of a Statutory Board specifically constituted and entrusted with definite funds for rendering State-aid to industries. Finally, they recommend that the Government should make an annual grant of five lakhs of rupees for industrial development. The unspent balances of the grant and all recoveries should go to form an Industrial Development Fund which ought to be the nucleus of a future Industrial Bank for Mysore. They are, however, chary of constituting an industrial bank for Mysore immediately, and recommend instead the creation of an industrial loan department in the Bank of Mysore which should be worked as a detachable section. They hope that at a future time the detachable branch could be combined with the Industrial Development Fund to form an Industrial Bank² for Mysore.

However, none of the important recommendations of the Committee seem to have been adopted by the Government. The Board of Industries and Commerce to whom the Report

¹ *Indian Industrial Commission*, p. 218.

² *Committee for Organizing Financial Assistance to Industries in the State*, Chapters IV & V.

was referred opined that a Statutory Board was unnecessary and the establishment of a separate industrial section in the Bank of Mysore was not feasible.¹ The authorities of the Bank of Mysore protested with equal vehemence against the creation of an industrial section in the Bank.² Some of the minor measures suggested by the Committee were, however,, noted for adoption.

SUGGESTIONS FOR IMPROVEMENT

In the foregoing pages the existing financial mechanism in Mysore was portrayed. Hereafter an attempt will be made to offer a few suggestions for re-organizing the system and placing it on a scale commensurate with the growing needs of industry. At the outset the onerous function of Company promotion has to be placed on a more scientific basis in order to reduce the heavy mortality in our industrial concerns. As we have already observed, the creation of professional promoters and Issue Houses is obviously not feasible.? The only measure of practical importance and of immediate value would be the reconstitution of the Board of Industries and Commerce with a new personnel appropriate for the purpose for which it is created. The Board ought to be a permanent institution consisting of about three experts, like the Indian Tariff Board, and devoting their full time to the investigation of prospective concerns. Every private business enterprise ought to obtain the advice of the Board before seeking a charter of incorporation. The levy of fees for technical advice may be universalized in view of the fact that such advice is valuable and should not therefore be wasted on ill-conceived and non-genuine plans of promotion.⁴ Though the levy of fees may augment the initial expenses of a concern, still it will be amply made good in the long

¹ *Report of the Board of Industries and Commerce*, 1935-36, p. 12.

² *Ibid.*, 1934-35, p. 8.

³ *Supra*, p. 143.

⁴ Regarding protests against the levy of fees, see the *Proceedings of the Meeting of the Economic Conference*, held in March 1929, pp. 11-14.

run. However, the Board cannot be expected to be self-supporting and the Government should perforce step in to bear the cost. Such expenditure may be considered as a subsidy to industry paid in a manner most conducive to healthy industrial development.

The next issue of considerable importance is the provision of block capital to industry. By this time it must be fairly clear that the Bank of Mysore in its present form can never undertake to provide long-term finance to industry. If it does so it will be committing an error in the methods of banking. Hence the remaining alternatives are whether it is preferable for Mysore to have a separate industrial bank immediately or to experiment mixed banking in the Bank of Mysore. The former alternative is premature and the latter dangerous. Though there is no law of causation determining whether industrial banks should precede or succeed industrial evolution, still the financial machinery should not outrun the economic necessities. The conditions in Mysore do not warrant the institution of an industrial bank immediately. On the other hand, mixed banking is alien to the traditions of Indian banking and for a small country like Mysore to launch an experiment of that nature is injudicious. Besides it is not wise to risk the fair progress so far made by the bank by grafting an exotic scheme on it precipitately.

Foreseeing the above difficulties the Seal Committee have recommended the creation of an independent section in the Bank of Mysore for dealing with industrial loans. But the weakness of such a system would be that whenever one of the sections came to grief the other will follow suit. However much we may endeavour to treat them as two different entities still they will have only one legal personality. According to the law of liquidation even if one section fails both of them must disappear into oblivion simultaneously. It is therefore advisable for the Bank of Mysore to start a private company with an independent directorate to bring

about a closer relationship between industrial and financial interests. A representative of its directorate ought to be on the board of supervision of the concerns sponsored by it. In this respect the recent history of British banking is instructive. The Bank of England has brought into being the "Securities Management Trust" and the "Bankers Industrial Development Company"¹ The capital of the former is entirely subscribed by the Bank of England and that of the latter is contributed by all banks and finance houses in England. Mysore may take the latter institution as its model and invite the other banks in the State to participate in it. Besides the Government may also make an initial contribution of about ten lakhs of rupees towards its capital.

The subsequent contributions of five lakhs of rupees per annum which the committee recommend is adequate, but it ought to be placed as deposit in the new institution at a low rate of interest. The institution ought to operate on strictly commercial lines and the risk should be borne by the participating members in proportion to their respective contributions. It should function like an industrial bank operating for normal profits, with the only difference that it is a creation of the other commercial banks in the State instead of being a full-fledged public Joint-Stock Company. The advantage of such a scheme would be that in the event of its failure it may be wound up by its creators without jeopardizing the capital market. Otherwise, if the circumstances are favourable, it may be developed into an industrial bank with public participation. There could be a Government representative as well on the directorate of the private company. The Statutory Board which the Seal Committee desired to have becomes superfluous under the scheme which we have suggested because no liaison factor is any longer necessary between the Government and the bank. On the other hand, if necessary, the reconstituted Board of

¹ Stephenson and Branton: *Economics of Banking, Trade and Finance*, pp. 146-149.

Industries and Commerce may be directly consulted on technical matters before granting an industrial loan. It could be visualised that such a private company will be the nucleus for a future Industrial Bank. At an opportune moment it could be converted into a public company. Debentures could be issued to the public and the Government deposits may be gradually withdrawn.

In its actual operation the Bankers' Industrial Development Company which we recommend for Mysore may draw one or two useful lessons from the German banking practice.¹ The provision of block capital should take the form of underwriting and issuing of securities as in Germany and a lasting participation in any one individual concern may with advantage be avoided as far as possible. If the object of Government, in entering into industrial partnership with private investors is merely to induce confidence, then it stands to reason that they ought to withdraw from it when circumstances permit. The securities held by Government may be sold to the public if they are willing to take them up because it is not the object of the State to earn a dividend on them. Hence both the Government and the proposed industrial development company should see that the securities taken over by them are rapidly passed on to the public who are the ultimate repositories of all industrial securities.

The provision of current finance is entirely a responsibility of the Bank of Mysore and its confreres, because it is the legitimate function of a commercial bank to deal in short-term finance. In exceptional cases, however, the Government may guarantee cash credits. But the existing banking practice in India regarding cash credits should be suitably altered so that it may gain greater popularity than at present.²

None of the above devices can be expected to assist small-scale industries. The existing system of Takavi loans in

¹ P. Barret Whale: *op. cit.*, p. 46.

² The defects of the Cash Credit System in India is succinctly described in *Organisation and Finance of Industries in India*, by Samant and Mulky, See Chapter II, pp. 135-137.

Mysore is quite appropriate for the purpose. It would be more efficacious to grant such loans through Industrial Co-operative Societies than directly by the Government. Direct Takavi advances by Government may, however, continue in the form of supply of machinery on the hire-purchase system.

In conclusion we may mention that what Mysore needs is not a spectacular change but a judicious adaptation. A gradual and conscious evolution, insured against all possible contingencies, is desirable in the interests of a steady industrial progress.

CHAPTER VI

PUBLIC UTILITIES

THE concept of Public Utility is applied to a number of industries such as Railways, Generation of Electricity, Water Works, etc. They are undertakings which usually provide necessities and conveniences for the social welfare of the community. Public Utilities are considered to possess certain inherent features differentiating them from other industries. They are therefore accorded special treatment by the State. To investigate the rationale of such a procedure it is necessary to examine the economic characteristics which render Public Utilities and other industries mutually exclusive. Public Utilities are monopolistic in nature. The large specialized equipment which they have to instal before commencing operations deters potential competitors from entering the field. Besides, the futility of duplicating the plant and interfering with streets and highways is a further consideration for discouraging competition among them. The monopolistic characteristic is thus manifest among Public Utilities. They are treated as natural monopolies and it is considered that competition is inappropriate in their operation.

Public Utilities are also favoured by circumstances to exercise the power of discrimination to the fullest extent. The problem of discrimination in the price structure of certain industries may be studied under three headings, namely, the motive for differentiation, the ability for differentiation and the benefit of differentiation. The motive for differentiation consists in the proportion of overhead costs to prime costs. Whenever the ratio of overhead costs in an industry is very high there is an inevitable desire to introduce discrimination in its price structure. This is because in such industries there is a wide gap between the marginal revenue of individual units and the average revenue of aggregate sales. Hence it is in the interest of the *entrepreneur* to maximise his total

revenue by selling as much as possible through a scheme of differentiated prices. In all those industries where a large specialized equipment or fixed capital is necessary the proportion of overhead costs is high. Public Utilities have invariably to instal large specialized equipment before commencing operations. This incidentally deters potential competitors from entering the field and leaves the existing firms in virtual possession of a monopoly. Therefore it is obvious that Public Utilities have a strong motive for differentiation. But a moment's reflection will show that there are also other industries where the motive is equally strong. The Iron and Steel industry for instance, has a large proportion of overhead costs and consequently has a legitimate desire for discrimination. But normally they are incapable of exercising it. Hence the true differentia between Public Utilities and other industries consists not in the motive but in the ability to discriminate.

The ability to discriminate depends upon the capacity to isolate markets in such a way as to prevent the transference of units of supply and units of demand among them. The products of Public Utilities are by their nature incapable of transference and hence they enjoy immunity from competition by similar products from other areas. Besides there are also obvious hindrances to the movement of customers between markets. Hence all the factors are in favour of the Public Utilities pursuing a policy of discrimination. As Dr. Benham says, "A Public Utility usually controls either the whole or a significantly large proportion of the supply of its product within its area, while the relative non-transferability of its product protects it from the competition of similar products from other areas."¹ This feature is therefore the distinguishing characteristic of public utilities which warrants public intervention. It should however be admitted that the Public Utilities are not in exclusive possession of this

¹ F. C. Benham: The Economic Significance of Public Utilities, *Economica*, November 1931, p. 435.

characteristic. There are a few others who successfully employ the principles of discrimination, such as the recognised professions, like the medical profession. But Government regulation of their charges is not considered necessary since they regulate their charges in a manner that is acceptable to the public. Besides they cannot exploit the public as they are not in possession of a monopoly. Retail trade also practises discrimination but the price differences among them are so small that they are not worth the trouble of regulation. Dumping is also an instance of discrimination but since it transcends political boundaries it is not within the control of any single legislative authority. The countries affected take measures to protect themselves against it. Hence we are left only with the large Public Utilities, such as Railways, Generation of Electricity, and Water Supply, which have not only the motive but the ability to discriminate.

Finally we may examine the benefits of discrimination. Even when an industry has both the motive and the ability to discriminate it will not be profitable to do so unless the demand conditions in the different markets are favourable. It is only when the elasticities of demand in the separate markets are different that it is beneficial to discriminate. Mrs. Robinson propounds the principle with consummate ability. She says, " If the demand curves of the separate markets were iso-elastic, so that at any price the elasticity of demand was the same in each market, then the same price would be charged in all of them; for when the marginal revenues were equal in each market, the prices would then also be equal, and the result would be the same as though the market was not divisible."¹ On the other hand when the elasticities differ it pays the monopolist to discriminate between the separate markets by selling at different prices and equalising the marginal revenue that he derives from each of them. In this respect, though it is not possible to generalise, still it may be asserted that the Public Utilities have sufficient scope to

¹ Joan Robinson: *Economics of Imperfect Competition*, p. 185.

benefit through discrimination. As they cater for different sections of a society, who are roughly classified according to their wealth, the elasticity of demand of their customers is bound to differ and the policy of discrimination to be profitable.

It is evident therefore that the economic concept of Public Utilities is based on the distinguishing feature of discriminating monopoly exercised by them. This is a special feature of Public Utilities and is the essential factor which attracts the attention of the politician for bringing them under public control. The economic concept is more fundamental than either the legal or the political concept because the latter concepts are based on the former. The political concept asserts that because certain industries have those special characteristics they ought to be regulated, meaning thereby that the competitive hypothesis is inappropriate in respect of them. The legal concept carries it further and says that because they have to be regulated they shall be called Public Utilities and treated in a particular manner. For instance, according to the American Statute Law certain industries are defined as Public Utilities and declared to be suitable for Government management. While the legal and political concepts are based on the economic concept, they also extend it to such an extent as actually to overshadow their prototype. But whatever may be the subsequent superstructure, the original criterion of selection is in terms of economic values. The others are subordinate to it. However it should not be inferred that the economic concept has a determinate connotation. It depends upon certain economic circumstances which are themselves extremely variable. Any change in them will *ipso facto* alter the scope of the economic concept. As Batson points out, changes may occur either due to a change of opinion, as in Germany, where the opera is considered as a national necessity, or due to certain technical changes causing an increase in the proportion of overhead costs. It may also be due to an increase in the facilities

for dealing in isolated markets.¹ Therefore the economic concept is true only under certain existing circumstances. It is a fixed concept with a changing content.

PURPOSE OF PUBLIC CONTROL

Having defined the concept of Public Utility we may investigate the objects of exercising a public control over them; or conversely inquire into the possible consequences of leaving them under private management. In an individualist society there is often a divergence between the social and private net product at the margin. In other words, as Pigou points out, private enterprise when it operates under conditions of simple competition often leads to a distribution of resources less favourable to the national dividend than some other possible distributions.² This can be corrected by the imposition of a tax or the grant of a subsidy. But in the case of a monopoly it becomes extremely difficult to effect a correct allocation of natural resources among different occupations. Though it is theoretically feasible to do so through a regulation of price and output, there are insurmountable practical difficulties. Hence whenever self-interest under conditions of monopoly causes an investment of resources different from what is in the interest of the national dividend there is always a case for public intervention. The objective of such regulation therefore is only "to attain ends similar to, and harmonising with, those attained by competition in other fields". Dr. Benham draws attention to two important considerations which justify State operation of certain industries which have a propensity to monopolization. In the first place the State attempts to achieve the individualist ideal of producing as much as possible per unit of means employed and secondly of producing that assortment of goods and services out of all other assortments, which consumers most

¹ H. E. Batson: The Economic Concept of a Public Utility, *Economica*, November 1933, p. 472.

² A. C. Pigou: *Economics of Welfare*, p. 380.

prefer.¹ It is thus obvious that the Public Utilities have certain inherent qualities which if left to themselves tend to yield results which are out of harmony with the competitive hypothesis. Therefore it is necessary to exercise some form of control over Public Utilities in order to attain the normal results of the competitive mechanism.

FORMS OF PUBLIC INTERVENTION

Having agreed about the necessity of public intervention the next task is to decide the form of control to be exercised by the Government. Public Utilities may either be under private operation with a public control, or under direct Public operation. In England, for instance, many Public Utilities such as Railways, Electricity and Gas Works, Water Supply, etc., are undertaken by private enterprise but controlled by public regulation. In countries where private enterprise is forthcoming this form of organization is feasible. But even in such countries it is necessary for the Public Authorities to see that the national interests are adequately served by the privately operated Public Utilities, and that a well co-ordinated system of organization is maintained for the benefit of the community. The disorganized growth of electricity generating stations in England had to be rectified through the National "Grid System" in 1928. In countries where private enterprise is not forthcoming direct State operation of Public Utilities is necessary.

With regard to Public operation some serious objections are levelled against the appropriateness of Government bodies to act as organs for the operation of business. The Central and Local Authorities are not specially chosen for intervention in industry and as such no special business competence can be expected of them. Secondly the fluctuating nature of political bodies interferes with the sustained application of a business policy. And it is also likely that Government agencies are liable to injurious electoral pressure.

¹ F. C. Benham: *op. cit.*, p. 435.

Finally the administrative areas are determined on non-commercial considerations and as such are unsuitable for operating an industry. The optimum size of an industry may differ from the scope of an administrative area. In such an event Government intervention would mean uneconomical operation of the Plant. But all the above objections have been overcome by the modern device of the Public Corporation such as the Port of London Authority and the Central Electricity Board in England. This form of organization for the operation of Public Utilities is gaining currency in all the important European countries. In the words of Gordon, "while the widest differences of opinion remain as to the proper scope of public enterprise, there is well-nigh universal concurrence on the utility of the Public Corporation as a form of organization where such enterprise is adopted."¹

The device of the Public Corporation also obviates certain other objections of a political nature against the Public operation of industries. The political power of the Central or Local Authorities may permit them to maintain inefficient Plants through a manipulation of the tax revenues. A Government body may also unduly restrict the taking of risks and the launching of new ventures since their political interests are at stake. Besides Government operation may also interfere with the most efficient size of the business unit. The Public Corporation is free from all these defects since it is entirely non-political in character. It has to earn a profit like a private commercial concern and has perforce to maintain efficiency. Regarding the optimum size of the operating Plant the Public Corporation has full latitude to approximate towards it, since it may transcend the local political area. For instance, the Central Electricity Board through its national grid controls the transmission system over the whole of England.

We may reach a tentative conclusion at this stage. It is now fairly clear that some industries by virtue of certain

¹ Gordon: *The Public Corporation in Great Britain*, p. 3.

economic characteristics have perforce to be brought under Government operation or control in the interest of the public. The choice of those industries should rest entirely on economic considerations. The form of State organization to operate those industries should be such that the defects of State management should not outweigh the possible consequences of leaving them alone. The actual method of Governmental operation in each country ought to depend upon the particular circumstances. It is a matter of expediency.

PUBLIC UTILITIES IN MYSORE

The practice of modern Governments is in close conformity with the preceding theoretical speculations and the rendering of vital services is usually undertaken by the State. Transportation and the communication of intelligence through the media of Railways, Posts and Telegraphs are generally nationalized and the supply of electricity, gas and water are likewise often undertaken by Public Authorities. The Mysore State though small in area and dependent politically has lived up to those high ideals of State action. The three available Public Utilities, namely, Railways, Water Supply, and the generation of electricity, are undertaken by the State.

Apart from general considerations, Mysore State has also some special reasons for the operation of its Public Utilities. The political separation of Mysore from the neighbouring British Indian Provinces imposes certain economic responsibilities on it. Its resources have to be utilised in a manner that is conducive to the economic interests of the State as a unit. For instance, power for industrial purposes should be made available in all areas even though some of them may not be entirely remunerative. The loss due to it has to be made up on the aggregate earnings. Besides the State has also to provide certain services considered to be socially advantageous. Such public-spirited action in the economic interests of the State will not be forthcoming in the event of private operation of such utilities as the railways and

the generation of hydro-electricity. Social considerations will also have adequate scope under State operation. Cheapness and convenience of travel for the citizens of the State and the intangible benefits of rural electrification may not influence policy under private operation.

Besides, private management in Mysore would mean in all probability, management by a Company in the neighbouring British Indian Province. For instance, the railways in Mysore were managed by the Madras and Southern Mahratta Company till they were taken over by the State. Such a Company would frame its rate schedules in a manner that would increase its own aggregate earnings. It would be more interested in long haulage and through traffic instead of being instrumental in the industrial expansion of the State. Similarly private monopoly of hydro-electric generation would lead to an exploitation of the people, and there would not be an adequate expansion of facilities for power supply in non-remunerative areas. Under private management construction and development of railways would hardly be influenced by the administrative necessities of the State. On the other hand it would entirely depend upon commercial considerations judged from the standpoint of railway finances. Hence the economic development of the State in conformity with its political integrity necessitates public operation of some of the important services such as Railways, Waterworks and the generation of hydro-electricity. Further it is also important to observe that under public operation the potential resources of the State will be exploited to the fullest extent. The generation of hydro-electricity in Mysore could never have reached its present capacity but for the construction of the dam across the Cauvery at Krishnarajasagara. The dam has regulated the flow of water and ensures a perennial supply for the generating Plant. If the generating Plant was under private management such a comprehensive view of the potential resources of the State might not have been taken and even if it was envisaged it could not have been executed. In

the following sections a historical and critical survey will be made of some of the Public Utilities in Mysore.

RAILWAYS—CONSTRUCTION AND CAPITAL COST

The construction of Railways in Mysore commenced at the outset as a famine relief measure. In the year 1877 when famine broke out in Mysore, construction of the metre gauge line between Bangalore and Mysore began. By 1882 the line was thrown open for traffic. The estimated cost of the line was Rs. 60 lakhs and the whole line was entirely constructed out of current revenues. Further extensions of the lines were effected by 1884 and Bangalore was connected with Gubbi, a distance of 54 miles. A loan of Rs. 20 lakhs at 5 per cent, interest was raised by the Government for the purpose. It was however not possible for the Government of Mysore to undertake any further railway construction as the available resources were not equal to the actual requirements of the scheme, especially on account of the burden of the famine debt of Rs. 80 lakhs due to the Government of India. Hence on the advice of the Government of India the Mysore State handed over the existing lines at that time and the further extension thereof to the Southern Mahratta Company in 1885. The contract was for a period of forty-six years and included a guarantee of 4 per cent, interest payable by the Mysore Government on the sterling loan of £ 1,200,000 raised by the Company. The Company had to pay the actual outlay by the Government on the Mysore-Gubbi line and to undertake the extension of the line as far as Harihar. The total distance of 255 miles from Mysore to Harihar had to be worked as a separate system by the Company. The Company was entitled to get its working expenses and interest at 4 per cent, on the capital of £ 1,200,000 invested by it. After deducting the necessary working expenses the net proceeds was agreed to be shared between the Government and the Company in the proportion of three is to one and out of it the Government had to pay the guaranteed interest on

the sterling loan raised by the Company. The construction was completed in about three years and the through line to Harihar was opened in 1889.

Before the close of the nineteenth century a few more fresh lines were constructed by the Government. Nanjangud a distance of $15\frac{1}{4}$ miles was connected with Mysore and a new line was constructed between Bangalore and Hindupur a distance of $51\frac{1}{2}$ miles. In 1899 a metre gauge line was constructed by the State between Shimoga and Birur which is a distance of about 37 miles and was thrown open for traffic. The three systems were however handed over to the Southern Mahratta Company for actual management. Similarly the mining railway of $10\frac{1}{2}$ miles at Kolar Gold Fields was constructed by the Government and handed over to the Madras Railway Company for management.

The twentieth century witnessed a few eventful incidents, chief among them being the revision of the contract with the Madras and Southern Mahratta Company in 1908. The new contract was to be in force for a period of 30 years from December 1907, and the Company was to receive one-twentieth of the net earnings of all lines including the branch lines instead of one-fourth of the net earnings of the Mysore-Harihar line according to the old contract, and the interest payment by the Government on the original sterling loan had to continue as heretofore. The first decade of the twentieth century was not a period of rapid railway construction. During the next ten years large construction schemes were taken up and important additions were made to the existing railway system in the State. By 1918 a light railway was constructed and opened for traffic between Bowringpet and Bangalore *via* Kolar and Chickballapur. The necessary finance for the construction of this line was met partly by the District Board of Kolar and partly by the Government of Mysore. At about the same time the State completed the construction of one of its present main lines, namely, between Mysore and Arsikere, a distance of 103 miles. This involved

a capital expenditure of Rs. 82,39,944, as three large rivers had to be crossed.

The second decade of the century also witnessed the construction of a network of tramways of 2 ft. guage. They are in three sections as under :

	Miles
Tarikere-Narasimharajapura ..	36
Shimoga-Kumsi ..	30
Bhadravathi Iron Works ..	44•3

Tarikere-Narasimharajapura tramway is owned and worked by the Government. Shimoga-Kumsi tramway was constructed by the Workington Iron Steel Company, a private firm, for carrying manganese ore to their works. The tramway belonging to the Mysore Iron Works has been constructed by them for conveying wood from the neighbouring forests for conversion into charcoal.

The most eventful incident of the second decade of the twentieth century was the restoration in 1918 of the Bangalore-Nanjangud and Birur-Shimoga lines to the State for management. These lines were hitherto managed by the Madras and Southern Mahratta Railway Company and were handed over to the State under instructions from the Government of India due to the fulfilment of certain terms of the contract between the State and the Railway Company. After this transfer nearly 372 miles of metre gauge and narrow gauge lines were brought under direct Government management.

Further railway construction started during the third decade of the century. Chief among them was the Nanjangud-Chamarajanagar section. The objective of this scheme was to connect the system of railways in Mysore with the South Indian Railways at some convenient point so that the trade of the State may be accelerated. The work on this section could not progress steadily at the initial stages due to financial stringency. During 1923-24 the District Board of Mysore was called upon to raise a debenture loan of Rs. 8 lakhs at 7 per cent, with a government guarantee of interest to undertake the work. As they had already accumulated Rs. 4 lakhs.

out of the railway cess it was reckoned that the two together would suffice to meet the capital expenditure of Rs. 12 lakhs required for the construction of the section. The work was complete by 1926 and the railway was opened for traffic on the 27th August 1926. During this season another branch railway between Shimoga and Arasalu a distance of 19 miles was completed.

The lines constructed by the District Boards and Private Companies in Mysore are worked by the State according to a definite agreement. The terms of the agreement are that there is a government guarantee of interest at 4 per cent, on the capital provided by the District Board or the Company. Out of gross receipts the guaranteed interest and working expenses are deducted. Half of the remaining surplus goes to the Government as guarantors of interest and the other half is shared by the Government and the District Board or Company in the proportion of the capital contributed by each. In case of all such Railways the Government reserves the option of purchasing the interests of the District Board or Company at terms stipulated in advance. The only Railway that does not come under the terms of the above agreement is the Nanjangud-Chamarajanagar line. It is worked by the State for a fixed share of 70 per cent, of the gross receipts.¹

The accompanying table gives details regarding the capital invested and the distance of each section of the Mysore Railways. The table also shows the capital invested on the lines worked by the M. & S. M. Railway and the State respectively as they stood in the year 1937. The capital at charge on all the lines in the State including those that are provided by the District Boards and Companies is about 6-32 crores of rupees. Out of a total railway mileage of 787 in Mysore, the State owns 607 miles, and about 55 miles, which is part of the broad gauge section between Bangalore

¹ H. Rangachar: *Railways in Mysore*, A Reprint of "The Hindu", 1937, . 121.

TABLE I
Statement showing the lines worked and Capital invested by the State and the M. & S. M. Railway Company (1937)

Line	Gauge	Worked by M. & S. M. Railway Company		Worked by the State		Total Distance of Railways in the State (Cols. 3 & 5)	Total Capital invested on Railways in the State (Cols. 4 & 6)	Broad Gauge Lines 5' 6"	Metre Gauge Lines 3' 3½"	Narrow Gauge Lines 2' 6"	Tramways 2'
		Distance	Capital Rs.	Distance	Capital						
Bangalore-Harihar ..	Metre	210.49*	1,79,21,706	—	—	210.49	1,79,21,706	—	210.49	—	—
Yesvantpur-Hindupur ..	"	51.19*	26,00,885	—	—	51.19	26,00,885	—	51.19	—	—
Kolar Gold Fields Railway	Broad	9.88	12,45,333	—	—	9.88	12,45,333	9.88	—	—	—
Bangalore-Mysore ..	Metre	—	—	86.01	—	86.01	—	—	86.01	—	—
Mysore-Chamarajanagar ..	"	—	—	38.09	—	38.09	—	—	38.09	—	—
Mysore-Arsikere ..	"	—	—	102.95	3,27,82,446	102.95	3,27,82,446	—	102.95	—	—
Birur-Anandapuram ..	"	—	—	73.95	—	73.95	—	—	73.95	—	—
Chicklajur-Chitaldrug ..	"	—	—	20.90	—	20.90	—	—	20.90	—	—
Bangalore-Bowringpet	Narrow	—	—	102.20	43,71,909	102.20	43,71,909	—	—	102.20	—
Tarikere-Narasimharajapura	Tramways	—	—	26.60	—	26.60	—	—	—	—	26.60
Tadasa-Hebbe ..	"	—	—	9.60	13,10,729	9.60	13,10,729	—	—	—	9.60
Total		271.56	2,17,67,924	460.30	3,84,65,084	731.86	6,02,33,008	9.88	583.58	102.20	36.20

* From January 1st, 1938, the Bangalore-Harihar and the Yesvantpur-Hindupur lines comprising a total mileage of 261.68 miles have come under direct State management.

and Madras, belongs to the Government of India. The balance of 125 miles is owned either by the District Boards in Mysore or by the Government in co-operation with District Boards or private companies. About 33 miles of this group have been financed by the District Boards, about 54 miles have been financed partly by Government and partly by District Boards, and 38 miles by Government and a Private Company incorporated in the State.

CROSS EARNINGS ON ALL LINES

Taking all the lines in the State that are worked by the M. & S. M. Co., and the Government of Mysore, we may investigate their commercial position during the decade ending 1936-37. The average gross earnings on all the lines in the State for the decade 1927-28 to 1936-37 was Rs. 77.48 lakhs. For the same period the aggregate working expenses amounted to an average of Rs. 58.87 lakhs. The net receipts therefore on all the lines in the State was on an average Rs. 18.65 lakhs. The net receipts bore a proportion of 4.35

TABLE II

Statement showing earnings and expenditure on all lines in the State

Year	Gross Earnings Lakhs of Rupees	Working Expenses Lakhs of Rupees	Net Receipts Lakhs of Rupees	Percentage on Total Capital
1927-28	88.19	63.51	24.68	6.7
1928-29	88.27	64.66	23.61	6.7
1929-30	86.02	65.09	20.93	5.6
1930-31	77.15	62.60	14.55	3.8
1931-32	74.32	58.11	16.21	4.15
1932-33	73.52	57.85	15.67	3.9
1933-34	71.19	56.50	14.69	3.6
1934-35	70.49	53.26	17.58	2.88
1935-36	72.98	54.07	18.91	3.06
1936-37	72.74	53.06	19.68	3.15
Average ..	77.48	58.87	18.65	4.35

NOTE.—Data taken from the Administration Reports of the Government of Mysore.

per cent, to the total capital charge on all the lines in the State including those that were worked by the M. & S. ML Co. However, the earnings on the Mysore Railways show a continuous decline after the year 1929-30 due to motor competition and the repercussions of the Great Depression. In the year 1936-37 the percentage of earnings on the total capital was only 3-15 per cent, though this was a slight improvement over those of the two preceding years. Table II will show the exact position regarding the averages given above.

POLICY REGARDING CONSTRUCTION AND MANAGEMENT

The foregoing account will reveal the fact that the policy of the Government of Mysore in respect of the construction and management of railways is different from that of the Government of India and it is in some respects superior to it. The original policy of railway construction in India was based on the system of financial aid by the State in the shape of a guarantee of interest to private companies. Such a system had a grave weakness, namely, the lack of any incentive for economy in construction by the private companies.¹ As a consequence there was an excessive financial burden on the State and the whole guarantee system was discredited. Therefore during the second period of railway construction in India between 1870 and 1880 a policy of Direct Construction by the State was adopted. But due to certain financial difficulties and other extraneous circumstances there was very little progress in railway construction during this period. Therefore there was a reversion in 1880 to the old method of construction by private companies on a Government guarantee of interest or other form of assistance. As such it is obvious that most of the railway lines in British India were constructed by Private Companies with no compelling motive to economise capital expenditure. Hence the railways started operation with a heavy capital expenditure and involved the Government of India in excessive financial burdens.

¹ Dr. V. Anstey: *The Economic Development of India*, p. 131.

In Mysore on the other hand a greater part of the railway network was constructed by the State sometimes out of current revenues. Excepting for about 172 miles which was constructed by the Southern Mahratta Company, the other lines in the State of a total of 560 miles were constructed either by the Government directly or with the financial participation of the respective District Boards. From the point of view of financial interest in construction, the Government of Mysore has financed the construction of 575 miles, and only 147 miles was constructed by a loan raised by the Southern Mahratta Railway Company. The advantages of such a policy are that there has not only been a motive for economy in construction unlike in British India, but the extensions of the lines have also been undertaken according to the economic and administrative necessities of the State. Regarding the management of the several sections there has been a difference in practice. Most of the main lines and some of the branch lines were in the first instance handed over for private management. That was because of the prevailing financial condition of the State. Subsequently with the improvement in the State finances and the general economic progress, most of the lines were gradually taken over for State management. One of the important motives for taking over the lines quickly for State management is to provide an efficient system of transport for an industrially advancing territory. It is evident that the provision of an essential service to the community has been the chief objective of the State.

RECENT DEVELOPMENT

From January 1st 1938 the State Agency has resumed control of the Bangalore-Harihar and Yesvantpur-Hindupur sections which for a period of thirty years had been worked by the Madras and Southern Mahratta Company on behalf of the Government of Mysore. That means another 262 miles of railway have come under direct State management. The

Mysore State Railways now rank among the first class railways in India, with a total open mileage of 732 miles under their management.¹ The Bangalore railway station which was hitherto under Company administration has now been taken over for State control. Elaborate extensions and additions have been made to the Railway Central Workshops at Mysore at a cost of nearly 12 lakhs of rupees in order to cope with the repair work of the rolling stock which has increased in magnitude due to the extension of railway network under State control.

TRAFFIC HANDLED, EARNINGS AND EXPENSES

The statistics pertaining to traffic handled and the earnings therefrom on the State worked lines of the Mysore Railways reveal certain important features. The data may be studied in three groups according to the gauge of the railway in each section. This method will incidentally throw some light on the relative merits and appropriateness of the different gauges of railways in the State. Taking the decade 1926-36 we find that the average number of passengers carried over the metre gauge section was 3,224,000 and during the peak year of 1929-30, 3,528,000 persons were carried. The average gross earnings from passenger traffic during the same decade was Rs. 15,83,000. The peak year of 1929-30 yielded Rs. 17,81,000 from passenger traffic. During the same decade the metre gauge section carried an average of 317,000 tons of goods traffic. The average gross earnings from goods traffic during the decade was Rs. 11,83,000. One of the important features of the data seems to be that the earnings from passenger traffic is relatively larger than that of goods traffic.

In some of the other Indian States we find that the earnings from goods is relatively larger. For instance, in

¹ *Press Note*, by the Publicity Officer to the Government of Mysore, December 22nd, 1937.

Bikanir State the average earnings of the metre gauge railway from goods traffic was Rs. 22,06,000 during the decade 1926-36, whereas the passenger traffic yielded on an average only Rs. 17,42,000. Similarly in Jamnagar and Dwarka Railways the average earnings for the decade from passenger and goods traffic was Rs. 6,34,000 and Rs. 6,66,000 respectively. In Bhavanagar State there is only a slight excess in passenger earnings. The average earnings from passengers was Rs. 14,78,000 and that from goods was Rs. 14,24,000. The same tendency could be observed if we take Class II railways in India as a whole and compare the earnings from the two types of traffic. During the decade 1926-36 the average earnings of the whole group was Rs. 1,56,71,000 from goods traffic and only Rs. 1,32,40,000 from passenger traffic.¹ It is thus obvious that generally goods traffic is the mainstay of the aggregate earnings of a railway. This is true also of railways in Western countries. The fact that conditions in Mysore are not in conformity with those elsewhere in India is somewhat disquieting. An acceleration of the internal trade of Mysore would be an effective leverage in turning the balance. A manipulation of traffic rates with a view to give an impetus to internal trade is desirable. This would not only benefit the railways but increase the economic well-being of the community by an interconnection of producing centres and a quicker exchange of commodities among them. The potential traffic from each region of the State has to be investigated and through an offer of favourable rates a trade in them ought to be induced. Such trade is cumulative, as it is not unlikely that it may have to be transported after each stage of production and may also incidentally attract other types of traffic. Goods traffic is in this way self-generating and is also likely to be more remunerative in the long run,' than passenger traffic.

The statistics pertaining to the narrow gauge of 2 ft. 6 in. present similar tendencies. For the decade 1926-36 the

¹ *Statistical Abstract for British India, 1926-27 to 1935-36*, p. 760.

TABLE III

Statement showing Traffic Carried and their Earnings (Lines worked by Government)

Year	1926-27	1927-28	1928-29	1929-30	1930-31	1931-32	1932-33	1933-34	1934-35	1935-36
Metre Gauge 3' 3½"	No. of passengers, 1,000	3,388	3,508	3,528	3,194	2,760	3,130	3,250	3,142	3,314
	Earnings from passengers 1,000 Rs.	16,04	17,41	17,81	15,56	14,06	14,95	15,44	14,77	14,82
	Tons of Goods 1,000	278	304	357	316	327	309	292	323	358
	Earnings from Goods 1,000	11,47	12,57	12,98	11,76	11,81	10,90	11,30	11,60	12,43
Narrow Gauge 2' 6"	No. of passengers 1,000	929	981	—	832	519	608	613	666	835
	Earnings from passengers 1,000 Rs.	3,02	3,08	—	2,43	1,46	1,73	1,76	1,81	1,91
	Tons of Goods 1,000	37	48	—	51	35	36	33	29	36
	Earnings from Goods 1,000 Rs.	1,31	1,78	—	1,86	1,25	1,22	1,12	1,05	1,19
Tramway 2'	No. of passengers 1,000	51	55	—	50	45	44	41	42	36
	Earnings from passengers 1,000 Rs.	17	17	—	15	11	13	12	12	11
	Tons of Goods 1,000	7	9	—	9	5	8	8	8	8
	Earnings from Goods 1,000 Rs.	32	40	—	37	28	36	39	31	39

NOTE.—Data taken from Statistical Abstract for British India, 1926-27 to 1935-36.

average number of passengers were 667,000 and the railway earnings from them were Rs. 1,90,000. During the same period 24,000 tons of goods were carried, with average earnings of Rs. 1,21,000. On the tramways of 2 ft. gauge an average of 41,000 persons were carried during the decade and the earnings from them was Rs. 12,000. The average goods traffic was 7,000 tons with an earning of Rs. 31,000. The excess in goods earnings in the case of Tramways is due to the fact that a major part of the Tramways is meant exclusively for goods traffic; as for instance, the Tramways of Mysore Iron Works and those belonging to Workington Iron Steel Company.

WORKING EXPENSES AND NET EARNINGS

Maintaining the same classification of railways according to gauge we may investigate the gross earnings, working expenses and net earnings in each category of the lines worked by the State in Mysore. During the decade 1926-36 the average gross earnings on the metre gauge section was Rs. 30,24,000 and the working expenses amounted to Rs. 24,12,000 yielding an average net earning of about Rs. 6,01,000. The proportion of working expenses to gross earnings was 80.3 per cent, with an average net earning of about 2 per cent, on the total capital charge. In the narrow gauge section the percentage of working expenses to gross earnings was on an average 80.9 per cent, for the decade and the proportion of net earnings on the total capital cost was only 1.73 per cent. The Tramways have a relatively smaller percentage of working expenses to gross earnings. The proportion of working expenses is only 69 per cent, but still the percentage of net earnings on total capital cost is only 1.25. The reason for this is that the amount of gross earnings is itself meagre and hence the remaining surplus bears a very small percentage to the aggregate capital cost. However two important conclusions may be deduced from the above averages. The metre gauge section of the Mysore Railways, which has a

longer mileage than the other two sections has a better percentage of net earnings to total capital cost than the other sections. This may be accounted for by the fact that most of the main lines are of metre gauge and that they traverse the commercially best areas of the State. Besides they also connect the main lines leading into British India. The second inevitable conclusion from the data is the low percentage of earnings on the Mysore Railways. The latter conclusion is supported by a comparison with the net earnings of some of the British Indian Railways.

During the decade 1926-36 the railways in Bhavanagar State had an average net earning of 6.2 per cent, on the total capital cost. The railways in Gondal State earned during the same period an average of 8.5 per cent. In Bikanir State there was a net earning of 3.5 per cent, on the capital invested in the railways. All the above railways are of the metre gauge type. We may take two railways of 2 ft. 6 in. gauge and compare their earnings with those of the Mysore Railways. The Barsi Light Railway had during the decade an average net earning of 4.8 per cent, on its total capital cost. The Shahdara (Delhi)-Saharanpur Light Railway had an average net earning of 9.9 per cent, on the capital invested. Thus even the light railways elsewhere seem to be making a higher percentage of net earnings than those in Mysore. Taking the railways in Class II as a whole we find that they are having an average net earning of 4.6 per cent, on the total capital cost.¹ It is therefore quite obvious that the earnings on the Mysore Railways is relatively low.

The low percentage of net earnings in the Mysore Railways may be accounted for either by heavy and wasteful capital expenditure or by a high proportion of working expenses to gross earnings. The former is not likely in Mysore since the construction was undertaken mostly by the State and executed economically and expeditiously. Hence it is the high operating expenses that seem to be responsible for the

¹ *Statistical Abstract for British India*, 1926-27 to 1935-36, p. 777.

low net earnings. The proportion of working expenses to gross earnings was during the decade 1926-36, 58 per cent, in Bhavanagar Railways, 53.1 per cent, in Gondal, and 70 per cent, in Bikanir. It was 58.7 per cent, in Barsi Light Railway and 47 per cent, in Shahdara (Delhi)-Saharanpur Light Railway. For Class II railways as a whole the working expenses was 63 per cent. So the working expenses of about 80 per cent, on the Mysore Railways exceed all the above estimates. It is not easy to account for the high operating expenses.

One of the important reasons for the high proportion of operating expenses to gross earnings appears to be the short railway mileage worked by the State. A large part of the expenses in railways are fixed and therefore unless there is an optimum mileage for operation the burden of the fixed costs will be heavy. This could be remedied either by increasing the open mileage worked, or by increasing the number of ton-miles run. The former was not possible in Mysore till recently since some of the State owned lines were under Company management on an agreement. The number of ton-miles run cannot be increased unless the internal trade is very brisk and the road competition is reduced. With the resumption of control over the Company worked lines in 1938 the situation is likely to improve. The operating expenses for the longer mileage is not expected to increase proportionately, but the gross earnings will be greater. Hence the proportion of operating expenses to gross earnings is bound to be lower, and the net earnings higher hereafter. The second reason for the high working expenses in Mysore is due to the cost of coal which is relatively higher as compared with the areas which are nearer the coal producing regions. In this respect the Railways which we have been comparing with Mysore Railways are at an advantage. A further reason for the low earnings on the Mysore Railways is the fact that it is not connected with the South Indian Railway, so that the line ends almost in a blind alley. That prevents the through

TABLE IV

STATEMENT SHOWING GROSS EARNINGS, WORKING EXPENSES AND NET EARNINGS

Averages for the decade 1926-35 (Lines worked by Government)

Railways	Total Capital at charge Rs. 1,000	Gross Earnings Rs. 1,000	Working Expenses Rs. 1,000	Net Earnings Rs. 1,000	Percentage of Working Expenses to Gross Earnings	Percentage Net Earnings on Total Capital Cost
Metre Gauge 3' 3½"	3,07,93.6	30,14.1	24,12.4	6,01.7	80.3	2.0
Narrow Gauge 2' 6"	42,48.7	3,65.3	2,92.7	72.7	80.98	1.73
Tramways 2'	12,47.7	49.7	34.0	15.7	69.0	1.26
Total ..	3,62,90.0	34,29.1	27,39.1	6,90.1	76.7	1.66

NOTE.—Data for averages taken from Statistical Abstract for British India, 1925-26 to 1935-36.

traffic to South India from passing across Mysore. In fact Mysore would provide the shortest route, and the circuitous journey that the traffic takes at present could be avoided. If the Mysore Railways are connected with South India directly, a large part of the traffic going to the South would choose to go through Mysore and thereby the gross earnings on the Mysore Railways would increase appreciably. With the increase in ton-miles the railways would attain increasing returns and the net earnings will be enhanced.

STRUCTURE OF RAILWAY RATES

At the outset, it may be useful to enunciate briefly the general principles underlying the theory of rates. The essential feature of the adjustment of rates is that they are based on the conditions of demand and not predominately on the cost of service. Hence there is no uniformity in charges, and the practice of "price discrimination" is in vogue as among other Public Utilities.¹ There are two underlying reasons for the divergence of rates from the cost basis. In the first place there is a very large capital outlay and the proportion of constant as compared with variable expenditure is very high. It is not possible to express them in terms of fixed proportions as they are a function of the volume of traffic. Locklin says "The attempt to express the constant and variable expenses as a definite proportion of the whole is somewhat unfortunate."² Hence the allocation of the fixed costs among the different consignments of traffic is not possible and it is impracticable to allocate even variable expenses accurately amongst them so that the unit cost of transport is indeterminable. Secondly the factor of decreasing cost operates among railways until the maximum capacity of the line is reached. So it is in the interest of the railways to take as much traffic as possible by offering different rates.

¹ *Vide Supra* section 1.

² Dr. Philip Locklin: *The Literature on Railway Rate Theory: Quarterly Journal of Economics*, February 1933, p. 176.

Various theories have been developed to explain railway rates, the chief among them being the "overhead cost" theory and the "joint cost" theory. The former theory was offered as an explanation by a large number of early economists. In 1891 Taussig suggested that railway rates is a case of Joint Costs explicable in terms of the classical analysis. He has however been severely criticised by Pigou and others on the basis that there is no true jointness in the services offered by the railways.¹ Modern economists adhere to one or other of the above theories according to the extent to which they are willing to extend the classical theory of Joint Costs.

So in practice the value of service principle is substituted for the cost of service principle in adjusting rates. This is known as the method of charging according to "what the traffic will bear". Those items of traffic which can stand a heavier charge are charged more than the others. The limits within which the rates can vary are set, on the one hand, by what a particular traffic can afford to pay, and on the other by the special out-of-pocket expenses incurred by the railways for carrying a particular consignment of goods. To give effect to the above principles, commodities having similar characteristics are grouped together into classes and charged differently. In respect of distance railway rates vary generally in three ways. They may be on an equal-mileage scale and the rates will remain uniform per mile irrespective of the distance transported. Next, the rates may be on a cumulative or telescopic scale according to which the basis of the rate becomes progressively lower with an increase in the distance transported. This is a corollary to the principle of diminishing costs operating on the railways. Thirdly, there are the exceptional rates quoted between any two points for special reasons, such as competition from other types of transport. They are known as "Commodity Tariff" in America and as "Exceptional Rates" in England.

¹ Dr. Philip Locklin: The Literature on Railway Rate Theory: *Quarterly Journal of Economics*, pp. 188-196.

RAILWAY RATES IN MYSORE

The system of railway rates in Mysore embodies in its broad outlines the general principles enunciated above. There is a classification of goods into sixteen categories, among which ten are major classes and six sub-classes. The commodities belonging to the higher classes are more valuable and are capable of bearing a higher transport charge. The maxima and minima rates for the classes are as follows :—

TABLE V

Class	Maxima Pie per Md. per Mile	Minima Pie per Md. per Mile
1	•38	•100
2	•42	
2 A	•46	
2 B	•50	
2 C	•54	
3	•58	•166
4	•62	
4 A	•67	
4 B	•72	
5	•77	
6	•83	
6 A	•89	
7	•96	
8	1.04	
9	1.15	
10	1.25	

1.87

In addition to these class rates there are certain commodities which are transported at what are known as schedule rates which are lower than the maxima class rates. The schedule rates in Mysore generally taper as the distance increases and as such they have a telescopic effect. The basis of the schedule rates varies according to the nature of the commodity, though they generally decrease as the distance increases. For instance agricultural implements and machines have rates varying from .30 to .10 pie per maund per mile as the distance increases. Commodities of a lower value such as ores, ballast, sand, etc., have rates which taper from

•20 to .10 pie according to distance. There is also a special type of schedule rates on the Mysore Railways which is applicable only for local traffic within the State. These rates are generally lower than the ordinary schedule rates and are meant to encourage internal transport and trade. Finally special station-to-station rates, which are lower than schedule rates, are quoted for certain commodities which are affected by road competition. These special rates resemble the "commodity tariff" of America and are based on the same principle of overcoming competition of other types of transport.

The passenger fares on the Mysore Railways differ according to the importance of the line and the nature of the gauge. On the metre gauge lines the fares of upper classes *are* higher among the more important sections than among those which are less important from the point of view of traffic. For instance the fares for first and second classes are 18 pies and 9 pies per mile respectively on the metre gauge lines which cross the State boundary and merge with the British Indian Railways. On the other hand they are only 15 pies and 6 pies per mile on the other metre gauge lines which are only of local importance. There is however no difference in this respect with regard to the lower class fares which vary from $3\frac{1}{2}$ pies to $2\frac{1}{2}$ pies per mile according to the nature of the train. On the narrow gauge and Tramways the fares are lower. They are 6 pies and $2\frac{1}{2}$ pies per mile for upper and lower classes respectively. These fares compare very favourably with those of some of the British Indian Railways. For instance the fares on the Mysore Railways are very much lower than the corresponding maxima rates on the M. & S. M. Railways.

GENERAL FEATURES

The rate structure of the Mysore Railways present certain general characteristics. A large portion of the traffic appears to be carried on the equal-mileage scale. Only a small proportion of the aggregate traffic is transported according to

the schedule rates and a still smaller percentage has the benefit of the station-to-station rates. This is not a very desirable feature because the rate structure overlooks the important consideration of diminishing costs in the operation of railways and it discourages long distance traffic. This feature is not, however, peculiar to Mysore Railways but it is true of Indian Railways in general. Mr. Srinivasan points out that the bulk of the Indian rates are on the straight line basis and vary in direct proportion to the distance hauled, and that the cumulative principle is applied only to a few of the lowest classes of commodities.¹ The short haulage on the Mysore Railways need not be a limiting factor for the application of the cumulative principle. For instance, in England the average length of haul is very short and goods are rarely consigned over more than a hundred miles. Still the English rate system is built upon a telescopic basis and the rates decrease with an increase in the mileage hauled. Such tapering rates are very desirable in Mysore for encouraging the external trade of the heavy industrial products of Mysore.

In the second place the system of station-to-station rates should be applied in Mysore to a greater extent than at present. The bulk of the American railway rates are of the exceptional type. Though the general classification of commodities is maintained, in actual practice the rates between any two points, in America, is largely determined by extraneous circumstances.² The station-to-station exceptional rates are desirable for Mysore on account of two reasons, namely, to withstand road competition and to quote appropriate rates for industrial products from the places of their origin to competitive market centres. Bangalore, for instance, on account of its good transport relations may be considered as one such competitive centre in the State. It is therefore desirable that the Railways should quote station-to-station rates from the various industrial centres to Bangalore in order to enable the local products

¹ K. C. Srinivasan, *Railway Freight Rates*, p. 29.

² *Ibid.*, p. 195.

to compete successfully with the imported commodities. The co-operation of the railways, in this respect, is necessary for the building up of industries in the State.¹

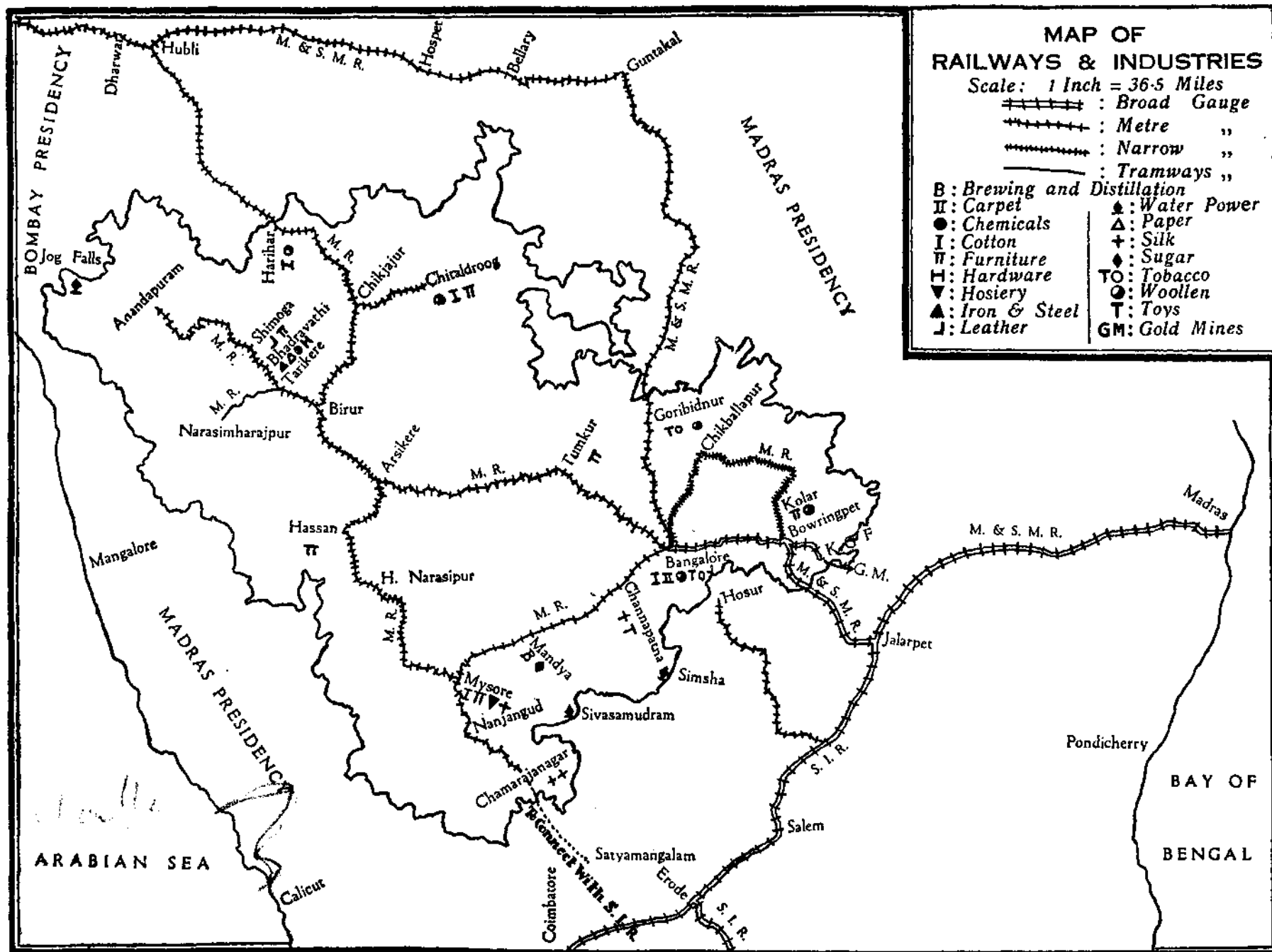
ROAD-RAIL COMPETITION

For the past few years motor transport has been competing most successfully with the railways all over the world. In distances of less than fifty miles it has established its supremacy over the railways. The extreme flexibility of motor transport and its relatively low capital cost are some of the features that are in its favour. Without going into the problem of the fairness of such competition we may try to investigate its effect on railways and the methods of reconciling the two types of transport.

In Mysore the railways have suffered a large diminution in the volume of traffic and earnings due to road competition and the great depression. In 1928-29 the gross earnings of the Mysore Railways amounted to Rs. 88.27 lakhs and in 1934-35 it fell to Rs. 70.49 lakhs.² There was thus a fall of nearly 20 per cent, in railway earnings. Though it is not possible to isolate the effects of the two factors still it is certain that the loss due to motor transportation was substantial. A few effective measures have been adopted in Mysore to meet the competition. Special station-to-station rates, which are lower than schedule rates, are quoted for certain commodities which are affected by road competition. Fast shuttle trains are introduced and they stop at important villages which are intermediate between stations. Fares have been reduced on most of the sections from 3½ pies to 2½ pies for third class travel. Co-ordination of road and rail transport has also been attempted in Mysore. A body known as the Mysore Traffic Board has been established. The Board supervises the motor transport services through a control of licenses and rates. Road powers are granted to the railways, and a

¹ Vide J. C. Bahl: *The Oil-Seed Trade of India*, p. 94.

² H. Rangachar: *op. cit.*, p. 123.



monopoly of road transport is exercised by them wherever the roads run parallel to them. Between Shimoga and Sagar the railways have introduced their own high speed Diesel engine buses and they are working very remuneratively. Further, those District Boards which have been collecting a railway cess for construction of railways have been authorised by Government to utilise the money for the construction of roads and exercise a monopoly of motor transport on them.

With regard to Road-Rail competition it is important to realise that each of them is extremely efficient within its own sphere. Transport by rail is by far the best for long distance traffic. But the road haulage companies skim off the most remunerative part of the available traffic. So it is in the interest of both to effect a scientific co-ordination between them. As Fenelon says, "such co-ordination implies that each form of transport would be used in the economic conjuncture best suited to its characteristics".¹ But the method of co-ordination bristles with difficulties. Co-ordination could be attained only through unification but unification through the preponderance of one form of traffic over another is not desirable. Therefore co-ordination through Public Control is the only satisfactory solution. A Public Corporation, free from political interference and imbued with commercial outlook, should operate them in the interest of the public.

HYDRO-ELECTRIC GENERATION

The generation of hydro-electric power in Mysore was contemplated because of the absence of coal in the State as a source of power, and the existence of great opportunities for the development of water power. Mysore is situated in an elevated position in the southern peninsula of India and is wedged in between the ranges of the eastern and western ghats. The Cauvery Falls, which provide the chief source of potential power in the State lie on the border of the

¹ K. G. Fenelon: *Transport Co-ordination*, p. 67.

Mysore State. The river Cauvery is the principal river in the State and it traverses a distance of 160 miles discharging a colossal quantity of water.

The power potentialities of the falls were envisaged nearly half a century ago and in 1894 Edmund Carrington an electrical engineer applied for a concession for developing the water power at the falls. In 1895 however, the Government of Mysore, with the farsighted vision of its Dewan Sir K. Seshadri Iyer and the technical skill of Captain A. C. G. De Lotbiniere were able to explore the scheme in all its aspects. The chief difficulty at that time was the transmission of power over long distances. As the chief consumer of power was the Kolar mines, about 92 miles away from the falls, there was a certain amount of hesitation in launching the scheme. The technical objection was well within reach of a solution as in the meanwhile great progress had taken place in America regarding long distance transmission.

In 1899 therefore the Mysore Government deputed Captain De Lotbiniere to Europe and America to study conditions personally and obtain expert opinion. In the meanwhile the necessary agreements with the neighbouring province of Madras regarding their respective water rights of the Cauvery were amicably settled and the permission of the Government of India was obtained through the British Resident. By 1900 a contract was given to the General Electric Company of New York for the supply and erection of electric plant. The hydraulic plant for the scheme was ordered from Messrs. Escher Wyss and Co. of Zurich. The whole of the plant for generation, transmission and distribution was ready by 1902 and the commercial service began during July of that year. The total amount of power generated at the outset was 6,000 E. H. P., just sufficient to deliver 4,000 H. P. under contract to the Kolar Gold Mines. The scheme was under the control of the General Electric Co., for about a year after its inception and was subsequently taken over by the Government of Mysore for management. A special

electrical department was formed in that year and the generation of electricity has been under its control since then.

The scheme has developed from its small beginnings to a very large hydro-electric power plant. By the year 1928 the capacity of the plant was increased to 35,000 E. H. P. developing eight times its initial capacity. The seventh installation was complete by 1928. The scheme at the present time is one of the largest in the British Empire and the first of its kind in India. Further additions to the generating plant have extended its capacity to produce 53,000 E. H. P. The cost of the plant and its erection is approximately computed¹ as follows:—

	£
1. Hydraulic Plant	26,500
2. Electrical Plant Generating and Transmission	112,000
3. Distribution Plant	53,000
4. Works in India (Rs. 22,29,000)..	148,000
Total ..	339,500

In 1937 the total capital outlay on the electric scheme including the automatic telephone was Rs. 3,21,41,079. This includes the outlay on all the later installations.

A most significant part of the development in recent years is the large extent to which rural electrification has spread in the State. The remotest and the humblest of the villages have been lit with electric lights. Power is available to the poor farmer and the handicraftsman to lighten their toil. Lift irrigation and power looms are increasing in number. Thus the incalculable benefit of electric power for such industries is being utilized by the State solely for the welfare of the people. It could be asserted with ample justification that in nationalising the water power resources of the State the Mysore Government has acted most judiciously. No private organization could have administered the undertaking

¹ M. Gopalakrishnaiya: *History of the Cauvery Power Scheme*, p. 96, 1932.

with the same spirit of service and extended the benefits of electricity to one and all as the State has done. During the past thirty-six years, due to the cheap motive power, the industrial development of Mysore has materially advanced.

In addition to the indirect benefits conferred on the State, the scheme has also been a phenomenal commercial success. During the first five years of its operation, that is from 1902-1907, it yielded a gross revenue of nearly 80 lakhs of rupees. The net revenue after paying interest at 4 per cent., was at an annual average of 14.1 per cent, on the capital outlay, during the period. The major load during that period was taken by the Gold Mining Companies and so the revenue was essentially from that source. During the next two quinquennial periods the gross revenue was about 87 lakhs and 108 lakhs of rupees respectively. The return on capital, excluding interest, during the two quinquenniums was at an annual average of 8.69 and 8.30 per cent, respectively.¹ Though a considerable portion of the revenue during these periods was from power supplied to lighting and industrial purposes still the income from the supply to the mining companies was substantial. The steady increase in revenue from the mining companies is particularly noteworthy in view of the fact that according to agreement there was a graduated reduction in the rates for power in successive years. That shows the enormous increase in the demand for power from the Gold Mining Companies. There has been a gradual and steady increase in the annual revenue of the electricity scheme excepting on two occasions when there was a mild setback. During the year 1920 there was a decrease in revenue due to a variation in the rate of exchange from 1s. 4d. to 2s. This is because the rates for power for the mining companies were fixed in terms of sterling. Again in 1926 there was a slight decrease in revenue due to the general reduction in power charges and a variation in exchange from 1s. 4d. to 1s. 6d. The net revenue of the Electrical Department in 1936 was Rs. 39,65,299. After

¹ Data for calculating averages taken from *Mysore Gazetteer*, Vol. III, p. 229.

deducting the interest on the total capital outlay it yielded in 1936 a profit of 8.34 per cent.

RATE STRUCTURE IN ELECTRICITY INDUSTRY

The technique employed in evolving rate structures in the electricity industry is extremely interesting, but not easily intelligible to the uninitiated. Therefore a brief study of the underlying principles of rate making in the industry may be undertaken as a prelude to a discussion of electricity rates in Mysore. Electricity industry has two important characteristics which necessitate a complicated system of rates. In the first place storage of electricity is not technically feasible and hence it has to be generated according to the demand for it. Secondly the consumption of electric energy varies from time to time, giving rise to peak and off-peak periods in its demand. Since the industry has to keep itself in readiness to satisfy the peak load it becomes necessary to maintain a large reserve capacity. The industry cannot therefore expect to operate at its full capacity. Nevertheless it can realise great economies through a fuller utilization of its plant. Hence its essential preoccupation is to increase the ratio of the average use to the maximum use. This is a legitimate desire because the cost of generating energy at off-peak periods is very small since only the prime cost need be reckoned with. Hence the primary consideration in electricity rates is to design a variety of rates in order to equalize the use of electricity throughout the day and throughout the year. Glaeser says, "The need of price discrimination is therefore a continuing economic necessity in order to maintain a maximum utilization of existing fixed plant."¹ In technical language the relationship between the average use and the peak use is known as the "Load Factor". It is defined as the ratio of the average power to the maximum power during a certain period of time. An improvement of the "Load Factor" means therefore a better utilization of installed capacity. Another

¹ M. G. Glaeser: *Outlines of Public Utility Economics*, p. 626.

source of economy in the industry is through an expansion of the size of the power plant. Hence in devising rates an expansion of the potential demand for energy is an equally important consideration.

The simplest method of charging is by means of " Flat Rates ". But they are inequitable and uneconomic. They do not differentiate between customers either according to the fixtures installed or according to the energy consumed. Besides there is no incentive to economise. As Jones and Bigham point out " Flat Rates " are only adapted to street lighting and display lighting, because the number and wattage of the lamps and the hours of service are definitely agreed upon in advance.¹ " Metre Rates " on the other hand are based on the amount of energy consumed. They may be either uniform for all energy consumed or progressively decline as the energy consumed increases. But the " Metre Rates " are defective in so far as they do not levy a contribution from the customer for the " service of availability " rendered by the generating stations. In other words the expenses of keeping in readiness to serve the customers to the extent of the energy-consuming appliances installed by them are not reimbursed. Therefore what is known as " Two Part Rates " are devised. They consist of an energy charge and a demand charge. The latter is a charge for the energy that the Company may be called upon to deliver. Two typical forms of this kind of rates are the " Hopkinson Rate " and the " Wright Rate ". The former consists of two separate rates; one based on demand according to the customer's installation and the other on the energy consumed. The " Wright Rate " is ostensibly a single rate but embodies within it a demand charge also. The rate is based not only on the actual energy consumed but on the demand of the individual customer.

The object of the two part rate is to reimburse the company for the two types of costs which it incurs, namely,

¹ E. Jones and T. C. Bigham: *Principles of Public Utilities*, p, 299.

output cost and capacity cost. The latter is due to the maintenance of adequate plant to meet the estimated total demand of the customers at any one time. But there are certain difficulties in the allocation of the demand costs. In the first place the individual demand may occur at off-peak period in which case a demand charge is not justifiable. Secondly, the individual demand cannot be easily measured but only estimated on the basis of the active connected load which depends on the capacity of his fixtures. But then the summation of the individual demands always exceeds the total demand at the central station. This is due to the " Diversity Factor " in electricity industry which is defined as the ratio of the sum of individual demands to the total demand at the point of supply. All customers do not demand energy at the same time. So the customers should not be charged to the full extent of their demand but it ought to be corrected by the " Diversity Factor ". These principles should therefore receive adequate consideration in framing rate structures. Glaeser says, " The diversity factor measures economy in the installation of capacity and hence in fixed capital outlay. The load factor measures economy in the utilization of installed capacity and hence in overhead costs ".¹ There is also a customer charge to recover expenses of metre-reading, etc., but it is not popular as it is too complicated.

The underlying principles of electricity rates are to earn adequate revenues and to distribute the burden equitably among the customers. To achieve these, customers are classified and charged differently. The special costs have to be borne fully by each class and the joint costs are allocated among them on the value of service principle. Such discrimination has no monopolistic motive of earning maximum revenue but is only for utilizing the plant fully. So, referring to Public Utilities, J. M. Clark says, " These services exhibit all the problems of overhead costs and in extreme forms."²

¹ M. G. Glaeser: *op. cit.*, p. 651.

² J. M. Clark: *Economics of Overhead Costs*, p. 318.

ELECTRICITY RATES IN MYSORE

In Mysore, as elsewhere, the principle of discrimination is applied in electricity rates. The consumers are classified according to the purpose for which energy is utilized by them. Power is supplied for lighting and other household appliances at the rate of 4 annas per unit. There is a minimum monthly charge of 9 annas per point of 60 watts per month. In addition there is a metre hire varying according to the capacity of the installation with a maximum of Re. 1 per month. Customers are allowed discounts varying from 5 to 25 per cent, according to their total consumption. In terms of the technical concepts that we have already defined this could be called as a "Metre Rate". The system of discounts gives it a sliding scale effect on the "Block Rate" principle. It combines a minimum charge which also has a relationship with the individual demand. So far the system is in conformity with theoretical principles. A combination of a Metre rate or Wright rate with a minimum charge is recommended by economists.¹ But the addition of a metre hire seems to be inequitable. The object of it is to recover the customer charge but that could be easily done through the monthly minimum avoiding thereby the complicated three-part system. In the case of religious and charitable buildings, power for lighting is supplied at a special rate of 3 annas per unit. Power for cooking and heating purposes is supplied at a straight line metre rate of 1-25 annas per unit. It has also a uniform metre hire of 8 annas per month. The object of this low rate is to encourage the off-peak consumption of energy.

The charges for power for industrial purposes seem to be framed on the "Wright Rate" principle with a sliding scale based on the "Block Rate" system. There is a monthly minimum attached to it but the purpose of it is only to confine the rate schedule to which it applies, to large consumers. The rates decline from 1.50 anna to .60 anna as the rated

¹ E. Jones and T. C. Bigham: *op. cit.*, p. 317.

maximum demand of the customer increases. The rates fall in units of .10 anna as the demand increases in blocks of 100 H. P. A minimum monthly charge of 50 per cent, load factor is applied to these rates. They are also entitled to a scale of discounts rising from 2½ per cent, to 25 per cent, as the individual load factor improves. Small concerns with less than 10 H. P. maximum demand, all flour mills and pumping installations for irrigation purposes have a special rate of 1 anna per unit of energy. Except flour mills the others have no minimum charge, but have to pay a fixed monthly metre hire. Flour mills have to pay a minimum of Rs. 7 per H. P. per month in addition to a metre hire.¹

A comparison of the rates in Mysore with those in other parts of India would be interesting. We can arrive at the lowest charge per unit of power for industrial purposes in Mysore by taking the minimum charge of -60 anna and allowing the full discount of 25 per cent, on it. This gives •45 anna per unit of power which compares very favourably with the rates prevailing in other parts of India. Dr. Anstey points out that at Bombay power is supplied at about -5 anna per unit which is slightly higher than the Mysore rate.² The Punjab scheme in its final stage is expected to supply power at .41 anna per unit.³ It will only be slightly lower than the existing rate in Mysore. Thus it could be claimed that the rates charged for power in Mysore are among the lowest in India. It is not unlikely that the rates in Mysore may be reduced further with an increase in industrialization. As the existing firms improve their load factors and as new firms come into existence the load factor of the central station is likely to improve effecting a substantial reduction in the cost of energy. This is especially true of a hydro-electric plant. As 3. M. Clark says, " Output expenses are reduced to their

¹ Particulars about rates are taken from the Appendices: M. Gopalakrishnaiya: *op. cit.*

² V. Anstey: *The Economic Development of India*, p. 33.

³ *Ibid.*, p. 33.

lowest terms in hydro-electric plants but are fairly substantial where plants burn coal. "¹

FURTHER POTENTIALITIES AND FUTURE POLICY

The hydro-electric resources of Mysore are plentiful. The Cauvery scheme is only one among the several potential sources that have so far been harnessed. The Chief Electrical Engineer in Mysore says, " In addition to a number of hydro-power sites capable of development, the State has four rivers, namely, the Cauvery, the Shimsha, the Bhadra, and the Sharavathi with topography and rainfalls suitable for the production of 225,000 H. P. without infringing on the water necessary for meeting the State's irrigation development programmes."² He estimates that about 80,000 H. P. can be produced on the Cauvery, about 23,000 H. P. on the Shimsha, about 25,000 H. P. on the Bhadra and about 80,000 H. P. on the Sharavathi. The Government have sanctioned a development programme to increase hydro-electric production to 93,000 H. P. during the next five years. Construction of a generating station at Shimsha valley has already started and is nearing completion. On 5th February 1939 His Highness the late Maharaja of Mysore laid the foundation stone for the Gersoppa Hydro-electric power project, at the site of the Jog Falls on the Mysore-Bombay border. The scheme is expected to produce 24,000 H. P. at the first stage of development and is estimated to cost Rs. 150 lakhs. The project is designed in four stages of 24,000 H. P. each and can be executed as the demand for power increases. The launching of the scheme is justified by the enormous increase of demand for power for industrial and lighting purposes which is in excess of the combined capacities of the existing power plants. The present design and layout of the project is based on surveys begun in 1918.³ Hence in view of the

¹ J. M. Clark: *op. cit.*, p. 323.

² S. G. Forbes: *Hydro-Electric Developments, Mysore Dasara Exhibition Magazine*, 1937, p. 36.

³ "Hindu", 5th February, 1939.

fact that there is a prospect of an early development of several generating stations in Mysore, it is necessary to devote some thought to a rational scheme of co-ordination and control of the system. Mysore has no doubt an advantage over other countries like England in so far as there has been a national control of the scheme from the outset instead of a heterogeneous growth under private initiative; but still with a growth in the number of generating stations a well-conceived plan of co-ordination is essential.

The significance of the above plea will be appreciated if a brief account is given about the early growth and the subsequent control of the electricity system in England. From 1880 to 1918 the development of the electrical system in England was under private and municipal control with the result that there was an ill-balanced growth of numerous independent generating plants. Even as late as 1926 there were thirty-two stations responsible for 50 per cent, of the output while no less than 462 small enterprises were required to produce the other half.¹ Such a system is particularly unsuitable for an industry like electricity supply due to certain technical reasons. The demand for electricity from each station is extremely unsteady and varies from small loads to peak loads. Since electricity cannot be economically stored it has to be generated as and when it is required. Hence it entails the maintenance of plant adequate for the peak loads by each station that is working in isolation. Since the average load factor is generally not higher than 25 per cent, of the peak load, nearly 75 per cent, of the plant has to be idle in each station. Therefore the industry by its inherent nature precludes an isolated and disorganized scheme of development

It was to remedy this state of affairs that two Acts were passed in England; one in 1919 and the other in 1926. The 1919 Act embodied the recommendations of the Williamson

¹ Marshall E. Dimock: *British Public Utilities and National Development*, pp. 198-199.

Committee and it created the Electricity Commissioners. The 1926 Act incorporated the suggestions of the Weir Committee and brought into being the Central Electricity Board. The second Act was more rational and thoroughgoing in its effect since it attempted to solve the crucial problem of co-ordinating the scheme. However both the bodies created by the two Acts have continued to function side by side; the first as a judicial and the second as an executive body.

The essential innovation introduced by the 1926 Act is what is known as the "Grid System". As Robson defines it "The Grid is a network or gridiron of high voltage transmission lines covering practically the whole country and interconnecting the large and efficient selected stations, thus enabling generation to be concentrated in these stations and supplies to be tapped off any point at which they are required."³ Through the "Grid" the Board has powers of controlling the generation and transmission of electric energy even though the individual plants continued to be under private hands. One good result of such a co-ordination was a remarkable reduction in capital cost because each station could obtain power from others to meet its peak loads reducing thereby the spare or "stand-by" plants. Robson says, "It may be anticipated that the percentage of spare plant required under *Grid' operation will be round about 20, i.e., 20 per cent, of the aggregate peak load as compared with an average figure of near 80 before 1931."² As a consequence the cost of generation has been reduced considerably and the average price of electricity for all purposes in England has fallen from 2.047d. in 1924 to 1.38d. in 1931. Thus the production and the wholesale side of the supply have been successfully controlled by the C. E. B., though the retail distribution is still left in the hands of private stations with uneconomic results.

At first sight it may appear that the English analogy is not quite apt for Mysore, because there has been in Mysore a

¹ A. Robson: *British Enterprise*, pp. 121, 122.

² *Ibid.*, op. cit., p. 130.

national control of electricity supply from the outset, and as such there exists no heterogeneous system to be rectified. But the significance of the co-ordinating function will be evident when a number of generating stations arise which is likely to happen in Mysore at an early date. Therefore, hereafter the capacity of each prospective generating station ought to be carefully adjusted. Taking the power potentialities of each source as given the size of the plant to be erected in each place ought to be such as to overcome the necessary " indivisibilities " and should not exceed the average load factor. The peak load of each region should be adjusted through a control over the transmission system of the whole electricity supply of the State, by confining extra generation to the large and efficient stations.

A necessary preliminary to such an arrangement is the division of the State into industrial zones. Various factors have got to be reckoned with in doing so. The present industrial development, the future possibilities, and the hydro-electric resources in each area ought to be some of the bases for determining the zones. An estimate of the probable demand for power in each area ought to be made and the plant to be erected in the corresponding water power source should be capable of meeting the average regional demand. The peak loads have to be adjusted from other generating stations. Transmission beyond a point is uneconomical, and so, as far as possible, power should be tapped from neighbouring sources.

Further a progressive State like Mysore ought to realise that power can often initiate industrial development and it should not always wait for industry to demand it. Through a scientific alignment of zones and an efficient system of distribution it will be possible to encourage the rise of several industries, particularly of the small-scale type. If in agricultural areas electric power is brought to the vicinity of the workers, several small-scale rural industries could be placed on a power basis. Much advance has been made in this

direction in other parts of India. In the United Provinces power is sold in bulk to licencees who distribute it to seasonal factories, flour mills and small sugar factories of open-pan type.¹ They have also executed an elaborate scheme of tube-well construction. There are about 1500 tube-wells at a total cost of about Rs. 135 lakhs. The Ganges Canal Grid of the United Provinces has the advantage of low transmission cost for supplying energy for these purposes. Sir William Stampe observes, "The source of power on the Ganges Canal system developed as it is on a series of Canal falls, is located nearer to the field of utilization than is generally the case, thereby avoiding the incurrence of heavy capital charges on long transmission lines from distant mountains to the sphere of utility."²

Thus a well planned and scientifically co-ordinated electricity supply could offer a powerful leverage to industrial development. It is possible to plan the future electricity system of Mysore if an official body is set up consisting of the Chief Electrical Engineer, the Director of Industries and the Director of Agriculture. With mutual consultation they can draw up a scheme for dividing the State into zones and encourage potential industries by an efficient system of distribution of power. Modernizing the method of distribution is much more important than that of generation, because it is reckoned that in England whereas only 40 per cent, of the capital cost is devoted to generation and transmission, nearly 60 per cent, is absorbed by distribution.³ Since Mysore industries are on an electricity basis and not coal basis every attempt to perfect the system of electricity supply ought to be made.

¹ *State Action in Respect of Industries*, Government of India, 1928-35, p. 36.

² Sir William Stampe: Some Aspects of Cheap Power Development under the New Constitution in India: *The Asiatic Review*, October 1938, p. 456.

³ A. Robson: *op. cit.*, p. 106.

CHAPTER VII

STATE AND INDUSTRY

SPHERE OF STATE ACTION

THERE has been no consensus of opinion regarding the nature and extent of State interference in economic affairs. It has been a matter of opinion among thinkers differing according to the exact perspective from which it is viewed. If one believes with Bentham that the sole function of the State is to promote the happiness of the greatest number,, that each individual is the best judge of such happiness and that the self-interested action of individuals tends to maximise the happiness of all, then one is tempted to oppose all types of State interference. On the other hand, if according to Plato and Aristotle, the State is considered as a moral organism, then no type of human activity can escape its surveillance. Between these two extremes, State action has been gradually extended according to the exigencies of circumstances. At the outset the main function of the State was to maintain internal order and to guard against external onslaughts. These two simple functions necessitated further measures and thus in course of time the scope of State interference was greatly extended. During the middle ages the State influence was practically co-extensive with all economic activity in the community. The State went even to the extent of determining prices and interest which are left in the modern democratic community to the free play of economic forces.

As Soltau says it is only in modern times that the problem of State action in economic questions has really arisen.¹ This change in attitude has been the outcome of two essential developments, namely, the appearance of the State as a distinct entity and the genesis of a philosophy of individual

¹ R. H. Soltau: *The Economic Functions of the State*, p. 27.

rights which has begun to resent any kind of State interference. Thus people have grouped themselves in opposing camps standing either for liberty or authority forgetting for the moment that the true solution consists in a convergence of the two extreme tendencies. The State in its ultimate analysis must be construed as an organization to aid human self-expression, so that the individual may have enough freedom to manifest what is unique in himself. Omitting for the moment the psychological and moral implications of such a process, we can envisage the economic structure resulting from such a conception of State action. While permitting free play of economic forces, a certain amount of regulation and guidance by the State is considered inevitable. "Thus" as Soltau says, "it is only in the name of freedom that freedom can be restricted".¹ The State has to go even further than this in respect of certain types of industrial production such as the Public Utility industries. As we have seen in the previous chapter they cannot be left in the hands of profit-making private enterprise. This is because in certain cases private enterprise fails to undertake certain developments which would in the long run yield social gains, and secondly, it is not in the interest of the community to leave such essential social monopolies for private benefit. It is therefore imperious that the State should undertake to supply these vital necessities to the community. But the responsibility of the State in the field of industry does not cease with the control of public utilities. It has to guide the career of private industry and direct it to proper channels. The extent to which the State can go in this direction depends upon the ideology of each State and its local economic circumstances. It cannot be decided on *a priori* grounds. In this respect economic principles lack universal application. We may therefore examine the extent and method of State intervention in Mysore and see if it has done violence to the *laissez faire* hypothesis.

¹ R. H. Soltau: *The Economic Functions of the State*, pp. 42-43.

STATE OWNERSHIP AND MANAGEMENT

In Mysore the role of the State in relation to industry does not cease with the nationalisation of the public utility services. There is also a close contact between the State and the private industries; the degree of relationship varying with the nature of the industry and the exigencies of circumstances. The policy of the State regarding industries other than public utilities has been one of either active participation or indirect support. As we have observed in a previous chapter a number of industries which have no claim to be classed among public utility industries have been brought into existence and worked entirely with Government finances. For instance the Mysore Iron and Steel Works, the Sandal Oil Factory and the Soap Factory owe their origin and existence entirely to Government initiative and finance. In respect of these industries, therefore, there is a full and active participation of Government in the industrial sphere. The economic justification of such a policy is the exploitation of certain existing natural resources which would otherwise lie dormant. The State is interested only in the promotion of these industries and not always in the profit that they yield. This is obvious from the fact that there is a certain sense of readiness to transfer these establishments to private hands after placing them on a profit yielding basis. Therefore the Government takes upon itself the role of an *entrepreneur* in order to make good a specific deficiency. The policy of active participation therefore is to accelerate the pace of industrial progress rather than to create a source of public revenue. In the event of a lack of private enterprise to take over the Government industries they are continued by the State so that they may be made to serve as object lessons. It is therefore obvious that such industries are started neither for their own sake nor for the profits of promotion as it is done by private promoters of companies. Hence there is ample economic justification in Mysore for the policy of active and full participation of the State in industries other than public utilities.

PART-OWNERSHIP BY THE STATE

The State in Mysore plays another interesting part in its relation with private industries. Recently it has adopted the policy of becoming a part owner in private establishments. Under this scheme there is a partial financial and administrative co-operation between the Government and private capitalists. A Joint Stock Company is floated for an industry and a certain percentage of its share capital is contributed by the Government and the remainder is thrown open for public subscription. The Government enjoys no special privileges with regard to the earning of dividends but shares with the private shareholders in proportion to its capital contribution. The subsequent management of such a concern is left to a board of directors constituted by the representatives of the shareholders and the Government. The Mysore Sugar Factory, the Paper Mills and the Spun Silk Mills are examples in point. The degree of Government participation has declined with the maturity of the scheme. Now the participation is only nominal as the Government have succeeded in creating a sufficient amount of confidence among the people. The object of the new line of action is twofold, namely, to inculcate a spirit of enterprise among the *entrepreneurs* of the State by enlisting private co-operation from the outset and to educate private capitalists in the art of industrial management. The method of partial approach as distinguished from full financial participation of the State should not be construed as a retrograde step in the industrial policy of the Government but should be considered as a step in advance, quite in keeping with the industrial progress that has been effected in the State during the past few decades. A policy of partial participation is adequate and appropriate at this stage of industrial advancement as sufficient confidence is created and what is needed now in the State is more a moral support than active partnership. A sufficient amount of industrial consciousness has been created and capitalists are only awaiting avenues of investment.

The time is not far off when even this initial spurt and moral support by the State may be superfluous. Till then, of course, this gesture on the part of the Government is essential. Mysore may very well take credit for the novelty of its method in fostering private industry. It is a new departure in the economic realm.

INDIRECT SUPPORT TO PRIVATE ENTERPRISE—INITIAL ENQUIRY

In addition to the active participation of the State in industries as described in the preceding paragraphs, a large measure of indirect support is also extended to industries which are started and managed purely by private enterprise. The nature of such support is varied. At all stages of their development the private industries can indent upon the services and support of the State. Often the preliminary enquiry regarding a prospective industry is conducted by the Board of Industries and Commerce and the information is furnished to the intending *entrepreneurs*. This type of initial investigation is of far-reaching consequence in a country where the technical knowledge of the *entrepreneurs* is meagre and where specialist firms for conducting such enquiries are absent. Schemes are in the first instance submitted to Government by private agencies or individuals and they are referred to the Board of Industries and Commerce for preliminary enquiry and opinion. During 1935 two such important schemes were submitted, namely, the establishment of a Coffee Curing Works at Chickmagalur and the manufacture of agricultural implements and edged tools.¹ The Mysore North Indian Planters Association suggested the organization of a coffee curing works with a capital of a lakh of rupees. The proposition was gone into all its details by the Board and they recommended that the scheme might be taken up if the planters assured their support. Similarly a scheme for the manufacture of agricultural implements was forwarded by an enterprising individual. The

¹ *Report of the Board of Industries and Commerce: 1935-36*, pp. 7 and 8.

Board considered the proposition and made proposals to the Government. Thus the preliminary enquiry which is an essential requisite in launching an industry is in most cases done by the Government for the benefit of private *entrepreneurs*.

TECHNICAL ASSISTANCE

The organization of a private firm is further assisted by the State through the offer of technical advice in the selection of machinery.¹ The erection of plant on behalf of the private industrialist is often undertaken by the Department of Industries and Commerce. The State even goes to the extent of lending qualified technicians to private industries for the maintenance and successful operation of the plant during the initial stages. A large number of pumping plants in the State have been erected by the officers of the Department of Industries and Commerce. The pumping plants erected by the Department have invariably given good results as they have been erected in consultation with the Department of Agriculture, who report on the suitability of the soil and the adequacy of the water supply. Another industrial venture for which the technical help of the Department is largely sought is the domestic power loom factory. The history of the oil mills in Mysore repeats the same tale. In the year 1930, a confectionery plant was erected by the Department for a private industrialist in Bangalore and the machinery for him was obtained through the Trade Commissioner for Mysore in London.² The table given below gives a classified list of installations put up by the assistance of the Department of Industries and Commerce.

¹ See chapter on *Industrial Finance* for suggestions regarding the levy of fees for technical advice, p. 158.

² *Administration Report of the Department of Industries and Commerce, in Mysore, 1929-30*, p. 3.

TABLE I
List of Installations put up by the Assistance of the Department from 1913-1936

Year	Pump- ing Plants	Rice Mills	Flour Mills	Oil Mills	Tile Facto- ries	Sugar- cane Mills	Other Indus- tries	Total	Approxi- mate cost	Amount of loan sanctioned
1912-13	3	2	—	—	—	3	5	13	Rs. 53,794	Rs. —
1913-14	14	2	—	1	—	4	5	26	1,43,753	55,528
1914-15	6	4	3	2	—	—	7	22	1,50,645	76,912
1915-16	16	3	4	1	1	4	10	39	2,78,220	83,352
1916-17	8	2	2	—	1	2	9	24	1,13,815	42,404
1917-18	4	2	7	3	—	—	11	27	1,33,473	1,85,520
1918-19	1	8	2	1	3	—	6	21	66,620	93,029
1919-20	4	4	3	—	1	—	8	20	96,670	1,23,468
1920-21	—	4	8	—	2	—	6	22	50,230	76,122
1921-22	—	3	—	2	—	—	6	11	52,700	49,935
1922-23	—	3	—	—	—	—	5	8	32,435	41,996
1923-24	3	4	2	—	—	—	6	15	65,375	80,082
1924-25	7	5	7	4	—	—	22	45	2,50,450	48,257
1925-26	10	13	1	5	—	2	15	46	2,42,000	67,352
1926-27	6	17	4	6	1	1	15	46	2,85,700	72,286
1927-28	12	17	4	2	—	—	28	63	2,93,750	73,378
1928-29	24	19	9	2	—	1	12	67	3,15,160	79,116
1929-30	26	11	5	—	—	1	13	56	2,12,950	47,468-10
1930-31	16	3	5	—	1	—	20	45	19,540	65,716
1931-32	4	1	7	—	—	2	4	18	66,610	13,944
1932-33	7	9	2	—	—	1	14	33	92,810	3,920
1933-34	16	4	3	1	—	—	12	36	77,398	77,398
1934-35	5	2	—	1	—	—	2	10	22,450	13,500
1935-36	1	1	—	2	—	1	6	11	38,200	—
Total	190	136	78	33	10	22	249	718	32,25,848	13,93,275

INDUSTRIAL WORKSHOP—REPAIRS AND RENEWALS

One of the reasons for the slow progress of mechanisation in industry and agriculture in Mysore has been the scarcity of facilities for subsequent repairs and renewals of foreign imported machinery. To obviate this difficulty the State has maintained a Government Industrial Workshop which undertakes the repairs and renewals of parts for the machinery erected by it for private industrialists. This has infused a certain amount of confidence among the private capitalists as a mechanical breakdown need not bring their venture to a standstill. A proposal to start an Industrial Workshop in the State was made by the Director of Industries some two decades ago. He considered it as almost the *sine qua non* of a useful department of industries in the State. In 1917 the Government sanctioned the formation of a Central Industrial Workshop in Bangalore and in addition a small Workshop in each district. The object of these institutions was to undertake minor repairs and to provide facilities for practical training to the students of the district industrial schools. In addition to these the Central Industrial Workshop has also undertaken the manufacture of several machines in common use such as essential oil stills, sugarcane mills, etc. Thus the Central Industrial Workshop has proved itself the most valuable adjunct of the Department of Industries in rendering direct assistance to industrial concerns in the State. The commercial results of the concern have not been satisfactory due to heavy overhead charges but still the Workshop has been maintained on account of the invaluable services it renders to the individual concerns in the State.

On the technical side the demonstration of improved methods and processes is another significant feature of State aid to industry in Mysore. A certain amount of mechanical research is being constantly carried on in the various institutions belonging to the Government such as the Textile Institute, the Central Industrial Workshop and the Silk Filature. The results of these researches are demonstrated

to the public either through the peripatetic parties or in the annual exhibitions held in the State. Facilities for adopting these improvements are extended to industrialists "either by means of loaning the new appliance or by granting financial help. Domestic weaving and sugarcane crushing have particularly benefited by exhibitions and demonstrations. The power looms and the steel sugarcane crushers in Mysore have for the most part been introduced by the efforts of the Department of Industries. The process of silk reeling has been greatly improved by the propaganda of the Sericulture Department.

SUPPLY OF MATERIALS AND SALE OF PRODUCTS

We have traced so far the fostering of private industries by the State during their embryonic and infant stages. They are taken care of even during their adult stages by furnishing them with certain essential raw materials which may not be economically secured by the private organizations. The Government of Mysore has arranged to supply duty-free salt to the tanneries in the State. It has considerably reduced their cost of production and is a very desirable form of support to a promising industry. Alcohol is supplied duty-free to the Mysore Pharmaceuticals which is a private firm engaged in the manufacture of medical preparations. Sandal-Awood is supplied at most favourable prices to the wood carvers of the Sorab and Sagar taluks of the Mysore State. The Paper Mills which have been recently instituted in Mysore have been obtaining the requisite amount of bamboo from the Forest Department at a low fixed rate. The State also supplies electric energy at special rates for industrial purposes. Very often free land and occasionally free premises are granted to private establishments. The Paper Mills have been granted a large extent of land free of cost in the vicinity of the Mysore Iron Works. The Government have provided free accommodation in the old distillery buildings at Bangalore to a private firm for the manufacture of electric materials.

Regarding the disposal of their products the private industries once again look forward to the State and their appeal is met by an assurance by the Government to purchase the locally manufactured goods, whenever they satisfy the required specifications. The Government have held out a promise to the Mysore Paper Mills to purchase paper from them to the extent of their requirements. The Mysore Lamps, Ltd., which is a public limited company floated with a capital of Rs. 5,00,000 have similarly been assured that electric lamps for the use of the Government Departments will be largely purchased from them. This goes a long way in relieving the strain on the concerns as the securing of a market is a greater ordeal at present than the execution of an industrial scheme. The Government Arts and Crafts Depot at Bangalore attends to the disposal of the artistic wares manufactured by craftsmen and some of the products of the cottage industries.

The Trade Commissioner for Mysore in London has been giving valuable assistance to firms in Mysore in securing a market for their products either in Great Britain or on the Continent. He deals with commercial enquiries and other matters concerning Mysore trade in England and Europe. Through the Trade Commissioner, Mysore participates in the British Industries Fair held in London with a view to find a foreign market for its artware. The Trade Commissioner for Mysore in London is thus a valuable liaison factor between the local producers and the external markets. He has been responsible for several important business connections between Mysore and England.

STATE LOANS TO INDUSTRY

The loaning of initial and working capital which is often known as industrial "Takavi" is liberally granted to private concerns. From its inception the Department of Industries and Commerce has been empowered to make loans to prospective establishments. The loan is returnable to the

Department in easy instalments as soon as the concerns begin to function. Such financial help is a great fillip to industry where enterprise is not combined with capital and where the idea of Joint Stock Company has not gained a foothold. A tabular statement of the administration of "Takavi" loans in the State is attached to the chapter on Industrial Finance. The statement furnishes the details regarding the financial help rendered by the State to private industry. There is no gain-saying the fact that a substantial part of the industrial edifice in Mysore has been constructed with the capital lent by the State in the form of industrial "Takavi". Different types of industries such as rice mills and sugarcane crushers have availed themselves of the opportunity. Sometimes the State also guarantees the advance of industrial loans made by private banks. In a country where industrial banking has not adequately developed the "Takavi" system fills a vital gap.

The system of State financial aid to industries has also been attempted in several provinces in British India but it has not yet succeeded there to the same extent as in Mysore. The fifth Industries Conference held at Simla in 1933 came to the conclusion that except in some Indian States the larger loans had nearly always been unsuccessful.¹ They also made a noteworthy recommendation, namely, that the loan procedure should be as expeditious as possible and that there should be less rigidity in its working. Mysore may with benefit adopt these recommendations.

PIONEERING AND DEMONSTRATION FACTORIES

In Mysore the policy of starting pioneering and demonstration factories has been very effectively put into practice. As recommended by the Industrial Commission, such factories have a salutary effect on industrially backward countries. By cutting new ground the pioneering factories create an industrial awakening and provide sufficient leverage for private enterprise. The demonstration factories serve as

¹ *State Action in respect of Industries*, 1928, pp. 35-43.

object lessons and have a marvellous educative influence on the public. The latter are started not with an object to show to the public that similar private concerns would be successful but to train people engaged in small industries, in modern methods of manufacture. The Soap Factory and the Metal Factory in Mysore are examples of pioneering industries. They were started with the express understanding that sooner or later they ought to be handed over to a private agency. The Metal Factory was accordingly transferred to a private body. Though the Soap Factory has not yet been handed over still the purpose of starting the concern is obvious. The object of it has been amply fulfilled as a number of small private soap factories have been started in the State and the possibility of manufacturing soap in Mysore has been proved beyond a doubt. The Government Textile Institute was started as a demonstration factory and its influence has been largely responsible in saving the handloom weaving in Mysore from extinction. The Institute imparts instruction in handloom weaving, and in 1936 there were 40 students undergoing training. The average expenditure per year for technical training in the Institute is Rs. 9,900 and the average cost per student is Rs. 247 per annum.

Pioneering and Demonstration Factories are also in existence in British India. The Kerala Soap Factory in Madras Presidency is the only existing pioneer factory in the strict sense of the word. In the United Provinces, there are two demonstration factories attached to the Harcourt Butler Technological Institute, one for sugar and the other for oil.¹ A demonstration weaving factory was started at Shahdara in 1928 and it has training classes for apprentices. Thus the principle of starting pioneering and demonstration factories which was first adumbrated by the Industrial Commission has been adopted all over India but Mysore made an earlier beginning than other parts of India.

¹ *State Action in respect of Industries* (Government of India), 1928-35, p. 44.

TECHNICAL EDUCATION

Last though not least are the facilities created by the State for technical education. One of the fundamental measures for the preparation and improvement of the industrial personnel is to impart a well conceived course of technical and industrial education. A technically qualified intelligentsia is an essential requisite of industrial progress in a country. All other measures for accelerating the pace of industrial progress would be largely frustrated if an efficient man power to work the wheels of industry is lacking. The Russian five-year plans, it is said, had to pass through two bottle necks, namely, the absence of an intelligentsia and the crude condition of its transport facilities. The achievement of the first five-year plan in Russia most vividly demonstrated the deficiency of the intelligentsia and the extent to which it was responsible in retarding the progress of the plan.

Hence it is extremely important to decide at the outset the nature and extent of industrial education for each country. To a large extent it ought to actually precede industrial development so that the human factor of production may be available to an adequate extent. To an equally great extent technical education ought to be capable of a certain amount of adaptation to keep in harmony with the changing industrial circumstances. No rigid formulae could be followed in respect of such education. The scheme of industrial and technical education has got to be adjusted according to the peculiar needs and circumstances of each country.

Mysore has a large number of peculiar characteristics in respect of its industrial structure and as such it needs a system of technical education suitable for its requirements. There has been no industrial revolution in Mysore as in England or Japan but on the other hand it has been witnessing a gradual evolution in its industrial organization. The cottage industries are retaining their vigour and vitality as

ever and they promise to occupy a significant place in the future structure of industry in Mysore. Agriculture may never yield its place of prominence to manufacturing industry and as such the development of rural industries to provide subsidiary occupation to the farmers has to be reckoned with. Besides the twentieth century is witnessing a rapid growth of large-scale industries in Mysore which calls for technical education of a very high order. Hence Mysore needs a scheme of industrial education that is peculiar to itself instead of being merely a replica of the schemes elsewhere.

So far we have been using the terms technical and industrial education rather loosely. In common parlance the two are often used as synonyms, but a distinction ought to be drawn between them. But an exact line of demarcation between the two is rather difficult to draw and at best only a hazy boundary line is perceptible. Writing of British India Clow says " It is convenient here and follows a fairly common practice to restrict technical education, education however elementary it may be, mainly or exclusively directed to the more organized branches of industry, *e.g.*, engineering, mining, and to regard as 'industrial education' training of however high a standard, directed to unorganized branches of industry such as crafts and cottage industries " ¹ In practice, however, the schools are not well defined and often the two objectives appear to merge in one institution. Still it is advantageous as far as possible to treat the two types of training as fundamentally different in giving effect to a scheme of specialised education.

Industrial Education in Mysore has been under the control of the Department of Industries and Commerce. This tendency of placing industrial education under the control of the Industries Department instead of the Education Department is characteristic of the neighbouring British Indian provinces as well. The Industrial Commission recommended such a transference with great emphasis because a sound

¹ A. G. Clow: *The State and Industry* (Government of India), p. 45.

correlation between specialised education and the requirements of industry had to be secured. And in the opinion of experts such a correlation could be achieved with great facility under the administration of the Industries Department than under the Department of Education. Institutions of collegiate rank, however, are under the control of the University.

There are nine industrial schools maintained by the Department of Industries and Commerce and two more institutions of a slightly advanced nature, namely, the Chamarajendra Technical Institute at Mysore and the Government Weaving Institute at Bangalore. The nine industrial schools are situated in various districts of the State, where cottage industries are flourishing and the need for special training is keenly felt. The subjects taught in the industrial schools are usually smithy, carpentry, weaving, lacquerware manufacture and sandalwood carving. The subjects chosen for instruction in each school is largely influenced by the requirements of the district in which the school is situated, and according to the type of cottage industry that is flourishing most in each locality. For instance sandalwood carving is taught at the Industrial School at Sagar, a place known for its sandalwood carving from time immemorial. Similarly at Chennapatna which is famous for its lacquerware manufacture, the industrial school trains students for the use of power driven lathes and the preparation of new lacquerware compositions. Thus a real impetus is given to the development of indigenous cottage industries by a judicious adaptation of the type of training in each school to the needs of the locality.

The main objective of these schools is to train artisans in various handicrafts so that they may be equipped with the necessary knowledge and skill to continue and develop the various cottage industries. Emphasis is placed on the improvement of the manual dexterity and the personal skill of the workers. The training that is imparted is mostly non-academic in character and the maximum stress is laid on

practical training. The students are acquainted with the cost aspect of their work at the later stages of their training. Another laudable feature of these schools is that after the usual period of three years' training some of them are employed in the institution itself on regular wages so that they may gain experience in handling real work orders. The school undertakes the sale of the articles manufactured by the trained students. The total output in 1934-35 in all the nine industrial schools, of articles manufactured for sale was valued at Rs. 26,151-12-11.¹

The two other institutions namely The Chamarajendra Technical Institute and the Government Weaving Institute are of a specialised character. They are in the nature of Trade Schools organized for a special purpose. The Chamarajendra Technical Institute at Mysore manufactures artistic furniture and trains students in furniture making and ivory inlay work. The Government Weaving Institute imparts instruction in handloom weaving and also engages itself in peripatetic activities. A certain amount of practical research in the field of handloom industry by designing new methods and appliances of weaving is undertaken by the Institute.

There are four aided industrial schools in the State in addition to those maintained by the Government and they receive annual grants from the Industries Department. They are organized and maintained either by the munificence of philanthropists or conducted by the Missionary activities in the State. Another special feature of industrial education in Mysore is the organization of Home Industries classes for women. The women are trained in useful arts and handicrafts such as embroidery, lace making and other types of needlework. The Department of Industries makes an annual grant to these institutions and lends the services of trained women instructors. During 1934-35 a total grant of Rs. 8,054 was made to these home industries classes. At this

¹ S. G. Sastry: *The Cost of Industrial Education* (Mysore), p. 3.

stage the presentation of a few figures in order to ascertain the cost of industrial education in Mysore will be illuminating. The table given below shows the number of students trained, the average expenditure, and the cost per student in the various industrial schools in Mysore:

TABLE II

*Table showing Cost of Industrial Education per Student
1935*

No.	Schools	Number of Students	Average* Expenditure per year			Cost per Student per year		
			Rs.	A.	P.	Rs.	A.	P.
1	Chamarajendra Technical Institute ..	285	39,150	0	0	137	8	0
2	Government Weaving Institute ..	40	9,900	0	0	247	0	0
3	Industrial School at Hassan ..	44	6,676	0	0	151	11	0
4	Industrial School at Chickmagalur ..	62	6,086	9	0	98	3	0
5	Industrial School at Shimoga ..	36	5,777	5	0	160	7	0
6	Industrial School at Chitaldrug ..	66	5,351	0	0	81	1	0
7	Industrial School at Chennapatna ..	141	9,766	5	0	69	4	0
8	Industrial School at Sagar ..	35	4,781	11	0	136	10	0
9	Industrial School at Doddaballapur ..	37	6,471	10	0	174	14	0
10	Industrial School at Gudibanda ..	30	3,683	5	0	122	12	0
11	Industrial School at Nelamangala ..	31	2,117	8	0	68	5	0
	Total ..	807	99,761	4	0	131	9	9 (average)

* This includes only Establishment and Overcharges, and Scholarships paid—Three Years' Course.

A further proof of the interest evinced by the Government of Mysore in industrial education may be obtained by a study of budget figures and the total allotment for education. The revenue of the State from 1901-1935 amounted to Rs. 98,90,39,409 and out of this a sum of Rs. 9,89,23,666 has

been spent during the period on education in general. That means out of the total State revenue nearly 10 per cent, is spent on education. The amount spent on Industrial Education alone during a period of 35 years is reckoned at Rs. 88,07,225 which is approximately 9 per cent, of the grant for education in general.

Apart from industrial education, facilities are also created in Mysore for technical education of a high order. The Engineering College in Mysore State which is one of the constituent Colleges of the Mysore University has special courses in Civil and Mechanical Engineering. The expenditure on the Engineering College during the period 1917-35 has been Rs. 20,29,826 out of a total University grant of Rs. 1,45,29,847. For technical education of a still higher order students are deputed to foreign countries as State Scholars. An annual grant of Rs. 50,000 is being made to the Indian Institute of Science for the facilities granted to the training of Mysore students and for the technical research done by the Institute on behalf of the Government of Mysore. Occasionally grants are also made to other Indian Universities such as the Benares Hindu University for imparting certain types of technical education to Mysore students which are not available in the State. Thus the scheme of industrial and technical education in Mysore is well adapted to its needs. There is no dearth of technicians. A steady supply of artisans and foremen is assured from the Government and aided industrial schools. This is an essential condition for sound industrial progress. For higher technical qualifications persons are trained both within the State and abroad.

AN APPRAISAL OF STATE ENDEAVOUR

An appraisal of the State industrial policy in Mysore is no mean task. It is not with any intention of awarding praise or blame that we attempt at this stage to evaluate the results of the policy pursued by the State. On the other hand, if we take stock of the achievements, the onerous

problem of formulating a future policy is facilitated. It is with that object in view that an enquiry will be made here to examine the merits and shortcomings of the policy of the State in relation to industry. The problem of industrialisation has been attacked on many fronts and the resulting scheme of State support is fairly comprehensive. The rapidity with which the conversion of a rural economy into an industrial order has been effected is impressive and striking. It is noteworthy that in spite of the absence of that most effective weapon in the armoury of the State, namely, the power of fiscal manipulation, Mysore has been able to make substantial progress towards an industrial regeneration.

In deducing any general conclusions about the successful operation of the economic mechanism in Mysore, we are confronted by two difficulties namely, the incessant pressure of the Economic theorist to adhere to a policy of liberalism, and the inherent desire on the part of every nation to exploit its natural resources to the fullest extent. The Economist warns us that the capitalistic system is rendered inflexible by constant State interference and attributes all the rigidities of present-day capitalism to external influences. But all the same the world is tending more and more in the direction of interventionism in economic affairs. The nations no longer conceal their readiness to intervene in economic affairs in order to pilot their State towards a desired end. The two objectives appear at first sight to be incompatible and irreconcilable. It is important to realise that two things are essential to maintain Capitalism in all its purity, namely, international co-operation, and a complete surrender of economic development to individual judgment. The former factor will not be available so long as the aims of national development are opposing and conflicting. If the ideological bases of national structures differ, true international co-operation is not feasible. The latter, namely, a complete surrender of economic issues to private judgment would compel the State to navigate an unknown sea and the political mechanism

cannot function efficiently. Besides on sociological grounds also certain types of State intervention may be necessary, such as a graduated scale of income-tax or labour legislation. Even these may affect economic freedom and differentiate against certain types of economic activity. Hence complete economic freedom is unthinkable. So what is vital to solve our problem is to determine the degree of State interference which is compatible with the greatest possible degree of individual economic efficiency. It is no longer possible to conceive of complete *laissez-faire*.

However, we should not fail to recognize the fact that a State is not infallible. It is as human as any group of individuals. Like every human institution the industrial organization sponsored by the State in Mysore has its own blemishes. But just as light and shade are both necessary to make a portrait similarly success and failure are incidental to evolution, and each serves as a corrective of the other. Still in the case of a Government enterprise a failure stands out in clear relief whereas a private failure may go unnoticed. As Prof. D'Souza¹ says, " Naturally, a Government in business gets little credit for its successes and more than its meed of discredit for its failures, for, the general maxim seems to be 'more business in Government and less Government in business '." Public criticism stigmatising the State for a wrong utilisation of public revenues has to be faced and the State also feels guilty of having jeopardized private enterprise even though it may be for a temporary period. Hence usually a sense of conservatism characterises State policy towards industry. That on balance Mysore has avoided these dangers and has steadfastly followed a policy of judicious reconstruction is praiseworthy.

SOME EARLY FAILURES

There is no doubt that certain initial attempts by the Government have not been met with adequate success. The

¹ V. L. D'Souza, *Economic Development of the Mysore State*, p. 25.

career of the Mysore Tannery is an example of such a failure. In the year 1912, 50 per cent, of the share capital of the concern was taken over by the Government and attempts were made to manufacture suitable leather for exportation to European markets. The first set-back that the concern had was when the Government of India placed an embargo on the exportation of leather which necessitated the finding of a local market for its products. The financial interest of the Government in the concern was to the extent of Rs. 53,000 and with heroic efforts the Tannery was made to yield profits during the years 1918 and 1919. In 1920 Messrs. Chari and Co. were appointed as the managing agents of the concern. The year 1921 had forebodings of a period of bad time for the Tannery. The continued depression in the leather trade necessitated the employment of an American expert to improve the quality of its products. A change of managing agency occurred in 1924 and Messrs. Best and Co. of Madras took over the establishment. Mr. Tigh, the General Manager, effected enormous improvements and almost lifted the concern from the slough in which it had got itself entangled. But the ill-fated industry experienced fresh troubles in the shape of unfavourable exchange rates and stocks began to accumulate. The Tannery had to suspend operations in 1925 due to the unfortunate demise of Mr. Tigh, its General Manager. However recently operations have been resumed, once again under a change of management.

Thus due to one reason or other the concern has continued in a state of suspended animation. The causes of its failure are both internal and external. When market conditions were favourable it was not efficient on the technical side, and when technical experts were employed certain extraneous circumstances disturbed its career. Besides frequent changes in the managing agents did not permit the adoption of a sound and steady policy.

The crushing of sugarcane and the conversion of the juice into jaggery under mechanical conditions was one of

the earliest attempts of the Department of Industries. A sum of Rs. 25,000 was earmarked in 1912 and machinery for the purpose was erected in three centres, namely, Saggere, Haravu and Kunigal. The installation of a steam heating plant at Agaram was a novel experiment attempted by the Government. For various reasons these methods were not taken kindly by the people. Prejudice no doubt played a significant part in retarding its progress. But all the same the technical and economic defects of the experiments ought not to be overlooked. The sugarcane was not always available at an economic distance from the crushing plant and hence the farmers found it unprofitable to transport it. Besides the cost of conversion into jaggery was neither uniform nor as cheap as it was under the indigenous process. The experiments were also not quite successful on the technical side. The steam-heating process at Agaram had to be completely given up. The overhead charges were also fairly high as the plant had to lie idle for most part of the year due to the want of a steady supply of cane. Thus due to various reasons the people lost confidence in one of the pioneer attempts of the Government. Till this day the hopes of the Government in this direction has not been realised.

Among the larger concerns the Mysore Iron Works has been the target of incessant criticism from the public. However well founded the criticisms may be, this is an undertaking that stands on a different footing from the two previous experiments described above. It is no doubt a fact that an investment which runs into significant proportions has not yielded adequate returns over a fairly long period. But this is not due to any errors of omission or commission on the part of the Government. On the other hand certain fortuitous factors are responsible for it and the concern is evincing extraordinary powers of adaptation to overcome it. So we will not be far wrong if we say that the concern is more sinned against than it deserves. It is an undertaking whose results cannot be judged within a short period. With the

recent structural changes the concern may be expected to yield good results in the future.

If a few attempts have failed many more have succeeded and the State policy could be appraised only in the light of the net results achieved. The manufacture of soap, sandal oil and sugar are some of the outstanding successes which have made Mysore famous. Within three decades Mysore has developed into an industrial country of no small importance. Without the entrepreneurial leadership of the State it is doubtful if such a progress could have been possible. Moreover the Government have done as much justice to small and decadent industries as to large and promising industries. For example extraordinary fillip has been given to hand spinning through the establishment of spinning centres. In 1927 Government approved a scheme prepared by the All India Spinners' Association for starting hand spinning at Badanval as a subsidiary occupation for agriculturists. The capital expenditure and working cost for financing the operations connected with the purchase of cotton, advances to spinners, etc., were borne by the Government. The experiment was showing signs of success from the very outset. It was yielding an income of an anna per day for a woman spinner working four hours a day and Rs. 7 per month for a weaver working about three hours a day. Thus hand spinning as a subsidiary occupation has practically been revived at Badanval and the neighbouring villages. Though the income yielded by hand spinning may appear insignificant still it is a substantial supplement to the family earnings. The success of the experiment at Badanval has led to the establishment of spinning and weaving centres at three other places, namely, Gundlupet, Terakanambi and Tagadur. The credit of having revived this disappearing industry is due to the initiative and financial support of the Government.

CONCLUSION

By way of concluding this chapter we may recapitulate the underlying principles of State aid to industry and see to what

extent the State action in Mysore is in conformity with them. The primary assumption of any kind of State intervention in industrial affairs is that the initial loss of the tax-payer would be more than made good by the ultimate gain to the consumer. This assumption would turn out to be true only when a proper choice of industries is made. The industry must have a bright prospect of success as judged by the raw material resources, labour, machinery and scientific technique. The industry must be capable of developing the unutilised resources of the State. In such an event the community is more than reimbursed in the long run. But the State may also have to undertake certain industries at a permanent loss to the community. The key industries, food industries and defence industries have to be carried on in the interest of the nation irrespective of their yield. Finally the State has to intervene in order to evolve an economy that is consistent with the aspirations of the community. In other words a servile State which exports only agricultural products and depends upon imports of foreign manufactures stands in need of State aid for turning the balance. The expense involved in developing industries through bounties and subsidies has to be borne as an indirect tax by the community. Thus these are the three fundamental considerations for State intervention. But the State should safeguard against certain contingencies in adopting the above policy. There should be no unfair competition between the State and the private industrialists. It may occur when the State selects for operation an industry which is likely to be undertaken by private initiative. Next, all unfair discrimination in favouring certain industries as against others must be avoided. The competitive mechanism should be allowed to function in the normal way. Finally State management, being more expensive and less elastic than private ownership, should only be of a temporary character. For instance in Japan the State has taken the initiative in starting and developing several economic enterprises, but it has always regarded it as desirable to

transfer them in due course to private hands. In 1880 a law was enacted in Japan, for the gradual transference to private owners, of all the establishments started by Government.¹ Hence industries started by Government should be made over to private management as opportunities arise. Such a conception of State action is in conformity with the individualistic hypothesis. The individualist State has a twofold basis, namely, a person's individual right to the free use of his own powers and possessions and his social right for the co-operation of others to secure certain common benefits through concerted action. The latter consideration is the chief justification of State intervention in an individualistic society.

In its broad outlines the industrial policy of Mysore is based on the sound principles enunciated above. Both in the choice of industries and their subsequent conduct the accepted principles of intervention are applied. Injurious interference with private enterprise is scrupulously avoided. In fine the capitalistic system is maintained, and no violence is done to the individualistic hypothesis.

In conclusion a few points may be emphasised before closing this chapter. At its present stage of industrial development, Mysore is in need of three important measures. The collection and dissemination of industrial statistics and information is of vital necessity. It would be of great benefit to the industrialists for pursuing their business on a rational basis. The establishment of organized industrial research may be mentioned with equal emphasis. What is being done now by individual concerns has to be well co-ordinated and systematised. Lastly there is a need for a better system of marketing organization in the State, particularly for the small-scale industries. These are measures which the State alone can initiate.

¹ H. G. Moulton: Japan, *' An Economic and Financial Appraisal," p. 313.

CHAPTER VIII

EXTERNAL TRADE

IN the theory of pricing the space element is as vital as the time element. Still it received only a meagre attention from the earlier economists.¹ An unequal distribution of productive factors over space necessitates an adaptation of economic activity to suit each area. Hence the space aspects of the price mechanism need adequate elaboration. The theories of inter-regional and international trade have been developed to effect such an extension.

NATURE OF INTERNATIONAL TRADE

The primary cause of regional specialization in production and consequent exchange of commodities, is the difference in the endowment of economic agents between different areas. They are relatively immobile and thus determine the nature of economic development in each region. Those commodities will be produced in each area which incorporate a large proportion of the factors that are available in abundance and a relatively smaller proportion of the scarce factors. Trade rounds up the process and equalises factor prices through commodity exchange. As Ohlin says: "The mobility of goods to some extent compensates the lack of inter-regional mobility of factors."² International trade is the chief application of the general theory of inter-regional trade. Nations are the most tangible regions and hence trade between them has certain distinctive features. Political barriers and differences in monetary mechanisms render factor mobility more difficult. However, trade between nations overcomes the relative immobility and the non-divisibility of factors of production.

The classical explanation of international specialization of production was based on the "Theory of Comparative Cost".

¹ B. Ohlin, *Interregional and International Trade*, pp. 3 and 4.

² *Ibid.*, p. 42.

The classical theory involved, however, two implications which are untenable in the light of modern analysis. Real costs were expressed in terms of quantities of labour-time which cannot be reconciled with more recent cost analysis. Besides, the classical school assumed that all labour was of the same quality and that it was an absolutely mobile factor of production. But, as Haberler says: "In reality, some of these assumptions are never true and some are not always true, so that the 'Labour Theory of Value', at least in its simplest forms breaks down."¹

A second assumption of the classical economists was a rigid and uniform combination of factors of production. But as Ohlin has pointed out there is a tendency for the minimum cost combination to be chosen. He indicates that if the factors were completely divisible they could be combined in any proportion irrespective of their absolute quantities.

Under such circumstances an optimum proportion would exist but not an optimum size.² Ohlin is the most outstanding and vigorous critic of the doctrine of Comparative Costs. "Ohlin is correct," says Viner, "in his claim that the doctrine of Comparative Costs when expounded in terms of a single factor or of fixed and uniform combinations of the factors, cannot serve effectively to explain the influence on the course of international trade of the differences in the proportions in which the different factors enter into the production of different commodities and the differences as between countries in the relative abundance of different factors."³

Some of these shortcomings of the classical exposition are overcome by the substitution of the opportunity cost conception for the doctrine of comparative real cost. The assumptions of the Labour Theory of Value have to be given

¹ Haberler: *Theory of International Trade*, p. 126.

² B. Ohlin: *op. cit.*, p. 53.

³ Jacob Viner: *Studies in the Theory of International Trade*, p. 502.

up because, in reality, there are a large number of different factors of production; some of them being specific to a particular industry, It is no longer possible to conceive of labour as one homogeneous factor of production. Therefore Haberler¹ thinks that a more plausible method of approach is to ascertain the marginal substitution-ratio, of all the available factors in a country, between different lines of production. This ratio differs between different countries and thus induces them to specialize in the production of certain commodities and trade with one another. For instance, Country 'A' may have a better opportunity-cost ratio for the production of tea instead of linen and conversely Country 'B' may have a better ratio for the production of linen instead of tea. Hence the fundamental point of analysis is to determine at the outset the production-indifference curves for each country as between different commodities. The slope of the tangent to such a curve will represent the relative marginal productivities of factors between different commodities. The allocation of the factors of production between different products will be determined by the relative scales of output. The exchange-ratio of the two products in each country will be equal to the substitution-ratio between the different products. It is claimed that this line of approach is better than the classical form of the doctrine of comparative cost because it allows for the utilization of various factors of production and for their use in variable proportions. Under foreign trade each country will import those commodities in the production of which it has a relative disadvantage, and export those in the production of which it has a relative advantage. The result is that consumption in the community will be at a higher level with a greater total utility.

A significant corollary of international trade is the localization of industries in particular nations. Industries get regionally localized either at Consuming Centres or at the

¹ Haberler: *Theory of International Trade*, Chapter XII.

sources of raw material supply. If the raw materials are bulky and of a weight losing character they are "raw material localized". On the other hand if the raw materials are light and go into the finished product in a large proportion they are "market localized" ¹ This general theory of localization is applicable with equal cogency to localization of industries as between different nations, except for the fact that obstacles at national borders may render "transfer relations" less intimate. International specialization of industries therefore is in the first instance a function of good "transport relations". They atone largely for the paucity of raw materials. Hence the nature of "transfer relations" is the chief determinant of the character of industry and trade. The efficiency of productive factor equipment may in its turn atone for unfavourable transfer relations. Thus the two forces act and react on each other in influencing industrial concentration in different nations. Particular instances of localization are explicable therefore only in terms of the relative determining influence of the two forces.

Finally an appraisal may be made of economic benefit accruing to nations as a result of international trade. It is not feasible to make an estimate of the total gain to a nation through foreign trade. On the other hand a more plausible method is to evaluate theoretically the effects of facilities and hindrances to international commodity movements. The volume of available goods for different countries varies in inverse proportion to the obstacles at national frontiers; and its magnitude at any particular time may be taken as a fair index of a nation's gain through foreign trade. Under conditions of trade between nations there are also greater opportunities for a more scientific adjustment of the productive mechanism to the local factor-equipment. Technical coefficients may be combined in optimum proportions achieving thereby an increase in national income. Factor prices tend to be even between nations and costs of production

¹ Ohlin: *op. cit.*, p. 255.

approach equality. In fine the volume of world output increases as a result of international trade.

FREE VS. RESTRICTED TRADE

Having set out the theoretical aspects of international trade we may now examine the extent to which scientific principles are applied in actual practice. It appears extremely paradoxical that what is considered to be intellectually sound is feared to be empirically unsound. Though there is a general consensus of opinion regarding the essential benefits of free trade, still the world is tending more and more towards restrictionism in various forms. The heyday of unfettered trade came to an end during the second half of the last century. With the reimposition of duties by Bismarck during the seventies of the last century a new era in protectionism commenced. Though Bismarckian policy may have been partly a political manoeuvre, still it had a favourable intellectual atmosphere in the teachings of the German Historical School, based largely on the "infant industry" argument of Friedrich List.

The initial impetus has only gathered greater momentum during subsequent years due to a series of events which have distorted human judgment. The War and its aftermath deprived industry of much of its flexibility. The Great Depression has exaggerated these tendencies. Naturally human ingenuity has framed all sorts of novel and fantastic forms of restrictions amounting to a sort of self-frustration as Professor Robbins observes, destroying with one hand the riches which the other has created.¹ The most modern among the devices in the economic sphere for nullifying freedom of trade is the quota scheme. "The use of quotas" says Van Zeeland, "appears from experience to be one of the most formidable obstacles to the development of international trade".² In the sphere of finance restrictions regarding the

¹ L. Robbins: "Improvement of Commercial Relations," *Carnegie Endowment*, p. 27.

² Monsieur Van Zeeland: *Report on International Trade*, 1938, p. 35.

transfer of capital and of commercial payments have been extremely harmful to international trade. In short ingenious devices are contrived to counteract the progress of science in annihilating distance.

An inquiry into the rationale of such reaction bristles with difficulties. A greater part of the spirit of restrictionism appears to have been engendered through the conflicting ideologies of modern nations. The ultimate aims of the politicians have their economic counterpart and different degrees of national isolation have resulted, having 'autarchism' as their extreme form. Legitimate clash of interests between the nation and the world are few and far between. It is either the opposing ideals or the methods of achieving them that are responsible for the centrifugal tendency among modern nations.

After the foregoing preamble it is not difficult to set out the virtues of a liberal trade policy. If the maximisation of the social product is accepted as a criterion of national prosperity, then liberalism is a scientific technique *par excellence* for achieving it. Free trade allocates the factors of production among industries in a manner most conducive to their maximum productivity instead of retaining them in an employment where their yield is less. Exposure to foreign competition may mean the ultimate ruin of certain weak industries but yet the non-specific factors engaged in them may then find a more profitable employment compensating for the loss of specific factors. Hence as Haberler says, there will not be a diminution in the size of the national dividend.¹

Free Trade has the unique quality of shaping the structure of industry on rational lines. Wherever non-divisibility of factors is a significant characteristic it is through free trade that the optimum size of the production unit can be attained and all the internal economies realised. Given certain transport relations and factor equipment an intelligent conduct

¹ Haberler: *Theory of International Trade*, p. 222.

of economic affairs is feasible only in an atmosphere of free exchange of commodities between nations. It is obvious therefore that the doctrine of free trade has the greatest scientific value, and as Taussig says, however widely it is rejected in the world of politics, it holds its own in the sphere of the intellect.¹

A refutation of some of the essential arguments of protection may illuminate the situation further and banish all misgivings. Considerations of space, however, prevent a fuller presentation of the protectionist fallacies. Among the non-economic reasons for protection the underlying fact seems to be the maintenance of the *status quo* of the nations both internally and externally. National defence and the * preservation of the special ethos of the nation' are the two foremost considerations on political and sociological grounds. Preservation of certain occupations either for national solidarity or for sentimental reasons is often adduced with equal vehemence. But in all these cases the cost is inordinate. Everyone realises that economic preparation for an eventual conflict is an abnormal and morbid manifestation. Still the contingency of a conflict is so imminent that military protectionism is gaining ground. This political necessity may serve its limited purpose well if it is realised that in the fullness of time economic affairs could best be determined only in terms of economic considerations. As Professor Robbins says " It is still arguable that the average citizen, even of the more bellicose areas, regards war as an evil which ought eventually to be eliminated, and conceives the main object of policy to be the inception of conditions in which the non-military requirements of the race are satisfied as far as the niggardly provisions of nature make possible".²

Among the more orthodox and economic reasons for protection may be mentioned the expansion of production of the protected industries. It is no doubt a fact that the

¹ Taussig: *Free Trade, The Tariff and Reciprocity*, p. 33.

² Lionel Robbins: *op. cit.*, p. 31,

sheltered industry receives a special impetus but this does not tantamount to any increase in the social product. On the other hand as Pigou points out, protection harms other industries more than it benefits the industry concerned.¹ The indirect depressing effect, though concealed, is spread over many industries.

Expansion of the home market is adduced as another reason for a policy of protection. There will certainly be more work if the demand is increased but value judgments have to be made not in terms of quantity of work but in terms of product of work. Work yields a smaller product when it has to confine itself to the home market. "The goal of economic effort" as Beveridge points out "is not employment but wealth".²

It is often argued that tariffs can improve the balance of trade. Such a contention reveals a lack of proper comprehension of the monetary and foreign-exchange mechanism. Besides an adverse balance cannot be rectified unless the fundamental forces that are causing it are brought under control. A mere restriction of imports will only curtail exports still further.

Much emphasis is laid on the claim that tariffs maintain wages. Countries with a high wage level are chary of having free trade relations with countries where a low wage level prevails. However neither theory nor practice bears out the contention. Unless labour is completely mobile, equalisation of wages cannot occur. Therefore to maintain a wage difference prohibition of immigration is a more appropriate weapon than a tariff policy. Even in practice there is no strict causal relationship between the two factors. Taussig says "The general range of wages in the United States was not created by protection and is not dependent on protection".³

¹ A. C. Pigou: *Protective and Preferential Import Duties*, p. 48.

² Sir W. Beveridge: *Tariffs, The Case Examined*, p. 61.

³ Taussig: *op. cit.*, p. 6.

One of the protectionist fallacies which has gained the greatest currency is the effectiveness of a tariff in counter-acting the lower costs of foreign countries, but such a contention is due to a misconception of the very basis of trade. Cost differences between nations are primarily responsible for trade and hence a systematic attempt at equalising them would frustrate all trade relationship. Unless the nations want to deny themselves the benefit of a larger volume of production, an equalisation of costs even if successful should not be attempted.

Last but not least is the infant-industry argument which has been immortalised by Friedrich List. It has gained so much popularity as to be exalted to the level of an axiom. Its theoretical validity is unimpeachable but as a practical measure it is an elastic yardstick. No industry could be singled out as satisfying all the conditions of being an infant. Besides even if such an industry is found it will refuse to believe that it has grown, lest the protective shield be removed. "Thus temporary infant-industry duties" says Haberler, "are transformed into permanent duties to preserve the industries they protect".¹ Therefore a rational infant-industry duty is not easily conceivable and the idea is at best a camouflage for full-fledged protectionism.

EXTERNAL TRADE OF MYSORE

The foreign trade of Mysore is not on all fours with that of any other independent nation of similar area. The reasons for such differentiation will be obvious if the underlying factors determining trade jurisdictions are examined. There are both economic and political forces which delimit areas into independent trading units. From the economic standpoint the availability of resources and their relative nontransferability beyond a particular area are the chief determinants. Factors of production may be liberally supplied in certain regions but it may be either uneconomic or impossible

¹ Haberler: *op. cit.*, p. 281.

to transfer them beyond a certain territorial limit. Hence it follows *ipso facto* that there should be regional specialisation and inter-regional trade. Therefore it could be borne in mind that even on purely economic grounds special areas can claim to have external trade. Political considerations may no doubt exaggerate and even distort economic boundaries. National boundaries are fortified with fiscal barriers, and monetary mechanisms differ widely between nations. Hence international trade is another species belonging to the same genus as inter-regional trade.

Mysore forms a natural geographical and economic region. Raw materials are available plentifully and they are of such a nature that they cannot be easily transported over long distances. The iron ore of Bhadravathi, the gold ore of Kolar and the forest resources of Shimoga have their respective industries, localised near them because, as industrial products, they are bulky in nature and weight losing in character. Hydro-electric resources are exploited in the State but the transmission of the energy beyond a certain distance is technically inefficient. So the water power resources of the State are only of regional significance. The elaborate irrigation works of Mysore have augmented the cultivation of sugarcane. Again, sugarcane is incapable of transportation beyond a certain economic distance. Hence the sugar industry can only be 'raw material localised'. Thus Mysore as an economic region has all the characteristics of an independent unit and its trade relations are genuinely inter-regional in nature.

No cut-and-dried definition can be offered on the political aspect. Mysore is a smaller political area in a large country having definite political features. But the political separation of Mysore has no significance from the standpoint of its international trade, because it has neither fiscal independence nor a monetary mechanism of its own. Overseas countries in their trade relations with Mysore have to penetrate the Indian Tariff and deal in Indian Currency, though the political

boundaries of the State are not reinforced by tariff walls or currency mechanisms. It is therefore obvious that on the international side the position of Mysore is not well defined. We are more interested in the economic repercussions of such a situation than in its political implications. The situation warrants a policy of regional specialisation consciously based on free trade principles. Comparative costs in Mysore as compared with other areas in India ought therefore to be the criterion of specialisation. Dependence on the Indian fiscal measures is not efficacious for Mysore because they are formulated without specific reference to the conditions in Mysore. In the new federal constitution the states are expected to have a voice in forging the fiscal policy, but their voice will get so diluted in the crucible of Indian opinion that industry cannot place much reliance on this constitutional advance. The right policy for Mysore is therefore to develop her industries on the basis of comparative cost differences and to adhere to free trade principles.

COMPOSITION AND CHARACTER OF TRADE

At the outset a few remarks may be made regarding the presentation of trade statistics in Mysore. The trade of Mysore passes through two important channels, namely, the frontier roads and the railways. Road trade is of considerable importance because large quantities of cotton from the Bombay Presidency are brought by road into Mysore State to be ginned; and equally large quantities of coffee and silk find an outlet by roads to the adjoining territories of the Madras Presidency. An idea of the magnitude of road trade may be had from the fact that hardly twenty per cent, of the aggregate export of coffee is transported by rail, the rest being conveyed on roads.¹ It is rather unfortunate that in spite of its significance no actual measures have been taken to collect statistics of road-borne trade. Two attempts were however made to collect road figures. One of them was

¹ V. L. D'Souza: *External Trade of Mysore*, p. 1, 1928.

during the war and it was suspended for obvious reasons. The second attempt made in 1930 was given up after a couple of years on account of financial considerations. Therefore the trade figures of Mysore do not present a full and accurate picture of the actual conditions. However since 1913 statistics of rail-borne trade have been collected and compiled with great accuracy. The returns are published every quarter and once a year they are consolidated and published by the Department of Industries and Commerce under the caption "Review of the Foreign Rail-borne Trade of the Mysore State". This document is the chief source of information for all our generalisations.

The history of the external trade of Mysore may be said to begin from the year 1913 because the systematic compilation of trade statistics commenced in that year. The subsequent years may be divided into convenient periods according to the vicissitudes of trade, so that the underlying trends of trade may be discerned. The year 1913 may be taken as representative of pre-war conditions, and the quinquennium that follows it, is a period of abnormal trade conditions due to the War. The last year in the quinquennium seems to belong really to the next period because there is a sudden increase in trade by about Rs. 4 crores as compared with the previous years. The aggregate trade for the year 1917-18 was Rs. 20.46 crores whereas it rose to Rs. 24.30 crores in the next year.

The post-war years have to be divided into three periods. The five years immediately following the war are years of steadily increasing trade. The average aggregate trade for the quinquennium was Rs. 26.48 crores as compared with Rs. 19.13 crores during the war period. Commencing from 1924-25 we have a period of six years with unsteady trade. The first half of the period represents the ebb and the second half the flow of trade conditions during the period. The average total trade for the first three years is Rs. 25.04 crores which fall short of the average of the preceding period by

more than Rs. 1 • 50 crores. There is a very high average of Rs. 29.47 crores for the second three years of the period. In spite of such disparity they may be put together for purposes of study, due to the general unsteadiness that characterises the trade of the period. The quinquennium commencing from 1930-31 indicates a terrible decline in trade, the average for the period being Rs. 22 • 98 crores which is lower than that of any period during post-war days. The year 1932-33 was the median with Rs. 22.65 crores. There was an improvement at the end of the quinquennium.

The relative magnitude of imports and exports during these periods merit comparison. During the war period the average imports and exports stood at Rs. 9.25 crores and Rs. 9.88 crores respectively. The subsequent five years registered an absolute increase both in imports and exports but there was a difference in their relative increase. Whereas the imports increased by about 50 per cent, the exports rose only by about 20 per cent. The enormous increase in imports may be attributed partly to the facilities after the war for getting machinery and such other materials for the growing industrial needs of the country. There was also a remarkable increase in the importation of coal and oils during the period.

During the next period of six years commencing from 1924-25 the average imports and exports stood at Rs. 13.35 crores and Rs. 13.86 crores respectively. As compared with the previous period, while the imports have slightly fallen, the exports have grown appreciably and actually exceed the import average for the period. There is an increase of 10 per cent, in exports as compared with that of the previous period. This is accounted for partly by the general acceleration of export trade and mainly by an appreciable increase in the exports of oil seeds and hides and skins. They stand out in clear relief.

The last period starting from 1930-31 is one of general decline and shrinkage in both imports and exports. The average imports and exports for this period are Rs. 11.71 crores and Rs. 11.27 crores respectively. There is a fall of

about 12 per cent, in imports and a fall of about 19 per cent, in exports as compared with the immediately preceding period. This reaction is obviously a repercussion of the great depression. The impact seems to have been felt here a little later than elsewhere. Among the imports the articles that have suffered most are cotton and cotton fabrics, iron and steel, coal and sugar. The decline in exports is largely accounted for by oil seeds, hides and skins, and food grains. Normally there is an excess of imports in merchandise and it is offset by the shipment of specie from the Kolar Gold Fields.

It may be interesting at this stage to institute a comparison between the trade position of British India and that of Mysore. The method of scanning the periods adopted by us in the case of Mysore corresponds approximately to the divisions chosen by Parimal Ray¹ for India. But the trade statistics reveal exactly contrary conditions during most of the periods. Parimal Ray points out that in the case of India the war suddenly stemmed the swelling tide of progress and he says that any war year as compared with 1913-14 marks a decline in aggregate trade.² The position in Mysore appears to be entirely different. Whereas the aggregate trade of 1913-14 was Rs. 16.77 crores, the average for the war period was Rs. 19.13 crores; an increase of nearly 15 per cent. Besides many of the individual war years record a higher aggregate trade than the pre-war year of 1913-14.

This incompatibility with the situation in India may be explicable on two grounds. In the first place, in Mysore the year 1913-14 marks practically the beginning of a period of industrial regeneration. During the war period most of the industries of Mysore were in a stage of gestation and hence acceleration of trade was inevitable. It is of course to be admitted that the absence of war might have meant still greater augmentation in trade. Secondly Mysore did not suffer to the same extent as India regarding the

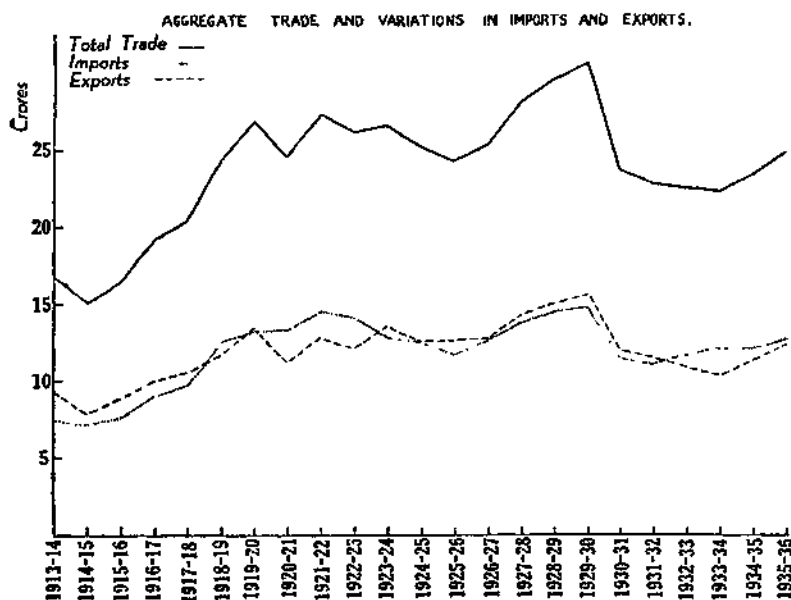
¹ Parimal Ray: *India's Foreign Trade*, pp. 47-48.

² *Ibid.*, p. 89.

TABLE I

*Showing Aggregate Trade and the Variation in Imports and Exports
(In cmres of rupees)*

Year				Total Trade	Imports	Exports
Pre-war year	..	..	..	16.77	7.46	9.30
War average	..	..	..	19.13	9.5	9.88
Post-war average	..	..	..	26.48	13.66	12.68
1924-25	..	..	..	25.28	12.51	12.59
1925-26	..	..	..	24.47	11.78	12.68
1926-27	..	..	..	25.38	12.53	12.85
1927-28	..	..	..	28.21	13.90	14.30
1928-29	..	..	..	29.66	14.56	15.09
1929-30	..	..	..	30.54	14.82	15.65
1930-31	..	..	..	23.56	11.51	12.05
1931-32	..	..	..	22.85	11.25	11.60
1932-33	..	..	..	22.65	11.67	10.98
1933-34	..	..	..	22.45	12.02	10.43
1934-35	..	..	..	23.42	12.12	11.30
1935-36	..	..	..	24.92	12.65	12.27



restrictions on foreign trade such as the circumscribed area of commerce and the scarcity of shipping tonnage. This is

because Mysore's proportion of overseas trade is very much smaller as compared with her trade with the rest of India. Besides war must have actually provided Mysore with special opportunities for trade within India due to the contraction of the foreign trade of the latter.

Again the post-war period in Mysore tells a different tale from that of India. As already observed there was an enormous growth in the aggregate trade and the imports especially showed a spectacular increase. This may be due to the various industries of the State which were awaiting the importation of plant from abroad. It is only during the next period that Mysore trade comes in a line with that of India. Speaking of the period between 1923-24 to 1929-30 Parimal Ray says " At long last Indian trade stood, after years of set-back and stagnation, on the threshold of a period of fairly steady recovery " ¹ Thus the peculiar circumstances of Mysore seem to have given it a new orientation in the affairs of its external trade.

We may next trace the changes in the composition of the external trade of Mysore and ascertain to what extent they reflect the growing industrialisation of the State. The percentage proportion of manufactured and unmanufactured imports and exports to the total trade will throw some useful light on the problem. Thus the proportion of manufactured exports to total exports which was 29.2 per cent, during the war period² rose to 32.8 per cent, during the quinquennium starting from 1925-26 and it went up to more than 42.4 per cent, in the last period of five years commencing from 1930-31. There is however a gap of four years in the middle, starting from 1921-22, during which comparisons are not possible due to changes in the methods of classification in the trade reports of the State. Still even during those years the general tendency is equally manifest. The increase in

¹ Parimal Ray: *op. cit.*, p. 117.

² War period is from 1914-15 to 1918-19. The percentages given above are the averages for the quinquenniums chosen.

the manufactured exports during the last period is particularly noteworthy because that is a period when exports shrunk considerably.

Conversely the export of raw materials has decreased perceptibly during the above periods. From 31.7 per cent, in the war period it fell to 30.3 per cent, during the second period of comparison and it fell further to 21.0 per cent, in the last period. The import percentages on the other hand do not reveal a progressive tendency. While the imports of manufactures was 50.2 per cent, in the war period* it fell to 40.8 per cent, during the second period. But it seems to show a rise to 47.5 per cent, during the last period. Similarly the import of raw materials was 17.2 per cent, in the first period and 20.9 per cent, in the second. But in the third period it shrinks to 18.9 per cent. The reaction in the last quinquennium may be considered abnormal as the repercussions of the great depression were being experienced during that period. Barring that, the changes in the composition of the trade reflect genuinely the all-round industrial expansion within Mysore.

TABLE II

Showing the Percentage Proportion of the Principal Groups of Articles Imported into Mysore
Imports (percentage)

	Pre-war year	War average	Post-war average	Decade 1924-25 to 1933-34 average	1934-35
I. Food, drink and tobacco ..	31.4	30.5	29.8	34.7	32.3
II. Raw materials and articles mainly unmanufactured ..	19.3	17.2	16.5	20.1	17.2
III. Articles wholly or mainly manufactured ..	48.7	50.2	52.8	43.8	49.7
IV. Miscellaneous ..	0.6	0.4	0.7	1.0	0.6

TABLE III

*Showing the Percentage Proportion of the Principal Groups of Articles
Exported from Mysore*

Exports (percentage)

	Pre-war year	War average	Post-war average	Decade 1924-25 to 1933-34 average	1934-35
I. Food, drink and tobacco ..	51.9	39.0	32.9	35.6	34.7
II. Raw materials and articles mainly unmanufactured ..	30.2	31.7	31.5	25.9	19.3
III. Articles wholly or mainly manufactured ..	17.9	29.2	35.2	37.2	45.0
IV. Miscellaneous ..	0.01	0.1	0.3	0.9	0.9

A further insight into the actual tendencies in the productive structure of Mysore may be obtained by making a survey of a few articles of commerce. Priority of place ought to be given to the trade in cotton and cotton fabrics not only on account of their magnitude but also because they offer the best material to study the changes in the economic structure of a country. The variations in their volume are almost barometric in nature. The imports of cotton and cotton fabrics stood at Rs. 122.61 lakhs in 1913-14 and there was a progressive increase till the peak year of 1921-22, when it reached the colossal volume of Rs. 388.29 lakhs. Subsequently there was a gradual decline till 1929-30 and a more rapid decline after that, settling down at Rs. 195.03 lakhs in 1934-35. These variations reflect with extreme fidelity the actual transformations in the internal economy of Mysore. The rise of cotton mills and the increase in looms and spindles arrested an excessive export of the staple and an excessive import of the finished article.

The trends of export trade in cotton and cotton fabrics reveal no less faithfully the progress of manufactures within

the State. In the pre-war year of 1913-14 the exports were at the low level of Rs. 62.46 lakhs. It increased by leaps and bounds in the war years, reaching Rs. 218.41 lakhs in the peak year of 1918-19; a height never to be equalled in any of the subsequent years. In the first decade of the post-war period the exports averaged Rs. 159.84 lakhs. The years following the decade being depression years indicated a slight decline but the general positive tendency was manifest. The rate of increase in yarn trade is greater in the case of exports than in the case of imports. Similarly, the proportionate increase of cotton fabrics exported is greater than that of raw cotton exports. Thus trade indices offer sure signs of a well-established cotton industry in the State.

The trade in oils and oil seeds figure prominently in the external trade of Mysore. But it is difficult to read either the needs or the aspirations of the country from the trends of its trade. Excepting for the slackness during war years there has been a steady increase in the export of oil seeds till the recent depression when a definite decline is noticeable. As compared with a pre-war export of Rs. 41 lakhs worth of oil seeds, Mysore exported to the extent of Rs. 140 lakhs in 1928-29. In doing so it is obvious that Mysore is exporting in raw form a product of great potential importance to industry. The situation is further accentuated by the fact that there is a growing importation of vegetable oils to cater to the needs of the local soap factories. This condition has been caused by the inefficiency of the indigenous extraction of oil. Power driven oil mills have no doubt been introduced recently but there appears to be a greater need for them. As an auxiliary for their success facilities for transportation of oil in bulk have also to be created.

Mysore's trade in hides and skins is of considerable importance. The proportion of its export trade is much higher than its import trade. Mysore exported hides and skins to the extent of Rs. 24.52 lakhs in 1913-14. Subsequently the

progress was rather slow and lingering, till 1923-24; from which year there was a spell of prosperity for seven years. Since 1930 the trade is once again at a low ebb with Rs. 21.89 lakhs for 1934-35. The imports of hides and skins are mostly in a raw condition, while the exports are composed of raw skins and tanned hides. Tanning of skins has not yet developed in the State in spite of the existing facilities and hence trade in tanned skins is negligible. On the other hand the tanneries of Mysore specialise in the tanning of hides which are known in trade as " East India Kips ". The trade in hides and skins could be profitably augmented if the local tanneries are modernised.

DIRECTION AND DISTRIBUTION OF TRADE

Regarding the direction and distribution of trade the presentation of trade statistics in Mysore, in its existing form, is not of much economic value. The origin of the imports into Mysore and the destination of exports from it, are not specifically mentioned. Indo-Mysore trade statistics are set forth with reference to four definite blocks only, the remaining being grouped under one heading. No information about the trade relations with overseas countries is set forth and as such the direction of much of the overseas trade is a matter of conjecture. Hence the prospects and possibilities of trade with foreign countries cannot be accurately measured and usefully indicated. However a few general conclusions may be deduced from the data as it is presented, even though they may lack scientific precision and educative value.

In 1934-35 Mysore obtained 24 per cent, of her imports from the Madras Presidency, 31 per cent, from the Madras Ports, 11 per cent, from the Bombay Presidency, 3 per cent, from Bombay Ports and 31 per cent, from other blocks. The physical contiguity of Mysore with the Madras Presidency accounts for the large share taken by the latter in the external trade of Mysore. The proximity of the Madras

Port naturally offers the best facilities for the overseas trade of Mysore.

Changes in the shares taken by the above blocks in the import trade of Mysore are interesting. Though there is an absolute increase in the imports from Madras Presidency, still there is a fall in proportion relatively to total trade. From 45 per cent, in 1913-14 the proportion fell to 34 per cent, a decade hence and to 24 per cent, in 1934-35. During the same period the share of the Madras Port has progressively increased from 22 per cent, to 28 per cent, and then to 31 per cent. The above feature may be interpreted as an increase in the overseas trade of Mysore. There does not seem to be any appreciable change in the position of Bombay Presidency and Bombay Port. On the other hand imports from the " other blocks " have increased perceptibly.

In 1934-35 Mysore sent 36 per cent, of her exports to Madras Presidency, 26 per cent, to Madras Ports, 28 per cent, to Bombay Presidency, 4 per cent, to Bombay Ports and 12 per cent, to " other blocks ". Thus even in the export trade Madras and its ports seem to take the lion's share. Bombay Presidency, however, absorbs a larger proportion of Mysore exports than it contributes towards its imports. The respective proportions of the various blocks have not materially altered even though the absolute figures have varied.

The actual composition of the trade of Mysore in the various directions may be briefly mentioned. The imports from Madras consist chiefly of building materials and cotton goods whereas the exports to Madras are composed of hides and skins and oil seeds. The exports of chemicals and silk are mainly in the direction of Bombay. The imports of coal and coke into Mysore are particularly from the " other blocks " of India.

TABLE IV

*Direction of Mysore Trade (a few typical years)**Imports**(In lakhs of maunds)*

Year	Madras Presidency	Bombay Presidency	Madras Ports	Bombay Ports	Other Blocks	Total
1918-19	29.58	9.64	14.43	3.59	—	104.66
1920-21	32.64	14.91	28.37	6.40	—	116.55
1922-23	37.95	17.78	26.08	5.51	28.05	115.39
1926-27	35.75	13.17	29.22	6.03	18.97	103.18
1929-30	37.84	15.68	35.28	5.97	—	120.36
1933-34	31.54	15.45	31.44	4.08	35.35	117.88
1934-35	30.10	14.35	38.93	3.86	38.03	125.32

TABLE V

*Direction of Mysore Trade (a few typical years)**Exports**(In lakhs of maunds)*

Year	Madras Presidency	Bombay Presidency	Madras Ports	Bombay Ports	Other Blocks	Total
1918-19	12.68	10.28	10.71	2.58	—	54.96
1920-21	15.37	16.81	10.96	2.36	—	49.02
1922-23	22.36	36.14	18.49	1.05	4.04	82.09
1926-27	32.66	24.08	15.93	1.15	2.19	76.03
1929-30	29.30	31.62	21.82	2.01	—	88.12
1933-34	18.99	17.48	16.44	1.51	5.07	59.51
1934-35	17.83	14.46	13.42	1.83	5.83	50.39

TRADE ORGANIZATIONS

Two typical trade institutions organized in Mysore, namely the Office of the Trade Commissioner for Mysore at London and the Chamber of Commerce in Mysore, may be examined to ascertain the co-ordinating influence they exert on the trade activities of the State. The function of the Trade Commissioner with reference to Mysore foreign trade is both regulative and creative. The existing trade relations of Mysore industrialists with foreign countries is systematised

and the middle-man's profit is reduced to a minimum. What is perhaps of greater significance than the regularisation of existing trade is the discovery of fresh sources of demand for the products of the Mysore State. Though this is a difficult function still it has been found feasible on account of the advantage of having a person conversant with Mysore industries at the spot where its products are likely to be demanded. The export of Mysore granite to London owes its origin entirely to the endeavours of the Trade Commissioner.

Another onerous duty of the Trade Commissioner is to nurse the foreign markets and to arrest a decline in the demand for foreign products among them. The market for Mysore coffee in European countries has been showing a downward tendency for the past few years and the Trade Commissioner is endeavouring to stop this tendency by a simultaneous process of popularisation of Mysore coffee in foreign markets and by the offer of suggestions for the improvement in the quality of local coffee. Thus the Trade Commissioner is functioning as a liaison factor between the local producers and the external markets.

The Mysore Chamber of Commerce is an organisation of the merchants and industrialists of the State, imbued with the spirit of associated activity for safeguarding their mutual interests. The Chamber endeavours to promote and protect the commercial interests of Mysore. It voices the opinion of the commercial community and initiates appropriate legislation. On the economic side it collects and disseminates statistical information for the benefit of the trading community. Through affiliation with similar institutions in India a co-ordination of commercial policy and procedure is attempted.

TARIFFS AND COMMERCIAL POLICY

The Indian States have been occupying a most anomalous position in the scheme of Indian Tariffs. Though the States

have been bereft of all powers of initiation of fiscal measures they cannot keep themselves beyond the pale of their influence. Whereas a State has had to suffer all the consequences of a bad tariff it has not been entitled to use its good offices effectively, in initiating a suitable fiscal measure. It is not necessary to examine the fairly obvious historical and sociological reasons for relegating the States to a subordinate position in the medley of fiscal controversies in India. On the other hand, the economic implications of such a situation need adequate elaboration.

With the grant of fiscal autonomy in 1921, India commenced a new era in its tariff policy. The Indian Fiscal Commission adumbrated a policy of protection "with discrimination" and recommended the creation of a Tariff Board to put into practice the general line of policy laid down by them. Subsequently the Tariff Board has examined with reasonable accuracy the claims of several industries in India but at no time has there been a specific reference to conditions prevailing in Indian States, although the fiscal measures of the Government of India are fraught with serious consequences to the States. Apart from the state of helplessness and uncertainty in which the industries belonging to the Indian States are placed, there are far-reaching indirect influences on the financial systems of the respective State Governments. As Wajid Khan says "The imposition of sea customs for the benefit of British Indian revenues throws the whole taxation system of the States into confusion."¹ Articles imported from overseas are enhanced in price by the sea customs and the consumers in the States have to bear it with no corresponding benefits, not even a semblance of a constitutional share in determining it. No further imposition of duties at the frontiers of the States is advisable as it would amount to double taxation which would not be fair to the subjects of the States. Thus the taxable capacity of the citizens in the States is also reduced and the yield of

¹ Wajid Khan, *Financial Problems of Indian States under Federation*, p. 33.,

the taxes of the State Governments is bound to be diminished. The actual magnitude of the problem could be appreciated if it is pointed out that the Indian States contribute Rs. 11.65 crores to the Indian Exchequer in the shape of sea customs.

Hitherto we have been expatiating on a state of affairs which is in the twilight of its existence. Looking ahead, the bright features of a federal constitution with its more equitable distribution of rights and responsibilities are discernible. But on closer examination the prospects of emancipation for the States are as mocking as they are promising. The crucial problem of the propounders of the federal scheme seems to be the difficulties of reconciling the claims of the maritime States with federal principles. The Davidson Committee points out that if the port-owning States are to enter federation, room must be found for a compromise in which ideals and logic would yield in some measure to hard facts.¹ But the real problem of some of the inland States like Mysore which is perhaps more industrialised than many of the maritime States remains unsolved. No doubt there is expected to be a vital constitutional readjustment capable of yielding good results. Through their representation in the federal legislature the States can ventilate their grievances and initiate suitable policy. But in actual practice there need not necessarily be an alignment of the legislature on the basis of States and British Indian Provinces. It is not likely that the States will always put their weight together particularly in matters of industrial development which are not of universal significance. If for instance protection for the silk industry is under contemplation, except Mysore and Kashmir, the other States may not evince much interest. It is therefore futile to envisage a thorough reorientation of fiscal policy under a Federal Scheme. The change will be more psychological than real.

Such grim realities of the situation need not however be a source of despair to a State like Mysore. As we have been

¹ *Report of the Indian States Enquiry Committee (Financial)*, 1932, p. 141.

striving to point out from the outset, Mysore is getting industrialised not because her industries are under the hot-house of high tariffs but by virtue of her factor equipment and transfer relations. Protection is by no means the only or the primary measure of encouragement to industries. On the other hand, it is the last resort and at best an uncertain device. As Dey points out, protective duties are not the only, nor often the most economical, way for the promotion of industries.¹ A thorough-going application of "Scientific management" and "Rationalisation" is a condition precedent of any claim for external support. There is no evidence to show that Indian industries have adequately explored in this direction. Further if assistance of some sort is incumbent, a wisely arranged system of bounties is preferable to import duties. Bounties are more definite in application, less uncertain in their effects, and under certain conditions less costly to consumers. If Mysore attempts the above specifics its fiscal disabilities may be largely offset. Besides tariff protection is no panacea for all types of industrial deficiencies. If a particular industry is in need of internal economies for reducing its cost of production, import duties would be ineffective. On the other hand tariffs are more suitable for achieving external economies. As Adarkar points out, internal economies depend partly on the size of the industrial unit and while protection may enlarge the scale of the industry, it may do nothing to the size of the industrial unit.²

There is however a limited field within which tariff protection may be efficacious. If an industry is operating under decreasing costs it may pay to protect it even if it has a comparative disadvantage in costs. Though there is no complete agreement on this point among recent economists, still they concede certain aspects of the thesis.³ Thus we

¹ Hirendra Lal Dey : *The Indian Tariff Problem*, p. 39.

² B. N. Adarkar: *The Indian Tariff Policy*, p. 53.

³ J. Viner: *Studies in the Theory of International Trade*, p. 482.

find that the scope of influence of protective duties gets extremely circumscribed when it is looked at from the proper perspective. Hence an Indian State like Mysore which suffers from certain fiscal disabilities need not lose confidence in its industrial aspirations. The chances of survival in a competitive world ultimately depend upon the relative cost conditions of trading areas. So we may reiterate the thesis that the best policy for Mysore consists in regional specialisation consciously based on free trade principles. Protective measures may be utilised as supplementary aids and palliatives whenever they are available.

CHAPTER IX

LABOUR PROBLEMS

ONE of the important consequences of modern industrial development is the problem of labour. It is a problem that disturbs the equanimity as much of the economist as the statesman, because while emerging from economic transformations it converges with increasing pressure on social relations. Hence it is as much an economic as a social problem. Society cannot complacently regard the plight of industrial labour as a price paid for economic development because such an attitude is fraught with serious consequences and it may undermine the entire well-being of the community. The economist should assume the role of a social philosopher while examining the problems of labour, since the welfare of the community is the ultimate objective of the creation of all material wealth. Like all social problems the improvement of labour conditions presents insurmountable difficulties in assigning the exact share of responsibility among the different arbiters of a community. Industry-stands to lose from a decay of its personnel to the same extent as the society from an impoverishment of its human stock, but while the former rarely takes a long run view the latter has perforce to take a comprehensive outlook of the situation. Hence invariably the State has to take the initiative in the amelioration of the position of the working classes and bring sufficient legal and moral pressure to bear on the industrialists to recognize their due share of responsibility.

The magnitude of labour problems usually increases with industrial progress. Among countries that have made great strides in industrial development the problem assumes wider dimensions. But it is important to realize that the difference is only one of degree and not of kind. The nature of the problem is similar even in a less advanced country and the visual specifics adopted may be applied there with equal

cogency. Hence even though Mysore is relatively younger in its industrial development, still it cannot postpone with any impunity the amelioration of the condition of its working classes. Mysore has been for the most part an agricultural country till recent years. With the advance of industries, especially of the large-scale type, during the twentieth century there has been brought into existence a separate class of labourers and a rather feeble labour consciousness has been aroused.

INDUSTRIAL POPULATION

An enquiry into the magnitude and growth of the industrial population and the proportion that it bears to the other occupations in the State is a useful method of approach for determining the extent of the problem in Mysore. Out of a total population of 6.5 million people in the State, 352,000 persons, that is 14.6 per cent, of the aggregate number of workers and earners in the State, have been classed as earners in industry, trade and transport. Taking industry alone we find that there are 201,000 persons engaged in it, that is 8.6 per cent, of the total earners.¹ It is certainly a very meagre proportion as compared with the percentages in some of the industrial countries of the West which are approximately of the same size as Mysore. In Switzerland, for instance, nearly 46 per cent, of the population is engaged in industry alone.² Thus it is obvious that industry is far from being the main occupation of the people in Mysore. Agriculture claims the largest percentage of workers. About 72.5 per cent, of the earners are engaged in the exploitation of animals and vegetation.³ Even if the earners engaged in the exploitation of minerals are included in that of industry it gives us a proportion of only about 9 per cent, of the total earners in the State.

¹ *Census of India*, 1931, Vol. XXV (Mysore), p. 196.

² *Economic and Industrial Switzerland* (Swiss Office for the Development of Trade), p. 6.

* *Census of India*, 1931, Vol. XXV (Mysore), p. 196.

However, the trend of development is of some consequence. In 1911 there were 155,000 industrial workers in the State.¹ The number fell to 143,000 in 1921 due to the ravages of the influenza epidemic in 1918. In 1931 the number increased to 201,000 exceeding thereby even the figure of 1911. As compared with the census of 1921 there is an increase in the absolute number of industrial workers in 1931, though there is a negligible fall in the proportion. Whereas there were 143,000 industrial workers in 1921 there were 201,000 in 1931, though the proportion has fallen from 8.9 per cent, to 8.6 per cent, in the latter year.² Thus there has been an increase of nearly 50,000 industrial workers during the decade. The tendency is also borne out by the fact that the proportion of agricultural workers during the same decade has declined from 73.6 to 72.5 per cent., even though there is an increase in the absolute number. Thus the increase in the proportion of agricultural workers is not commensurate with the growth of the aggregate population. A further evidence of the industrial bias of the people consists in the growing urbanization of the population. During the decade 1921-31 whereas the urban population increased by 22.5 per cent, the rural population grew only by 7.7 per cent. Thus the tendency in the growth and occupational redistribution indicate the gradual transformation of the economic organization of Mysore.

The distribution of the population among the various districts of the Mysore State throws some light on the correlation between industrialization and aggregation of population. Bangalore, which ranks fifth from the point of view of area, takes the second place in respect of population among the districts. Bangalore district claims about 908,000 persons out of the total population. This is to an appreciable extent accounted for by the agglomeration of industries at that centre. Similarly the Kolar district, where the

¹ *Census of India*, 1911, Vol. XXI (Mysore), Tabls VI, p. 211.

² *Ibid.*, Table on p. 196.

gold fields are located, has a population of 764,000, which is higher than that of many of the other districts which have a larger area. Bangalore has the highest density of 368 persons per square mile. Kolar comes third with a density of 266. Kadur, which is a non-industrial district, presents a contrast with a density of only 125 persons per square mile.¹

IMMIGRANT LABOUR

The composition of the industrial population in Mysore reveals certain interesting features. With regard to its labour supply Mysore is not self-sufficient. This is borne out by the data concerning the total increase in the number of workers during the decade 1921-31 and its distribution between the different occupations. In 1921 there were 1,598,000 workers and the number increased to 2,350,000 in 1931, recording thereby an increase of about 32 per cent. The proportion of workers to total increase has not changed much in the groups representing "exploitation of animals and vegetation", and "Industry, Trade and Transport"» Whereas in 1921 there were 74.8 per cent, of the workers engaged in the "exploitation of animals and vegetation" there were 73.2 per cent, in 1931. Thus there was a slight fall in the proportion. The group "Industry, Trade and Transport" represented 15.5 per cent, in 1921 and 14.6 per cent, in 1931. The proportion of workers in Industry was more or less stationary with 8.9 per cent, in 1921 and 8.6 per cent, in 1931. There was a fairly large fall from 5.1 per cent, to 3.6 per cent, in the group "Public Administration and Liberal Arts". The miscellaneous group records an enormous increase from 4.7 to 8.4 per cent. As we have observed in the first chapter this is due to a discrepancy in recording and a large part of the increase attributed to the group may really belong to Industries, Trade and Transport.² From the above data we can conclude that there is

¹ *Census of India*, 1911, Vol. XXI (Mysore), pp. 6 and 7..

² See Chapter 1, *Population and Resources*.

only a slight transference of agricultural workers to industry. The fall in the Public Administration group is more than made up by the miscellaneous group. Hence there is reason to think that the absolute increase in the number of industrial workers is to a certain extent due to immigrant labour. It is therefore necessary to observe the immigration statistics to account for the growth of industrial population. There has been a continual inflow of people into Mysore from the neighbouring provinces of British India and the census of 1931 records 340,700 persons as born outside the State but residing within it, the net result of migration being 214,700 in favour of Mysore. The highest proportion, that is about 86.3 per cent, of the immigrant population is from the contiguous area of Madras Presidency. Bombay Presidency, which is also contiguous, ranks second with 9 per cent. Among the non-contiguous territories Hyderabad takes the first place with 1.2 per cent.¹ The large proportion of outside labour in Mysore industries is also corroborated by certain special enquiries conducted in Mysore regarding the economic condition of labourers. The largest employers of labour in the State are the textile industries and the gold mining Companies. It is pointed out that among the textile mills nearly 50 per cent, of the labourers employed at present are non-Mysorean.² In the Kolar Gold Fields area about 43 per cent, of the population is from outside the State, the majority of it being from the adjoining provinces of British India.³ The special officer appointed in 1931 to enquire into the economic conditions of labour in the Kolar Gold Fields points out that the bulk of the labour comes from the Madras Presidency, of which the North Arcot district contributes the largest share.⁴

¹ See Chapter 1, *Population and Resources*, p. 80.

² R. K. Sreenivasan and C. Narasimha Moorthy: *Labour and Housing in Bangalore City*, p. 10, 1935.

³ *Census of India*, 1931, Vol. XXV (Mysore), p. 83.

⁴ M. A. Srinivasan : *Economic and Social Conditions of Labour in the Kolar Gold Field*, p. 4, 1931.

It is obvious therefore that the composition of the industrial labour corps of Mysore consists of foreign elements to a great extent. Even though the centres of recruitment are not distant, still they lie outside the borders of the State. However, this is not in any way a peculiar feature of Mysore, because almost all industrial centres in India draw their labour force from distant parts. Except Ahmedabad and Cawnpore, which secure the bulk of the labour, either from within or the adjoining provinces, the other industrial centres recruit from long distances. Rangoon, Jamshedpur, Bombay and the Hooghly area have to get their labourers from distant parts. At this juncture it is germane to enquire about the loss of efficiency due to the migratory character of the labour force. In this connection it is necessary to examine the nature of industrial labourers in India and their propensity to make constant visits to their villages. In the first place it is necessary to dispel the idea that the industries in India are manned by a mass of agricultural workers who serve in industry only for a few months in the year. Excepting seasonal industries it is not true of the regular factory industries. This is because all those that are drawn from the villages need not necessarily be agriculturists. Some of them might have belonged to the decaying rural crafts. But it must be admitted that the factory population in India is not entirely divorced from the villages. As the Royal Commission on Labour in India point out, the great majority of labourers are villagers at heart, having had a village upbringing and retaining a contact with their villages.¹ They do cherish a hope of returning to their villages either for a short respite or for good. But the actual realisation of this ambition is a variable quantity. With some the contact with the village may be closer than with others. For those particularly, who belonged to the village crafts and whose villages are remote, it is only a pious hope. However the village connection need not be a despair of the industrialist.

¹ *Report of the Royal Commission on Labour in India, 1931, p. 12.*

So long as the visits are not too frequent the link with the village is a real advantage. It invigorates the worker and widens his outlook. It also serves as an insurance against the uncertainty of industrial employment. In fact it is the village connection that has to a large extent obviated the necessity for schemes of social insurance in India. It would be an interesting study to investigate the extent to which the village connection is retained among the industrial workers in Mysore but the necessary data is not available. The only available information is that the immigrants in Mysore are less inclined to return to their villages than the local labourers. So it is necessary to realise that in general, the industrial labourers in India neither desert industry too often nor refuse to urbanize and acquire the characteristics of industrial life.

ORGANIZATION OF LABOUR

The general features of labour organization in Mysore are identical with those in the other parts of India, and the genesis and development of the movement is also alike, except for a time lag due to the relatively later industrialization of Mysore. It was only in 1920 that there was for the first time a feeble manifestation of discontent among the labourers in Mysore.¹ Even then the awakening did not take any organized form and for a few years subsequently there were only sporadic attempts at strikes. In fact it was only a reflection of the agitation of labour in the industrial centres of British India. The transmission of the feeling was not due to any affiliation of unions or other form of direct contact but was purely informal and psychological. The apparent reason for the slow development of the movement is the scarcity of labour at the initial stages of industrialization and consequently the willingness of the employers to offer advantageous terms to the workers. Otherwise it would

¹ *Report of the Administration of the Department of Industries and Commerce, 1920-21, p. 14.*

have been difficult to attract the agriculturists even from such poor tracts as Nagamangala and Kunigal Taluks, and the immigrants from Madras. With the popularisation of factory work a reserve class of workers quickly came into existence and consequently it was labour's responsibility thenceforward to demand, through organized effort, fair conditions of work. The Royal Commission on Labour in India, writing in 1931, say that in this respect the turning point has come only during the last five years.¹

The system of recruitment of labour in Mysore does not appear to be free from the ubiquitous jobber. The "maistry" in Mysore, who is the counterpart of the "sardar" in British India is all-powerful in the employment and interpretation of labour to the employers.² The justification of his existence seems to be the want of direct contact between the management and the labourers, due to differences of race and language. This system, or rather the want of a system, is a source of great abuse such as bribery and intimidation. Besides the high percentage of labour turnover in Indian factories, which is wrongly attributed to the agricultural interests of the labourers, is really due to the pecuniary interests of the jobber in shifting workers between firms. The prevalence of the jobber system incidentally points out the lack of labour unions which can directly negotiate with the employers. That is, however, no reason for countenancing the jobber. It is absolutely necessary that every large firm should have a labour officer, fairly conversant with local conditions and languages, for the recruitment and subsequent enlightenment of the labour force.

Mysore has so far not made much headway in respect of its labour organizations. One of the reasons for this is the absence of solidarity among the ranks of the workers due to such discordant elements in them as recruits from the rural population of Mysore and the immigrants from

¹ *Report of the Royal Commission on Labour in India*, 1931, p. 21.

² *Census of India*, 1931, Vol. XXV (Mysore), p. 206.

Madras. Unless the working population is homogeneous the genesis of a class consciousness is not feasible. One redeeming feature, however, is that the immigrants are less inclined than the local labourers to keep in close touch with their homes and have practically settled down in Mysore. The sex ratio among them is also more satisfactory than among those in the larger cities of India.¹ Next, efficient leadership from among their own ranks must come into prominence before effective organization is possible. In this respect Mysore is on all fours with the rest of India in so far as its labour leaders have been persons from outside the ranks of labour who have in no small measure failed to evince the understanding which is so necessary for the part they have to play. Besides it is also difficult for the workers to adopt the principles of the leaders who are not co-sharers of the cause they espouse. One more reason that could be adduced which is peculiar to Mysore is the fact that here the capitalist *entrepreneur* is to a great extent the State itself and as such the cleavage between the capitalist and the working classes has not as yet been keenly felt. This is not however a healthy sign because in an economy that is primarily capitalistic trade union organization is an organ of fundamental importance and the sooner it develops the better it is for a formal recognition of the place of labour in society.

A serious act of omission which has failed to give the necessary fillip to the growth of labour organization is the want of Trade Union Legislation in Mysore. Such legislation confers on the unions and their members a measure of immunity from civil suits and criminal prosecutions. Besides, it enhances the prestige of the unions and gives an impetus to the movement. The passing of the Trade Union Act in 1926 in India gave an extraordinary fillip to the development of the movement.² The question of the introduction into

¹ *Census of India*, 1931, Vol. XXV (Mysore), p. 206.

² *Report of the Royal Commission on Labour in India*, 1931, p. 318.

Mysore of legislation providing for the registration of trade unions as in British India was first taken up by Government in the year 1927. A Committee was appointed to examine its feasibility but since the Royal Commission was engaged at that time in its investigations they considered it desirable to await its recommendations. In 1935 the question was again revived by the Government and it was referred to the Board of Industries and Commerce for opinion.¹ The views of the large employers of labour and the existing labour organizations were also obtained. But unfortunately it was finally decided by Government to defer the question of trade union legislation in the State. Hence the trade unions in Mysore have merely been registered as Charitable Institutions. They have no immunity from criminal proceedings and are therefore ineffective for militant purposes.

EXISTING TRADE UNIONS

The chief among the labour unions which are registered as Charitable Institutions in the State are the Bangalore Textile Labour Union, the Bangalore Woollen, Cotton and Silk Mills Employees' Union and the Mysore Printing Labour Union. The Bangalore Woollen, Cotton and Silk Mills Employees' Union, which comprises the workers of the largest textile mill in the State, was founded in the year 1929 by the labourers of the mill with the assistance of the management. The Department of Industries also rendered much help in the formation of the Union and has since watched its progress with keen interest. The Union had a total membership of 2,544 out of 3,950 persons employed and realised Rs. 1,795 from subscriptions during the year 1929-30.² Ever since its inception the Union has been successfully negotiating with the management of the mills. One

¹ *Administration Report of the Department of Industries and Commerce*, 1935, p. 19.

² *Ibid.*, 1929-30, p. 21.

of the office-bearers of the Union is representing the interests of labour in the Mysore Legislative Council. However, as the labour unions in Mysore are not affiliated to each other, labour is not in a position to present a united front to capital and collective bargaining is not sufficiently effective.

It is interesting to observe that in the gold mining areas of Mysore a peculiarly oriental type of labour organization has come into existence. The special officer of Government who was deputed in 1931 to make an enquiry into the economic conditions of labour in the gold fields gives a very interesting and lucid description of the system of " Mine Panchayets " in the area.¹ It was in the year 1925 that the first of its kind was formed at the Mysore Mines. It consisted of ten employees, nominated by the Superintendent of the Mine. At the time of the general strike among the mining labourers in 1930 the conception got currency and each Mine formed its own " Panchayet". The Nandydrug Mines Company has two " Panchayets ", one to represent the underground workers and the other, the surface workers. The compelling motive for such organization was to have a means of collective representation and to enable the management to ascertain the views of labour more expeditiously and conveniently. The " Panchayets " are now for the most part elected bodies and are formally recognized by the management to represent the grievances of the workers. Curiously enough, these bodies have so far evinced a flair only for judicial activity such as settlement of disputes among members, excepting occasional representations for social amenities.

However, one is wholeheartedly inclined to agree with the opinion of the special officer regarding the potential utility of these bodies.² In a country like India the hallow of tradition has certainly a greater appeal to the people

¹ M. A. Srinivasan: *Report on the Economic and Social Conditions of Labour in the Kolar Gold Field*, p. 54.

² *Ibid.*, p. 55.

than alien institutions, however well-conceived they may be. If the democratic character of the " Panchayets " is retained and a gradual transition is effected to the more legitimate functions of the body, it could be the nucleus of a most useful system of labour organization in Mysore. It is not always profitable to superimpose on India, methods that have been found effective in Western countries. As Dr. Anstey points out, " Such methods should be carefully adapted to Eastern conditions, and the peculiarities of the Indian social system and of the psychology of the people should never be forgotten ".¹

Though the labour institutions for collective effort are still in the making, industrial disputes are fairly frequent. Strikes are very frequent among the mining labourers and in the textile industries, The table given below indicates the nature

TABLE I

Showing Strikes and Lockouts in the State

Year	Mining		Textile		Printing		Match Manufacturing		Total
	No.	Persons involved	No.	Persons involved	No.	Persons involved	No.	Persons involved	
1920-21 ..	1	—	4	—	1	—	—	—	6
1921-22 ..	—	—	—	—	—	—	—	—	—
1922-23 ..	—	—	—	—	—	—	—	—	—
1923-24 ..	—	—	—	—	—	—	—	—	—
1924-25 ..	—	—	—	—	—	—	—	—	—
1925-26 ..	—	—	1	—	—	—	—	—	1
1926-27 ..	—	—	6	—	—	—	—	—	6
1927-28 ..	—	—	1	—	—	—	—	—	1
1928-29 ..	—	—	7	7,500	—	—	—	—	7
1929-30 ..	1	16,000	1	4,500	—	—	—	—	2
1930-31 ..	—	—	1	70	1	218	—	—	2
1931-32 ..	—	—	1	4,300	—	—	1	145	2
1932-33 ..	1	240	1	—	—	—	—	—	2
1933-34 ..	—	—	—	—	—	—	—	—	—
1934-35 ..	1	2,000	2	—	—	—	—	—	3
1935-36 ..	1	3,000	3	620	—	—	—	—	4
Total ..	5	—	28	—	2	—	1	—	36

¹ Dr. V. Anstey: *Economic Development of India*, p. 295.

and frequency of strikes in Mysore, showing thereby the extent to which it is used as a weapon of industrial warfare. The demands of the workers have invariably been either for the reinstatement of dismissed workers or the restoration of their bonuses. Improvement of working conditions, enhancement of wages and the shortening of the working day have not so far figured prominently among the demands of the working classes. This indicates the fact that labour organizations in Mysore are still defensive in their policy and attitude.

ECONOMIC CONDITIONS OF WORKERS

The connotation of the expression, economic condition of the workers, is a composite of several ideas regarding the well-being of the labourers. Though it is the earning capacity of the individual that is usually reckoned, it is the income of the family that shapes the budget and hence deserves greater emphasis. Besides, the income of a working class family acquires significance only when it is compared with their cost of living and also with the relative income of the other sections of the community. Otherwise changes in prosperity and the relative well-being of the working classes cannot be determined. Again, not only the volume but the direction of expenditure is of equal significance. Unless the social habits of the workers are ascertained their standard of life cannot be determined. Finally, conditions of living and vital statistics throw useful light on the well-being of the workers. It is obvious therefore that such a many-sided problem as this cannot be adequately examined in the absence of detailed and special investigations. Even the Royal Commission on Labour in India experienced extraordinary difficulties in the treatment of this subject.¹

In Mysore there does not exist any special machinery for the collection and systematization of data regarding labour conditions. It is of primary necessity to have an exclusive

¹ *The Royal Commission on Labour in India*, 1931, p. 184.

labour department equipped with statisticians, for the purpose of collection and collation of useful material regarding working class conditions. A periodic bulletin may be issued as a vehicle for communicating the information for the enlightenment of the public. However, our task has been considerably lightened by two important enquiries into labour conditions, conducted in the Mysore State. In 1935, under the auspices of the University of Mysore, two students of considerable merit conducted an enquiry into the labour and housing conditions in Bangalore City.¹ The other document is the report submitted by the special officer in 1931 on the economic and social conditions of labour in the Kolar Gold Field.² A liberal use will be made of the data presented by them in our ensuing analysis.

SCALE OF WAGES

With regard to the scale of wages in the factories, no reliable data is available. It is mentioned in one of the departmental reports that the wages of a skilled workman in the factories varied from eight annas to Rs. 1-8-0 per day and that of an unskilled labourer from five annas to eight annas per day. Such meagre information does not carry conviction. It is incumbent that the Department of Industries, or the labour section of it that we have suggested, should ascertain the scale of wages not only in each industry separately but in every section of an industry. Otherwise, useful comparisons with conditions elsewhere are not possible. In the gold mining area the scale of wages has been reckoned separately for the Company and Contract labour.³ Nearly

¹ R. K. Srinivasan and C. Narasimha Moorthy: *Labour and Housing in Bangalore City*.

² M. A. Srinivasan: *Economic and Social Conditions of Labour in the Kolar Gold Field*.

³ Those employed directly by the Company and those employed by private contractors on behalf of the Company. The former group is slightly larger than the latter. In 1931 there were 10,500 Company labourers and 8,000 Contract labourers.

36 per cent, of the Company labour gets over ten annas a day, whereas about 69 per cent, of Contract labour gets more than ten annas. Nearly 50 per cent, of the Contract labour earns more than twelve annas a day, whereas just about 25 per cent, of the Company labour earns this wage. The proportion of labour earning eight annas or less per day is as high as 40 per cent, among Company labourers and only 17.4 per cent, among Contract labourers. The range of wages in the gold mines is from two annas to nearly five rupees per day. The most usual rate for all mining labourers is between twelve annas and one rupee per day. On the basis of their daily wages a Company worker has a monthly average earning of Rs. 23, while a Contract labourer has an earning of about Rs. 25. But if the average monthly income is taken as a criterion, the Company labourer earns more than a Contract labourer. Whereas the average is only Rs. 15 for a Contract worker, it is Rs. 22 for a Company labourer. The reason for this disparity is due to greater absenteeism among Contract labourers. The lower percentage of absenteeism among the Company workers is due to the system of attendance bonus, which will be discussed more fully at a later stage.

STUDY OF FAMILY BUDGETS

A deeper insight into the economic condition of the workers could be obtained by a study of family budgets. In Bangalore, which is the most important industrial centre in the State, an enquiry was made into the income and expenditure of the working classes in connection with the housing survey.¹ The method of sampling was adopted in the selection of families and the budgets of about 230 families were examined. The aggregate income of these families living in labour colonies amounted to Rs. 4,587-1-0, giving an average income of Rs. 19-15-10 per month per family. The aggregate monthly expenditure of the same group of

¹ R. K. Srinivasan and C. Narasimha Moorthy: *op. cit.*, pp. 15-17.

families amounted to Rs. 4,449-8-0, giving an average expenditure of Rs. 19-5-6 per family. Among the families examined, about 40 per cent, have surplus budgets, nearly 21 per cent, have balanced budgets and about 38 per cent, have deficit budgets. Though the families selected do not belong entirely to the class of industrial labourers, still the results are not largely vitiated, because 40 per cent, of them are of the mill labourers and 25 per cent, of casual labourers.

In the mining areas the budgets of fifty families of work-people were examined. On an average each family had an income of Rs. 32-2-0 and an expenditure of Rs. 39-13-0. They spent 53•6 per cent, of their income on food and 4•4 per cent, on liquors. Mining labourers usually spend more on food and drink than other industrial workers. Besides the proportion of male workers is also higher among mining labourers. In 1931 out of 18,514 persons employed only 1,275 were women. One of the disquieting features of the data seems to be that families with an income of less than Rs. 40 a month seem to be perpetually on the deficit side. This may be accounted for partly by the inaccuracy of estimates pertaining to expenditure and partly by the small number of families selected for examination. If a large number of families with their incomes varying over a greater range had been selected, the results might perhaps have been better. The average size of a family in the mining area is reckoned at 3-94 persons. In Bangalore City the average size of a family is 4.3.

INDEBTEDNESS AND EXPENDITURE ON DRINK

The economic condition of the working classes depends largely on the extent to which there is a drain on their income towards interest charges and expenditure on drink. Indebtedness among the working classes in Bangalore is fairly high. Among 230 families examined there were 103 indebted families with an average debt of Rs. 127-5-7 per family. The proportion of the debt of those indebted is over six

times the average monthly income of the family. The rates of interest charged range from 25 to 300 per cent. In the mining area there were 48 indebted families out of the 50 investigated and the average debt was Rs. 199 per family. The proportion of the debt to income and the percentage of interest are similar to those in Bangalore. The expenditure on drink is of considerable magnitude in the budget of a labourer and ranks next only to interest. In the gold mining area nearly 75 per cent, of the country-brewed beer in the State is consumed. In Bangalore the *per capita* consumption of arrack per annum is 25.5 drams, which is the highest in the State. Thus there seems to be the highest incidence of consumption among the industrial and mining labourers. The drink evil is as much a consequence as it is a cause of the plight of the workers. It is a vicious circle which has to be attacked at as many points as possible.

HOUSING CONDITIONS

One of the most visible manifestations of the appalling plight of industrial labourers is the nature of their housing conditions. Modern industry is particularly susceptible to the evils of the aggregation of industrial personnel in relatively small areas. It is in the nature of the modern technique of production and should therefore be taken as given. Problems of housing have arisen in the wake of industrial civilization and they have to be handled with a scientific perception if the fruits of the new ordering of our society are to be secured. The value of large cities will no longer be measured by their artistic proportions but by the sum of human welfare which they can impart. We are often the victims of an optical illusion when we see a pretty city. Unless the other side of the shield is observed a correct estimate of its potentialities for human happiness cannot be made. Bangalore, for instance, which is the most important industrial City in the State, is as much an attraction for the tourist as it is for the settler. Its salubrious climate, its æsthetically laid-out

parks and artistically constructed buildings do create an optical illusion. But when the condition of the houses of the working classes is examined, a dismal picture is presented.

During a period of forty years between 1891 and 1931 the area of the City has increased from 8-25 square miles to 12-13 square miles, and the population has grown from 80,285 to 172,357 persons. That means that while the population has increased by 115 per cent, the area has increased only by 47 per cent. This in itself is a problem of considerable magnitude. It is rendered worse by the disproportionate distribution of the growing population among the different divisions of the City. Nearly 55 per cent, of the total population is concentrated in one-fourth of the total area which corresponds to the industrial regions and the balance of 45 per cent, is spread over the remaining three-fourths of the area of the City. The working classes in particular live in huts constructed of mud walls and thatched roofs. There are 2,442 such huts, mainly concentrated in the vicinity of the cotton mills. Applying the standard of overcrowding adopted by the Bombay Municipal Act¹ the investigators have estimated that nearly 22.2 per cent, of the families dwelling in huts are living under conditions of overcrowding.² The tenement houses are also a common feature of the congested areas of the City. The largest percentage of the occupants of these tenements is that of the industrial labourers. It is estimated that the average rent of these tenements is Rs. 2-8-2 per month and it bears a proportion of 12.3 per cent, to the income of the family. In respect of overcrowding, the tenement houses appear to be worse than the huts. It is reckoned that nearly 53.1 per cent, of the families occupying tenement houses live under conditions of overcrowding.

¹ According to the Bombay Act a room used exclusively for dwelling is deemed overcrowded when the floor space available for each adult is less than twenty-five superficial feet and for each person under ten years, less than twelve and one half superficial feet.

² R. K. Srinivasan and C. Narasimha Moorthy: *op. cit.*, pp. 19-20,

In the Kolar Gold Field area nearly 86 per cent, of the workers live in huts put up and maintained by the Companies. The majority of the huts which are meant for the workers are made of " Thatti " with corrugated sheet roofing. The rents charged for the huts vary from eight annas to Rs. 2, according to the nature of the construction and the space available. The Companies are incurring expenditure of about a lakh of rupees per annum in maintaining sanitation and cleanliness in these lines, and it works out to about Rs. 8 per Indian employee. However, even these huts are not free from overcrowding. There are innumerable instances of more than one family occupying the same hut. Part of the working population live in huts in the Coolie colonies, which are not under the control of the Companies. These lines leave much to be desired in respect of sanitation and cleanliness. But they provide slightly greater accommodation than the huts belonging to the Companies.

It is not necessary to expatiate about the obvious evil consequences of overcrowding and unhealthy conditions of life. It has serious repercussions on the mental make-up and the moral reactions of the occupants. Bad housing is not only an evil in itself but is the parent of several undesirable habits of life. It is aptly said that between the dreariness of the factory and the drabness of the home the worker finds the tavern a very attractive place.¹ Besides, it also takes its toll of human life. There is always a high correlation between bad housing and infant mortality. In Bangalore the rate of infant mortality varies from 97 to 331 according to the congestion in the area.² In the gold mining area the rate is 182.5, which is comparatively lower, due to the greater care taken by the Companies to maintain healthy conditions of life.

SUGGESTIONS FOR IMPROVEMENT

The improvement of housing conditions is a problem for which no ready-made suggestion can be offered. It is not

¹ R. K. Srinivasan and C. Narasimha Moorthy: *op. cit.*, p. 35.

² *Ibid.*, p. 36.

possible to award praise or blame to the different authorities for what they have or have not done, inasmuch as it is not possible accurately to apportion the responsibility among them. As the Royal Commission on Labour say, with the best of intentions the industrialists have been unable to provide for more than 10 to 40 per cent, of their employees.¹ Whether they can provide for more or less than that is a matter of personal equation. Some of the Companies have gone quite far in providing comfortable dwellings for their workers. The housing scheme of the Buckingham and Carnatic Mills of Madras deserves praise. The scheme of the Empress Mills at Nagpur for providing decent homes for their workers is equally attractive. In this respect the industrialists of Mysore have not as yet contributed their legitimate quota. The Mysore Spinning and Manufacturing Company have constructed a few houses to accommodate about fifty families. But this does not appear to be more than a mere gesture. Whatever may be the share of responsibility of others for it the industrialists must be alive to the fact that it is a problem for which they are primarily responsible.

The part that the Government and the local bodies have to play is no less onerous. If the employers are interested in the workers as their personnel, the Government is interested in them as citizens of the State. It is not possible to prescribe where the one has to begin and the other end. There ought to be a co-ordination of policy among all concerned. The Bangalore City Municipality have constructed a labour colony at Sri Rama Puram which is in the vicinity of the textile mills. The colony covers an area of 18 acres and it is laid out into 334 sites. Among them 250 sites have already been built upon by the Municipality. The cottages have been built on up-to-date lines with proper ventilation and sanitary facilities. This may be good in itself but unless there is a comprehensive scheme in which all parties

¹ *The Royal Commission on Labour in India*, 1931, p. 287.

participate, it may not be possible to grapple with the situation. As the Royal Commission suggest, there ought to be a zoning of industrial and urban towns.¹ Thenceforward, schemes of house-building may be undertaken by interested parties under the direction of the local authorities. A system of State loans for the construction of workers' dwellings is necessary but it should invariably be accompanied by appropriate specifications. It should, however, be admitted that in this direction Mysore has still to make up a great leeway,

EARNING CAPACITY AND " SCIENTIFIC MANAGEMENT "

Improvement of the output and efficiency of the labourers has been one of the most important pre-occupations of the industrialists in the present generation. Considerations of space prevent us from portraying in detail the methods and achievements of the application of scientific methods to production. Still, a brief account could be given of the essence of " scientific management" and the " Incentive systems " of wage payment. The technique of work and the methods of industrial remuneration have been so rationalized in the twentieth century that familiarity with them will alter the perspective from which labour problems have to be viewed hereafter in India. " Scientific management" as a method of internal organization of a business concern took shape under F. W. Taylor in America.² It is defined as the art of knowing exactly what is to be done and the best and cheapest way of doing it. The kernel of the system consists in having a central planning department in a firm where all brain work is concentrated. The task of the operative ought to be preceded by an intelligent analysis of the work by the management. They should originate, plan and arrange work so that the working time of the operative is productively occupied. The scheme is expedited by a system of " Functional Management". The essence of Taylor's scheme was

¹ *Royal Commission on Labour in India*, 1931, p. 289.

² L. Urwick: *The Meaning of Rationalization*, p. 54.

to make a "Time Study", through job analysis, so that the standard time for each piece of work may be determined in advance. As a complementary to "Time Study" F. B. Gilbreth introduced the idea of "Motion Study".¹ It consisted of an investigation of the movements required for a task so that the unnecessary ones may be eliminated and the essential ones retained and improved. These pioneer attempts, though rather unsuccessful in practice as they were much too exacting, gave an impetus to some of the modern refinements of Scientific Management based on careful research. During the past decade immense progress has taken place in scientific business organization. The recent achievements may be studied under three sections namely, the human factor, the industrial and commercial, and the economic. The human factor has been the theme of several studies. A proper selection of workers according to their aptitude for different tasks is systematically undertaken. The subsequent training of the worker within the industrial firm is an important aspect of scientific organization. The effect of work on the employees and the variation of output are carefully watched. The problem of rest pauses and the causes of industrial accidents are investigated.

On the industrial and commercial side much attention is devoted to a scientific layout of plant and machinery so that the arrangement of premises and internal transport may be more efficient. Materials and finished products are tested in order to maintain a high standard of quality. Scientific methods of cost accounting are adopted for determining the cost of an article and the percentage of its constituent elements. On the economic side "Intelligence" sections are started for studying the trend of industry in various regions. Business barometers are constructed to forecast future business tendencies.

In fine measures are taken to eliminate wastes of labour, time and materials. In other words Scientific Management

¹ B. F. Shields, *The Evolution of Industrial Organization*, pp. 137-143.

discards the rule-of-thumb methods and applies scientific methods in administration and operation. A change in the attitude of mind is an essential requisite for achieving success in the application of scientific management. In India it may not have as much scope as in Western countries, due to the illiteracy of the operatives. But even though it may not be possible to introduce it in all its essentials, still the management may use its discretion to apply certain aspects of it wherever it is feasible.

Incentive systems of wage payment are a part of the scheme of "Scientific Management". In India methods of wage payment have not gone much beyond the time-honoured "time-wage" and "piece-wage" systems. Occasionally there may be a scheme of "profit-sharing" in the form of a bonus to the workers at the time of declaring dividends. In spite of the obvious advantages of the "time-wage" system, particularly for a country like India, one ought to be aware of its deficiencies. It does not record individual differences and very often equal wages are paid for unequal outputs so that the incentive for greater effort is absent. The "piece-wage" is no doubt an improvement in principle, but so long as the management has the power of manipulating the rate there are chances of its being abused. Profit-sharing is not very effective in increasing the incentive of the worker, on account of the remoteness of the reward. Besides, it is often considered as a permanent feature, and during depressions when the differential is not available for division, the workers go on strike. Hence the incentive systems of wage payment are more scientifically conceived and have a greater appeal for efficiency. Taylor originated a type of "Differential Rate" system which included reward and penalty for executing a piece of work either before or after the standard time. This idea has manifested itself in various schemes of efficiency wage payment such as Gantt's "Task with Bonus", Emerson's "Efficiency Wage", Halsey's "Premium System", etc.¹ The

¹ B. F. Shields: *op. cit.*, pp. 149-152, and 255.

essential difficulty in the adaptation of any of these principles for Indian conditions is the illiteracy of the operatives. But it may not be impossible to conceive of certain plans suitable to local conditions, provided the principle is accepted. The propriety of the plan and the details of its execution must rest with the management.

A few words may be said about the argument for the general enhancement of the scale of wages. The Royal Commission on Labour consider that it is feasible to raise the scale of wages and go to the extent of saying that an increase in efficiency need not be made a condition precedent of improved wages.¹ But it is doubtful how, for any length of time, wages could be higher than the marginal productivity of labour. It would only check employment either by reducing output or stimulating labour-saving devices. If on the other hand it is suggested that the system of wage payment should be such as to call for greater efficiency and thereby increase earning capacity, one could agree. A mere arbitrary enhancement of the level of wages cannot be in conformity with the theory of marginal productivity. Besides, it is illusory to suppose that it confers any real benefit on the workers. To substantiate our position we may quote a few lines from Joan Robinson's "Introduction to the Theory of Employment". Mrs. Robinson says "If *entrepreneurs* agree to pay their workers higher rates, money demand for goods is increased, and it is argued from this that activity and output will increase. But this rise in demand merely offsets the rise in cost of production due to higher wages. A larger expenditure of money is now needed to buy the same goods, and the increase in money income is not an increase in real purchasing power".² Improvement of the regularity of employment as a mediate approach for increasing the earnings of the worker is no doubt commendable.³

¹ *The Royal Commission on Labour in India*, p. 210.

² Joan Robinson: *Introduction to the Theory of Employment*, p. 50.

³ *Royal Commission on Labour in India*, 1931, p. 210.

But in this connection it is necessary to observe to what extent absenteeism is a means of physiological self-protection. That would involve an inquiry into "Fatigue Study" in relation to the hours of work and its spread-over in each concern. Hence the paradox of increasing income without increasing wages is difficult to work out in practice. In this connection it is of interest to note that in the Kolar Gold Fields there is less absenteeism among Company workers than among Contract workers, due to the payment of an attendance bonus for the former. They are entitled to a rising scale of bonus varying from Rs. 2 to Rs. 4-8-0 according to their regularity. Though the scheme is laudable in itself, still no casual relationship could be established between the bonus and regularity, due to the difference in the nature of work of the two groups of operatives. The Contract labourer has a harder job and therefore perhaps takes more off-days as a physiological self-protection.

LABOUR LEGISLATION

With regard to legislation pertaining to labour employed in factories, Mysore has more or less kept pace with the legislation in British India. In fact the Acts that have been passed in Mysore are modelled entirely on the Indian Acts. Since the industrial conditions in Mysore are to a large extent similar to those in British India, there is a great advantage in taking the Acts of the latter as a model. Besides, Mysore has also the advantage of benefiting by the findings of the Royal Commission and other official enquiries about labour conducted for the Government of India from time to time. The aggregate number of industrial establishments in Mysore employing 10 persons or more was 335 in 1935 and the average number of persons employed daily in all these concerns was 52,637. Among these, 216 concerns have been included in the register of factories and they employ altogether 20,708 adults, of whom 3,580 are women. The number of children employed in the factories is about 1,500.

FACTORIES REGULATION

The latest Act in Mysore regulating labour in factories, known as the " Mysore Factories Regulation " was passed in the year 1936. It is based to a large extent on the Indian Act of 1934 which came into force in 1935. The Act of 1936 in Mysore amends and consolidates two previous Acts, namely the " Mysore Factories Regulation of 1914 " and the " Mysore Factories (Amendment) Regulation of 1925 ". The Acts of 1914 and 1925 in Mysore were based on the Indian Acts of 1911 and 1922 respectively. The Mysore Factories Regulation of 1936 is a comprehensive Act providing for health and safety of the workers in the factories, restricting hours of work and its spread-over and conferring certain privileges on women and children employed. The Act specifies certain industries, such as cotton ginning and the manufacture of coffee, as seasonal factories, with the proviso that if they exceed one hundred and eighty working days in a year they will be considered as perennial factories.¹ All other factories which employ twenty or more workers come within the category of perennial factories. It is also provided for that an inspecting staff will be appointed consisting of inspectors of factories for every district and one Chief Inspector for the State. With regard to health and safety, the Act insists on cleanliness and proper ventilation, and the avoidance of overcrowding. It prescribes strict regulations regarding the methods of artificial humidification and insists on a certificate of stability of the building in which a factory can commence its operations. Fencing of machinery in motion and the provision of rooms for children in factories are some of the other clauses pertaining to health and safety.

Following the recommendation of the Royal Commission and the embodiment of it in the Indian Act of 1934² the hours of work in Mysore have been restricted to 54 hours a week for regular factories and 60 hours for seasonal factories,

¹ *Mysore Factories Regulation*, 1936, p. 3.

² *Report on Indian Labour Legislation*, 1932-37, p. 11.

with a daily maximum in each case of 10 hours and 11 hours respectively. It is also provided that an adult's working hours cannot have a spread-over of more than 13 hours in a day. Regarding rest intervals, a worker is entitled to an hour's rest after six hours of continuous work or a half-hour's rest after five hours of continuous work. In the latter case two such intervals are necessary before exceeding eight-and-a-half hours work.¹ In respect of rest intervals the Royal Commission suggested an important departure of permitting the employers to split the rest hour into shorter periods as they deem fit.² The idea was based on the results of fatigue studies in other countries and was intended to overcome the frequency of unauthorized intervals in India. Unfortunately this important recommendation was not embodied in the British Indian Act.³ Some of the recent researches have also proved the efficacy of short rest pauses. The British Industrial Fatigue Research Board considers that ten minutes' rest periods during morning and afternoon spells reduce fatigue and increase efficiency.⁴ Short rest pauses are also found to reduce labour turn-over in monotonous work and increase output. The exact position of the rest pauses will depend on the nature of the industry. It would have been of immense benefit if the Government of India had given greater consideration to this aspect of the recommendation of the Royal Commission.

The Mysore Factories Regulation specifies that women workers should on no account be permitted to exceed the normal hours of work prescribed for adults and that they should be allowed to work only between 6 a.m. and 7 p.m. Adolescents could work as adults if they obtain a certificate of fitness. In the case of children the working day is limited to 5 hours with a spread-over of 7½ hours. Children are

¹ *Mysore Factories Regulation*; p. 15.

² *The Royal Commission on Labour in India*, 1931, p. 46.

³ *Report on Indian Labour Legislation*, 1932-36, p. 10.

⁴ "The Social Aspects of Rationalization" (*International Labour Office*), 1931, p. 26.

prohibited from working in two factories on the same day. It is obvious that the Act in Mysore has incorporated all the essential features of the corresponding Act in India which is its prototype. There have since been two amending Acts in India, one in 1935 and the other in 1936.¹ The former was in response to the decision of the Court of International Justice. The Amendment prevents the employment of women at night even in a supervisory capacity. The 1936 Amendment refers to the inclusion of workshops not using power, within the operation of the main Act. These changes may be incorporated in the Mysore Act as occasions arise.

WORKMEN'S COMPENSATION

The first Workmen's Compensation Regulation of Mysore was passed in the year 1928. It was based on the Government of India Workmen's Compensation Act of 1923 and it provided a scale of compensations payable by employers to the workers on account of industrial accidents. On the recommendation of the Royal Commission on Labour the Government of India passed another Act in 1933 modifying the provisions of the previous Act in certain important respects. Mysore followed suit and passed the Workmen's Compensation (Amendment) Regulation in 1936. This Act brings within its scope all workmen employed either by way of manual labour or on monthly wages, except those whose employment is of a casual nature. If personal injury is caused to the workman by accident arising out of and in the course of his employment, his employer shall be liable to pay compensation. In the Amended Act the period of total or partial disablement to entitle the workman to compensation has been reduced from ten to seven days, in conformity with a similar change in the Indian Act. Substantial changes have been effected in the Amended Act in respect of the

¹ *Report on Indian Labour Legislation, 1932-37*, p. 13.

TABLE II
Table giving Details Regarding Workmen's Compensation Act in Mysore

Year	Number of Accidents	For Compensation	To Register for Memoranda of Agreement	Fatal Accidents	Non-fatal Accidents (Disablement)	Amount of Compensation paid
From January to June 1929	45	33	12	28	5	Rs. A. P. 19,157 3 7
1929-30	200	99	101	66	33	38,275 7 6
1930-31	204	134	70	74	60	46,988 9 1
1931-32	314	190	108	136	54	93,699 6 4
1932-33	204	111	82	62	49	36,867 2 7
1933-34	176	73	98	57	16	33,186 8 0
1934-35	209	72	125	52	20	31,063 8 0
1935-36	217	145	84	78	54	50,399 0 0
TOTAL	1,569	857	680	553	291	3,49,636 13 1

scale of payments. According to the old Act the compensation for fatal accidents consisted of either thirty months wages or Rs. 2,500, whichever was less. In the Amended Act the payment ranges from Rs. 500 to Rs. 4,000 according to the monthly wages of the person. Similarly for permanent total disablement the payment ranges from Rs. 700 to Rs. 5,600, which is substantially higher than the old scale of payments. Changes have also been effected, to the advantage of the worker, in the scale of compensations for partial disablement.¹ The Director of Industries or the Deputy Commissioner may be appointed as the Commissioner for Workmen's Compensation for a specified area. The Amended Act has made it compulsory that the distribution of the amount of compensation should be made through the Commissioner. The table given above gives details regarding the working of the Act in Mysore since its inception.

MATERNITY BENEFIT

Acts for providing maternity benefit for women working in factories were in existence in some of the provincial Governments in India before the enquiry of the Royal Commission. Bombay had an Act passed in 1929 and Central Provinces in 1930. The Royal Commission recommended that legislation should be passed throughout India and that the scheme of maternity benefit should be made compulsory. The Acts in the provincial Governments of Bombay and Central Provinces were amended in 1934 and 1935 respectively in accordance with the findings of the Commission and new Acts were also passed in some of the other Provinces such as Madras.² The Mysore Maternity Benefit Regulation was passed in the year 1937. The object of the Act was to regulate the employment of women in factories sometime before and sometime after confinement and to provide the payment of maternity benefit to them.

¹ (*Mysore*) *Workmen's Compensation (Amendment) Regulation*, 1936, p. 13.

² *Report on Indian Labour Legislation, 1932-37*, p. 28.

the Act prohibits the employment of women for four weeks following the day of delivery. They are entitled during the period to their average daily wage or 8 annas, whichever is less. The maximum period of absence is eight weeks.¹ To entitle themselves for benefit the women must have had nine months previous service and should give notice of absence for confinement.

BOARD OF CONCILIATION

A suitable machinery for the settlement of industrial disputes is an important asset in the maintenance of harmonious relationship between the workers and the employers. Several Acts were passed in India to give effect to this idea and the last one of them was the Trade Disputes (Extending) Act of 1934. In 1936 the Trade Disputes (Amendment) Bill was introduced in the Legislative Assembly with the object of providing for the appointment of Conciliation Officers. The Bill was circulated for eliciting public opinion. The Royal Commission on Labour emphasized the fact that the conciliation brought about by special officers would be more salutary in effect than *ad hoc* public enquiries.² The Bombay Trade Disputes Conciliation Act of 1934 is the nearest approximation to the ideal suggested by the Royal Commission.³ The Act provides for not only a staff of conciliators but also for a labour officer who should watch the interests of workmen. In Mysore, though there is no legislation to the effect, a Board of Conciliation has been constituted since 1931.⁴ It is composed of six members representing the interests of employers, employees and the public. The Labour Commissioner is its ex-officio Chairman. He is expected to intervene on behalf of the workers for

¹ *Mysore Maternity Benefit Regulation, 1937*, p. 3.

² *The Royal Commission on Labour in India, 1931*, p. 348.

³ *Report on Indian Labour Legislation, 1932-37*, p. 25.

⁴ *Administration Report of Industries and Commerce Department in Mysore, 1932*, p. 20.

the settlement of disputes and the promotion of industrial peace.

FURTHER MACHINERY AND LEGISLATION

In concluding this section we may notice some of the directions in which further action may be taken to improve industrial relations and incidentally point out the scope for other types of labour legislation in Mysore. The Royal Commission is emphatic about the efficacy of Works Committees in promoting harmony between the workers and employers. The usual objection to such a scheme is from the Trade Unions, because the Works Committees are regarded by them as dividing the loyalties of the workers and weaning them away from their Unions. Since the trade union organization has not yet gained a foothold in Mysore it is most opportune to make an experiment in setting up Works Committees in some of the large mills. The workers would welcome it, but the initiative must be taken by the Labour Commissioner. The success of the scheme in the Buckingham and Carnatic Mills at Madras ought to be an encouragement for sponsoring it in Mysore. If an early start is made in this direction the Works Committees will fit in appropriately when the trade union movement develops in the State.

With regard to the 'deficiencies of labour legislation in the State, the gravest omission is the Act for the registration of trade unions. The need for such an Act has already been discussed in an other connection. So we can only reiterate here the immediate necessity for such legislation. Among the other Acts which exist in India and have not yet found a place on the statute book of Mysore are those concerning Land Acquisition for Housing, Liquidation of Indebtedness, Payment of Wages and Levy of Fines, etc. The occasion to introduce similar legislation in Mysore will depend upon the policy to be pursued by the Government in future. If a scheme of co-ordination for housing is accepted, the passing

of a Land Acquisition Act for the purpose will be necessitated. Similarly, if the problem of the indebtedness of the workers is taken up for solution, there will arise an occasion for legislation for the liquidation of debts. In respect of payment of wages and levy of fines special enquiries ought to be conducted to determine the extent of hardship caused to the workers due to delays in payment and the infliction of arbitrary fines. Legislation will then depend upon the magnitude of the problem.

WELFARE WORK

Welfare Work is a comprehensive expression applied to the voluntary efforts of the employers to ameliorate the condition of the workers in a factory. This is a new-fashioned endeavour to revive and reinstate the rapidly disappearing human relationship that subsisted between employers and workers in the domestic system of economy. The disappearance does not involve any moral implication regarding the modern employers, but it has been caused entirely by the expansion of the business unit and the inevitable substitution of a cash nexus for the original relationship. With the expansion of the body of workers in an individual unit the problem of establishing close contact between them and the employers has also grown in dimensions. Hence what was spontaneous and automatic in a previous generation has to be planned and organized on a fairly large scale at present. The justification for welfare work need not be merely on sentimental grounds. Both from the humanistic and the utilitarian points of view the employers stand to gain by a well conceived scheme of welfare work. It has a favourable reaction on the physical contentment and the Efficiency of the workers. The mental make-up of the labourers is largely modified, removing thereby one of the chief sources of industrial unrest. A certain sense of responsibility and dignity is inculcated among the workers and the gulf between capital and labour is effectively bridged. In fine, welfare work is

like the quality of mercy that blesses both the giver and the receiver of it.

ACHIEVEMENTS ELSEWHERE

In Western countries some of the enlightened employers have gone to an appreciable extent in creating amenities for their workers. In fact the lines of demarcation between the capitalists and the workers is getting blurred and the workers in some industrial areas live comfortably under the parental care of the employers. The Bata Boot Manufacturing Company of Czechoslovakia employs on an average about 12,000 workers and the employers provide the workers with free hospitals, schools, theatres, swimming pools, recreation grounds, etc.¹ The factory premises is a large self-contained town with so many amenities that the labourers can rarely feel that their relationship with the employers is only one of work and wage.

It is gratifying to note that the Indian Mills have also recognized the necessity of welfare work. The Buckingham and Carnatic Mills of Madras have brought into operation an elaborate scheme of welfare activities.² They have not only created all conceivable conveniences for their workers but have also provided them with an opportunity to develop their personality through such institutions as literary, dramatic and athletic associations. The authorities have maintained a full-time staff for the purpose and a considerable amount of expenditure is incurred. Among the other concerns in India whose ideals of welfare work are worth emulation, may be mentioned the British India Corporation in Cawnpore and the Empress Mills in Nagpur.

MEASURES ADOPTED IN MYSORE

In Mysore some of the textile mills have devoted their attention to welfare work. In the Bangalore Cotton, Woollen

¹ *Social Aspects of Rationalization* (International Labour Office), 1931, p. 42.

² *The Report of the Royal Commission on Labour in India*, 1931, p. 260.

and Silk Mills, Ltd., a Welfare Department has been started and endeavours are made to improve the condition of the workers. At the Krishnarajendra Mills a creche has been opened for the babies of the women employees. Still it is evident that in this direction the achievements of the Mysore industrialists are only in their embryonic stage. A primary necessity for success in this direction is a change of attitude on the part of the employers. There is no novelty in the methods to be pursued because what has been done elsewhere could be easily applied with slight adaptations, but a wholesale reorientation in the attitude of mind is a condition precedent of success.

However, we can commend with confidence the welfare work that has been done by the Mining Companies at the Kolar Gold Fields. They have provided recreations to their workers in the form of radio entertainments, dramas and interesting lectures. In respect of medical relief, infant welfare and primary education the Companies have done all that an enlightened employer could do.¹ They have maintained a hospital at Champion Reef at an expense of nearly two lakhs of rupees per annum. Besides they also contribute a fairly large amount to the civil hospital at Robertsonpet, maintained by Government. An appreciable expenditure is incurred for child welfare and a few baby welfare clinics are also maintained at convenient centres. These laudable measures are responsible for the low rate of infant mortality in the area, namely 182.5, which is comparatively lower than that of other industrial areas in Mysore. The Companies also provide sick pay to their workers without recovering any contributions from them.

By way of concluding this chapter we may briefly point out the scope and advantage of State co-operation in the schemes of welfare work. Welfare work is both intra-mural and extra-mural. In the provision of amenities to the workers there is an imperceptible transition from the factory to the

¹ M. A. Srinivasan: *op. cit.*, pp. 46-47.

environment in which they live. When the activities transcend the limits of the factory there is a common ground for the State and the employers to co-operate. Through a scheme of social insurance the State could do much to elevate the position of the workers, but at present it may not be feasible in Mysore. In the absence of it, generous contributions from the Government may be pooled with those of the employers and utilized for conferring desirable benefits on the workers.

CHAPTER X

RESUME AND OUTLOOK

AN epilogue offers the unique opportunity of taking a bird's-eye-view of the industrial organization that has been portrayed in the preceding chapters. That would enable us to overlook the details, and have a panoramic view of the economic landscape. In such a general survey the essential landmarks of evolution will be more vividly perceptible. Further, the treatment in an epilogue could be more informal and less scientific, so that the influence of certain personalities in shaping the economic structure of Mysore may be examined. That would render the picture more realistic and attractive than the analytic treatment adopted so far, which is bereft of all human touches.

REGION OF ECONOMIC SIGNIFICANCE

At the outset it is necessary to realise that Mysore is a region of great industrial potentialities. It is endowed with varied economic resources which are amenable to profitable exploitation. But its raw material and power resources are such that they can only be utilized within a reasonable distance from the plate of their origin.¹ Hence they are of a regional significance. These features entitle Mysore to be considered as an independent economic area in India. Even if Mysore was not politically separated from British India it would have been an economic entity, having inter-regional trade with the rest of India. Its political separation, however, has not brought in its train the further economic advantages that normally follow. The powers of fiscal manipulation which is a characteristic feature of full sovereignty are absent, so that in this respect, the political independence is not of much economic value. Mysore is an area with no fiscal powers in a country which is largely protectionist. Therefore

¹ See Chapter VIII, " External Trade ".

it can neither adopt a complete Free Trade Policy nor proceed with its industrialization with the usual protectionist confidence. There is always an air of uncertainty and doubt regarding the fiscal policy of British India and its repercussions on Mysore. Thus it has had to evolve its industrial development under very peculiar circumstances.

These features have had their influence on the industrialization of Mysore. The early development of industries in Mysore was cautious and slow. Private enterprise undertook only those industries which were of overwhelming advantage, such as Gold Mining and Cotton Textiles. In the nineteenth century these were the only large industries of some importance in Mysore. It should no doubt be admitted that private enterprise in Mysore was particularly deficient at that time, as it is even now to a great extent. In fact both the large industries that have been referred to were initiated by external enterprise and capital. But even the British Indian and English enterprise and capital fought shy of launching other industries whose results were relatively more uncertain. Therefore industrialization in the early period was confined entirely to small-scale organizations which were essentially of a local significance. There was a whole range of small-scale industries which utilized to a modest extent the resources which were within their reach. This pattern of industrial structure did not show any signs of substantial alteration till the expiry of the first decade of the twentieth century. It would have been difficult at that stage to foresee the nature of evolution. The forces of transformation were not likely to be self-generated by the then existing economic organism. Some form of external stimulus was needed to shunt the economy on to new rails.

INFLUENCE OF STATE INTERVENTION

At the beginning of the second decade of the twentieth century the State overtly took cognizance of the industrial potentialities of Mysore and manifested its desire to guide

and stimulate private enterprise in exploiting it. This marked an important landmark. The role of State intervention for economic development has consisted of three phases, each of which has been characterised by a predominant type of industrial policy. The first phase commenced with the inauguration of the Economic Conference in 1911. This was a pioneer attempt in India and its objective was to set people to think about matters concerning economic progress. In other words it attempted to create an industrial awakening. The Economic Conference had a permanent machinery consisting of committees for Industries, Agriculture and Education. Apart from the Annual Conferences where broad issues were discussed the permanent machinery was engaged throughout the year in encouraging private enterprise through creating facilities for industrial development. The object was to investigate the industrial potentialities of the State and enlighten the public. The publication of bulletins and dissemination of knowledge were some of the important functions of the permanent machinery. The Economic Conference was also successful in starting certain auxiliary institutions for stimulating economic activity such as the Bank of Mysore and the Chamber of Commerce. In fine, the leading policy of this phase of State intervention was to accelerate and guide private enterprise in economic development.

The Economic Conference was the forerunner of the Department of Industries and Commerce in Mysore. The lessons taught by the Conference induced the Government to start an independent Department for the development of industries. In 1913 the Department was started with Mr, (now Sir) Alfred Chatterton as its first Director. The first decade of the twentieth century was eventful in the history of industrial development in India.¹ During that period the policy of State initiative in industrial development

¹ See Dr. V. Anstey : " The Economic Development of India," Chapter IX, *The Trend of Industry and Industrial Policy*.

was energetically pursued in some of the provinces. Madras Presidency was the pioneer in adopting the policy and under the direction of Mr. Chatterton two important industries were started, namely, the manufacture of aluminium hollow-ware and chrome tanning. The United Provinces followed suit and appointed a provincial Director of Industries with an elaborate programme of industrial development. These enthusiastic departures in State policy received however a severe set-back in 1910. Lord Morley, the Secretary of State, in his famous despatch of 1910 politely ordered the Madras Government to suspend their activities in these undesirable directions, and to confine their attention strictly to industrial instruction.¹ This put a temporary brake on the industrial progress of India and deprived the initiative of the provinces in fostering industry, by leaving the State policy vague and undefined. Thanks to the political separation of Mysore, these factors could not have their repercussions on it, and the policy of State aid to industries was steadfastly pursued. Mysore was not only free from the injunctions imposed on Madras Presidency, but was able to secure the services of Mr. Chatterton, for whose enthusiastic activities Madras was no longer a suitable place. Thus although the political independence of Mysore was not of much avail in fiscal matters, it proved a great advantage for rendering direct aid to industries.

Mr. Chatterton, as Director of Industries in Mysore, applied in practice the policy enunciated by the Economic Conference. So his regime and achievements fall within the first phase of the State activity in relation to industry in Mysore. His endeavours were set in two directions, namely, the improvement of the technique of existing small-scale industries and the investigation of the further possibilities of industrialization. Handloom weaving, sugarcane crushing, lift irrigation and several other small-scale activities were taken up for investigation. The apparatus in use among them

¹ H. R. Soni: *Indian Industry and its Problems*, p. 352.

was improved and the processes were mechanized wherever feasible. With regard to further possibilities, a thorough industrial survey of the State was made by Mr. Chatterton and he even envisaged the possibility of wood distillation in Mysore, which was actually undertaken during the next phase of evolution. His schemes for starting major industries could not attain fruition during his regime as they needed the co-operation of the people, whose outlook had not yet undergone a change.

With the Dewanship of Sir M. Visvesvaraya in 1912 there were signs of a transition. But it was not till about five years hence that the second phase of State activity in industrial affairs commenced. This was an epoch-making era in the history of economic progress in Mysore. The leading economic policy of the State during this period was one of direct undertaking by Government, of large industrial concerns. Schemes were conceived on a very large scale and executed on colossal proportions. The Mysore Iron Works and the Krishnaraja Sagara Dam are two of the major schemes which attained fruition during this period. This policy brought about a thorough reorientation in the industrial outlook of the people of Mysore. They realised the capacity of Mysore to execute large schemes and vie with some of the industrial areas in British India. The justification of the policy consisted in the fact that even after a decade of encouragement private enterprise was not sufficiently courageous to undertake large concerns. Besides some of the basic industries had to be started and the necessary resources for them were lying dormant in the State.

The third phase of State activity, which is now current, is characterised by stabilisation and progress. This era of conservation and judicious reconstruction, was inaugurated by the great statesman, Sir Mirza Ismail, when he assumed office as Dewan of Mysore in 1926. A new departure in the industrial policy has been enunciated and successfully applied under his guidance during the past decade. Mysore owes

much to Sir Mirza Ismail for the method of partial participation of Government in industrial ventures which has been so fruitfully executed. It has inculcated a great confidence among people for undertaking large industrial concerns. Thus during this period attempts are made for approximating towards the true ideal of State action, namely, to encourage and educate private enterprise and withdraw ultimately from direct participation in industry.

FEATURES OF PRESENT ORGANIZATION

The salient features of the industrial organization in Mysore have already been analysed in the body of the work.¹ At this stage we may take a synthetic view of the pattern, in order to appreciate its novelty and the economic benefits accruing from it. To put it in a nutshell, the industrial resources of the State are envisaged as a whole, they are executed in parts with the co-operation of private enterprise, but harmonized ultimately through State guidance. This is the fundamental line of action pervading the whole fabric of industrial structure in Mysore. It is obvious therefore that any form of authoritarian control of the productive machinery is scrupulously avoided. Capitalistic production under private initiative is accepted and retained as the only method *par excellence* for a healthy industrial reconstruction. The slight adaptation of the system through State intervention is to eschew some of the undesirable features of Capitalism, such as the insularity of individual concerns and consequent competitive rivalry, which frustrate a comprehensive survey of resources and their exploitation in the interest of national progress. Capitalism is therefore the basic framework of industrial structure. State intervention is only to enliven it and energize it.

The positive benefits of the adapted scheme are that a well planned and co-ordinated industrial organization is achieved without impairing private initiative. Industrial

¹ See Chapter IV, " Structure and Organization ".

expansion is so planned as to avail of external economies accruing from other industries whose equipment and products are not entirely specific to them. The Paper Mills and the Cement Factory have been started with the express understanding of using some of the equipment of the Mysore Iron Works which was amenable to such utilization.¹ For instance the Tramways belonging to the Mysore Iron Works is used for conveying bamboo from the forest areas to the Paper Mills. Such dovetailing is not easily conceivable in a purely private capitalistic society. Similarly the Krishnaraja Sagara Dam is yielding large external economies to the Sugar Factory and the Hydro-Electric Works. The burden of the overhead expenses of the Sugar Factory is reduced due to the longer crushing season rendered possible by the waters of the Krishnaraja Sagara. In the case of the Hydro-Electric Works the Dam has obviated the necessity of capital expenditure by the works, for impounding water to regulate its supply through all the seasons. Thus it is refreshing to find that there is almost an integration of industries on a national scale. The whole economy of the State is conceived as one unit and the interrelationship between different undertakings is profitably established.

External economies also accrue to industries from other departments which are not directly related to it. The results of agricultural research in the State are available for the benefit of industry. The sugar industry has profited much by the manurial experiments for sugarcane growing conducted by the Agricultural Department. Similarly the scientific research at the Institute of Science has brought about far-reaching economies in some of the industries. Thus there is a co-ordination between the institutions of research and the industrial concerns through the guidance of the State. In the actual working of the economic machinery, while the ideal of individual initiative and enterprise is maintained the interests of national progress for the ultimate benefit of the

¹ See Chapter III, " Large Industries—Development and Technique ".

community is not overlooked. It is evident therefore that the industrial organization in Mysore presents some features, which can claim an element of novelty.

FUTURE OUTLOOK

The prospects of future success may be estimated by the evidence of the policy pursued for the past three decades. One of the remarkable achievements is the creation of an industrial consciousness among the people. Both private enterprise and capital for industrial development are forthcoming at present in a generous measure. To that extent the State policy has been a success. Looking ahead, a few changes are expected to occur not at a distant future, which may enable Mysore to turn yet another leaf in her industrial progress. The inauguration of the Federal Constitution in India can mark the beginning of a new era for the Indian States if they make a proper use of the opportunity. While discussing in an earlier chapter, the fiscal powers of the States in the new constitution we were somewhat pessimistic about the chances of emancipation of the States from their present anomalous situation.¹ That conclusion was reached on the assumption that the normal reaction of the States will not be different from what it has been all along, in which case there is no hope of a change for the better. But with a change in outlook, and a reorientation of the internal policy, the States can make a good use of the unique opportunity afforded by the Federation. They will be equal partners in a Commonwealth of nations, and with a judicious alignment of the members in the federal legislature, it is not inconceivable that each of them can secure what is good for his own State through the co-operation of others. But individual success, as much as the success of the scheme, will depend upon the subordination of certain erroneous conceptions of sovereignty, for the benefit of the country as a whole. Patriotism has no bounds but it spreads in

¹ See Chapter VIII, " External Trade ".

ever-widening circles. In this respect as in others, Mysore can be a model to some of the Indian States which are chary of joining the Federation. Under the enlightened guidance of its minister, Sir Mirza Ismail, Mysore is preparing to join the Federation and will very soon bid fair to start a new era of economic and social progress.

From the purely economic standpoint, Mysore has to do a few more things in the future than what she has attempted so far. Economic success in a competitive world depends ultimately upon the relative cost conditions. If the expanding industries of Mysore need wider markets her cost conditions should be comparable with those of other industrially progressive countries. Factor equipment alone cannot contribute towards competitive capacity. Refinements in the technique and organization of production are necessary. Rationalization of the existing large-scale industries is incumbent. Rationalization is both a process and an attitude of mind. If the industrialists develop a scientific attitude of mind the application of the new process of organization is not difficult. Another indispensable characteristic of industry, in a cyclical world, is the flexibility of its structure. A quick adaptation is necessary to face the ebb and flow of business conditions. Mysore industries are not altogether rigid in this respect.¹ But in future they should consciously prepare themselves for the inevitable contingency lest they be taken unawares.

For improving the cost conditions of industries, external economies are as important as internal economies, Mr. Robinson classifies external economies into two categories, namely, mobile and immobile economies.² Immobile external economies are not available to individual firms beyond a reasonable radius of a concentrated industry. The external economies that are now available in Mysore are

¹ See Chapter IV, " Structure and Organization " Section, *Structural Dynamics*.

² E. A. G. Robinson: *Structure of Competitive Industry*, p. 142.

of the immobile type. Each establishment derives them either from a growth of the industry to which it belongs or from a development of industrialization in the State as a whole. But this does not exhaust all the sources of economy for the individual firm. The latter can also benefit by the International Mobile type of economies. They are due to a growth of an industry in the world as a whole. Improvement of machinery and better processes of production effected in a highly concentrated industrial centre are available to individual firms in distant areas. They form the mobile type of external economies. Mysore should also take advantage of such mobile external economies hereafter- To facilitate this, the State should start a Bureau of Industrial Information which should keep itself in touch with all the important centres of industrial research in the world. The information that it secures may be communicated to the industrialists for adoption.

A few remarks may be made regarding any new industries that may in future be started in Mysore. As far as possible emphasis should hereafter be placed on the development of light industries in the State.¹ The land-locked position of Mysore aggravates its transport problem. The cost of transportation of heavy products to distant consuming centres becomes high and as a consequence the market gets circumscribed to a narrow area. Hence heavy industries may be encouraged to operate only on a scale commensurate with the demand of the local and neighbouring markets. India is a continent and as such it cannot be expected to have a unified market depending on a concentrated industry.

Finally an appeal may be made to the future promoters of industries, to pay some heed to certain valuable economic considerations, before launching an enterprise. Economic science is not entirely barren in this respect. It can make valuable contributions to the practical genius of the industrialist. It is beneficial for an industrialist to take advantage

¹ See Chapter I, " Population and Resources ".

of the results of Economic research. It can guide him regarding a proper choice of location, an efficient size of operation and an optimum scope of integration. These are matters that are of fundamental importance for the efficiency of an industry. Particularly for a State like Mysore, which is experimenting in novel methods of industrial organization, a sound theoretical study of the economic principles governing industrial operation is most valuable. If Mysore can combine with its far-sighted industrial policy a fair share of economic analysis as applied to industrial organization, its future is full of hope and promise.

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308 INDUSTRIAL DEVELOPMENT OF MYSORE

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310 INDUSTRIAL DEVELOPMENT OF MYSORE

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MATERIALS FOR RESEARCH

This piece of research on the industrial development of Mysore State has been undertaken under certain special difficulties with regard to facts and figures. Both in their adequacy and in the form of presentation there are some deficiencies in the existing material for research. But it must be clearly indicated at the outset that Mysore is much better equipped in this respect than many other parts of India. We indicate the existing defects more to point out the right lines on which the existing machinery for collection and dissemination of industrial information should be developed rather than as a censure of their policy and procedure.

There has so far been no published work by an economist on the industrial development of Mysore. So there is no source from which some inspiration could be drawn about a plausible method of approach. Hence the plan of my thesis had to be conceived on original lines since it is a pioneer work. The thesis of Dr. Abayambal, my predecessor in the London School of Economics, is in type script and available only in England. It could not be of much help to me because its treatment is more historical and descriptive than analytical and critical. A greater service would be done to a progressive industrial State like Mysore by applying modern standards of economic judgment than looking at it from a historical perspective. Therefore in respect of a method of approach my work had to start a new tradition instead of benefiting by an existing one.

With regard to materials for research the chief difficulty consists in the paucity of government publications describing the growth and development of individual industries. The bulletins published by the Department of Industries and Commerce and the Economic Conference pertain essentially to an era which preceded the growth of modern large-scale industries. Hence they either deal with small-scale industries or with the possibilities of developing certain large-scale concerns. Very little information is available in them about the technique and organization of the existing large-scale concerns. The administration reports of the Department of Industries and Commerce give only the activities of the Department in relation to certain industries. They throw very little light on the technique employed and the internal administration of the various industries. A vertical study of individual industries, instead of a horizontal survey of several industries from a particular standpoint, would have been preferable. Information on such lines could be made available if individual industries published annual reports indicating their technical and economic position. But it is not always done. The Iron and Steel industry, for instance, does not publish any facts and figures for public consumption. Its Annual Report to the Government is a confidential document.

So there is no authentic information available to make any reliable estimate of the commercial value of the concern.

The Tariff Board enquiries are useful in this connection. The Memorandum submitted to the Tariff Board, the evidence of the Mysore Government and the findings of the Board are the only sources of information to ascertain the nature of the technique employed and the commercial position of the industries. Therefore those industries that come under the purview of the Tariff Board manifest their position to the public more clearly than others. Industries which are purely of a local significance do not publish all information that is necessary for useful investigation. For instance, with regard to the Soap Factory no information is available in the published reports either about the capital invested or the working expenses, so that the unit cost cannot be determined and the commercial success of the concern cannot be adequately explained. This is also true of some of the other government concerns. If it is inappropriate to publish annual balance sheets for these concerns at least small pamphlets may be periodically issued explaining their commercial position. Figures about the aggregate realisations from the industrial concerns given in the Administration Reports of the Government of Mysore are not of much avail for any serious economic investigation.

Periodical industrial surveys are necessary to observe the trends of development. After 1914 no such survey has been undertaken in the State. With regard to the Return of Large Industrial Establishments published in Mysore, two observations may be made. It ought to be published more regularly and it should be modelled on the Census of Production of Great Britain or the Census of Manufactures of U.S.A. It ought to contain information regarding the various size groups of industrial establishments and the trends of changes. The proportion of workers among the concerns and the percentage of output in the respective groups should be indicated. Otherwise it is difficult to observe the trends of changes. I have had to indulge in elaborate calculations in order to draw some useful conclusions from the data given in the Return of Large Industrial Establishments in Mysore.

The Review of the Railborne Trade of Mysore is a very valuable document for ascertaining the position of external trade of the State. But the document in its present form has certain deficiencies. Statistics of roadborne trade should be collected and incorporated in it. In the absence of it no accurate estimate of the exports and imports from the State is possible. The extra cost that it might involve is worth while in view of the importance of such data. Secondly the reports should have certain uniformity in the form of presentation of data. During some years certain types of information are altogether omitted but they are again incorporated in the reports of later years. For instance there is a gap of about four years starting from 1921-22, during which the figures relating to the proportion of manufactured goods to raw materials imported and exported is not mentioned. Such discontinuity

is not desirable. Next, with regard to the direction of trade the present system of giving data for five blocks is inadequate and misleading. More information about the actual places of destination and origin of trading goods is essential.

The information that is available at present about labour conditions in Mysore is very meagre and unsatisfactory. It is necessary to have more information about the scale of wages and the family budgets of workers in different industries. A cost of living index and an index of prices should be periodically prepared and published. Data regarding the labour turnover in factories is necessary for determining the village connection of industrial workers.

There is no adequate information available about the extent to which banks in Mysore finance industry. This information had to be specially collected for my sake from the various branches of the Bank of Mysore. It is difficult to ascertain the necessity for an industrial bank in Mysore in the absence of such information.

Economic investigators should have greater access to the scheme of railway rates in Mysore. The underlying principles of rate adjustment are not adequately given in the Annual Reports of the Railway Department. The information given in my thesis had to be obtained by correspondence with the Railway Department. No data seems to be collected about the extent of road competition in Mysore. Unless this is done, counter measures of rate adjustment by the railways will have to depend on mere guess work.

I have had enormous difficulties in surmounting the above troubles for obtaining the necessary materials for research. Some of the difficulties were obviated by me by a personal inspection of individual concerns and collection of data before I started to England. That has not only helped me to verify some of the figures given in the reports but has given me a first-hand knowledge of the actual technique and methods of operation in various industries. While in England I had to keep myself in continuous correspondence with the Director of Industries in Mysore. My special thanks are due to him for his unfailing courtesy and readiness in furnishing me with all the information that was necessary for my purpose. Finally, I had to resort sometimes to a mediate approach by depending on indirect evidence and deductions whenever information was not directly available.

Thus the piece of research that I have attempted had by no means a smooth sailing. In its finished form the thesis does not reveal all the difficulties that had to be encountered. This note is just to bring to light some of the difficulties that were met, with and obviated.

INDEX

- Agriculture—
 - resources and methods, 12
- Alfred Weber-
 - theory of location of industries, 105
- Amalsad, 33
- American Banking—
 - and finance of industry, 139-140
- Associations—
 - of different crafts, 62
- Bangalore City Municipality, 278
- Bangalore Woollen, Cotton and Silk Mills, Ltd., 97
- Bankers' Industrial Development Co., 136, 160
- Banks-
 - types in Mysore, 147
- Bank of Mysore, 148, 297
 - feasibility of reorganizing, 155
 - long-term finance, 159
- Banques d'affaires, 139
- Bhadravathi, 23
- Big Five, 135
- Bismark—
 - reimposition of duties by, 236
- Block Capital, 130
- Board of Industries and Commerce—
 - in Mysore, 146
 - reorganization of, 158
- British Banking—
 - and Industry, 133-135
- Buchanan, Dr., 8, 86
- Buckingham and Carnatic Mills, 278, 290, 292
- Capitalization—
 - of the Mysore Iron Works, 69-71
- Central Electricity Board, 169, 204
- Central Industrial Workshop—
 - in Bangalore, 214
- Chamarajendra Technical Institute, 221, 222
- Chamber of Commerce, 253, 254, 297
- Champion Reef Gold Mining Co., Ltd., 95
- Chatterton, Sir Alfred, 297, 298
- Classification of Industries—
 - in Mysore, 64-66
- Coal, 19, 24, 252
- Coffee, 16
- Comparative Cost Theory—
 - criticisms of, 233-234
- Conditioning House—
 - for silk, 40, 41
- Co-operative Credit—
 - in Mysore, 150
- Corporation Finance—
 - methods of raising, 131
- Cotton and Cotton Fabrics, 249-250
- Crystle and Co.—
 - managing agents, 96
- Current Account Connection—
 - with a German credit bank, 138
- Davidson Committee, 256
- Debentures, 132
- Decentralizing Factors—
 - regarding cotton industry, 100-101
- Declining Industries, 28-30
- Demonstration Factories—
 - in Mysore, 218
- Discrimination—
 - among public utilities, 163-166
- East India Kips, 251
- Economic Conference—
 - in Mysore, 146, 148, 29'
- Economic Region—
 - Mysore, 241, 295
- Elasticity of Substitution—
 - of scrap and pig iron, 75, 76
- Electricity Rates—
 - in Mysore, 200, 201
- Empress Mills, 278, 292
- Engineering College—
 - at Mysore, 224

- Entrepreneur—
 factor combinations, 129
 role of, 209, 211
 External Economics—
 mobile and immobile, 303, 304
- Factories Regulation, 284
 Factors Retarding Progress—
 of the Iron and Steel Industry in
 Mysore, 71-73
 Federal Constitution—
 Mysore and, 302
 Finance—
 of small enterprises, 61, 62-63
 Fiscal-
 position of Mysore, 25
 Flat Rates, 198
 Forests—
 resources and exploitation, 17
 France—
 artistic creation in industry, 53
 Free Trade—
 merits of, 237
 Friedrich List, 236, 240
- General Electric Co., 194
 George Scott and Sons—
 plant for soap manufacture, 81
 Germany—
 small-scale industries of, 53-54
 German Banking—
 and finance of industry, 136-139
 Gold-
 occurrence of, 4, 7
 mining of, 93-96, 296
 Government Textile Institute, 218
 Graham's Argument—
 decreasing cost and protection, 42
 Great Britain—
 the small industries of, 54, 55
 Grid System, 204
- Hides and Skins, 250-251
 Historical School—
 German, 236
 Home Industries Classes—
 for women, 222
- Hopkinson Rate, 198
 Housing Conditions, 276
 Hydro-Electric power, 22, 25, 171, 301
 history of development in Mysore,
 133, 134
- Incentive Systems—
 of wage payment, 279
 Indian Cotton Industry—
 survey of its vicissitudes, 98
 Indian Industrial Commission, 21, 22,
 33, 145, 218
 Indian Munitions Board, 35
 Indivisibilities—
 of production, 115, 205
 Industrial Development Fund—
 in Mysore, 155
 Industrial Education, 220, 222
 Industrial Finance—
 nature of, 130
 organization in Mysore, 156, 157
 suggestions for improvement,
 158-161
 Industrial Investment Fund—
 in Mysore, 155
 Industrial Population, 260, 261
 composition in Mysore, 264
 Industrial Schools, 221
 Industries Department—
 in Mysore, 32, 212, 220, 272, 297
 Infant Industry—
 argument, 240
 Integration-
 problems of, 123
 types in Mysore, 124
 Inter-regional Trade, 232
 Irrigation—
 in Mysore, 17
- Japan—
 industrial organization of, 52-53
 Jobber System—
 for labour, 266
 John Taylor and Sons, 7
 Joint Stock Companies—
 growth of in Mysore, 141

- Kaiser-i-Hind Woollen Mills, 101
- Kaldor, Nicholas—
 - co-ordinating ability, 115
- Kishimoto Shoten—
 - importer of Indian Pig Iron, 72
- Kolar Gold Mines—
 - supply of power, 194, 241
 - labour population, 263
 - housing conditions, 277
 - welfare work, 293
- Konsortium, 137
- Krishnaraja Sagara, 17, 299, 301
- Labour in Mysore—
 - immigration, 262, 263
 - scale of wages, 273
 - family budgets, 273-274
 - hours of work, 285
 - conciliation of, 289
- Lack Turnery, 48
- Liberalism—
 - policy of, 225
- Load Factor, 197, 201
- Location—
 - theory of, 105-109
 - split in, 113
 - of cotton industry in Mysore, 111-112
 - of iron and steel industry in Mysore, 109
 - of sandalwood oil manufacture, 110
 - of cement industry, 112-113
 - international, 235
- Madras and Southern Mahratta Co., 171
 - revision of contract with, 173
- Mahalakshmi Woollen and Silk Mills, Ltd., 101
- Managing Agents, 143
- Marketing Problems—
 - of Mysore Iron Works, 73-75
 - of hand-loom weavers, 33
- Material Index, 107, 109, 110
- Maternity Benefit, 288
- Metal Factory, 218
- Metre Rate, 198, 200
- Mine Panchayats, 269
- Mineral Resources, 7
- Minerva Mills, 98
- Mirza Ismail, Sir, 299, 303
- Morgan, J. P. and Co.—
 - banking house, 139
- Mysore Gold Mining Co., Ltd., 95
- Mysore Iron Works, 8, 66, 109, 122, 124, 126, 127, 174, 209, 228, 299, 301
- Mysore Spinning and Manufacturing Mills, 96, 278
- Mysore Sugar Factory, 86, 121, 210
- Mysore Tanneries, Ltd., 45, 227
- Nandidurg Mines, Ltd., 95
- Oil Seeds, 250
- Oorgaum Gold Mining Co., Ltd., 95
- Operating Expenses—
 - Mysore railways, 185
- Opportunity Cost Conception, 233
- Optimum—
 - unit of silk filature, 41
- Organization—
 - problems of, 125
- Paper Mills, 91, 92, 114, 210, 215, 216, 301
- Part-ownership—
 - by the State in Mysore, 210
- Per Capita Consumption—
 - of cloth in India, 100
- Pioneering Factories—
 - in Mysore, 218
- Pipe Foundry—
 - at Bhadravathi, 68
- Pit Automatic Loom, 33
- Ploughing in—
 - of profits, 132
- Political Separation—
 - of Mysore, 241-242
- Population—
 - density, 2
 - occupational distribution of, 3-6
- Power—
 - resources and deficiency, 19
- Preference Shares, 132

- Promotion—
 of public companies, 131
 of companies in Mysore, 143-146
 and Government of Mysore, 145
- Protection—
 fallacies of, 238-240, 257, 258
- Public Control—
 of industries, 167
- Public Corporation, 169
- Quasi-Government—
 category of industries in Mysore, 65, 86-93
- Rail-borne Trade—
 of Mysore, 243
- Railways in Mysore—
 construction of, 172
 earnings of, 177
 traffic handled, 180, 181
- Rate Structure—
 general theory of railway, 187, 188
 of Mysore railways, 190, 191
 in electricity industry, 197
- Rationalization, 303
- Road-Rail Competition—
 in Mysore, 192, 193
- Royal Commission on Labour in India, 264, 266, 271, 278, 282, 284
- Rural Electrification—
 in Mysore, 195
- Sandal Oil Factory, 79, 110, 209
- Sargent Florence—
 criticisms of, 108
- Scientific Management, 279, 281
- Seal Committee, 147, 156, 159
- Securities Management Trust, 136, 160
- Sericulture, 35
- Short-time Financing, 133
- Silk Manufacture, 83
- Silk Waste—
 disposal of, 84
- Size—
 of a firm, 114
 forces determining optimum, 115-116
 and efficiency in Mysore, 117
- Small-scale Units—
 advantages of, 58-61
 suggestions for improvement of, 61-63
- Soap Factory, 81, 209, 218, 301
- Southern Mahratta Co.—
 construction of railways by, 179
- Spinning Centres, 229
- Spun Silk Mills, Mysore, 85, 210
- Sri KrJshnarajendra Mills, 97, 293
- Sri Rama Puram, 278
- State Action—
 sphere of, 207
 in industrial affairs, 213
- Steel Plant—
 in Mysore, 68, 75, 123
- Structure—
 and organization, 104
 dynamics of, 127
- Sugarcane—
 crushing of, 228
- Switzerland—
 small-scale industries of, 51-52
- Tackavi Loans—
 for industries in Mysore, 63, 152
 financial cost to government, 154
 future policy, 162
 grant of, 216, 217
- Tanning—
 as a cottage industry, 45
- Tariff Board—
 findings of (Iron and Steel industry), 78
 Paper manufacture and, 91
 optimum of sugar manufacture according to, 120
 efficient steel plant, 122
- Tariff Protection—
 position of Mysore, 25
 for sericultural industry, 42, 256
 Indian sugar industry, 89
 under new constitution, 255, 256
- Tata Iron and Steel Co.—
 understandings regarding prices and markets with, 74

- Tata Iron and Steel Co.—
 optimum output of, 78
 production capacity of, 121-122
 Taylor, F. W., 279, 281
 Technical Education, 219, 224
 Technical Factors determining size,
 56-58
 Textile Industry—
 cotton mills, 96-98
 woollen and silk, 101-102
 Trade Commissioner—
 for Mysore in London, 212, 216,
 253, 254
 Trade Unions—
 in Mysore, 268
 Trade Union Legislation, 267, 268,
 290
 Traffic Board—
 in Mysore, 192
 Two Part Rates, 198
 Ubiquities, 106
 University of Mysore—
 enquiry into labour conditions, 272
 Vani Vilas Sagara, 17
 Vertical Disintegration—
 of production, 115
 Visvesvaraya, Sir M., 299
 Weak Competitive Power—
 sericulture in Mysore, 38
 Weaving Institute—
 at Bangalore, 222
 Welfare work—
 at the Mysore Iron Works, 77
 significance of, 291
 Wood Distillation, 21, 67-68, 70
 Workmen's Compensation, 286
 Works Committees, 290
 Wright Rate, 198, 200

