

THE HAND-LOOM INDUSTRY IN THE MADRAS PRESIDENCY

CHAPTER I

INTRODUCTION

'The handloom weaving industry of India is still of great importance in the natural economy and has up to the present shown remarkable vitality in the face of competition with factory products. It is likely to remain the principal form of village industry and there is no immediate reason to fear its decline.'—*Royal Commission on Agriculture in India.*

'The revival and expansion of rural industries on an economic footing is a desideratum of any policy which contemplates the extension of arable farming.' *Ibid.*

'I hold the opinion that *the handloom may remain in India for many years the commercial weaving machine*, provided the loom is suited to the work to be done and is supplied with properly prepared materials.'—Prof. T. W. Fox.

NEXT to agriculture hand-loom weaving is the most important industry in India. It is the primary means of livelihood of a large number of persons. It is also the means of subsidiary income to many agriculturists and forms the main auxiliary to agriculture. It is important both as an urban and a rural industry, giving employment to millions of men, women and children of all communities.

The term 'hand-loom weaving' has a wide connotation. It comprises weaving of fabrics of cotton, silk, wool, jute, coir and cora-grass, weaving in each of them obtaining in such areas as there are natural facilities. Jute is woven on hand-looms in Bengal and the Northern Circars. Coir manufactures obtain on the West Coast. Woollen spinning and weaving as cottage industries are found in many provinces, especially in the Punjab, the Indian States of Hyderabad, Kashmir and Mysore. Silk-worm rearing, and silk reeling and twisting are common in Mysore, Bengal, and Kashmir; while silk weaving is carried on in many important cities all

over India. But all these can never equal either in magnitude or in value the cotton textile home industry.

The importance of the cotton textile industry cannot be exaggerated. The three main human physical needs are food, clothing and shelter; while agriculture provides all of them in a sense, it is the cotton textile industry that supplies the bulk of the cloth required. Cotton is the natural clothing of the people of India. It is light, and cool and best suited to the tropical climate. The needs of the people are simple; besides, they are poor and cannot afford costly luxuries. It is estimated that the proportion of cotton cloths to other fabrics such as silk, rayon or artificial silk and woollen consumed in India is 30 to 1. Cotton weaving, therefore, plays the same part in the Indian industrial system as the woollen industry did in England. Next comes silk weaving as a cottage industry. Silk is locally available. Besides, its use is decreed by Indian customs—Hindu and Muslim—on religious and ceremonial occasions. Practically all the silk fabrics that are manufactured in India are produced by craftsmen in their homes on hand-loom.

No doubt a large part of the cloths required by the people is met by manufactures of mills in India and by foreign imports. There are more than 300 cotton spinning and weaving mills and about 17 woollen mills.¹ Still home industries in cotton, silk and woollen fabrics play a very important part. Not less than a fourth of the total consumption of cotton cloth in India is prepared on hand-loom. Silk weaving and weaving of woollen blankets and carpets are primarily cottage- and hand-industries. It is difficult to estimate the total consumption of silk and woollen fabrics; but it can be roughly stated that more than half of the silk and a very considerable part of woollen blankets and shawls consumed in India are produced on hand-loom.

Out of 146 million actual workers in India, textile industries of all kinds (cotton, silk, woollen, jute, coir and

¹ The Statistical Abstract of Br. India, 6th issue, mentions 613 cotton weaving and 6 cotton carpet factories. This includes ginning and pressing factories.

other fibres) account for 4 million workers.¹ Deducting 800,000 persons who are employed in all textile factories (including both skilled and unskilled labourers in seasonal and

¹CENSUS OF 1921 AND THE INDUSTRIAL CENSUS TAKEN THEREWITH

Manufactures of	Census of 1921 (a)		Industrial Census, 1921 (b)			Workers in Cottages <i>c = (a-b)</i>	
	Men Workers	Women Workers	Number of Factories*	Men employed	Women employed	Men	Women
Cotton ...	1,803,054	1,172,168	2,037	334,719	99,177	1,468,335	1,072,991
Jute, Coir, etc.	365,626	224,229	484	258,636	51,875	106,990	172,354
Wool ...	69,636	42,396	88	9,652	887	59,984	41,509
Silk ...	34,034	46,688	174	8,428	995	25,606	20,693
ALL TEXTILES	2,455,296	1,575,378	2,889	616,019	157,046	1,839,277	1,418,332

NUMBER OF FACTORIES, FACTORY WORKERS AND
HOMEWORKERS IN COTTON TEXTILE
INDUSTRIES—(Census of 1921)

	Census of 1921		Industrial Census, 1921			Workers in Cottages	
	Men Workers	Women Workers	Number of Factories	Men Employed	Women Employed	Men	Women
Cotton cleaning, ginning and pressing.	148,240	87,434	1,418	56,941	26,114	91,299	61,320
Cotton Spinning ...	115,030	352,670	} 613	277,696	72,983	1,377,118	1,011,751
Cotton Weaving ...	1,539,784	732,064					
Dyeing ...	64,549	33,502	63	3,482	360	61,067	33,122
Lace and embroidery ...	118,014	55,845	28	347	3,478	117,667	52,367

regular factories) there are still more than 3 million textile workers who carry on their work in their own homes. Thus the importance of the textile home industry is striking.

IMPORTANCE OF THE COTTON HAND-LOOM INDUSTRY

Taking the cotton textile industry alone, cleaning, ginning, pressing, carding, spinning, sizing, weaving, bleaching, dyeing and printing support 5.8 million persons of whom about 3 millions—1,903,054 men and 1,172,168 women—are actual workers. Of them about 530,000 persons alone are employed in factories.¹ The rest are connected with hand-weaving and other connected home industries. These figures are quoted here to show the real magnitude of the handicrafts in cotton textiles, which support nearly a sixth of the total Indian industrial population.

The hand weaving industry, besides offering full time employment to many weavers, is also the subsidiary

¹PERSONS EMPLOYED IN COTTON FACTORIES OF ALL KINDS
IN BRITISH INDIA AND NATIVE STATES IN 1926

Description	British India		Native States		Total	
	Number of Factories	Number employed	Number of Factories	Number employed	Number of Factories	Number of persons employed
Cotton ginning, baling, pressing ...	2,092	145,014	610	39,380	2,702	184,394
Cotton spinning and weaving	273	338,684	46	40,028	319	378,712
Cotton hosiery	18	1,358	1	49	19	1,377
Dyeing and bleaching ...	32	4,886	5	700	37	5,586
Clothing factories ...	4	1,923	...	...	4	1,923
Total ...	2,419	491,865	662	80,157	3,081	572,022

means of income to agriculturists.¹ In the Madras Presidency the industry is mainly a caste specialisation and the primary occupation of such castes. Even here though there is a tendency for the industry to concentrate in certain centres it is still primarily a rural industry. In other provinces, Assam, the Central Provinces and Rajaputana weaving is mainly found in villages. Excepting in a few urban centres where it is the only occupation of weavers who manufacture special kinds of cloths, as the laced cloth of Madura, solid bordered cloths of Salem, the Madras handkerchiefs and lungis etc., hand-weaving is still mainly carried on in villages. Even in centres where the industry is localised and the weaver is fully employed at the loom, he depends on agriculture to some extent as a subsidiary source of income. Thus agriculture and hand-loom weaving are closely related in our rural economy.

In the beginning of the 19th century the cotton textile industry—from the cleaning of cotton to the dyeing and finishing of manufactures—was the work of the artisan. In that society a part of the growing population was always absorbed by this expanding industry and thus restrained the pressure of population on land. But the introduction of machinery threw a large number of those dependent on this industry out of employment and led to overcrowding in agriculture and aggravated the problem of rural unemployment. The present attempt to revive the charka and the hand-loom is intended mainly to solve the problem of unemployment and under-employment in villages and to provide subsidiary means of livelihood to agriculturists with only small holdings.

Lastly, the revival of the hand-loom industry will solve the problem of general unemployment and lead to a better distribution of work, wealth and welfare. A century of unabated enthusiasm for industrialism and mechanisation of industries has created a sense of insecurity even in the minds of

¹ 'There are periods in the cultivator's year when all the members of the family are busy in the fields; but there are periods also when they are idle. At such times there is much labour running to waste and ample scope for some form of secondary occupation. If the cultivator could bring himself and his family to learn the art (of weaving) and face the initial expenditure of Rs. 25 he could earn a few rupees more. Hand-weaving conducted on these lines would be as sound economically, as it would be acceptable to the sentiments of the people.'—MR. EDYER. *Census Report. 1921*

its most ardent advocates. It has not only not solved the problem of unemployment but has aggravated it. The introduction of mechanical power may mitigate the physical strain of workers and lessen their hours of work to some extent. But it leaves more permanent sores elsewhere. The labour displaced by machinery and power cannot be fully absorbed in other fields and so unemployment, conflict of labour and capital and further unemployment follow. The philosophy of machinery and power is too sanguine. The power of machinery to solve our problem is limited. This is now slowly recognized. If India is to make history and avoid all the evils and horrors of Western Industrialism, the path lies not in rapid industrialisation with the aid of gigantic imported machinery and in the indiscriminate substitution of mechanical power for man-power but elsewhere—viz., in the avoidance of the waste of human life and in the subordination of machine to man. Hand-loom weaving, in the present circumstances, satisfies this test and its encouragement will give employment—which no other industry can claim to do—to several million persons, who are famishing for want of work. The charge of 'making work' cannot be made against it. The cost of its revival and protection will not be greater than the cost of protecting the mill industry. The ultimate burden on the taxpayer and the consumer will be much less. It will further have the decided advantage of avoiding the evils of excessive industrialism.

Thus the hand-loom industry is important :

- (1) as supporting a large number of persons who have hand-weaving as the only ostensible means of livelihood;
- (2) as a means of providing subsidiary occupation to agriculturists who have a long off-season;¹
- (3) as a means of solving the problem of the increasing unemployment of the working classes;
- (4) as a measure of relief in tracts where agriculture is almost precarious; and

¹ Hand-loom weaving is the only dependable ancillary to agriculture. In precarious tracts—which are too many in India—inactivity may be almost unavoidable for a whole season or even for a whole year. Where the cultivator pursues some crafts which will employ himself and his family at times when they are not required in the fields—a craft in which continuity of employment is not essential—the proceeds of the craft are a saving from waste and therefore clear gain. The most typical of such craft is the production of home spun cloth.—MR. EDVE. *Census Report, 1921.*

(5) as a means of securing economic justice in the distribution of work and wealth.

The cotton hand-loom industry is most important in the Madras Presidency. While the mill industry has developed in the Bombay Presidency, it is in Madras that the hand-loom weaving industry, in spite of the rapid growth of mills, still maintains its own and consumes more than a fourth of the yarn available for hand-looms in India.

There are certain factors which have helped the development of this industry in this Presidency. First, a regular supply of yarn is assured by the spinning mills of the Madura group. Secondly, the growth of the dyeing industry in Madura has enabled the country weavers to manufacture coloured fabrics with which mills do not compete. Thirdly, Madras is fortunate in having from the days of the East India Company a flourishing export trade in handkerchiefs and lungis which are manufactured on hand-looms.

It may now be asked: can the hand-loom be revived in the teeth of mill competition? The answer is in the affirmative. It is not based on mere sentiment or on the fashionable creed which denounces everything modern but on the opinions of textile experts and on the peculiar economic conditions prevailing in India. Sir Alfred Chatterton, to whom many South Indian industries owe their existence, declared: 'The hand-loom weavers, who have already achieved wonders in the age of machinery, will be able to turn the tables on the power-loom if but a fraction of the capital, energy and organisation were devoted to their trade that have been expended in pushing power-loom.' The late Prof. T. W. Fox of the College of Technology, Manchester, stated more emphatically: 'The hand-loom will remain in India a *commercial machine*, provided the industry is properly organised'. In what respects the present organisation of the industry is weak and on what lines it can be improved to render the hand-loom a commercial machine is the thesis of this book.

CHAPTER II

HISTORY OF THE INDIAN COTTON TEXTILE MANUFACTURES

A SHORT history of the Indian cotton textile industry with special reference to the hand-loom may be relevant in this connection.

THE INDUSTRY IN THE PRE-MOHAMMEDAN PERIOD

India was the original home of cotton manufactures. From very early times it was well known as the cotton producing and manufacturing country, and even today it is the second cotton producing and the third cotton manufacturing country in the world.¹ The arts of cotton spinning and weaving were in a high state of efficiency even two thousand years ago as recorded in the memoirs of Herodotus and

I. WORLD'S PRODUCTION OF COTTON IN 1930-31 (From the Indian Finance Year Book, 1932.)

Country	Yield of Cotton crop (Tods)	Area under cotton in hectares
U. S. A. ...	14,932,000-bales of 500 lbs.	30,881,000
India ...	4,820,000 " 400 lbs.	8,774,000
China ...	2,400,000 " 500 lbs.	4,100,000
Egypt ...	1,603,000 " 500 "	3,680,000
U. S. S. R. ...	1,723,000 " 500 "	4,450,000
World's production	27,474,000 " 500 "	56,000,000

II. WORLD'S CONSUMPTION OF COTTON IN 1930-31 (International Cotton Federation Estimates)

Country	Consumption in 1,000 bales	Percentage of increase (+) or decrease (-) over 1912-13.
U. S. A. ...	5,246	- 8
United Kingdom ...	1,964	- 54
Japan ...	2,565	} + 208
China ...	2,329	
India ...	2,513	+ 15.4
Germany ...	1,086	- 37.1
U.S.S.R. ...	1,821	- 12
Total of world's consumption ...	22,483	- 1

Pliny. Dr. Ananda K. Coomarasami, after a careful study of the historical material, writes, 'Cotton weaving was a true domestic industry, practised even by ladies of rank, or at least a part of the household work. But in most parts of India weaving was already in Buddhist days a distinct profession and carried on largely, though not exclusively, by men.' The export of Indian cotton fabrics was also important during this period. The importance of the industry has been noted by many foreign historians and travellers; Renaudot,¹ the French writer, Chao-Ju-Kua,² the Chinese traveller, and Marco Polo,³ the Italian, have recorded the glory of the Indian cotton industry. Before the rise of the Moghul power Gujarat, Cambay, Telingana, Malabar, Bengal and the Coromandal coast had fully developed their cotton manufactures. The Dacca and the Broach muslins, the Masulipatam chintz and palampores, the coloured chintz of Gujarat, and the calicos of the Coromandal coast had become world famous. It is now accepted that India was not merely the accredited birth-place of the cotton manufactures⁴ but it had the practical monopoly both in the production of raw material and in the manufacture of finished cotton goods.

Cotton weaving was a true domestic industry which was practised in every household. Spinning and weaving and other processes were done only by hand. Even the best fabrics were made with crude tools by people in their own homes. Foreigners wondered at the very simple methods of the Indian weaver which were far superior to the elaborate mechanical devices of the western countries. These methods received the encomium of foreign writers. 'In spite of the raw material not being brought to its high state of cultivation, despite crude machinery and little division of labour, the products were fabrics of exquisite delicacy, unrivalled by any other nation, even those best skilled in the mechanical arts'.⁵

Even in early times the Indian export trade in cotton fabrics was not negligible. The Arabs and the Greeks traded

¹ Renaudot has translated the journal of an Arab, named Sulaiman, who visited India in the 9th century, A.D.

² Chao-Ju-Kua travelled through Bengal in the beginning of the 13th century.

³ Marco Polo visited India at the close of the 13th century.

⁴ J.R.A.S. Vol. XVII, page 347.

⁵ Baines, *The History of Cotton Manufactures*.

in cotton manufactures which they carried from Patila, Ariake, Baryagaza (said to be modern Broach) and Masalia (the present Masulipatam) to the Red Sea.¹ Pliny in his *Natural History* describes how the Indian trade in luxuries, especially in cotton fabrics, was draining the wealth of the great Roman Empire.

The extent, nature and conditions of the industry are described by the author of the *Indian Cotton Textile Industry*. 'That the industry was wide-spread can be seen from the fact that almost every household prepared cloth, at least sufficient for the needs of the family. The industry was exclusively a cottage industry and the members of the family helped the weaver in the preparation of the cloth. Craftsmanship did not hold an inferior status and was supposed to be under the special protection of the kings. . . . The hand-loom industry and the spinning industry afforded excellent by-employment in ancient times. It is, however, rather difficult to bring oneself to believe that this industry which reached such a high pitch of excellence, could really be the occupation of leisure moments only. The best artisans must have been wholtime workers who spent their whole life on this one industry and earned their living from it. There was no exploitation of labour by capital since setting up for oneself was but the normal thing for the artisans of those days'.²

THE INDUSTRY DURING THE MOHAMMEDAN PERIOD

It is generally asserted by certain historians that during the Mohammedan rule in India chaos reigned everywhere and that, with the growing political insecurity, social anarchy and economic disruption followed and that all arts and handicrafts declined and that cotton manufacture shared the common fate. This is not wholly true, at any rate as regards the later Mohammedan period. During the earlier years of the Mohammedan invasion every industry suffered as it was inevitable in such times of unsettled life. But with the beginning of the Moghul power the cotton industry, along with

¹ *The Periplus of the Erythraean Sea.*

² M. P. Gandhi, *The Indian Cotton Textile Industry.*

other handicrafts, recovered its former stature.¹ All the Moghul Emperors, Aurangzeb with all his religious bigotry not excluded, were great patrons of handicrafts. The chintz of Masula, we are told, was the craze of the Imperial Durbar. Moreland, a severe critic of Moghul administration, observes, 'the details go to show that the cotton industry was at this period much the most important handicraft in India'.² Another historian writes, 'on the coast of Coromandal and in the province of Bengal it is difficult to find a village in which every woman and child is not employed in making a piece of cloth. At present much of the greatest part of the provinces are employed in the single manufacture. The progress of the linen manufacture includes no less than a description of the lives of half the inhabitants of the Hindoostan'.³ The writings of other historians, foreign travellers and ambassadors indicate that the industry was universal and that the cotton manufacture was carried on in villages and towns to meet the demand at home and abroad. Gujarat supplied Persia, Tartary, Turkey, Barbary, Arabia, Ethiopia and other places with silk and cotton stuffs.⁴ Some centres specialised in the production of certain varieties chiefly for exports to foreign countries. Bengal, the Coromandal Coast, Cambay (drawing goods from Ahmedabad, Baroda, Broach and Surat) and the Indus Valley (deriving its supply from Lahore, Multan and Sukkur) supplied the foreign markets.⁵ The superior muslins of Dacca, called in admiration the *Evening Dew*, the *Textile Breeze*, the *Running Water*, the printed calicos of the Coromandal, the plain white and coloured cloths from many parts of the country, the celebrated handkerchiefs from Madras and the gold and silver embroidered silks and cotton fabrics of Ahmedabad and Benares formed the bulk of the cotton manufactures of India.

¹ 'The waves of conquest which commenced from the 11th century no doubt greatly hampered Indian industrialists and industries for some time. But the establishment of the Moghul Empire and the safety and security of the reign of Akbar seem to have fully revived Indian industries and handicrafts.' (*Industrial Commission Report*, page 296, Dissenting minutes of Pt. M. M. Malaviya.)

² Moreland, *India at the Death of Akbar*

³ Orme, *Historical Fragments of the Moghul Empire*, p. 413.

⁴ Ludovico di Varathema quoted by Moreland in his *India at the Death of Akbar*, p. 172.

⁵ M. P. Gandhi, *The Indian Cotton Textile Industry*, pp. 10-11.

The causes of the excellence of cotton manufactures are not far to seek. The climatic conditions, the environment, the inherited skill of workmen, the patronage of kings and nobles and the discipline of the guilds explain the unique superiority of the Indian manufactures. 'It is then a physical organisation of the natives, admirably suited to the processes of spinning and weaving, to the possession of raw materials in the greatest abundance, to the possession also of the most brilliant dyes for staining and printing the cloth, to a climate which renders the colours lively and durable and to the hereditary practices by particular castes, classes and families, both of the manual operations and chemical processes required in the manufacture:—it is to these causes with very little aid from science and in almost barbarous state of the mechanical arts, that India owes her long supremacy in the manufacture of cotton'.¹

The industry received the special patronage of the State. It maintained palace *Karkhanas* where silk brocades, fine muslins, gold embroidery, etc. were made by artisans under the supervision of a master.² The nobles and high officials of the State maintained their own workshops as well.

It is instructive to study the economic organisation of the cotton industry at that time. Originally caste was the sole economic factor in industry. Different professions were carried on by separate castes and weaving was confined to a few only. But with growing external trade other castes as well took to weaving. These castes, while maintaining their entity and subject to their own caste guilds in respect of their social life, became members of the craft-guild which regulated the industry. There was little division of labour from the point of view of internal technical organisation of the industry. The weavers and their dependents, working for themselves, caused a fusion of labour approaching almost the modern co-operative production which avoids all conflicts between labour and capital.

Side by side with this there were also guilds. Each trade had its guild representing many castes and the business of the guild was carried on by chiefs called the *Natamakaras* in the south, *sheths*, *gumastas* or *nagarsheths* in North India.

¹ Baines : *History of Cotton Manufactures*, p. 75.

² Cf. P. J. Thomas in the *Modern Review*, February 1924.

Under this system the workers in an industry pledged themselves to protect one another. Membership of the guild was regulated but was hereditary. The guild perfected a system of apprenticeship which, while safeguarding the interests of the craftsmen, secured efficiency and accounted for the Indian pre-eminence in arts.

Production in this period was on the small scale. At first there were not many intermediaries between the producer and the market. But with the expansion of the market, the individual artisan could not cope with the demand which required a larger capital and a greater specialisation of functions. Those were beyond the means of the weavers. Several classes of middlemen—*Mahajans*, *Chettis*—sprang up who provided the capital and acted as the link between the producer and the consumer. This, while accelerating production, had reduced the artisan to the position of a wage-earner depending on the middlemen for work. This is termed the domestic system and marks a distinct stage in the industrial evolution and is intermediate between the old and much praised system of the independent craftsman and the modern systems of the workshop and the factory.

THE INDUSTRY UNDER THE EAST INDIA COMPANY

The history of the industry under the East India Company was two distinct phases—the one upto 1780, when the industry was at its best, and the other after 1780 when the industry began to decline as a result of the development of the powerloom. During the first period the Company was more interested in securing commercial and trading rights than political power. It, therefore, developed a lucrative trade in cotton manufactures and other East Indian specialities in spite of the growing opposition of certain interests in England. The Directors of the Company sought to encourage the Indian industry by sending out hempdressers, spinners and weavers from England to train the Indians in the manufacture of sail cloth, and by sending out dyers and throwsters to develop the silk industry of Bengal and they also proposed to develop the calico industry in Bombay. All this indicates the sympathetic attitude of the Company, though the measures

were of doubtful benefit to the Indian artisans, for, they were far more advanced than their masters in their technique.

During the 18th Century in spite of the political turmoils in the country the cotton manufacture was thriving and expanding. India after clothing her vast population exported to the West $1\frac{1}{2}$ million pieces of muslins, calicos, doreas, handkerchiefs, longcloth, betellus etc., valued at £2.9 millions. The uninterrupted prosperity of the foreign export trade of India in cotton manufactures during the last quarter of the 18th century and the extent of the same from Bengal, Surat and the East Coast and also from China (Nankeen) can well be understood from the following table prepared from the Reports of the Select Committee appointed to take into consideration the export trade from Great Britain to the East Indies upon the subject of cotton manufacture, published in 1793:—

NUMBER OF COTTON PIECES SOLD BY THE E. I. CO., IN THE ENGLISH MARKET DURING 1770-1790.

Year	BENGAL	SURAT	E. COAST	NAN-KEEN	TOTAL	VALUE in £
1771	604757	131198	114710	17692	868357	1,435,475
1772	626160	147029	273766	20497	1067452	1,653,912
1773	761489	58138	134789	9818	964234	1,797,508
1774	616226	38366	207085	12506	874184	1,815,008
1775	517761	47405	181950	5000	752116	1,609,597
1776	607878	18822	209538	6180	842418	1,621,777
1777	655332	83024	224183	10299	972838	1,660,892
1778	805010	61285	296182	14990	1177467	1,663,069
1779	338465	31525	74676	12537	457203	747,121
1780	474703	18605	107130	8024	608462	1,257,863
1781	301617	33144	95868	14608	445237	850,703
1782	446488	36597	72188	24635	579908	1,287,110
1783	437802	82966	...	28201	548969	1,143,046
1784	516083	31130	44810	18698	610726	1,055,722
1785	768228	26767	45352	...	840347	1,560,847
1786	764173	...	43240	37741	845154	1,570,217
1787	745449	41882	38641	26524	852496	1,439,043
1788	594728	41806	96455	12805	745794	1,202,871
1789	614839	44715	112216	48329	820099	1,229,360
1790	866282	33131	126221	29060	1054694	1,752,356

The export of cotton manufactures by the French East India Company in 1791 is given in the accompanying table:—¹

¹ Cf. The Select Committee Report, 1793

PARTICULARS OF THE SALE ADVERTISED AT THE L'ORIENT BY
THE FRENCH COMPANY IN 1791

Name of cloths	Number of pieces	Value in £
Surat and Bombay	65025	45,678- 1-0
China (Nankeen)	241993	76,433-15-0
Coast Calicos (white)	134673	4,85,137-10-0
Coast Muslins	37383	44,261- 8-0
Coast Prohibited ¹	85478	1,01,265-16-0
Bengal Calicos	93381	1,43,747-15-0
Bengal Prohibited ²	18382	13,014-10-0
Bengal Muslins	40727	3,18,343- 5-0
Total	717412	1,227,887- 0-0

But for the slight decline in the export trade from Bombay and Surat during the Mahratta wars and from the East Coast during the Mysore wars, the export trade has been on the whole steady. Madras contributed nearly a third of the export and Bengal had the lion's share. The exports from Madras were chiefly (a) white calicos comprising longcloth, percaulas, salemwares, izzrees, Goudaloor dimities and (b) muslins comprising handkerchiefs, doreas and betellus.

[In 1820, even after the development of power-spinning and weaving in England the export of Indian piecegoods to England by the East India Company and the private merchants amounted to £1,839,258 excluding the trade in Nankeen (China Cloth).³ Between 1815-1818 the export of piecegoods from different parts of India in American vessels was also considerable.⁴]

¹ Some of the manufactures of India were prohibited from being imported freely into the European countries as Demy Blue Longcloth, Sastracundees, Sasserates, Pondichery Gingham, Rumals and Percaulas of Pondichery, Narpaley, Ventepaleon and Madras of the East Coast manufactures and Barangores, Romal and Seet Romals, Copees, Cushtaes, Phoetaes, Tepsos, Soofeys and Teaffates of Bengal. *The Select Committee Report 1793.*

² *Ibid.*

³ Evidence of Messrs. G. A. Robinson and T. Reid before the Board's Committee on foreign trade of the country, 1821—page 105.

Imports of	By E. I. Co.	By private merchants
Bengal piecegoods	£ 576,402	£ 27,545
Coast and Surat goods	1,199,502	45,809
Nankeen and China Silk	38,666	133,214

⁴ The details of imports are given in page 353 of the same report :—
Calicos 624618 pieces, muslins 5654 pieces, prohibited 408781 pieces and Nankeen 523853 pieces.

⁵ Board's Committee on Foreign Trade, 1821, page 344.

Since 1660 there had been a considerable opposition in England to the increasing importation of Indian calicos and chintzes. The woollen manufacturers of England complained that their goods were beaten out by the cheaper and the more attractive goods from India and their complaints gained strong support from Mercantilists who feared that England was being drained of its precious metals. Such opposition came to a head in 1700 when the importation of printed and painted calicos was prevented by an act of Parliament. Plain calicos, however, continued to come in and were printed in the country to meet local demand. Parliament again interfered and in 1720 passed an act prohibiting the wear of printed calicos. Other governments of Europe also took similar measures in the interest of their national industries. But these measures did not affect the textile exports of India to any great extent; and it has already been shown that there had been an increase in the last quarter of the 18th century.¹

THE INDUSTRIAL REVOLUTION AND AFTER

But the inevitable came. The Industrial Revolution in England enabled English spinners to make yarn strong enough for warp; and thus grew the great cotton industry of Lancashire. The use of steam-power made production incredibly cheap and soon the course of foreign trade under-

EXPORTS OF INDIAN PIECEGOODS IN AMERICAN VESSELS

	1815-16		1816-17		1817-18	
	Bales	Rs.	Bales	Rs.	Bales	Rs.
Bengal ...	12,559	31,16,366	16,040	35,99,324	5,921	15,23,725
Fort St. George ...	4,929	27,210	37,795	19,67,748	21,467	1,28,350

¹ P. J. Thomas, *Mercantilism and the East India Trade* (1926), pp. 111-17; 157-59...

went a revolutionary change. Indian exports to England died out and English exports to India began to increase. And this was considerably helped by the high tariffs imposed in England on textile imports and by the fiscal policy of the East India Company.¹

The following table will bring out this great change :—

FOREIGN TRADE IN COTTON MANUFACTURES OTHER
THAN YARN, HOSIERY, SHAWLS AND HANDKERCHIEFS

Year	Exports to England from India	Number of Power-looms in England	Imports to India from England
1814	1,266,608 pieces	.....	818,208 yards
1821	534,495 "	14,150	19,138,726 "
1828	422,504 "	55,500	42,822,077 "
1835	306,086 . "	109,626	51,777,277 "
1846	.....	.....	213,840,000 "

The cheapening of spinning and weaving by power meant a great handicap to the Indian spinner and weaver. The cost of producing a pound of yarn fell from 13.4 pence in 1814 to 5.9 pence in 1830 and the cost of producing a piece of cloth fell from 7s. 8½d. to 2s. 8d. during the same period.² Hence the shrinking market for the handspun yarn and hand-woven cloth, and the great hardship caused to spinners and weavers in India.

In the next half of the 19th century the increasing import of cotton manufactures from the United Kingdom and other foreign countries, stimulated by a policy of free trade in India, and the increase of the cotton factories within the country led to a further decline of the Indian cotton handicrafts as will be seen from the accompanying tables.

¹ Lord Ellenborough, in his evidence before the Select Committee, said 'While the cotton manufactures of England are imported into India on payment of a duty of 2½ per cent., the cotton manufactures of India are subjected to a duty on the raw material of 5 per cent., to a further duty on yarn of 7½ per cent., to a duty of 2½ per cent. on cloth and finally to another duty of 2½ per cent., if the cloth should be dyed after the *rowannah* has been taken out for it as white cloth.' (1848).

² Select Committee Report, 1832.

IMPORT OF COTTON MANUFACTURES INTO INDIA

Annual Average for	Value of Cotton Twist and Yarn	Value of Cotton Goods
	£	£
1850-54	1,199,893	5,176,943
1860-64	1,613,417	9,302,071
1870-74	2,750,908	14,812,750
1880-84	3,302,136	20,734,517
1890-94	3,311,061	26,203,756

¹PROGRESS OF COTTON MILL INDUSTRY IN INDIA

Year	No. of Mills	No. of Spindles	No. of Looms
1851	1	29,000	.....
1866	13	309,000	3,400
1876	47	1,110,000	9,100
1880	56	1,461,590	13,502
1890	137	3,274,196	23,412
1900	193	4,945,783	40,124

During the period under review the import of cotton goods had increased five times and the power-loom production in India twelve times. A certain increase in the import and Indian mill production can be accounted for by the growth of population but the increase of power-loom products shows unmistakably the displacement of hand-loom manufactures. From an economic point of view this increasing import of machine-made manufactures benefited the people who obtained cheaper clothing, but they had lost to a much larger extent by the loss of their weaving industry. For, this loss was not replaced by any new industry and millions of weavers sank to the level of agricultural labourers.

✓ In the present century the power-loom competition further increased. The import of manufactures from the United

¹ From the Bombay Cotton Annual, 1932-33.

Kingdom continued unabated till the late war. The wave of *Swadeshi* enthusiasm, the loss of yarn trade with China, the fall in the import of cotton manufactures from Britain during the war and the post-war boom led to a rapid development of power-weaving in India. Further the import of cotton manufactures from Japan, which was insignificant before the war, began to grow to the detriment of the hand-loom and the power mill alike. The tables A and B at the end of this chapter will show the place that the hand-loom has in the supply of cotton manufactures required for consumption in India.

Even in the year 1932-33 the hand-loom supplied a little over a fourth of the total cotton goods consumed in India. Whatever may have been the extent of the decline of hand weaving in the nineteenth century, there has undoubtedly been an increase in the production on the hand-loom during the last thirty-five years for which more definite statistics are available. From 784 million yards in 1896 the production on hand-looms has increased to 1588 million yards in 1933. This does not include the production of rayon and silk goods on hand-looms. This increase is significant considering the fact that the hand-loom had been handicapped by the imposition of duties on yarn, rayon and gold and silver lace imported for its use.

✓ THE PRESENT POSITION OF THE HAND-LOOM INDUSTRY

We may now proceed to study the geographical distribution of the industry in India, and in particular, in the Madras Presidency.

According to the Census of 1931 there are 1,678,453 men and 5,402,97 women in India including Native States who have cotton spinning, sizing and weaving as their primary occupation; and 82,814 men and 582,009 women are classed as working dependants. Besides, these industries are the subsidiary occupation of 189,205 men and 101,128 women. Thus nearly $3\frac{1}{2}$ million persons are wholly or partially engaged in the above mentioned industries. Excluding the number of persons employed in cotton factories, there are

still about three million persons depending on cotton handicrafts for their livelihood. The table below gives the provincial distribution of workers in cotton spinning sizing and weaving according to the census of 1931, and the distribution of hand-looms as estimated by the Indian Tariff Board in 1932.

TABLE SHOWING THE GEOGRAPHICAL DISTRIBUTION OF COTTON TEXTILE WORKERS

Province	1931 No. of persons engaged in cotton spinning, sizing and weaving						No. of hand- looms as estimated by the Indian Tariff Board in 1932
	as principal occupation		as subsidiary occupation		working dependants		
	Men	Women	Men	Women	Men	Women	
Assam ...	1,104	7,580	2,201	17,348	1,672	192,036	425,000
Bengal ...	127,692	30,394	18,006	1,711	4,116	4,879	200,000
B. & Orissa...	81,427	37,364	37,849	3,406	1,607	5,668	150,000
Bombay ...	207,854	47,705	3,249	776	4,716	17,582	100,000
Burma ...	2,568	40,091	791	45,346	1,458	144,637	569,000
C. Provinces.	86,310	22,811	10,624	2,248	5,423	29,021	100,000
Madras ...	333,611	82,453	22,279	479	12,627	28,513	225,000
N.-W.F.P....	8,373	829	382	7	384	167	500
Punjab ...	214,381	36,671	12,514	3,674	12,346	24,991	140,000
U. Provinces	253,526	90,846	21,025	3,489	3,449	29,680	75,000
Total for British India	1,329,239	399,052	129,438	83,013	47,950	477,943	2,086,423
Total for Native States	349,214	141,245	59,767	18,115	31,864	104,066	414,577
Total for India	1,678,453	540,297	189,205	101,128	82,814	582,009	2,500,000

Though there are certain discrepancies between the census of workers and the estimate of hand-looms, the importance of the industry to each province is clearly brought out. Madras has the largest number of workers. The Punjab and the United Provinces come next in importance. In respect of the number of looms Madras comes third, yielding the first and second places to Burma and Assam respectively. But this importance of cotton hand-weaving in Burma and Assam as

indicated by the number of looms is doubtful, for, the number of workers in these provinces is far less. The pre-eminence of Madras in the hand-loom industry is unquestioned. Though definite statistics are not now available regarding the consumption of yarn by hand-looms in each province, Madras must be considered to rank first in respect of production. For it takes very nearly a fourth of the yarn available for hand-looms in India. It is estimated by the Superintendent of the Census, 1931, Madras, that this Presidency accounts for the consumption of 75 million lbs. of cotton yarn by hand-looms. As a subsidiary occupation, cotton industries are still important in the provinces of Bihar and Orissa, Burma, Assam, Madras and the United Provinces.

The industry is found in all parts of the Madras Presidency excepting the Nilgiris. The accompanying map and Table C at the end of this chapter will indicate the importance of the industry to each district at different periods. Taking male workers as the basis of comparison (Census of 1931), the districts of Cuddapa, Chingleput and Salem have over 40 male weavers per 1,000 principal male workers in all occupations. Guntur, Coimbatore, Vizagapatam, Nellore, Bellary, Anantapur, Madras and N. Arcot come next in importance with over 30 but less than 40 per mill. East Godaveri, Kurnool, Tinnevelly, Ganjam and Chittoor have over 20 but less than 30. Other districts have less than 20.

Hand-looms that survive in this Presidency not only produce fabrics which are not as yet produced on power-looms but also manufacture different kinds of cloth in direct competition with power-looms. Though we cannot estimate, in the absence of a special survey, the extent of this competition, it is undoubtedly considerable; for out of 225,000 looms in the Presidency over 40,000, according to the estimate of the Department of Industries, Madras, are producing handkerchiefs and lungis alone; and probably an equal number of hand-looms is employed in the production of such fabrics as sheeting, dhoti, towel, carpet, chaddar, khadi napkin coating, shirting, muslin etc., which are also made on power-looms. This is very significant.

TABLE A

STATEMENT SHOWING THE INDIAN IMPORT, EXPORT AND PRODUCTION OF YARN AND THE AMOUNT OF YARN AVAILABLE FOR THE HAND-LOOM

Year	Net Imports of Foreign Yarn	Indian Mill Production	Export of Indian Yarn	Yarn consumed in mills for production of woven goods; 100 lbs. of yarn = 112 lbs. of cloth.	Balance of Yarn available for the Hand-loom
1	2 Million lbs.	3 Million lbs.	4 Million lbs.	5 Million lbs.	6 Million lbs.
1871	28.7	...	...	...	...
1881	45.8	...	27	...	...
1896-97	45.7	423	96	74	196
1897-98	53.0	463	200	81	231
1898-99	39.2	512	220	91	237
1899-00	37.1	514	244	87	220
1900-01	30.1	353	122	88	173
1901-02	31.6	573	278	107	220
1902-03	27.9	576	255	110	239
1903-04	23.1	579	260	123	219
1904-05	25.4	578	256	142	205
1905-06	40.8	681	305	146	271
1906-07	32.2	654	251	148	287
1907-08	30.7	638	223	169	277
1908-09	35.0	658	242	171	280
1909-10	34.7	628	234	204	225
1910-11	27.1	610	191	220	226
1911-12	34.7	625	161	238	261
1912-13	40.7	688	215	254	260
1913-14	35.9	683	207	245	267

TABLE A—*contd.*

STATEMENT SHOWING THE INDIAN IMPORT, EXPORT AND PRODUCTION OF YARN AND THE AMOUNT OF YARN AVAILABLE FOR THE HAND-LOOM—*Continued.*

Year	Net Imports of Foreign yarn	Indian Mill Production	Export of Indian Yarn	Yarn consumed in mills for production of woven goods; 100 lbs. of yarn = 112 lbs. of cloth	Balance of Yarn available for the Hand-loom
1	2 Million lbs.	3 Million lbs.	4 Million lbs.	5 Million lbs.	6 Million lbs.
1914-15	34.0	652	143	247	296
1915-16	31.7	722	168	314	272
1916-17	22.8	681	178	337	189
1917-18	13.3	661	130	340	204
1918-19	32.0	615	73	312	262
1919-20	7.9	636	161	343	140
1920-21	43.7	660	89	328	287
1921-22	53.5	694	88	361	299
1922-23	53.0	706	64	362	333
1923-24	39.5	617	46	359	252
1924-25	50.5	719	46	410	314
1925-26	50.6	686	32	415	290
1926-27	48.5 43.69	807	49.21	481 472	321 334 290
1927-28	50.0 46.15	809	30.13 22	507 510	318 328 315
1928-29	43.7 36.71	648	29.4 24.3	378 401	258 265 252
1929-30	43.9 36.96	833	30.86 24.0	502 506	338 340 333
1930-31	20.1 23.45	867	30.00 23.5	527 531	334 342 338
1931-32	31.6 26.94	966	27.7 22.0	600 611	365 364 354
1932-33	28.7	1016	15.1	632	397

[From the Indian (Textile) Tariff Board, 1927.]

TABLE B
STATEMENT SHOWING THE CONSUMPTION OF COTTON
PIECEGOODS IN INDIA AND THEIR SOURCES

Year	Net imports of foreign piecegoods	Mill produc- tion	Hand-loom production	Exports of Indian piece goods	Net balance of goods available for consumption	Consumption per capita	Population
1	2	3	4	5	6	7	8
	Mil. yd.	Mil. yd.	Mil. yd.	Mil. yd.	Mil. yd.	Yards	Million
1896-1897	1932	354	784	105	3063	10.59	289
1897-1898	1800	389	924	97	3113	10.73	290
1898-1899	2000	436	948	90	3384	11.63	291
1899-1900	2053	419	880	112	3244	11.10	292
1900-1901	1875	422	692	111	2878	9.80	294
1901-1902	2042	511	880	120	3313	11.23	295
1902-1903	1986	524	960	109	3361	11.31	297
1903-1904	1903	589	872	125	3239	10.83	299
1904-1905	2152	678	828	135	3523	11.70	301
1905-1906	2335	700	1084	129	3990	13.21	302
1906-1907	2193	708	1148	115	3934	12.89	305
1907-1908	2401	808	1108	112	4205	13.69	307
1908-1909	1870	824	1116	113	3697	11.96	309
1909-1910	2070	964	896	126	3804	12.23	311
1910-1911	2162	1043	908	134	3979	12.71	313
1911-1912	2262	1136	1044	118	4324	13.72	315
1912-1913	2847	1220	1040	125	4982	15.81	315
1913-1914	3042	1164	1068	130	5146	16.28	316
1914-1915	2327	1136	1184	110	4537	14.35	316
1915-1916	2019	1442	1048	161	4348	13.37	317
1916-1917	1771	1578	816	309	3856	12.16	317

TABLE B—*contd.*STATEMENT SHOWING THE CONSUMPTION OF COTTON
PIECEGOODS IN INDIA AND THEIR SOURCES.—(*contd.*)

Year	Net imports of foreign piecegoods	Mill produc- tion	Handloom production	Exports of Indian piece good	Net balance of goods available for consumption	Consumption per capita	Population
1.	2	3	4	5	6	7	8
	Mil. yd.	Mil. yd.	Mil. yd.	Mil. yd.	Mil. yd.	Yards	Million
1917-1918	1405	1614	812	234	3597	11.34	317
1918-1919	955	1451	1048	187	3267	10.27	318
1919-1920	836	1640	564	239	2801	8.80	318
1920-1921	1405	1581	1148	170	3964	12.42	319
1921-1922	980	1732	1190	187	3715	11.64	319
1922-1923	1467	1725	1341	186	4347	13.50	322
1923-1924	1374	1702	1005	201	3880	11.94	325
1924-1925	1710	1970	1256	230	4806	14.65	328
1925-1926	1529	1954	1160	164	4479	13.55	331
1926-1927	¹⁶⁹⁷ 1759	2258	¹²⁸⁴ 1336	²⁷⁹ 287	⁴⁸⁶⁹ 5161	15.45	334
1927-1928	¹⁷⁹⁴ 1935	2356	¹²⁷² 1312	²⁵⁸ 216	⁵¹⁶⁶ 5367	16.00	337
1928-1929	¹⁷⁷² 1912	1893	¹⁰³⁰ 1060	²⁵⁹ 287	⁴⁴⁴⁶ 4678	13.76	340
1929-1930	¹⁷⁹² 1919	2419	¹³⁵² 1384	²⁹⁰ 146	⁵³⁴² 5576	16.21	344
1930-1931	¹⁷⁹⁷ 1879	2561	¹³³⁶ 1368	¹⁸⁸ 98	⁴⁵⁰⁷ 4704	13.54	348
1931-1932	¹⁷¹⁰ 1700	2989	¹⁴⁶⁰ 1456	²⁰⁵ 205	⁴⁹¹² 5100	14.50	352
1932-1933	1204	3169	1588	66	5895	16.50	356

(Taken from the report of the Indian (Textile) Tariff Board, 1927.)

N.B.—(1) The quantity of handloom production in yards is derived from the estimated weight of yarn available for it in Col. 6 of Table A on the assumption that 4 yards of cloth are produced per pound of yarn.

(2) In the spinning and weaving statistics both weight and yardage of cloth woven in mills are given. But the weight of yarn consumed in the production of cloth by mill is ascertained on the assumption that 112 pounds of cloth can be made out of 100 lbs. of yarn.

TABLE C

CENSUS OF HAND-LOOMS AND WEAVERS IN THE PRESIDENCY OF MADRAS FOR THE YEARS 1901, 1921 AND 1931

District	1901			1921				1931 Census		
	WEAVERS		Number of looms	Weavers including unspecified		Number of looms	Number of looms	Total earners, weaving as principal occupation		
	Men	Women		Men	Women			Men	Women	
1. Agency ¹	2	3	4 ¹	5	6	7 ²	8 ¹	9	10	(1)
...	10,592	2,874	...	5,621	2,976	1,526	3,125	...	...	(1)
2. Ganjam	15,459	5,737	10,320	3,045	4,780	5,582	4,949	12,452	4,420	(2)
3. Vizagapatam	26,865	16,900	1,461	22,307	13,841	7,438	1,809	23,587	7,075	(3)
✓ 4. Godavari	<u>22,015</u>	<u>4,256</u>	<u>5,407</u>	<u>10,414</u>	<u>4,856</u>	<u>5,078</u>	9,124	{ 12,883 5,950	{ 3,553 East 1,399 West }	(4)
✓ 5. Kistna	<u>27,505</u>	<u>9,654</u>	12,203	18,178	2,409	6,349	4,419	6,872	2,238	(5)
✓ 6. Guntur	...	...	...	10,127	5,786	14,974	19,035	23,114	3,884	(6)
7. Nellore	23,230	6,658	8,325	1,208	5,944	10,494	10,550	13,136	1,980	(7)
8. Cuddapah	21,582	10,732	11,505	8,842	4,113	6,251	13,433	12,687	1,716	(8)
9. Kurnool	12,366	4,315	8,146	10,228	2,178	4,419	8,850	8,290	1,829	(9)
10. Bellary	12,934	3,171	9,284	4,269	2,420	5,102	9,845	8,786	3,629	(10)
✓ 11. Anantapur	12,086	4,842	2,299	5,743	2,198	4,841	6,050	9,163	2,054	(11)

12. Madras	...	3,224	775	...	6,748	531	1,527	...	6,253	788	(12)	
13. Chingleput	...	13,664	6,560	11,255	14,238	3,097	10,600	10,600	19,991	4,676	(13)	
14. Chittoor	} ³	...	...	...	8,682	3,350	3,862	2,446	9,490	2,943	(14)
15. North Arcot		...	25,668	13,768	9,751	15,797	5,651	12,743	...	20,484	3,317	(15)
16. South Arcot	...	15,615	7,713	6,964	10,830	4,375	4,646	12,241	11,857	937	(16)	
17. Salem	...	33,233	19,876	16,341	13,782	8,811	10,841	23,890	29,466	6,851	(17)	
18. Coimbatore	...	22,781	11,154	15,040	19,664	7,684	7,714	17,899	24,909	6,742	(18)	
19. Tanjore	...	12,425	2,184	9,598	11,291	6,493	6,209	14,858	8,593	1,369	(19)	
20. Trichy	...	10,754	5,736	4,515	8,790	3,070	5,898	10,001	9,788	2,442	(20)	
21. Madura	} ³	...	23,819	11,291	7,551	19,372	9,294	6,493	8,948	11,823	3,985	(21)
22. Ramnad		13,601	2,339	4,989	5,472	10,640	4,242	(22)
23. Tinnevely	...	23,194	10,301	10,196	8,910	5,353	11,394	13,038	13,611	5,257	(23)	
24. Malabar	...	12,269	3,299	6,328	11,330	3,127	7,886	10,696	16,230	4,343	(24)	
25. South Kanara	...	1,826	1,142	1,317	4,181	792	1,528	3,344	3,544	1,071	(25)	
26. Nilgiris	...	26	8	...	8	1	..	...	...	...	(26)
27. States	...	1,414	703	...	435	271	929	...	796	178	(27)	
Total	...	38,45,46	1,63,739	1,67,806	2,77,217	1,15,369	1,69,403	2,41,622	3,34,407	83,131	(28)	

¹ From the Statistical Atlas of the Madras Presidency for 1901 and 1921

² From the handloom census taken along with the general census in 1921

³ These districts were separately constituted only after the census of 1901

CHAPTER III

THE HAND-LOOM STILL SURVIVES!

It is surprising to find that the production on the hand-loom has not been affected during the last forty years though the number of power-looms has increased nearly four times. Now a fourth of the cloth consumed in India is produced on hand-looms. The hand-loom exists in industrially advanced countries; but the causes of its survival in those countries are different from the causes of its survival in India. In the United Kingdom the existing hand-looms mainly employ linen and where cotton looms exist they are plied as a means of subsidiary income by agriculturists. In some European countries they survive where they are run by cheap electric power. In France, Italy and Japan¹ hand-looms manufacture mainly cotton decorative patterns or silk fabrics. In most other countries they are simply manufacturing silk and artistic fabrics. But nowhere does the hand-loom exist in so large a number as it does in India and China, manufacturing plain cotton fabrics and competing with power-looms.² They exist in these two countries because of their peculiar economic conditions. Some causes of the survival of the hand-loom in other countries also apply in the case of India and of China. Many looms manufacture silk and mixed goods and special cotton fabrics which cannot be manufactured on power-looms on a commercial scale. There are looms which are owned by weavers who are partial agriculturists

¹ In Japan there were in 1926, 261,332 power-looms and 104,638 hand-looms. *Arno Pearse.*

² The estimated world consumption of cotton in mills is 10,000 million pounds of which more than 12 per cent is the share of the hand-looms. There are only two countries where the hand-loom production of cotton fabrics is important—China and India. In China nearly three-fourths of her cloth consumption are produced by home workers on their country looms. It is estimated that hand-looms in China produce 870 million lbs. of cloth. In India the share of the hand-loom production is one-fourth of her total cloth consumption and the average annual production in hand-loom is 300 million lbs. The reasons for the survival are: 1. absence of more remunerative employment, 2. abundance of labour, 3. local market, and 4. raw products locally available. (Cf. *the Report of the Committee on Industry and Trade, Part III, Survey of Textile Industry 1928.*) (G.B.)

and agriculturists who are partial weavers.¹ It is also true that a large variety of coloured cloths which cannot be manufactured on power-looms are produced on hand-looms. It is difficult to ascertain, for no census of hand-looms is taken on that basis, how many looms there are in the country owned by agriculturists, how many are devoted to the manufacture of special patterns and coloured fabrics etc. While other causes explain their survival to some extent, the abundance of labour and hereditary skill and the absence of other remunerative occupations can alone account for the existence of hand-looms producing almost a third of the cloth required in India in direct competition with the power-loom. The secret of the survival of the hand-loom in India in such a large number is explained by Sir Alfred Chatterton: 'The hand-loom weaver still survives to-day because there is no alternative open to him . . . He can easily hold his own for a long time to come since he is content to exist on but little more than bare necessities of life'.² The industry survives because the weaver is content with low wages and the women, who do winding, warping and sizing, are either very low paid or not paid at all as they are members of a weaver's family. This low standard of value for human labour is at once the cause of hand-weaving still surviving and the great stumbling block to the progress of the weaver.³ This is a hard fact and the weaver is not to blame, and it is in the light of this fact that schemes of economic reconstruction must be formulated. The weaver will, for a long time, hold his own and he will not be driven out, as the spinner is forced out, to other means of livelihood so long as these are not more remunerative than hand-weaving. The hand-spinners cannot

¹ According to 1921 census there were 1,27,175 men and 35,063 women who had returned themselves as partial agriculturists out of 15,39,784 men and 7,32,064 women weavers.

² Sir Alfred Chatterton writes in his book *Industrial Evolution in India* p. 213, 'The hand-loom has not died out in Europe, but wherever it is found working, investigation generally shows that there are special reasons why it continues to be employed. The hand-loom weaver in India still survives to the present day because there is no alternative open to him but in the struggle, he has been reduced from prosperity to poverty and even with the assistance of his women and children he is only able to earn a bare livelihood. In many cases he is no better off than an unskilled labourer and in times of famine and scarcity, the cessation of demand for his cloths reduces him to complete destitution at once. Whatever may be the ultimate fate of the hand-loom weaver, he can easily hold his own for a long-time to come since he is content to exist on but a little more than the bare necessities of life.'

fight the mill competition; and agriculture, however overcrowded, is certainly more remunerative than hand-spinning and that has led to the disuse of the charka and the spindle.¹ They find that they can earn more as general labourers than by plying the wheel monotonously. Weavers on the other hand are not yet reduced to such desperate straits. With the help of labour-saving devices and other ameliorative measures of their well-wishers, they can, with all their increasing difficulties, still earn better wages by working at their looms—perhaps for longer hours—than by taking to agriculture.

Other equally remunerative lines of employment are few and cannot absorb even a small fraction of the weavers. Even the establishment of new mills will not absorb the unemployed weavers. Nay, if all the cotton produced in India is converted into yarn and then all the yarn is manufactured into cloth, even such a large cotton mill industry will not give employment for more than two million workers. But the hereditary caste weavers number several millions. Further, it must be noted that the introduction of one power-loom means the unemployment of four weavers at the least, not to mention the extent of unemployment of others who do the preparatory processes.² The acceleration of the mill industry will not by itself bring about salvation. It will only create more unemployment and accentuate the problem of poverty which, at this stage of our economic development, will become in-

¹ The hand-loom was improved but not the spindle during the last 60 years. The progress of hand spinning depends on new inventions.

² The editor of *The Indian Textile Journal*, Bombay, attempts to defend the introduction of labour-saving appliances and to refute the objection against the use of machinery in industry, viz. that it results in the employment of fewer workers and thereby creates unemployment. 'Possibly the mistake' says he, 'may originally have been created by the definition "labour-saving"—a far more accurate description of machinery being the title recently applied to it by the Prince of Wales as of "labor-aiding"—of machinery. It reduces the amount of heavy manual labour necessary before its introduction, reduces the cost of production, and develops new processes and industries, thereby increasing, instead of diminishing employment.' He supports his last point by quoting figures of employment and production in cotton textile industries in England during the last eighty years. 'Owing to the introduction of machinery it was estimated in 1840 that one man can produce as much as 320 men did in 1769 when Arkwright invented his spinning machinery. In 1855 one workman could produce as much as 700 men. The official returns show that while in 1835 the number of cotton operatives in the United Kingdom was 218,000, in 1870 it increased to 450,000 and in 1914 to 689,000 the increase in population being from 24 to 45 millions.' (*The Indian Textile Journal*, July, 1927, page 304.) The facts, as stated above, are true but what is claimed for machinery is disputed. It is now recognised that the strain to the worker is much greater in many mechanical processes than in handicrafts. The worker is

tolerable. The grinding poverty of the unemployed worker will only enable him to offer battle to the mill-worker under conditions still more degrading and miserable and he will go on working for lower wages and sweating for longer hours till either the mill supply of yarn is cut short or he is, otherwise, squeezed out. This is a grim fact which must be recognized.

There is another important cause but for which the hand-loom industry could not have expanded so much. A feature of the origin and the growth of the Indian cotton mill industry is that it began as providing yarn for the hand-loom, first

Year	Excess of spindles in factory ¹	Estimated excess of yarn ¹
1876	8.3 lakhs	83 million lbs.
1886	17.5 "	175 "
1896	29.0 "	290 "
1906	35.1 "	351 "
1916	31.0 "	310 "
1926	38.9 "	389 "

in India, and later on in China. The mills continued to increase their spindles. Even when power-looms were installed the total number of spindles catering to the needs of the hand-loom and not required for power-looms also increased, though slowly. In the first decade of this century the loss of the Indian yarn export trade to China led for a while to

much more easily fatigued in factories. The increase in output and the fall in the cost of production are the merits of machinery. But its weakest claim is in respect of increased employment. It has got its limitation. The development of the mill industry in the United Kingdom increased the scope for employment there but at the tremendous cost of the human power now wasted in other countries. The extent of unemployment of handicraftsmen in other countries who catered to the local demand and markets which are now captured by the Lancashire industry is great but difficult to ascertain. The benefit of machinery to the United Kingdom—nay to all countries—is mainly due to its building of an Empire and Imperial economic policy. An empire cannot be claimed by all countries aspiring to develop their power industries. Except in a highly communistic society the benefit that machinery can confer is limited.

¹ Calculated on the basis of 30 spindles to a loom.

benefit the hand-loom weaver by making a larger supply of yarn available for him. But the spirit of *Swedeshi* first and the Great War later on accelerated the tendency for the installation of new looms in Indian mills. But side by side, the spinning industry also developed catering to the demand of the hand-loom. The cheapening of the price of mill yarn and its superior quality, compared with that of the hand-spun yarn, caused a steady expansion of the hand-loom industry. And this was a great service; and it would have been greater if power-looms were not indiscriminately installed. Probably they would never have been so rapidly installed but for the post-war fiscal policy of the Government of India. At present with the recovery of the import trade, the Indian power-loom, finding it difficult to face the competition of foreign imports in spite of the protection against them, is compelled to capture increasingly the preserves of the hand-loom to the great detriment of hand-loom weavers.

The present difficulties of the weaving mills in India are partially the result of competition from hand-looms from within the country. The future development of the cotton industry depends on the adjustment between mills and hand-looms. Certain fabrics can be produced perhaps cheaply only on power-looms; but where labour cost is a large item in the cost of production the hand-loom has the greater advantage. In most cases of manufactures the hand-loom has the advantage at least so long as the particular skilled labour is cheap and abundant and no revolution is made in the processes of power-weaving. The mills, therefore, must supply yarn to the hand-loom weaver in specified qualities at reasonable prices. Herein lies the mutual adjustment.

The survival of the hand-loom is attributed to yet another fact viz., that it uses fine counts mainly. It is true to some extent; but it is an exaggeration to state that the hand-loom survives because it consumes mainly fine counts. For, as the accompanying table will indicate, 65 per cent of the yarn used on hand-looms is coarse and medium (being less than 30s) even on the extravagant assumption that all yarns above 30s, imported and manufactured in India including rayon mercerised yarn and yarn of unspecified count, are consumed by the hand-loom exclusively.

TOTAL YARN OF COUNTS ABOVE 30s and ABOVE 40s AVAILABLE IN INDIA.

(STATED IN MILLION POUNDS.)

Particulars	Average for			
	1900-3	1911-14	1924-27	1928-31
Indian yarn				
1. Between 30s & 40s	13.4	19.8	22.3	48.0
2. Above 40s	1.2	1.7	7.7	17.5
<i>Imported</i>				
1. Color yarn				
Between 30s & 40s	...	15.6	4.8	2.4
above 40s	...	1.6	0.5	0.4
2. Grey yarn				
Between 30s & 40s		9.7	21.3	21.2
above 40s		6.6	6.7	6.2
3. Mercerised, bleached, art silk and other unspecified yarn	...	5.8	11.2	12.0
Total of 30s and above including mercerised etc.		59.8	74.5	107.3
Percentage¹		24.1 %	25.1 %	33.7
Total of 40s and above, including mercerised, bleached and art silk		15.7	20.1	36.1
Percentage¹		6.3 %	6.7 %	11.4
Total yarn consumed on hand-looms		248.0	297	318

This assumption is very extravagant. The increase in 30s is mainly due to the imports while the increase in the finer counts is the result of increased production of finer yarns in Indian mills. They have also increased their output of 30s to 40s. Considering the increasing outturn in Indian mills of fine fabrics as muslins, nainsooks etc., with counts

¹ Percentage of the total yarn consumed on hand-looms. Inc

up to 120s, it must stand to reason to assume that what finer yarn the mill requires for its use, it produces. It is estimated by Mr. G. S. Hardy, I.C.S., that Indian mills consume nearly 7 million lbs. of yarn above 40s. Therefore the increase in the quantity of yarn imported alone more correctly indicates whether hand-loomers use finer count yarns. The increase in this respect is very negligible.

However, as regards Madras Presidency there is an increasing import of foreign yarn of finer counts and it has also an increasing share of the finer counts made in India. The import of yarn of counts above 40s into Madras is nearly 20 per cent and of counts above 30s is 80 per cent of the total imports into India. As regards coloured yarn Madras accounts for 75 per cent of the imports. All this is required for the manufacture of kailis and kerchiefs, and for the celebrated grey cloths of Madura, Salem, Narayanavaram, Tugili, Torayur, Chicacole, etc.

It must however be admitted that though the percentage of fine count yarns to total yarns available is very small the number of looms employing such finer yarns for manufacture is not negligible. They account for nearly 30 per cent of the total number of looms. But it cannot be said with reference to all-India that the survival of the hand-weaving industry is mainly the result of increasing consumption of finer counts.

The survival of the hand-loom is traced to the increasing use of artificial silk and mercerised cotton. It would be mere guess work, without a proper survey of the hand-loom industry, to state whether rayon has affected or benefited the silk- or the cotton-hand-loom weaver. From a study of the foreign trade in silk and art silk it is evident that the export of raw silk has increased and its import fallen. And while there is nothing to indicate an increase in the production of raw silk in the country it may be concluded that less silk is now consumed on hand-loomers. But there has been a considerable increase in the import of artificial silk yarn. Therefore it would be safe to state that the increased import of rayon has benefited silk-weavers more than cotton-weavers.

Further, there are certain kinds of cloth which are the virtual monopoly of the hand-loom: viz., the coarse cloths and the superfine cloths. Mills in India are gradually

discarding the manufacture of cloths of counts below 14s.¹ In coarse yarn there is less tensile strength and therefore it is not possible to manipulate it on the power-loom with economy. The coarse counts produced in mills are mainly for the use of the hand-loom weavers who manufacture dupaties, bedsheets, carpets, jamakkalams, tapes, ropes and strings.

Again in out-of-the-way districts hundreds of looms are engaged in producing cloth from the coarse and medium yarns (partly spun locally on the charka) where none but hand-woven cloths are in demand. It is really fortunate for the weavers that such is the case. The Indian mill-made and the imported cloths have not yet much penetrated those markets. Motives of economy recommend to the masses of the poor people these coarse hand-woven cloths. There are many places of this type far interior into the country and the improvement in the means of communication and transport alone are likely to affect the weavers. Even where the mill cloths have reached the rural markets the local hand-made cloth is preferred for its price and durability to the heavily sized white cloths of the mills. Again the rural economy of those places favours the production of hand-woven cloth. In many parts of Salem and Tinnevely, even prior to the national propoganda for the revival of the charka there had been and there are still a number of Vellala villages where women spin and the local weavers convert the yarn into cloth.

Besides, there are certain kinds of hand-made cloths which cannot be manufactured with economy on the power-loom, e.g. the Conjeevaram and Kornad saris, the solid bordered grey and coloured cloths of Salem, the fine laced cloths of Madura and the Northern Circars, and a number of other types, special to each locality, of which the slow moving custom decrees the use. It has been observed that fashion is at once the best friend and the deadliest foe of the hand-loom weaver. This is very true. Local tastes and ideas of fashion and respectability account for the manufacture of such cloths on hand-looms. The survival of hand-loom weaving is in a large measure due to the fact that those tastes and

¹ Mukerjee: *Foundations of Indian Economics*.

ideas of fashions of the masses of the people have not materially changed. Western ideas of dress have affected the tastes of the educated few to the detriment of the industry. The rich and the middle classes are now aspiring to be fashionable. But the masses still prefer the hand-woven fabrics for their durability. The decline in the industry is in respect of certain patterns only, such as the broad-bordered Conjeevaram cloth. It must be said that with all the changes in the fashion the weaver is trying to adjust himself to the changing conditions and is producing new patterns. And this accounts for the survival of the hand-loom.

Again it is the conservatism of the South Indian women that preserves the hand-loom industry in a sense. The women prefer the artistically and elaborately figured garments—either pure silk or cotton and silk—and the varieties of cloths thus demanded in each small centre are so numerous that they can never be supplied cheaply by mills. On hand-looms alone it is possible to manufacture varieties of cloths with different patterns and colour designs to suit the tastes of different communities. It is true that mills have now captured much of this trade and manufacture many of the varieties hitherto produced only on hand-looms; yet the sovereignty of the hand-loom in this realm remains undisputed. Individual tastes and fancies are satisfied more effectively by the hand-loom weaver. Also weaving as a work of art is possible on the hand-loom alone while the mill can only perpetuate monotonous reproduction of stereotyped patterns. In the manufacture of cloths where the skill of the weaver rather than his mere power is required the hand-loom has still the undisputed sway.

Again it is stated that the difficulties which the mills have to face encourage the development of the hand-loom. 'Duties levied on mill goods afforded a certain protection to the hand-loom industry.'¹ This is true of the pre-war time when there was an excise duty on cloths manufactured in mills in India and an import duty on the imports of cloths while yarns were imported free. Even then the protective effect of the excise duty was merely incidental and it was not in fact designed to be a powerful lever for the expansion of hand-loom

¹ D. M. Amalsad : *Hand weaving in the Madras Presidency*.

weaving. But this does not hold good now. For it was after the abolition of the excise duty in 1925 while the import duty on yarn is retained, that there has been a great expansion of the hand-loom weaving as the accompanying table will illustrate.

STATEMENT SHOWING CONSUMPTION OF YARN BY HAND-LOOMS,

(in million lbs.)

Year	Production in mills		Estimated production on hand-loom
	yarn	cloth ¹	
1921-2	694	361	299
1922-3	706	362	333
1923-4	617	359	252
1924-5	719	410	314
1925-6	686	415	290
1926-7	807	481	334
1927-8	809	507	328
1928-9	648	445	264
1929-30	833	562	343
1930-1	867	590	342
1931-2	966	672	364
1932-3	1016	694	397

It is again said that the strength of the hand-loom industry lies in the weakness of the mill industry in some respects. This is an underestimate of the true vitality of hand-weaving. The reverse is nearer the truth. It is the weakness of the hand-loom industry, especially in respect of technical equipment and business organization, that accounts for the greater efficiency of the mill industry. It is claimed 'mills have to meet labour troubles, strikes and lockouts, increasing

¹ The weight of cloth given in the Weaving and Spinning statistics is reduced on the basis that cloths manufactured out of 100 lbs. of yarn will weigh 112 lbs.

cost of production due to increased prices which are great obstacles to the development of the power-loom weaving and these difficulties are likely to increase in future and it may be expected that hand-weaving may find scope for development'.¹ This is emphasising too much the weak side of the mill organization and ignoring the vitality of the hand-loom. It perhaps overlooks the fact that all this will adversely affect the hand-loom weaver as much as it would affect the power-loom for the weaver depends for the supply of his yarn on these mills.

Therefore, it must be here noted that it is the strength of the hand-loom that is responsible for its survival and expansion. It is claimed, and it is true, that cloths are produced on hand-looms with much better wearing qualities and sometimes at a much lower price than on power-looms. Expert opinion is in favour of the hand-loom. 'Hand-weaving is capable of competing with power-weaving'.² 'The Handloom can turn the tables against the power-loom'.³ 'There are splendid possibilities open to the hand-loom in India'.⁴

¹ D. M. Amalsad : Memorandum to the Textile Conference, Madras.

² Manager, Empress Mill, Nagpur, at the Indian Industrial Conference, 1907.

³ Prof. Fox : From the Correspondence of the Department of Industries, Madras.

⁴ *Bulletin of the Department of Industries, Bihar and Orissa.*

CHAPTER IV

THE DECLINE OF THE HAND-LOOM INDUSTRY : ITS CAUSES

WRITERS on the hand-loom industry generally attribute the decline of the industry to the competition from mills. 'The rapid development of machinery and manufactures', writes the author of *The Progress of the Madras Presidency during the last forty years*, 'and the cheapness with which cotton cloths were produced in England led to India being flooded with Manchester goods to the further injury of the weaving classes here. . . . Now the tide has turned and the development of the factories in India bids fair to enable her to manufacture the goods required for her own population even more cheaply than in England. . . It is clear that the deterioration of the spinners and weavers will now be even more rapid than in the past. . . The whole trade of the hand-loom weavers has now shrunk to small dimensions'.¹ This was true at the beginning of the factory industry in India; for a large range of goods that was formerly manufactured on hand-looms was captured by power-looms and thus the hand-loom was driven to explore new fields, which had become increasingly difficult because of its lack of resources and organisation. The development of the mill industry affected the other branches of the cotton home industries more disastrously than hand-weaving, which has not only tided over the storm of competition but is now regaining much of its lost ground. Though it must be admitted that the hand-loom is benefited by spinning mills which have cheapened the price of yarn and created a new demand for the hand-woven cloth, it cannot be denied that the hand-loom suffers from the competition of weaving mills. In this connection it must be noted that the Indian Millowners' Association claims that the power-loom does not compete with the hand-loom and that the mills far from being antagonistic to the development of the hand-loom industry are unreservedly in favour of its encouragement

¹ A similar view is expressed by Mr. E. B. Havell: 'The European goods had their great advantage in point of cheapness and therefore the native manufactures have suffered.' Most probably he meant by 'native manufactures' cloths woven on hand-looms out of hand-spun yarn.

and improvement.¹ This claim is supported by Dr. Radhakamal Mukerjee² and Mr. R. D. Bell, formerly Director of Industries, Bombay. The latter writes: 'the mill industry and the hand-loom industry are not really antagonistic to one another. A great part of the output of the hand-loom is composed of specialised types of cloth which are not suitable as regards quantity or quality for mass production. The amount of direct competition between mills and hand-looms is at present very restricted'.

'Hand-looms provide an enormous market for mill-spun yarns. Probably the greatest improvement in the hand-loom industry has been the provision of ample quantities of mill spun yarns of all counts and of regular twist and strength in substitution for the irregular and usually coarse handspun yarns of former days.'

The latter part of Mr. Bell's remarks is substantially correct. A great development in the hand-loom production took place after the development of the power spinning industry in India. But it cannot be ignored that power-loom weaving has not only driven the hand-loom from some of its former close preserves but is seeking to oust it from some others as well. The increasing outturn of dhoties, chaddars etc., is an instance of the mill competition with the hand-loom. The Salem *Gundanju*, the Conjeevaram *Pattai*, the Tugili *angavasthrams*, to cite only a few instances, are now increasingly produced on power-looms in India, Japan and Lancashire. In other respects also the mill competition tends to increase.

The growing rationalisation of hand-loom production, in order to keep pace with the progress in power weaving has created more unemployment among weavers and in many cases a fall in their earnings. This is inevitable in a changing and progressive world. The decline in the industry which

¹ M. P. Gandhi, *Indian Cotton Textile Industry*, pp. 87-88.

² Dr. Mukerjee writes in his *Foundations of Indian Economics*, page 164. The notion of competition between hand-loom and power-loom is wrong. The hand-loom does not compete with the mill but it supplements it in the following ways: (1) it produces special kinds of goods which cannot be woven in the mills (2) it utilises yarn which cannot at present be used on the power-loom (3) it will consume the surplus stock of Indian spinning mills which need not be sent out of the country (4) being mainly a village industry it supplies the local demand and at the same time gives employment to capitalists, weavers and other workmen and (5) lastly it will supply the long-felt want of an honest field for work and livelihood for educated Indians.'

every one bemoans is not quantitative, for the hand-loom has increased its output; but it relates to the human factor in the industry which is most deplorable and for this the mill competition is partly, if not solely, responsible.

The changes in the tastes and ideas of fashion of the people have also led to the decline of the industry. 'Both in fine and more especially inferior cloths the spread of Western ideas has had more prejudicial effects on the industry than the mere cheapness of the European goods'.¹ This is woefully true. Formerly rajas, courtiers and zamindars patronised hand-weaving which supplied celebrated muslins, sateens and other fine fabrics. At present persons in liberal professions, the merchant-princes and industrial magnates who occupy a high social position have become patrons of cheap foreign fineries and pseudo-works of art. This aspect has been much deplored by many writers.² The imports of foreign piecegoods are meant simply to satisfy their demand. Thus because of the change in the tastes of the rich and the ideas of respectability prevalent among the masses of the urban and semi-industrial population who care more for cheapness than for art and more for show than for quality, mill production advanced and the hand-loom industry suffered a severe set-back. Now, we witness the rapid supersession and base imitation of the many hand-loom patterns. 'The long-cloth has displaced the plain white cloth with a narrow border of coloured cotton'. The individual weaver cannot compete with the mill which has elaborate organisation, resources and power. He has to submit himself to the ever-growing competition of the mill and weave his own philosophy of resignation and contentment.

¹ E. B. Havell.

² Mr. D. R. Gadgil expresses a similar opinion. He writes in his *Industrial Evolution in India*, (p. 45): 'The next class which was the natural successor to the position of the nobles was the newly created educated class. This was mostly an urban and professional class, somewhat corresponding to the professional section of the "bourgeoisie" of the West. This new class might have been expected to patronise the handicrafts. But it may be said that the demand from this class did not amount to even as much as the demand from the Europeans. Indeed with a few exceptions they entirely turned their back on the indigenous arts. One of the most harmful effects of foreign rule is the imposition on the conquered people of the ideals of the conquerors and the newly created Indian "bourgeoisie" showed itself during the latter half of the last century extremely ready to accept European standards and pour scorn on everything Indian. This was especially so in the case of the arts. To follow European fashions was considered the hall-mark of enlightenment. Consequently the products of indigenous industries suffered.

It is also said that the cause for the decline of hand-weaving is the weaver himself. 'Weavers are as a class ignorant and illiterate with no business experience, knowledge, or intelligence, with no spirit of co-operation among themselves, trodden down by the influence of the money-lender on the one hand and by extravagant social customs on the other'. It is also said that he is the least receptive to new ideas and is almost unwilling to help himself out of his present miseries. It is possible to blame the weaver but, to be fair, let us ask: what have education, capital, organisation, and energy done for the weaver?—nay, what has society done for him or for his craft that he should have improved his status or developed his art, and, in failing to do it, he deserves this strong condemnation? Society has all along been indifferent and capital and energy and organisation were diverted to other channels which were more lucrative; and now we have the sorry spectacle of the growing, vast, uneducated, unprogressive and poverty-stricken rural population and rural artisans, on whose material and moral advancement depends the progress of society.

Technical experts have attributed the decline of the art to the almost crude and primitive and slow processes adopted in weaving. Technical deficiency may have retarded the growth of the industry previously in some provinces; but now everywhere in many respects many improvements have been made in the technique of the industry.¹ It must, however, be admitted that the decay of the industry is due to the unremunerative, wasteful and slow preparatory processes adopted by the ordinary weaver. 'Ancient and primitive types of tools were used by weavers who were averse to adopt economical preparatory processes and to increase their production by introducing small labour-saving appliances'. 'The weavers persist in the slow, laborious, wasteful and costly methods in their preparation of warp'. No doubt the processes are crude and wasteful and the division of labour is rough and ready.

¹ The number of frame looms, flyshuttles, drawboy devices, warping mill etc. in use is increasing in the Madras Presidency (Refer Appendix, Salem Dt. Hand-loom Census). Mr. M. P. Gandhi writes that the number of flyshuttle looms is 84,392 as against 31,042 other looms in the Hyderabad Dt. About a third of the hand-looms in Bengal are with flyshuttle. A study of the annual reports of the working of the Provincial Departments of Industries supports this view.

It must be noted, however, that the weaver is not unwilling to adopt improved methods. Nor must it be said that he is incapable of adjusting himself to the changing conditions, and benefiting himself by the improved technique. It is his crushing poverty that is the bane of his life. Left to himself, he cannot carry on the battle against the mill. He stands in need of help from enlightened capitalists and businessmen.

Thus, it becomes evident that the lack of organisation more than the competition of the mill goods or the technical deficiency is the real cause of the present stagnant condition of the industry. Sir Alfred Chatterton said, 'If only a portion of the capital, organisation and energy that have been spent on the mill industry is devoted to his trade, the hand-loom weaver would have turned the tables on the power-loom.' The master craftsman is a small capitalist and the reorganisation of the industry is both beyond his individual means and imagination and his present function is more trading than industrial in character. Unlike the English clothier, who was the industrial entrepreneur improving the technique of the industry and organising production, the merchant in hand-loom products cares more for trading profit than for industrial advancement. He has not organised the industry on scientific lines; nor has he rationalised production and created the necessary organisation for effecting economy in the purchase of raw materials required for the industry, and in the marketing of cloth. Nor is there co-operation among small merchants and craftsmen. Anything like organisation of the hand-loom industry dates only from the last decade and to-day we have a number of hand-loom factories which indicate how organisation of hand-loom weavers, however small, can help the weaver and the industry.

There are other causes which have also led to the loss of patronage and the decline of the industry. Certain practices resorted to by weavers to meet the mill competition have injured the reputation of hand-loom products. The weaver is not alone to blame. The merchants are the worst culprits who have encouraged these practices in many cases. They met outside competition by deteriorating the quality of weaving. The use of bastard reeds, irregular weaving, false description of cloths, absence of standardisation and the failure to observe

time deliveries are the factors which led to the loss of patronage. The revival of the industry depends on its reorganisation in these respects.

Again, in the industry as at present organized there is no proper division of labour nor is there a proper division of functions, the advantages of which are so well known and so commonplace that they require no detailed mention here. The cloth merchant is a Jack of all trades; he finances the industry; he regulates production; he himself markets the manufactures. There is not much of specialisation in any one branch. And even where it obtains, it is crude and unscientific. The means of the merchant are meagre and naturally his methods are inefficient. Unlike the mills or organised hand-loom factories he cannot study the needs of the market and thus adjust production to the demand nor can he effect internal economies in the industry as he is not himself a technical expert.

Above all there is one other cause which seriously handicaps the hand-loom weaver and it is here he has to depend on the mercies of his foe. He gets his supply of yarn from mills which invariably give a poor quality for the price paid. It was observed as early as 1908 by Mr. Churchill of Ahmednagar¹, and this view was later on confirmed by Sir A. Chatterton and others, that 'As regards the quality of the yarn I find it impossible to buy in the open market yarn of good quality for its number such as that used in mills. The mills usually have two classes of spindles, one producing yarn for their own use and the other for the market. The hand-loom weaver gets a poor quality of yarn or can get a proper quality only at a prohibitive price'.² As regards imported yarn it was observed that the price of imported yarn is proportionately higher than the price of cloths³ and leaves no margin for weaving charges. Besides the yarn is not obtainable in the most economical form. A similar complaint was made

¹ Proceedings of the Hand-loom Conference, 1907.

² Mr Churchill said 'I find it strange that the cost of yarn we import is greater than the cost of the imported cloth of the same weight. It is not possible to produce mulls of the well known 1703 type even at the cost they are sold in the bazaar though we use the same yarn and weave at the lowest possible cost. My experience tells me that the price of imported yarn is especially raised by some combination of foreign spinners and cloth manufacturers.'

before the Textile Tariff Board, 1926, by Mr. Amalsad. 'It is supplied only in the form of bundles which are deficient in length and seldom come up to the reputed count'.¹ Where good yarn is obtained hand-weaving is thriving. The Madras Presidency owes the present magnitude and prosperity of its hand-loom industry to the mills of the Madura group which are spinning mills exclusively.

Thus, the real limiting factors in the further development of the industry are (1) organisation and (2) steady supply of good yarn. Now the first step, therefore, in the revival of the hand-loom industry is the creation of an organisation which will, on the one hand, secure a steady supply of good yarn at a reasonable price; and, on the other, educate the weavers and the merchants in business methods, in the advantages of adopting improved appliances and processes and of manufacturing standardised quality goods; give them necessary financial help and technical advice; and also educate them in the efficient means of production and marketing.²

¹ Amalsad: Evidence before the Textile Tariff Board.

² In the Census Report of 1921, Mr. Edye, I.C.S., writes about the difficulties of the weaver and the survival of the hand-loom against mill competition thus:— 'The difficulty of the hand-loom weaver is two-fold—(i) when he purchases his hanks of mill yarn, he has to pay also the cost of reeling, bundling, and baling; for the mill-owner's profits, the salesman's commission, the freight, the middleman's commission, to say nothing of the fact that he has himself to fetch it from the market and rewind it for his weft before use—all of which charges the rival mill-owner escapes but (ii) worse than this, the mill which supplies the yarn is also a rival weaver of cloth and well aware of the fact. It is indeed surprising that the hand-loom weaver, existing as he does, at the tender mercies of the mills which can produce 95% of the different kinds of articles which he produces, just as well, if not better, manages to maintain his place in the sun. The secret of his success appears to lie in the fact that he has at his disposal the labour of his wife and children who otherwise would not be engaged in production of any kind. Consequently he is able to get all his preliminary processes done free of charge. His relation with the mills will always be a source of weakness to him, but he has managed to struggle against it so far and there seems to be no room why his position should not be strengthened as his other handicaps are minimised by the introduction of improved appliances and methods of marketing.'

CHAPTER V

THE DECLINE OF THE HAND-LOOM INDUSTRY : ITS NATURE AND EXTENT

THE necessary data are not available regarding the changes in the production of cloths on hand-loom since the first cotton mill in India was started. Regular and reliable statistics regarding the production, export and import of yarn and its consumption in mills came at the close of the 19th century. Nothing definite is known about the quantity of yarn spun on country wheels—for in the early part of the last century the production on the charka was very considerable—and even as late as 1870 the charka consumed several million pounds of cotton.¹ No systematic trade returns were made regarding the foreign trade in cotton manufactures prior to 1870, when the Annual Statement of the Sea-borne Trade was first published. Later on came the inland trade returns which throw light on the localisation of the industry and its migration. But it is unfortunate that they were discontinued as a measure of retrenchment in 1922.² The statement regarding spinning and weaving in mills in India was for the first time compiled in 1896 when the cotton excise duty was imposed. Thus there is nothing like a sure ground for discussion regarding the changes in the quantity of production on hand-loom since the introduction

¹ In 1869 S. S. R. Iyengar estimated that the charka and the hand-loom consumed about 1·8 million cwts. of cotton while the mills in India consumed 0·25 million cwts. only

² The Indian Economic Enquiry Committee observed (para. 30 of the Report): 'The annual publications relating to the inland trade of India (Railborne and Riverborne) gave import and export trade in staple articles, of each of the 5 or 6 blocks into which every province was divided and the imports and exports of 18 bigger blocks forming the trade divisions of India as a whole. The figures related to quantity only These internal trade returns were by no means satisfactory. The trade within a block was not recorded and there was obvious evasion on railways and trade by road which is not negligible. Nevertheless, the discontinuance of the publication has removed a very important check on provincial figures of production . . . We think the publication of internal trade returns should be revived and brought into line with the more up-to-date statistics of countries like the United States of America.'

of cotton mills in India, and it cannot be said how far the growth of the mill industry in India has affected the handicrafts.

But many writers have deplored the conditions of the cottage textile workers in the last century and they have attributed their miseries to the development of cotton mill industry. Mr. Royle, Mr. T. N. Mukerjee and Sir George Birdwood and others have noticed the steady decline of hand-loom weaving in India. Mr. E. B. Havell in his *Enquiry into the Arts and Crafts of the Madras Presidency* (published in 1882) observed that because of the competition of the mill cloths the Indian manufacturers who had supplied the wants of the low castes suffered most. He writes, 'Both in fine and inferior cloths the profits of the weaver seem to be reduced to a very low margin.' It is noticed by another writer 'The sufferings of the weavers are great and such as to excite commiseration. The present conditions will hasten the decline in native weaving; in fact it is obvious that in no very distant time the whole of the native industry in the low counts cloth or purely cotton cloth will give way to mills.'¹ Others found that the number of persons supported by the hand-loom industry was rapidly falling and concluded that it was a sure sign of its decay. Sir Alfred Chatterton, however, rightly pointed out that the decline of the handicrafts in textile industries was beyond hope of recovery so far as hand ginning, cleaning and spinning, were concerned, but hand-weaving had maintained its own. 'I think therefore that we may safely conclude', wrote Sir Chatterton in the Madras Census Report of 1911, 'that in the last forty years the number of hand-loom weavers has remained the same but owing to stress of foreign competition they now turn out a larger number of finished goods'. He also observed that there was no decline in the number of hand-looms working in the Presidency; only a majority of the weavers had to work hard to make a bare living.²

Now the weaver also complains of his lot. He earns, he

¹ S. S. R. Iyengar: *Progress of the Madras Presidency in the Last Forty Years*.

² The Madras Census Report for 1911.

says, miserable wages. In some cases he does not earn even as much as an ordinary unskilled labourer. This is as it would be in a free competitive market. But when the weaver speaks of the decline in the industry, not only does he refer to the fall in his money income but to his increasing period of unemployment and the change in his economic status. Formerly he was independent. He was his own employer and capitalist and he himself marketed his goods. From this independent position he is now reduced to one of dependence on the merchant or the moneylender for the supply of raw materials, for financial help, for the disposal of his manufactures, nay for everything. This means an intolerable slavery. The merchant, on the other hand, says that the trade in the hand-woven cloth is failing and his profits, shrinking rapidly, are not worth his continuing in the business. And the consumer is also disappointed with the quality of the cloth. The artist also has his complaint. He deplores the steady decline in the art of weaving. All are unanimous in their opinion that mill competition is the root cause of the decline of this industry in all these respects.

Vague as these assertions are, there is much truth in them. It is now necessary to define what we mean by saying that an industry is declining. Does the economist's conception of industrial decline differ from that of others? 1. Does the decline of an industry mean that it has not expanded and increased its output corresponding to the growth and the needs of the population? 2. Or does it mean that the industry fails to maintain as many workers as before? 3. Or does it mean that the economic or social status of the weaver has suffered a change for the worse? The second is no satisfactory test; for it is the very essence of progress in the technique and business organisation of industries that the introduction of scientific methods creates a temporary displacement of labour. But if this were to create permanent unemployment and the industries fail to absorb displaced labour directly or indirectly, this would constitute a menace to the social order. But of the other two, each by itself will constitute a symptom of its decline, especially when it relates to the human factor in the industry.

THE ECONOMIC STATUS OF THE WEAVER

It is difficult to state with any precision whether the economic conditions of the weaver have changed for the better or for the worse. But a study of the available literature invariably creates the impression that his conditions have changed for the worse during the last 120 years. No doubt he is now producing more cloth than before but that has not increased his purchasing power. The technical progress in the industry has not much helped the weaver to maintain his own, not to speak of the betterment of his conditions. The number of the unemployed and under-employed is increasing; the increase in his production has not improved his material conditions; nor have his earnings kept pace with the rise in prices and rise in the cost of living; added to it, one finds less continuity of employment and greater fluctuations in his wages. Thus unemployment of many workers in cotton textile industry on the one hand and the stationary economic conditions of those who still remain in the industry on the other are the two grim facts which indicate that the human factor has been ignored in the so-called industrial progress.

It is necessary to examine the available statistics regarding the changes in the industry itself under the heads: 1. hand-loom production and total consumption of cloth. 2. the number of persons supported by the industry as revealed by the censuses. 3. the number of looms working as stated in the industrial censuses and 4. the trade returns relating to the export of hand-loom manufactures. All these throw light on the conditions of the industry.

1. Proportion of the hand-loom output to the total consumption of cloth

A statement is given below showing the quantity of yarn consumed on hand-loom (1) in India and (2) in the Madras Presidency from the year 1896 when the statistics of mill production of yarn and cloth were first made available.

*Average annual consumption of yarn by hand-loom s stated
in million lbs.*

Year	All India ¹	Madras Presidency
1869	180	31½
1889	200	34½
1896-1900	233.8	
1901-1905	211.6	
1906-1910	267.6	63
1911-1915	262.2	67
1916-1920	214.4	59.5
1921-1925	297.0	Imports of yarn
1925-1926	288.9	by rail & foot
1926-1927	333.8	known since
1927-1928	328	1921
1928-1929	264	
1929-1930	342	
1930-1931	343	
1931-1932	364	
1932-33	397	

The consumption of yarn by hand-loom s has increased steadily except in the quinquennia following 1900 and 1915. The famine of 1900-02 and the Great War during 1914-18 account for the decrease in the hand-loom production in those periods. Besides, in 1901-5 while the Indian mill production of yarn was normal, both the export of yarn to China and the mill consumption of yarn had increased. Speaking generally, apart from the temporary depression, the consumption of yarn by hand-loom s during the last 60 years has increased rather than diminished.

But is this increased consumption of yarn commensurate with the increase in the total consumption of cloth in India? From an examination of the accompanying table it is evident

that the production of cloth on hand-looms has increased but it does not keep pace either with the growth in the

Average for	Per capita consumption of cloth		Per capita Production on hand-loom		Percentage of hand-woven cloth to total consumed	Popula- tion	
	Yards	Index No.	Yards	Index No.		Mil- lions	Index No.
1896-1900	10.9	93	3.10	95	28.5	293	98
1901-1905	11.7	100	3.27	100	28	299	100
1901-1915	14.6	125	3.42	105	23.4	309	103
1921-1925	13.3	114	3.50	107	26.3	328	108.3
1926-1930	14.8	126	3.80	116	25.6	340	114
1931-1935							

population or with the increased *per capita* consumption of cloth.

2. *A study of the occupational census: renumber of persons supported by the industry*

It is unfortunate there is no uniformity in the occupational returns of the censuses. In 1871 women were not classified according to profession and there was a male weaving population of 540,061 as against 431,733 men in 1881. Thus there was a decline of 20 per cent during that decade. The famine of 1876 and the growing mill industry are the two causes for this rapid decline. In 1881 there were 839,457 actual workers (excluding dependents) in all cotton textile industries i.e. ginning, cleaning, spinning, sizing, weaving, printing, and dyeing. No distinction is however made between the factory labourer and the home worker. There are two important heads of classification (a) cotton manufacturers (188,157 men and 354,577 women workers) and (b) weavers otherwise not described (196,610 men and 96,597 women workers). In 1891 there was again a reclassification of workers. Here the figures indicate an increase of 40 per cent because dependents are included and they are not separately shown from actual workers. In 1901 'actual workers' are again separately

enumerated from dependents and a distinction is made between workers in mills and in the home industry. The classification of workers in the different branches of the textile industry was also altered. In 1911 the distinction between factory and home workers disappeared and there was again a change in the classification of workers. In 1921 cotton spinners, sizers and weavers and unspecified spinners and weavers are enumerated separately while in the Census of 1911 they were grouped together under one head. In 1931 there is again a fresh classification. Spinners, sizers and weavers who were separately enumerated in 1921 are grouped together. The head of unspecified spinners and weavers of the last census was omitted. Though the new classification of persons following the occupation into (a) principal workers, (b) working dependents, and (c) persons following it as a subsidiary occupation is an improvement on the previous censuses, one cannot however state how many persons are supported by the particular industry or profession. Besides in some earlier censuses e.g. the Census of 1881, the cloth weaver and cloth seller, the spinner and the yarn dealer, the manufacturer and seller of all kinds are mentioned under one head. A statement is appended to this chapter showing the changes in the occupational returns since 1881 and it illustrates that the value of the census is lost by the constant changes in classification and by the absence of uniformity and continuity in the different heads of the returns.

Agriculture and hand-loom weaving are the main industries of this country and care must be taken in collecting useful information regarding them. The present census operation is far from satisfactory. Attention was drawn to it long ago by Sir Alfred Chatterton: 'We desire to point out to the unsatisfactory means provided by the ordinary census for the collection of useful occupational statistics and to suggest the adoption of special enquiries; for, the object is at least as important as the ethnological discussions that have hitherto figured so largely in the census reports'.¹

Inadequate and imperfect as the censuses are, it is possible to note certain tendencies. Since 1871 there is a pronounced decline in the number of workers in the cotton textile

¹ *Census Report of 1911.*

industries as a whole but the number of cotton weavers alone shows a slight increase or at least remains stationary so far as the Madras province is concerned.¹

The total number of actual workers in the Presidency has fallen all round if we compare 1901 and 1921 census figures. But figures for 1901 and 1911 indicate a slight increase over those of 1881. All these figures are not exactly comparable and so it is difficult to state definitely whether the number of workers has increased or decreased; but in all probability it has remained practically stationary in the case of men workers but there has been a decline in the case of women workers. The introduction of machinery in the process of cleaning, ginning and spinning and of improved preparatory process of warping in the home industry accounts for the decline in the number of women workers.

As regards hand-loom weaving in the Madras Presidency cotton weavers, as distinguished from spinners and sizers, are for the first time separately enumerated in 1881. A useful comparison may be made between 1891 and 1921. In the former period there were 1,090,685 persons supported by the

¹Cotton textile industries (both Factory and Home) in the Madras Presidency

Year	Actual workers		Total supported	Index No. of workers.	
	Men	Women		Men workers	Women workers
1871	540,061 ¹	not stated	not stated	139	...
1881	388,024	451,433	839,457	100	100
1891	not stated	separately	1,250,021	...	...
1901	408,896	243,487	1,218,666	106	53.3
1911	406,696	206,898	1,177,881	105	45.5
1921	299,507	141,735	938,790	77	31
1931	334,407 ²	83,131 ²	not stated	86	19

¹ This includes workers and dependents.

² This excludes working dependents.

industry as against 822,571 in 1921—a decline of 25 per cent. But these figures include factory hands, mill managers etc. A more useful comparison may be instituted between 1901 and

COTTON WEAVING IN THE MADRAS PRESIDENCY

Year	Actual workers		Total supported
	Men	Women	
1881	384,767	451,174	not stated
1891	not stated		1,090,685
1901	384,546	163,739	1,067,589
1911	386,598	194,350	1,118,628
1921	277,711	115,740	822,571
1931	334,407	83,131	not stated

1921. There were 24,359 men and 18,686 women spinners and sizers (actual workers only) in 1921 as against 6,414 men and 59,456 women in 1901—a decline of 70 per cent. in the case of women and an increase of 400 per cent. in the case of men and a decline of 35 per cent. in the case of both men and women workers. This can be explained by certain changes in the industrial practices. Firstly, hand spinning has become nearly defunct. A careful study of the practice of the industry will show, however, that men have taken the place of women sizers who have gradually disappeared as a result of the introduction of long warps. Weaving employs 192,105 men and 83,907 women workers in 1921 as against 384,546 men and 163,793 women workers in 1901. Thus in the course of two decades there is a decline of 40 per cent. in the number of actual weavers alone. This can be accounted for by the peculiar circumstances that obtained at the census operations in 1921. The hand-loom industry was at a low ebb and it had not as yet recovered from the effects of the war, high prices, cotton crop failures, etc. This is supported by 1931 figures. As weaving is fast ceasing to be the partial occupation of agriculturists and the ideal domestic industry of women and is tending to become more and more the

specialised calling of a distinct group of workers as a result of the advances made in the technique of the industry, there is naturally a fall in the total number of cottage workers.

3. Hand-loom Censuses

Special censuses of hand-looms were taken occasionally. In the Census of 1921 the number of hand-looms was ascertained in some of the provinces. But it does not mention how many

of them were actually working and how many of them were cotton looms. A careful scrutiny shows that there are more looms than actual weavers in some provinces. Also the Census of the looms in the United Provinces and other important hand-weaving provinces was not taken. Nor is the special census of looms available for any earlier period. (In the Presidency of Madras, however, a census of the hand-loom

Census of hand-looms, 1921		
Provinces	No. of hand-looms	Total supported by cotton industries
Ajmere-Merwara	1,587	6,195
Assam	421,367	13,362
Bengal	213,886	472,839
Bihar and Orissa	164,592	284,422
Burma	479,637	65,213
Delhi	1,067	7,584
Madras	169,403	601,178
Punjab	270,507	667,333
Hyderabad State	115,434	242,410
Rajputana Agency	89,741	190,783

was first taken in 1856. In 1871 the Board of Revenue stated in its report that there were 280,000 looms and noticed that there was an increase of 42 per cent over the 1856 census. In 1889 the Board again estimated the number of looms in the province to be 300,009.¹ The Statistical Atlas of the Madras Presidency, 1901, mentions 167,806 looms. According to the special industrial census of 1921 there were 169,403 looms while according to the returns of the Statistical Atlas compiled in the previous year there were 242,000 looms.²) How far these figures are

¹ S. S. R. Iyengar: *Progress of the Madras Presidency*.

² The Special Officer for cottage industries puts down the number of hand-looms at 259,451 (in 1928) as against 169,451 of 1921 census. At present it is estimated by the 1931 Census to be 193,474. The Superintendent considers this figure to be an under-estimate and believes that the estimates of the Special Officer for cottage industries indicating an increase of 60% over 1921 figures are easily justifiable. He estimates that the consumption of yarn by hand-looms in the Madras Presidency has increased from 60 million pounds in 1921 to over 75 million pounds in 1931.—Cf. *Report of the Superintendent, 1931 Census, Madras*.

usefully comparable, to what textile manufactures they refer are matters delightfully vague. The returns of the Board of Revenue belong to a period when statistical compilation was in its initial stage and therefore they are imperfect. They indicate an increase in the number of looms contrary to what may be expected from the growth of the mill industry; far from affecting the cottage industry it has actually accelerated the outturn of the hand-loom and led to an increase in its number. The former can be understood but not the latter.

A more detailed study of the statistical compilations of the Revenue Department, however, reveals the absolute unreliability of the data. The cattle census and the village statistical registers are supposed to enumerate the number of looms, of indigo vats, oil mills, and sugar cane presses. An examination of these data showed that the actual number of looms in villages seldom corresponded even approximately to the number entered in the registers. In some districts special censuses are also taken by Weaving Superintendents of the Department of Industries. And here again the information is furnished by the village officers. Their figures never tally with either the census figures or with the figures of the Statistical Atlas. To cite an instance, in Salem District there are 10,841 looms according to the census reports, 23,000 looms as stated in the Statistical Atlas and 28,000 looms according to the report of the Weaving Superintendent. How far these figures, obtained occasionally with no definite system of collection of statistical information, can be relied on for the discussion of the questions relating to the decline of the industry, its migration, and its present economic tendencies, it is difficult to say.¹

¹ 'We must on the whole conclude that any estimate of the tendency of the home weaving industry based on the census figures is at present inconclusive. But the record of the hand-loom census, if it is to be continued, may afford material for a better estimate at a future census'. This was the remark made by the Editor of the Indian Census, 1921. In 1925 the authors of the Report of The Indian Economic Enquiry Committee stated 'the statistics have not been compiled hitherto with a view to their being utilized for shaping the economic policies of the country'. How true it is! They further emphasised the importance of a census of production, especially of cottage industries. 'We consider it of great importance that an estimate of the quantity and value of the total annual production of the cottage industries should be ascertained along with the estimated value of raw materials used up. It would be interesting to

4. Export Trade in hand-loom manufactures

The Madras Presidency is, as it has been mentioned before, consuming nearly a fourth of the yarn available for hand-looms. And nearly 25 per cent of the looms manufacture lungis and saris mainly for export to Penang, Federated Malay States etc., and handkerchiefs to Africa. When other things remain the same an increase in the exports of these goods is an indirect proof of the increasing production on hand-looms.

Total piece goods exported from the ports of Madras Presidency.

Year	Export in million Yds.	Value in lakhs Rs.
1875	7.5	28
1880	5.3	22
1885	13.1	48
1890	13.6	46.0
1905-10	23.0	78.2
1911-15	25.0	92.4
1916-20	30.0	160.2
1921-25	37.6	230.0
1926-30	38.5	195.0

The annual export of lungis amounted to 18,800,000 (pieces?) yards before the War and it now amounts to 22,200,000 yards—an increase of 20 per cent during the decade. The export of lungis and saris was separately enumerated for the first time in 1914. Therefore it is not possible to ascertain whether there has

been an increase or decrease in their export as compared to the pre-War period. However, as lungis and saris form the bulk of the export of coloured goods from the Madras ports and as a great deal of these piecegoods is the product of the hand-loom, an increase in the export of the coloured goods from this presidency indicates that so far as these manufactures are concerned the hand-weaving industry has expanded.

ascertain, at the same time, the number of persons engaged wholly or partially in such industries, distinguishing dependents and hired workers. In weaving the number and kind of looms might be ascertained and similarly in cottage industries using machinery of one kind or another, the number of such machines might be recorded. Where the production varies in quality, the grade might also be noted.' (*Report* para. 60.) A very highly ambitious proposal! The 1931 census has not merely ignored this but failed to carry out even the modest suggestion of the authors of the 1921 census. Besides abandoning the scheme of industrial census and the census of hand-looms—valuable additions to 1921 census,—the Editor of 1931 census has adopted a new classification of cotton textile workers, making comparative study impossible. In the name of the improvement of statistics, the thread of continuity should not be broken,

This examination of the statistical position regarding the hand-loom industry has well brought out the following facts:—

1. The number of workers engaged in the cotton handicrafts has decreased; but quantitatively the hand-loom production has not suffered; on the other hand it has increased.

2. The fall in the number of home workers in ginning, cleaning and spinning is great. Workers engaged in these processes have suffered most by the introduction of mechanical power.

3. The power-weaving industry had not affected to the same extent the hand-loom which till 1915 produced nearly as much in value and quantity as the cotton mills in India, as the mill industry has affected other indigenous cotton textile industries. It was only after the War that the mill production outstripped the hand-loom production.

4. The growing rationalization of production—viz. the introduction of power and mechanical appliances in factories and the increasing adoption of labour-saving appliances by hand-loom workers—has thrown out more women than men out of the industry. The scope for the employment of women in factories with gigantic machinery and uncongenial surroundings being limited, the number of women workers in cotton power industries has fallen.

5. An important feature of the development of the hand-loom industry is that it is fast ceasing to be, at least so far as this presidency is concerned, the partial occupation of agriculturists; and it is becoming more and more the specialised occupation of particular classes of workers. But the monopoly of hereditary skill and of caste workers is not yet broken. The weavers however are slowly concentrating in towns and in colonies where there are certain facilities viz., the preparatory processes being done cheaply and quickly by special warpers and sizers. This means that women who are generally employed as winders, warpers and sizers in a self-sufficient cottage system of production are now thrown out. Perhaps there is nothing to lament in the decline of the number of women workers as their labour has nearly no value at all,

TABLE

Statements Illustrating the Changes in the Classification of Workers in Cotton Textile Industries according to the Various Censuses since 1881

NUMBER OF WORKERS IN THE COTTON TEXTILE INDUSTRIES
IN THE MADRAS PRESIDENCY

I. CENSUS OF 1881

	Actual workers		Total supported
	Men	Women	Not mentioned
1. Cotton manufacturers	188,157	354,577	
2. Weavers otherwise not described	196,610	96,597	
3. Calico printers	198	9	
4. Cotton dyers	1,059	250	
Total	388,024	451,433	

II. CENSUS OF 1891

	Actual workers	Persons supported by the industry (workers and dependents)	
	Number of actual workers not available	Men	Women
1. Cotton spinners and sizers			16,302	117,529
2. Cotton weavers, mill-owners and managers	580,783		569,902
3. Cotton factory hands undefined	1,829		1,127
4. Calenderers and fullers	10,065		10,221
Total		610,068	639,053

III. CENSUS OF 1901

	Actual workers		Total supported
	Men	Women	
<i>A. Mill industry—</i>			
Cotton ginning, cleaning, spinning and weaving	112	4,757	17,245
<i>B. Hand industry—</i>			
1. Cotton cleaning, ginning and pressing	10,754	11,272	38,609
2. Spinners and sizers	6,414	59,456	71,086
3. Weavers	384,546	163,739	1,067,589
4. Cotton carpet and rug makers	575	775	2,491
5. Printers, fullers and calenderers	714	1,122	2,476
6. Cotton dyers	5,781	2,366	19,170
Total	408,896	243,487	1,218,666

IV. CENSUS OF 1911

	Actual workers		Total supported
	Men	Women	
1. Cotton cleaning, ginning and pressing...	20,098	12,548	59,253
2. Spinning, sizing and weaving ...	386,598	194,350	1,118,628
Total ...	406,696	206,898	1,177,881

V. CENSUS OF 1921

	Actual workers		Total supported
	Men	Women	
1. Cotton cleaning, ginning and pressing ...	5,773	5,700	20,844
2. Spinning ...	23,128	18,028	84,938
3. Sizing ...	1,231	658	4,392
4. Weaving ...	192,105	83,907	597,753
5. Spinners unspecified ...	1,660	1,609	6,645
6. Weavers unspecified ...	75,606	31,833	224,818
Total ...	299,507	141,735	938,790

VI. CENSUS OF 1931

	Workers in the Madras Province						
	No. of Persons following occupation	As principal occupation		As subsidiary occupation		As working dependents	
		Men	Women	Men	Women	Men	Women
Cotton ginning, cleaning and pressing ...	28,905	16,994	7,584	1,180	288	1,189	1,668
Cotton spinning, sizing and weaving ...	486,248	334,407	83,131	22,604	4,919	12,653	28,534
Total ...	515,153	351,401	90,715	23,784	5,207	13,842	30,202

CHAPTER VI

SYSTEMS OF PRODUCTION

A STUDY of the business structure of the hand-loom industry will show how it is organised for production and marketing; and how far its organisation is defective. The following are the important systems under which the industry is at present carried on:—

1. Where THE INDEPENDENT COTTAGE WEAVER carries on production with the help of the members of his family and sells his product locally to a dealer or directly to consumers by hawking or in shandies.

2. THE COMMISSION AGENCY where master-weavers or cloth-dealers through middlemen, analogous to clothiers in the English woollen industry, employ weavers in their own homes, advance materials, pay wages, receive back the finished products and sell them;

3. THE COTTAGE WORKSHOP where master-weavers equip the factory with looms etc., employ weavers, give them yarn and other raw materials, pay them wages and themselves sell the finished products;

4. THE HAND-LOOM FACTORY where the owner erects the building, equips the factory with necessary looms and other plant, employs weavers, winders and sizers and other technical assistants and trading agents and conducts the business on modern lines;

5. THE CO-OPERATIVE SYSTEM where weavers are organised on a co-operative basis for production and sale. This is a recent phase of the development of the industry which seems to be full of promise in the future; and

6. Lastly the POWER-LOOM FACTORIES which are beyond the scope of the present enquiry.

It must now be noted that these different types of organization obtain in the case of all small industries—especially in the case of silk, wool and rayon industries.

We shall now enquire into the working of each system in detail with reference to the financing of the industry, the conditions of production, the organization of trade, the scope

and function of capital, labour and organization, their respective importance in each system and their relation with one another.

1. THE INDEPENDENT WEAVER

He comes first in historical sequence. He was once the commonest unit in India as he was elsewhere. But now he is fast disappearing. He is found in centres (a) where the industry is unorganized, (b) where the self-sufficiency of the village is not much affected by the development of the means of communication, (c) where there is not enough work in the locality to attract middlemen-capitalists and (d) where weaving is the secondary means of livelihood of agriculturists. This system is also in vogue in respect of products which have a ready local market. The weaver invests his small savings or borrows the capital required and invests it in the business. He purchases the yarn from local yarn merchants or travelling yarn dealers in shandies. He owns his loom and works in his own house. The members of his family assist him in winding, warping, sizing and occasionally in weaving too. The women throw the warp and wind the yarn for pirns. They sometimes assist him in sizing. The children help him in bobbin winding or in the manipulation of the harness if it is the draw-loom. The weaver sizes and weaves. When the cloth is ready he takes it to the nearest bazaar every evening or to shandies every week for sale. In some places he himself hawks it in streets. Thus he is thoroughly independent of any outside agency and the difference between the cost of the yarn and the price he is able to realise for the cloth represents the wages for the labour of all the members of his family who help him in production and of his own labour. It is very rarely that he employs outside labour. It is usual that weavers who thus work independently have their own groups of customers who place orders with them for their own requirements.

The economic position of this class of weavers is theoretically ideal. The weaver is his own capitalist. He is his own employer. He is thoroughly independent of the money-lender or the middleman. The market for his product is free. But

his position in fact is anything but enviable. His earnings are miserable—miserably low when the amount of labour involved is taken into consideration. His market is narrow and limited; his period of employment is irregular and uncertain; the fluctuations in the prices of yarn and cloth are too great for his slender means; the demand is unsteady. In times of scarcity and slack season and falling prices—such hard times occur but too often—there is every danger of his running serious risks and consequently running into debt. When thus he ceases to be self-dependent and becomes indebted to the sowcar-merchant or the cloth-dealer, who alone is interested in advancing him loans, he seldom regains his former independence. This is but the beginning of his slavery. The extent of the credit facilities now available and their effects on the economic condition of the weaver is an interesting point for further investigation. But generally speaking the absence of industrial financing institutions which will give easy credit and assist the weaver to tide over his temporary difficulties and the constant and rapid fluctuations in the yarn and cloth market often drive him to bankruptcy and wage serfdom. This is but the consequence of the weakness of his financial position. Thus weavers who have lost their independent position begin to slave for master-craftsmen and contracting middlemen, and we come to the second stage of the *System of Commission Agency*.

2. THE SYSTEM OF COMMISSION AGENCY.

This is the system most common now. It obtains in places (a) where weavers are financially too weak to undertake the responsibility of production and the risks of fluctuations in prices, (b) where weavers are attached to employers by reason of their indebtedness and are obliged to work for them alone, at least so long as the debt remains unpaid, (c) where weavers cannot have easy access to the consumer by reason of the distance of the market and (d) where the demand for the cloth, being seasonal and limited, necessitates the locking-up of capital for a long time which the poor weaver cannot afford. Most workers under this system are those who are deeply involved in debt. It is well known that the weavers are obliged to remain idle for a good part of the year

or are given insufficient employment. The sowcar and the cloth merchant are the only persons who are ready to advance them loans without any valuable security and they stipulate that they should work for them at a fixed rate of wages (which is usually less than competitive wages) at least, so long as some work is given by them. But this low rate of remuneration has no corresponding advantage; there is no guarantee of work throughout the year. The worker, thus indentured, has no more employment than the independent weaver. He is overworked for a very low wage when the market is brisk and is burdened with apparently generous advance of money when the market is slack, which only keeps him and his family in bondage for ever. Loans are advanced usually against looms for they are all the property the weaver has. But the significance of such loans, as distinguished from ordinary loans, is that the worker is bound to work for the merchant who advances the loan and there is no free market for his labour.

It is often said that 'the sowcar knows his business better and understands the needs of the weaver; and, but for him the weaver would have been long since extinct. To criticise the sowcar adversely betrays a lack of proper understanding of the relation and the interdependence of the weaver and the sowcar'. This is partially true but it cannot be denied that the system as it does obtain works out to the disadvantage of the weaver.

This system has different local variations, each of which has its bearing on the status of the weaver. In some cases where the money-lender is also the cloth dealer and merchant and deals directly with weavers, he gives them yarn and advances them wages. The weavers get it wound, warped, sized and woven into cloth which they return to the merchant. Sometimes yarn advances are treated as loans and bear interest. Cash advances are also made which carry interest and a running account is maintained by the sowcar. The merchant fixes from time to time the rate of wages and the amount of work to be given. He regularly purchases the yarn and other raw materials required for the industry and undertakes the responsibility of finding the market for the manufactures. In some places the merchant instead of deal-

ing directly with weavers finances the middlemen-contractors. The middlemen undertake to supply the merchant with stated quantity of cloths. Sometimes the middlemen receive the yarn from the merchant which they distribute to weavers. And sometimes the middlemen must purchase the yarn and get it converted into cloth and deliver it to the merchant. Each middleman has his group of weavers who live in villages and who for some reason or other are obliged to work for him alone. To them the yarn is given and fixed wages are paid on delivering the finished cloth. This type differs from the other one in this respect, namely, that there is a middleman between the sowcar-merchant and the weaver and there is a greater division of functions: The merchant finances the industry; the contractor organizes production and brings together the producer and the capitalist; and the weaver gives his labour. There are two distant contracts: one between the merchant and the middleman and the other between the middleman and the weaver. The dependence of the weaver on the middleman and the dependence of the middleman on the merchant vary in degree in different places.

This system is most commonly found in the trade of the Madras handkerchiefs, lungis and kailis in the East Coast districts. It is also found in many places in Coimbatore and Salem districts. There is no personal contact between the merchant and the weaver; the workers are indebted to the middlemen and they are not in direct touch with the cloth market, and this invariably results in their exploitation. How the system works out in practice in the case of the lungi trade and of the sari trade in Salem is worth notice. The cloth dealers of Salem, to cite an instance, place orders with the middlemen for coarse saris which are manufactured by weavers in villages somewhere near Erode. The Salem merchants give them coloured yarn and for each sari contract to pay 14 annas as wages and commission. The middlemen give 12 annas per sari to the weaver and get the cloth manufactured. The merchant sells it for Rs. 2-12-0 or Rs. 3-0-0 thus making a profit of 6 to 9 annas per sari. The middleman gets 2 annas. The weaver gets 12 annas (1928). After paying the cost of winding and warping which is very nearly 2 annas the weaver gets only 10 annas per sari. He

does 5 or 6 saris a week. Each middleman has a number of weavers who work for him and he goes to the village every week, gives them yarn and collects the manufactured cloths and pays them wages. The weaver earns about 3 to 4 rupees a week while the middleman by merely distributing work can earn easily that amount, perhaps much more.

The worst feature of this system is that there is always a tendency to exploit the workers. They are remunerated at a rate far lower than the rate at which the contractors are paid by the merchant. The absolute dependence of the weavers on these middlemen for work is the root cause of the evil. Where the weavers are obliged to work for the contractor or the money-lender the market for their labour is restricted and not free; but where they are obliged to sell their products to the sowcar-merchants there is no free market for their production; and where they depend for the work provided by the merchant or the middleman, there is no regularity of employment—which is as demoralising as, perhaps more than, wage slavery.

Yet another defect. In all these cases the mechanical equipment of the loom etc. for production is the weaver's responsibility. He owns the loom and all other plants connected with weaving. Neither the merchant nor the middleman takes any interest to know whether the loom is suited to the work or whether it is efficient. The weaver being very poor and leading almost a hand-to-mouth existence and groaning under his debt cannot have up-to-date cottage appliances. The plant in use for the preparatory processes, in some cases the loom itself, is most primitive and crude. It is a sad fact that neither the merchants nor the contracting middlemen are willing to finance the weavers for the purpose of equipping their looms with improved sleys and harnesses. Nor are they within the means of the individual weaver. The improved means of winding, warping and sizing done by special groups of workers are availed of by the weaver if he can get more work which would compensate for the members of his family giving up winding, warping and sizing and taking to weaving by introducing a second loom in the family. Else the weaver, irrespective of the time and labour involved in doing these processes, attempts to earn as much

as he could by doing himself all processes connected with weaving.

Now it must be noted that it is this class of hand-loom weavers that is at once the object of sympathy—for 'their conditions enlist our commiseration'—and of adverse criticism by industrial enthusiasts—for 'they are slow in adopting improved appliances and are unwilling to help themselves'. The workers, as it has been pointed out before, have not resources enough to adopt modern inventions; the sowcar is unwilling to finance them for this purpose so long as it does not increase his profits. The result is that the whole system, from the view-point of scientific and technical equipment, is very primitive.

Again the profits of middlemen and merchants are a big slice in the price of the cloth, while the labour cost is despicably low. In Salem, as it has been just pointed out, the weaver usually gets 10 annas, the middleman gets 2 annas and the merchant 6 to 9 annas per sari which includes interest and depreciation charges and cost of retail trade. The contractor in the Madras handkerchief trade gets Re. 1-0-0 per piece while the weaver gets Rs. 3-0-0. Though everything obtained by the middlemen cannot be said to be the result of the exploitation of the workers, still a large portion of it is due to the advantage taken of the unfortunate position of the weavers.

3. THE COTTAGE WORKSHOP SYSTEM.

Here the master-weaver is also the merchant and he invests the capital required for the industry. He is the owner of the business. He purchases yarn etc. required for the industry, sets up looms, gets the yarn warped and sized, employs weavers in his home and pays them mostly by result. The worker here is a mere wage earner. There are no regular hours of work and the weaver has no guarantee of employment. Those workers who are not indebted to the master-craftsman are at liberty to determine their contract of labour at will but the others—and this class is numerically the stronger—have no freedom of employment. They are bound to work for him at least so long as some work, sufficient or insufficient,

is given. There is nothing different in the conditions of the workers of this group from those of the workers in the commission system. But it is generally said that this system is less rigorous, less exacting and less inhuman than the former.

However, one redeeming feature of this system deserves notice. Wherever the master-craftsman is rich and intelligent enough he equips the workshop with all labour-saving devices and thus helps the weaver in increasing his productivity, reduces the cost of production, increases his profits and the wages of the worker as well. But such rationalisation of production by the master-craftsman is rare, for he finds it difficult to expand his market if the output is increased. Generally, his means also are slender.

This system is much in vogue in the silk weaving industry and in the weaving of costly cloths. In Salem among carpet weavers this is common. But the small workshop system with the master-craftsman is a feature of that branch of the industry which requires the constant intelligent guidance of the master-weaver or where strict supervision of the work is required in order that lace and silk are not embezzled by workers.¹

4. THE HAND-LOOM FACTORY.

The cottage workshop is the forerunner of the hand-loom factory. Great hopes are entertained of the factory as a means of reviving hand-loom weaving. It is just here that the scope and functions of capital, labour and organization become definite. In all systems mentioned above management has hardly any place in the economy of production. Even here the owner of the business is not different from the organiser or the entrepreneur. The joint-stock principle has

¹ The small workshop obtains in other countries where the workers can get some advantage by co-operation: as in finishing in Switzerland, dyeing in Italy, common ownership of costly plants in Netherlands.

This system often leads to sweating and slavery of the worker to the advantage of the employer. This is again a point for fuller investigation (wherever this system obtains) regarding the outturn of the worker from day to day and the wages he is paid from time to time and the loans he is advanced. All this will indicate how he is worked in busy seasons, under-paid when the market is dull and under-employed in some months of the year. If the study is continued for a sufficiently long period it would yield useful results regarding the influence of the conditions of their employment on their economic, social and moral progress.

not yet been extended to the hand-loom organisation. It is very common that the owner of the business is also the organiser. The functions of the industrial organiser and the business organiser are not distinct.

Hand-loom factories are chiefly found in the Malabar district, though they are now slowly springing up in other parts of the Presidency: cotton hand-loom factories in Tanjore, Salem and Madura; silk hand-loom factories in Ganjam; woollen factories in Mysore and Bellary; and coir factories in the West Coast. The cotton hand-loom factory is by far the most important system in Malabar. In Cannanore alone there are nearly 50 factories. Five of them employ more than 100 persons each. All the hand-loom factories are producing coatings and shirtings and are competing directly with the power-loom. With the advent of rayon new hand-loom factories are springing up in other parts of the province. The introduction of rayon inaugurated new patterns, and extended the market for goods. More capital and organisation followed the extension of the market for hand-loom products.

Here all the operations—from winding to finishing and packing—are done in the factory itself. The real advantage of the factory organisation lies in the possible economy of time and cost effected by introducing labour-saving appliances as the hand-driven bobbin winding machine, the warping mill, the beaming machine, etc. Another advantage lies in the employers' command of resources enabling them to make such fabrics as are in demand or to explore the possibilities of the market for new manufactures. It is worth noting that most of the hand-loom factories in this Presidency and some of the hand-loom factories in the Punjab have the monopoly of the trade in shirtings and certain types of coatings in Upper India. The third advantage is the possibility of employing technical experts and departmentalising production and distribution. The weaving section, the dyeing section and the commercial section are even now the common departments in hand-loom factories. There is also an increasing division of labour. The progress is more satisfactory in respect of commercial organisation. The mail order house, the travelling canvassing agent, the commission salesmen, effective

advertisement, participation in exhibitions and attractive showrooms are the common features of these factories.

Such elaborate organization requires a large capital for the erection of the factory and up-to-date weaving and other appliances. Here caste weavers meet with a strange discipline; for the factory is open for work between specified hours. They are paid piece-wages. Some members of the special staff e.g., the dyeing expert, the weaving master, the manager and the sizer are paid monthly salaries.

However, there are some short-comings in the factories as at present organized. The workers have to submit themselves to the factory discipline and have to come to the factory punctually and work regularly. This is said to cause hardship to the caste-weavers who are never accustomed to such a discipline. Therefore the factory fails to attract hereditary weavers with skill. In most factories, it is interesting to note, the workers are mostly non-weavers by caste and hereditary profession. A new class of workmen has thus been brought into existence, especially in the West Coast. In Madura, Salem, and Tanjore, on the other hand, the workers are weavers by caste.

Another defect is that most of the factories are small with limited resources. They cannot employ technical experts with proper training and qualifications. Most of them are very poorly paid. Besides, many factories are factories only in name. Where only a few weavers are employed complete technical equipment is not possible. Even where there are many factories in one place there is very little co-operation among them and each works as an independent unit on a ruinous competitive basis.

The beginnings of the hand-loom factory can be traced to the efforts of the Christian Missions in India to provide work and honest means of livelihood to those who had embraced Christianity. The German Basel Mission in the West Coast was the first to start a factory at Cannanore and their example was soon followed by other Missions. Weaving schools, which are in essence hand-loom factories, were first started. A great deal has been since done for the development and organisation of the hand-weaving industry by the Christian Missions in India, especially the Salvation Army.

It is only quite recently that other private non-missionary organisations have come into existence to develop the industry on commercial lines.

It was thought in the beginning of this century that the revival of hand weaving against the competition of the power-loom was possible only on its organisation on factory lines. Accordingly, the Government of Madras started a hand-loom factory in Salem in 1906. The Government explained that it was an experiment to ascertain whether it was possible to improve the condition of the hand weavers in South India (a) 'by substituting for the native hand-loom improved looms which enable the weavers to produce a greater length of the cloth in a given time without in any way sacrificing the essential characteristics of native hand-woven goods, (b) by introducing the factory system among the weavers, so that they may work under the management of men with commercial and manufacturing experience and so that capital and organisation may be introduced into the industry to render hand labour more productive, and (c) by introducing, if possible, improved preparatory processes to diminish the cost of preliminary warping and sizing which the yarn undergoes before it is placed on the loom'.¹

This factory worked for about five years and was closed down in 1910 on the ukase of the Secretary of State for India disapproving in strong terms the industrial policy of the Government of Madras.

Government succeeded in making improvements in the preparatory processes and popularising to the weaver the use of the fly-shuttle, the warping mill and other useful weaving appliances evolved by the Industries Department. But the experiment was in fact a failure in so far as it did not succeed in introducing the imported automatic looms or in substituting power-sizing and central warping for the indigenous methods. It had also failed to attract the hereditary weavers to the factory. Efforts were made subsequently by private individuals to establish hand-loom factories, and excepting the one at Tondiarpet managed by the late Sir P. T. Chetty, all others failed. Their failure is due to the lack of technical knowledge on the part of the management,

¹ Sir Alfred Chatterton's paper in the Indian Industrial Conference, 1907.

to the inability of the directors to work harmoniously together, and to the dislike of the weavers to subject themselves to discipline and control. But these difficulties are neither inherent nor insurmountable as is shown by the recent rapid growth of hand-loom factories in the country, some owned, managed and worked by weavers themselves.

Generally men are employed for sizing and weaving while women, for bobbin and pirn winding. In some factories children are employed for doubling the thread and knotting the ends. The fear, that the organisation of the factory will eliminate women labour or that women would not come to the factory for work, is unfounded. For, in the West Coast the success of the hand-loom factory is due to the greater readiness of women and men of non-weaving castes to come and work there. It must be noted that in Kumbakonam and Madura women are unwilling but this conservatism is slowly disappearing. Another interesting fact is that in Kumbakonam and Salem there are factories which are run and owned by weavers themselves while in the West Coast most of the factories are owned by capitalists belonging to the non-weaving communities.

It must however be noted that with the growth of hand-loom factories the basis of ownership of the business has not been altered. The common characteristic of the artisan, the commission agent and the cottage workshop is that the business is privately owned by an individual and therefore the capital is insufficient for the technical and commercial development of the industry. Nor do these types of organisation permit of expansion; and so there is very little need for large capital. But in the hand-loom factory the capital required is large and one would naturally expect that the ownership of the business would be on the joint-stock basis with limited liability of share-holders so as to attract more capital. But that does not obtain at present.¹ The future of the hand-loom factory depends on its joint-stock basis of organisation for it would then alone be able to attract enough

¹ The joint-stock principle has not yet been applied in this country to small organisations for reasons, (i) their promoters are not well-known to the investing public, (ii) banks are not very much attracted by their business and (iii) the legal obligations imposed by incorporation are often too exacting for small concerns.

capital and develop the business on scientific lines. The application of the co-operative principle to the hand-loom factory deserves careful consideration; but it may not, at this stage of development of the industry and the condition of workers, attract the amount of capital necessary to organise a first-class hand-loom factory on co-operative basis.

5. CO-OPERATIVE HAND-LOOM PRODUCTION

Co-operation as the basis of the hand-loom industrial organisation has not yet been given a fair trial. Some weavers' societies for credit and a few non-credit societies are found but they are languishing for want of proper guidance and support. The experiment of co-operative production in Madura, Conjeevaram, Salem and Itchapur and the causes of the failure of the experiments in some centres are dealt with in a subsequent chapter. But suffice it to mention here that the weavers' co-operative societies for production and distribution are very small and they are weak both financially and commercially. They are ill-equipped; they are never organised on factory lines; and they have not as yet attracted the services of men of industrial experience and ability. The experiments so far made have undoubtedly failed; but power mills are not suited to Indian conditions and to the genius of Indian craftsmen, and co-operation offers the best basis for organization of the weaving industry. The opinions of Textile Experts, Directors of Industries and co-operators are unanimous on this point. 'The weaving industry', writes Mr. Maxwell-Lefroy, 'seems to me to be eminently suited to the Indian craftsman working in his own village if his circumstances can be bettered. If I am correctly informed the success achieved by Japan has been due largely to a splendid organisation of the cottage weaving centred round factories which only collect and finish the fabrics. Whether we achieve the similar result by the individual weaver, the group of weavers or the hand-loom factories is a matter of local circumstances purely—but it cannot be ordinarily obtained by any development of mills'.¹ Mr. Davies and Sir Alfred Chatterton, formerly Directors of Industries, Madras, have declared time and again that co-operation offers the best

¹ Report on Silk Industry in India.

solution and the weavers must be organised in hand-loom factories formed on a co-operative basis.

6. THE POWER-LOOM

The mills differ from the hand-loom factories in four important respects: (1) their use of power, (2) economies due to their larger outturn, (3) their mass production and (4) their increased specialisation and employment of technical and business experts. A more detailed enquiry of the organisation of mills is out of place here.

This survey of the systems of production brings out certain facts in the light of which the re-organisation of the industry must be attempted. The domestic system, the cottage workshop and the system of commission agents are the most dominant types of production at present. The entire handicraft is tending to become more dependent on a class of specialised entrepreneurs. While the rise of this class means much to industries in other countries, as persons of this class provide capital, standards and management, or supervise some of the processes, or see that goods are made according to certain standards and made in time, or bear certain risks of organisation, its rise in India has not been beneficial to the industry to the same extent. Besides, the evils characteristic of small industries carried out in isolated homes of the workers are not eliminated. The weavers are sweated—not in the sense that merchants get rich but in the sense that the workers get less than what is necessary for a bare living, not to speak of a decent living. Further, the fortunes of these industrial units are subject to violent vicissitudes. They suffer from a chronic dearth of capital. The tools are simple and primitive. The methods are crude and wasteful. The *morale* of the worker is anything but satisfactory. The present conditions of work can inspire nothing better. The workers are tempted not only to pawn but to steal their employers' goods when they are in distress. On the top of all, as a result of the disappearance of their economic independence in the industrial world, the workers have little or no choice of employers, and when hungry, cannot refuse work if wages

are low. They are helpless without a strong association of their own. But the system of production is not easily susceptible to trade union organisation which can better the conditions of the workers, nor to an organisation of producers for the preservation of the standards, regulation of prices, wages and output and, in general, the betterment of the industry. The revival of the caste and the craft guilds is well nigh impossible. But the creation of an organisation, for bettering the conditions of the workers and of the industry without prejudice to the work being done in villages and in the homes of workers and without creating all the evils of modern industrialism, is one of the problems of the re-organisation of the hand-loom industry.

CHAPTER VII

BUSINESS ORGANIZATION

SUPPLY OF COTTON TWIST AND YARN

THERE are three distinct sources of supply of yarn for the hand-loom: (1) from the Charka, (2) from the Indian mills, and (3) from foreign imports. The organisation for distribution of yarn is different in all these cases.

THE HOME SPUN YARN.

A century ago the only source of supply of yarn was the Charka. Before the advent of the mill industry in India nearly 3 million cwts. of cotton were consumed in the country by the Charka and the hand-loom. In 1869 the total production of cotton was estimated to be 7.1 million cwts. of which 5 million cwts. were exported and 2.1 million cwts. were consumed in India—0.25 million cwts. by mills and the rest by hand-looms. In 1889 the total production of cotton was 9½ million cwts. of which 5½ million cwts. were exported to foreign countries, 3 million cwts. were consumed by local mills and 1 million cwts. by hand-looms in India.¹ This shows that with the growth of Indian mill industry the hand-spun yarn was very rapidly superseded by yarn made in Indian mills. The writer's enquiries in some places in Tanjore district revealed that 100 years ago the Government of Madras offered certain transport facilities to spinners and weavers of fine cloths. Weavers at Tugili got their yarn of 60s and sometimes 100s from Negapatam, Sikkil, Thachanellore and other places where caste Hindus and Muslim women spun fine yarn of repute which was purchased by them. Cloths when manufactured were collected and were sent to Tirukkoiloor, Panruti, Vridachallam and other places in the north with the

¹ S. S. R. Iyengar; *Progress of the Madras Presidency.*

seal of the Circar which gave them the necessary protection in transport. However with the growth of the mill industry hand-spinning shrank to insignificance. Yet the supply of hand-spun yarn for the hand-loom industry even now is considerable. In Assam spinning and weaving are done by women at home and almost every household has its spinning wheel and its own loom.¹ According to the Census of 1921 there were 229,463 wheels, 95,172 hand gins, and 41,729 hand-looms in Assam. Even now in Vizagapatam and other districts the ryots often spin their own yarn which they hand over to the weavers to be made into cloth. 'In Sripuram and in Pondura,' writes the author of the *District Gazetteer*, 'the Patu-Sales make delicate fabrics from specially fine threads called *patu-salai nool* which the women of their castes spin for them and which is as fine as 150s.' Mr. T. N. Mukerjee in his book on the *Arts and Crafts of India* describes how in Arni fine yarn was spun for good muslins as late as 1880. Even to day in many Vellala villages of Salem district women spin their cotton into yarn and the Panchama weavers who are partial agriculturists convert it into cloth for customary wages i.e. two local measures of ragi and four annas per piece. Similarly, the Special Officer who enquired into the cottage industries in Madras Presidency has also noticed cases of survival of cotton hand-spinning in the districts.

Hand-spinning is now a growing industry due to the vigorous propaganda carried on by the All-India Spinners' Association. The expansion of the industry is marvellous and it shows that in many cases hand-spinning was given up because there was no organization which could provide the necessary facilities for the distribution of cotton, purchase of yarn, employment of weavers and the marketing of cloth. The following figures give us an idea of the growth and

¹ *Census Report for 1921.*

expansion of the hand-spinning industry in India and the Madras Presidency :—

PRODUCTION OF HAND-SPUN CLOTH IN INDIA.
(From A. I. S. A. Reports)

Year	Value of production in lakhs of rupees.			Price of Cotton per Candy (Highest Price)
	India	Madras Presidency :		
		Andhra	Tamil Nadu and Kerala	
1921	... not known ...	...	...	Rs. 560
1924	9.5	...	4.7	560
1925	19.0	...	7.0	475
1926	23.76	3.5	8.45	360
1927	23.45	3.8	10.97	360
1928	24.1	2.95	9.97	415
1929	31.5	3.39	11.37	417
1930	54.9	7.78	16.16	354
1931	58.3	7.75	24.42	272
1932	44.6	...	13.94	199

Thus the industry under the management of the A.I.S.A. has increased its output four times since 1924. It now supports more than 60,000 spinners and 3,500 weavers, besides numerous carders, dyers and bleachers. It becomes evident that from the point of view of the number of persons supported by the industry, the khaddar industry is not insignificant. But judged by the percentage of hand-spun and hand-woven cloth to the total consumption of cloth, the industry is still unimportant.

Hand-spinning generally obtains in places where cotton is not an important commercial product but is grown as a garden crop to meet the domestic demand. In many other places it is carried on as a famine relief measure. In Tirupur it thrives as it is fostered by the A.I.S. Association. The cotton is purchased by the Spinners Association, ginned and distributed to spinners who return the yarn to the depot and receive

wages. The depot again distributes the yarn to weavers who convert it into cloth and get wages. The A.I.S.A. has its own sale depots. This elaborate organisation does not obtain in places where hand-spinning is carried on voluntarily as a means of subsidiary income e.g., Uttangarai taluk in Salem district. Cotton is grown by spinners themselves and the yarn is given to the village weaver who converts it into cloth for customary wages.

The question now arises whether this source of supply can still further expand, even after the Spinners' Association withdraws its help, and become more important in the future. The scope for and the extension of the industry is dependent on the following factors:—(1) the nature of the spinning wheel, (2) the necessity for subsidiary employment, (3) earnings in other industries and their possibilities for expansion, and (4) the growth of an efficient organization for the fostering of this industry. Any improvement in the spinning wheel which will increase the outturn, say six times, will make this industry the primary means of livelihood. But during the last hundred years and more very little improvement has been made in the hand-spinning wheel. Inventions have helped power-spinning and not hand-spinning and if the dream of a better spinning wheel materialises in new inventions and improvement of the Charka, its future will be assured. But as regards hand-weaving, inventions have proceeded *pari passu* with those in power-looms. This accounts for the triumph of power-spinning over hand-spinning while the power-loom has not yet vanquished the hand-loom. It cannot be said that in India there is no need felt for the subsidiary means of livelihood but the Charka will not be resorted to unless (1) an organization of the A.I.S.A. type becomes a permanent feature, and (2) earnings in other fields become less remunerative than in spinning. The spinners left to themselves can do nothing.

The case for the Charka is well stated by its advocates, but it is too much to expect that all yarns required for our consumption can be produced on the country wheel. It is estimated that if all the adult male population of India spin for four months consecutively working at the rate of ten hours a day the requirement can be met. But how laborious, tedious

and wasteful! Will people spin? What is the inducement? The doctrine of capitalising idle hours and of using man-power in preference to mechanical power has, even with reference to India, a limited application unless it be that human values further depreciate.

THE MILL YARN : (i) LOCAL SUPPLY

No less than 80 per cent of the yarn consumed by hand-looms is supplied by the Indian cotton mills. Madras Presidency consumes 60 million lbs. of Indian mill yarn. It consumes about 20 million lbs. of foreign yarn; and the yarn available from the local mills is about 40 million lbs. From Bombay the West Coast imports by sea and the Telugu districts import by rail annually about 20 million lbs. The Bombay mills supply finer counts for the hand-looms.

The mills have their own systems of sale. The local mills have their sole agents for each territorial area and all sales must be effected through them alone. The agents are mainly large capitalists. They get 2 per cent commission in the case of local mill yarns and 1 per cent in the case of Bombay mill yarn and also a month's credit. If the sum is immediately paid, a rebate of interest, usually one per cent, is paid. In all these cases the sales to the agents are secured by the guaranteeing brokers, who get 5 annas 4 pies for every bale of yarn sold to agents. The legal effect of this transaction is that mills sell to their agents and the guaranteeing brokers stand surety.

(ii) FOREIGN IMPORTS

The average annual import of foreign yarn into India during the years 1921-6 was 53½ million lbs. of which

Grey accounts for 41 million lbs.

White	„	2	„
Coloured	„	7½	„
Mercerised	„	3	„

The United Kingdom and Japan supply all the grey yarn, Japan's share being more in counts below 40s while the United Kingdom supplies all yarns of 40s and above. It has the monopoly of bleached yarn also, its share being more

than 80 per cent. Japan has practically all the trade in mer-
cerised yarn. The United Kingdom again has the lion's share
of the trade in coloured yarn. Netherlands, Italy and Switzer-
land also share in the colour yarn trade.

The import trade is practically in the hands of foreign
importing firms. Though Madras consumes more than or
at least half the amount of foreign yarn consumed in India
it is striking that practically the whole trade passes through
Bombay. The direct import into Madras is less than a half
of what it actually consumes. The rest is imported from
Bombay by rail.¹ The predominance of Bombay in the
foreign trade is due to its financial supremacy.

Each importing firm has its own system of distribution;
one firm sells to yarn dealers only; another sells to all for cash;
a third sells to approved agents for credit and for cash. But
the recent tendency for importing firms is to market their
yarns directly to small dealers in mofussil towns. Thus the
numerous middlemen between the importer and the retailer
are eliminated and the trade is so well organised by the
importing firms that the best price for yarns is now obtained.
This rationalisation of the business has not, however, bene-
fited the weaver directly by any reduction in the price of
yarns.

Has the hand-loom consumption of foreign yarn increased?
The average annual import into India for the quinquennium
1890-05 was 45 million lbs. and for the quinquennium 1900-05
was 27 million lbs. and 37 million lbs. for 1910-15 and 53 mil-
lion lbs. for 1921-26. Thus the present increase in the im-
port over 1890 is 18 per cent. The fall in the import of yarn
during the 1900-1915 is due to the increasing imports of piece-
goods. The share of the Madras Presidency in the increased
imports of yarn is not exactly ascertainable as a good part
of its imports is got from Bombay by rail. However it can
be inferred, from the larger export of her handkerchiefs and
lungis which are mainly manufactured out of foreign yarn,
that its import has increased.

It may be noted in passing that the price of imported yarn
determines the price of local yarn. It is often stated that the

¹ In 1920-21 out of 23 million lbs. of foreign yarn consumed in the Presi-
dency nearly 11 million lbs. were imported by rail, chiefly from Bombay.

imported yarn does not compete with Indian mill yarn. The range of competition is really small, yet it helps to regulate the price of Indian mill yarn. The imports from Japan and the lower counts of the American yarn from the United Kingdom especially determine the prices of Indian mill yarn. 'The imported yarn (of counts below 40s) though it is only a small portion of the yarn used by the hand-loom industry, exercises an important function in that it helps to regulate the prices of Indian mill yarn.'¹ So care should be taken in imposing duties on imports of foreign yarn.

PRICE OF YARNS IN THE RETAIL MARKET

Competition rules in the wholesale yarn market and in important centres as Madras, Madura, Salem and Coimbatore where there are a number of yarn depots. But in villages remote from urban centres and in fairs which are frequented by a few yarn merchants competitive prices do not obtain and there is a more or less rigid rate for yarns of particular brands. The retail prices in those centres are less fluctuating than those of the wholesale and urban yarn markets. Another feature worth noting is that while a rise in the wholesale market is immediately followed by a rise in the retail price of yarn in the rural parts, it takes time for the retail price to adjust itself to a fall in the wholesale prices. This shows the weakness of small buyers. Also in many villages in Salem and Coimbatore districts, the price of yarn is one to three annas per pound higher than it is in headquarter towns.

THE NATURE OF THE YARN CONSUMPTION ON HAND-LOOMS

The Indian mills supply about 250 million lbs of yarn, of which nearly a fourth is dyed; the import amounts to 50 million lbs and the hand-spun yarn about 2 million lbs. The hand-spun yarn is mostly of low counts, i.e., below 20s. Of the imported yarn in the Pre-War days 50 per cent used to be coloured yarn. Now it is only a fourth of the total imports. Regarding the counts of yarn imported, 10 per cent is below

¹ Speech of the Member for Commerce and Industry in the Legislative Assembly—1921-22.

20s, 60 per cent between 20s and 40s (the bulk of it being 40s), and the rest above 40s.

It is not possible however to state how much of each count of yarn is consumed in hand-loom. The Monthly Returns of Spinning And Weaving Mills In India publish the total production of yarn of each count and the volume of cloth produced without stating how much of each count of yarn is consumed in mills themselves. The mills in India now produce yarns up to 100s-100s but the bulk of yarn produced is below 30s being more than 90 per cent of the total production. In mills the greatest weight was spun in the following counts: (stated in the order of importance) 20s, 21s, 24s, 22s, 11s, 30s, 16s, 14s, and 12s. But it is not known how much of each count is available for hand-loom. It is safe however to assume that the Indian mills supply all counts below 80s while Japan supplies 40s and 60s and the United Kingdom the finer yarn above 40s.

CHAPTER VIII

BUSINESS ORGANISATION :

MARKETING OF CLOTH WITH SPECIAL REFERENCE TO HAND-WOVEN GOODS

'In these days the study of markets, and especially the methods of penetration into new markets, has become a matter of immediate interest. The expansion of foreign trade, depending almost entirely on the discovery and exploitation of new markets, and the retention of markets already gained against continual and intense competition, is at once the problem of industry and the main duty of finance.'

'The hold which small shops retain on poor districts rests on solid economic foundations. Some of the foundations are the product of evil and unnecessary conditions and others are likely to endure so long as a considerable part of the population live on small incomes and are inadequately housed.'—A. Marshall, *Industry and Trade*.

'Not a little of the industrial success of modern Japan is due to the attention that has been paid not only to the educational and technical training of cottage workers but to the building of business organisations which take over the products of their industry and disposing them all over the world.'—*The Indian Industrial Commission*.

THE organisation required to market any article depends on various factors. The distribution of the consumers; their habits and tastes; their income, the character of the demand for the article in question; the nature of the article to be marketed and the conditions under which it is produced—all these determine the organisation required to bring the product to the consumer.

THE DISTRIBUTION OF THE POPULATION

India is a vast country with a vast population scattered over many villages. Its area is about 1·8 million square miles. There are 687,981 towns and villages maintaining a population of 352 millions. A comparison of India with the United States of America, another large civilised country, in regard to the distribution of the urban and rural population will explain the types of marketing organizations prevailing in the two countries. The continental United States of America is about 3 million square miles with a population of 112 millions. But its population is more urban in character. The percentage of urban population in America is 51·4 (assuming that places containing more than 2,500 inhabitants are urban centres) while in India the urban population accounts for 27 per cent only (even assuming that places having 2,000

inhabitants are urban centres). The rest 73 per cent of the Indian population are found in 677,232 villages scattered all over the country.¹ The marketing organisation in India for supplying this necessary of life is largely determined by the resources, habits and tastes of this vast rural population. The consumers being found in villages separated by distance from one another cannot be reached by shops and therefore hawkers and weekly fairs play a prominent part in the marketing organisation in India) while the concentration of population in urban centres in America makes it possible to reach the consumer more easily through shops.

THE CONSUMER

Further, the habits, tastes and resources of the consumer will generally determine the nature of the marketing organisation. The Indian consumers can be grouped under two main heads: (1) urban, and (2) rural. These, again, may further be subdivided according to their status and means. The rich land-owning classes in the rural area and the professional classes in the urban centres enjoying a higher standard of living consume more cloths than others. Their requirements also admit of many varieties. The urban class as a whole needs more clothing than the rural population which by tradition is frugal and simple. Even the urban artisans and wage-earners use more cloths than those in villages. The regular monthly income of the former and the seasonal earnings of the latter account for the difference in their demand. (Social conventions and ideas of fashion regulating the sartorial outfit of individuals differ according to castes and communities they belong to.) It is estimated that a fifth of the urban population consume nearly a tenth of the total cloth available and that the urban population—one-fourth of the total Indian population—consume a little more than half the quantity of cloth available. This higher consumption of cloth in towns is partly due to their better economic conditions and partly to

¹ No. of villages with a population below 500—509: 786 with a total population of 97 millions.

No. of villages with a population between 500—1,000: 113,541 with a total population of 79 millions.

No. of villages with a population between 1,000—2,000: 53,905 with a total population of 73½ millions.

the more efficient marketing systems prevalent there. The congregation of the population with a regular fortnightly or monthly income and a higher degree of literacy enables the traders to effect more sales by show rooms, advertisements, auctions and clearance sales, etc. The difference in demand and consumption of the various classes of the population is also due to the difference in their social and personal habits, age, sex and occupation and income. And on these factors depends the nature of the marketing organisation.¹

THE SYSTEM OF PRODUCTION DETERMINES THE METHODS OF DISTRIBUTION

Where the weaver markets the cloth himself hawking obtains invariably. Where cloths are manufactured by the sowcar or the capitalist master craftsman both *shandy* sale and shop systems obtain. But where goods are manufactured on hand-loom factories, regular shop, canvassing agency, mail order house and commission agency are the regular channels of distribution. In the case of mill-made cloth—especially imported cloths—hawking and shandy sales are not so common except in far interior villages of the country. Regular shops are the main channels of making them available to the consumer.

THE SYSTEM OF DISTRIBUTION DEPENDS LARGELY ON THE PROXIMITY OF THE MARKET AND THE BUYING HABITS OF THE CONSUMER

Where cloths are produced for local consumption hawking, sale in shandy and 'bespoke system' (i.e., manufacture and sale of cloth on orders placed) obtain. But where cloths are manufactured for purposes of export to other districts and outside the province and also where such cloths are specialities having an extensive market, the capitalist middleman is an invariable factor and the ultimate consumer is reached by the retail cloth shop through one or more middlemen. The

¹ The consumer's spending power is limited by his earning ability. This is a truism. But 'the standard of living', the opinion of the class to which the consumer belongs, as to what may be expected of him in the matter of his clothing requirements has its constant effect on his conduct.—Clark : *Readings in Marketing*.

middlemen purchase the cloth from manufacturers according to the requirements of moffussil retailers and forward it to them. This is what the Komatis of Salem do. Their function is to finance the trade and the moffussil merchant. Where cloths are intended for foreign exports as in the case of Madras handkerchiefs, lungis and kailis, they pass through a series of middlemen ending with the shipper—some finance trade; others, production; and a few, act only as buying or selling agents.

Hawking, shandy sales and sowcar shops are more important in rural areas while 'shop' and 'auction' systems are characteristic of towns. This does not, however, mean that hawking and sowcar shops are uncommon in towns. One can find a host of hawkers and a number of sowcar-cloth-merchants in the area occupied by the working classes in urban centres. Hawking in respect of costly silks and other fabrics is now becoming more usual with the development of the idea that the consumer must be attacked in his own place.

What system—whether hawking, sowcar shop, or the regular shop—obtains in a particular locality is determined by the buying habits of the consumers.¹ With price higgling and the sales for credit which are dominant among the working classes and in rural areas, hawking and sowcar systems obtain. In towns where there are regular shops price higgling is almost eliminated and the sale is based on standardised quality, guaranteed satisfaction and fixed prices. Therefore in these shops the consumer has come to expect that goods can be bought without bargaining. This means that while he is safer in his purchase in this shop regarding the price he pays he is more careless also. This psychology of the consumer is well appreciated by the dealers, and the auction and clearance sales systems are coming more into

¹ The habits of the consumer.—The purchasing habit of the consumer is a deciding factor in the systems of retail-trade. The rich and the upper middle class urban consumers expect quality cloths at fixed prices and they go to regular shops for their purchases. Here the consumer seeks the retailer. In rural areas on the other hand, price higgling, customary prices and careful examination of the quality of the cloths are regular features. The price higgling is partly the result of the consumer's ignorance of the cloth market and his slender means. He has to be reached in his own place by the retailer.

prominence in urban cloth shops. In Madras there are about half a dozen 'clearance sales' in a year : Summer sales, Dasara sales, Deepavali clearance sales, Christmas sales, Stock-taking sales etc., etc.

The kinds of fabrics also determine the type of retail shops. For example, coarse cloths—white and coloured—manufactured on hand-looms and mills, are generally hawked and sold by sowcars in villages and in ordinary cloth shops in towns. But the specialised fabrics for which there is a limited demand and for which the market is narrow, the shop is the only usual channel of distribution. The laced cloths of Madura and Salem, the elaborately embroidered cloths of Kumbakonam and Bangalore are seldom sold by hawkers. The specialised hand-woven cloth depot is the chief distributing agency for such fabrics.

Specialism in the retail trade of cloth is now increasing. Shops dealing only in underwears, saris, or other cloths, are quite common. There are two kinds of shop : one, where only mill piecegoods are sold, and the other, where hand-woven goods alone are available. Their distinguishing features may be noted. In the mill piecegoods shop wholesale purchase, attractive show-rooms, standardised products, fixed and uniform prices, large daily turnover and small commissions obtain while in the hand-woven cloth depots time-to-time purchases from weavers and manufacturers in small quantities, variable prices, bargaining and small daily turnover are common.

CHAPTER IX

SOME TYPES OF RURAL AND URBAN CLOTH MARKETS

(A) THE RURAL MARKET

1. *The Weekly Fair or Shandy*

THE weekly fair is a special feature of Indian rural trade. Except in Guntur, Nellore and Malabar this is the main channel of distribution.¹ The fairs play a very important part in bringing to the rural consumer necessities and luxuries otherwise procurable only in towns. They in fact serve the same purpose for the rural area as a number of specialised shops do in towns. These weekly markets are held in convenient distances, to serve a group of villages and the days are so arranged that the same traders may go on from one market to another. These markets are often visited by the weavers living in the neighbouring villages and they sell their cloth manufactured during the week and purchase yarn and other articles required for work for the next week. Also cloth merchants visit these fairs. *Shandy* sale is an integral part of the system of trade adopted in this Presidency.

Prices are to a large extent inelastic and this is almost always the case with coarse cloths and other cloths of common varieties which are brought to the market by the producers. Buyers are accustomed to a fixed movement in prices. There are seasonal variations in prices: The price of cloth is usually higher during marriage, Deepavali and Sankranti seasons than in other times. Also shandy prices seem to be a bit higher but steadier than the hawker's price. In the shandy retail sale is the rule. The sale is invariably for cash. In small shandies the cloths are brought for sale by small weavers while in the bigger shandies, as the Pollachi Fair, big merchants come there for disposing of their products. In all these rural shandies hand-woven goods are more important than mill cloths. They form nearly 75 per cent of the cloths brought there for sale.

¹ The Madras Census Report 1921.

2. *Special Fairs and Exhibitions* are held during important local festivals (e.g., Conjeevaram and Madura festivals, Park Fair exhibitions, where shops are opened for the occasion). Here thousands of people assemble and this is a rare opportunity for dealers. Besides coarse ordinary cloths, special fabrics also are brought for sale. The weekly fairs are generally attended by the poor people while the fairs during festivals are attended by the rich and the poor alike. The rich seldom go to the weekly fairs. They get their requirements from weavers of the locality with whom they place their orders or they go to shops in the neighbouring towns for the purchase of high class hand-woven and mill goods.

There are three other institutions which play an important part in bringing cloth to the rural consumer :

- (a) The village pedlar and the hawker in the bazaar
- (b) The local moneylender or the sowcar who also sells cloths, utensils etc.
- (c) The seasonal trader called the *Arumasa Kadankaran*.

(3) The *Pedlar* is a general merchant having for sale some articles of necessaries and luxuries. But the cloth pedlar is not a general merchant, but sells cloth alone. He sells usually for cash but recognised customers are given credit also. Such hawking is quite usual during the marriage and Deepavali seasons, when the demand is brisk.

(4) In many villages where there are small *Marwadi money-lenders*, e.g. in Coimbatore district, they combine sales of old and new cloths, ready-made shirting and clothing, utensils etc., with money-lending which is their primary business. This kind of business thrives most in centres where there are a number of wage-earners and artisans. Their prices are often many times higher than those of the hawkers and retail dealers in the neighbouring towns. But the sale is generally for credit and the impecunious wage-earners who are slaves of conventional extravagances and social prestige but who have not the ready means for the purchase of their requirements have recourse to these money-lenders. The scale of business is very small and therefore the prices are high enough to cover the interest, risks involved in transaction and charges for waiting and retail sale. The range of goods is limited and therefore only needed persons resort to these

shops. This system obtains in urban centres also where there are the colonies of the working classes, (e.g. Perambur). It thrives because the customers have not the ready money for the purchase of their requirements and they have accommodation only from these kindly sowcar merchants. Also the sowcars allow easy payments by instalments. In many cases valuable articles are pledged to the sowcars who advance loans and sell cloths for credit. But the high rate of interest and the high credit prices work double havoc on the customers. It is in such cases that co-operative sales depots will be useful and may eliminate the profits of the middlemen to some extent and reduce the price of cloth to consumers.

(5) The *Arumasa Kadankarans* (meaning six-months creditors) are important as rural retailers in South India. They are mainly Labbais coming from Karur and other interior taluks of Trichinopoly district. Their operation is interesting. A number of them subscribe capital, each about Rs. 50 or so, purchase the cloths usually demanded by the agricultural labourers and also some ready made and cheap coats, shirts, underwears and other brightly coloured goods, have their shows in the villages just a few days before Deepavali and sell them to the villagers with the assistance of the local headman. The sales are for credit mainly. The time they visit the villages is very opportune. It is just then there is demand for cloth; for custom enjoins the purchase of new cloths for Deepavali. It is also favourable for credit sales. The agriculturists are just then entering a period of off-season due to rain and temporary cessation of agricultural operations. The ryots are then generally out-of-pocket. Cloths are sold to them at six months' credit. The merchants return at the time of the harvest and collect their dues usually in the form of grain. Here the prices of articles are from 100 to 300 per cent higher than in shops in towns.

The characteristics of this system are: (1) there is an element of barter in this transaction; the merchants accept grains instead of money for payment; (2) while the prices are indeed very high, the profits of the merchant are not high enough to make his business worth his while for there is a large amount of bad debts and (3) the prices of cloth are twice as dear and the commutation rate of grains is some-

what less than the market rate. The whole system persists because of the ignorance, poverty, necessity and illiteracy of the people; and the conventional expenses occurring at a time when their savings are nil and income is meagre; and the merchants take advantage of the situation.

(B) THE URBAN RETAIL MARKET

1. THE HAWKER

In almost every town the weavers of the neighbouring villages can be found hawking their manufactures usually in the evenings. In most places they sell direct to consumers but in Salem the daily transactions in the evening bazaar run to several thousands of rupees and the middlemen's transaction is nowhere so extensive as in Salem. The Komati Chettis act as middlemen for mofussil cloth merchants, purchase goods coming into the market and brought down by weavers. For every rupee of transaction they get not less than $2\frac{1}{2}$ annas.

In other places also the cloth hawkers are mainly independent weavers who come to town to sell their goods. In most cases the articles are meant for local consumption. This enables the weavers to eliminate middlemen's profits and compete with mill products.

2. SMALL SHOP

Where articles are of costly varieties and the demand for them is restricted, the weavers cannot sell them directly to the consumers. The capitalist-merchant is a necessary link. He purchases for cash or credit from weavers and retails them to consumers. Here the function of the merchant is really marketing. In most cases the merchant purchases the articles; neither commission nor consignment sale being known in the trade of hand-woven goods. He must necessarily lock up a great deal of capital in stock, for, while he must be purchasing cloths when they are coming into the market, he can sell them only in particular seasons. This means that risks due to fluctuations in prices are borne by the merchant himself. His prices therefore include a heavy charge against such risks. While this is the case with the retail merchant, the merchant who performs the function of a broker, e.g. Salem

Chetti—gets very good profits for no other function than financing the trade, allowing the mofussil merchant a month's credit and paying off immediately the weavers in cash. He pays the weaver taking a discount of 2 annas per rupee and charges the merchant $\frac{1}{2}$ anna for agency function and accommodation and 12 per cent interest on overdue amounts.

3. SOWCAR SHOP

It is the same as the sowcar's shop in rural areas except that in the urban shop a larger percentage of sale is against pledged moveable properties.

The characteristics of all these systems of marketing are small scale business, price higgling, unstandardised goods, absence of advertisement, different prices for cash and credit.

4. AUCTION SHOP

A recent phase in the development of marketing of hand-loom products is the *auction system*. This does not always mean that the goods are auctioned for a small commission on behalf of the weavers, but it is a device of retail sale adopted by cloth merchants. The cause for its popularity is the correct appreciation of the mass-psychology. The buyer usually associates cheapness with auction sales though often he is taken unawares and the price he pays is dearer considering the quality of the cloth. This system had its origin in the imitation of the much advertised clearance sales of foreign piecegoods merchants.

The modern shop with advertisement, organised salesmanship, fixed prices and standard qualities obtains only with reference to mill-woven goods and goods manufactured in hand-loom factories. Except in the few co-operative cloth depots where one price system and wide advertisement obtain, the progressive ideas of modern salesmanship do not obtain anywhere in the case of hand-woven cloths.

SOME PROBLEMS OF MARKETING HANDLOOM PRODUCTS

(i) *Standardisation*

It might be noted in passing why hand-woven goods are not favoured by piecegoods merchants. They deal in large stocks of mill goods because the mill product is standardised.

and answers to the sample. But there is no standardisation of quality or prices in regard to the handwoven goods. It does not however mean that they cannot be standardised but there is no agency to effect it. Nor is the cost of standardisation prohibitive. The absence of standardisation often results in higgling in prices, more salesmen, slow turnover, high costs, and low profits. Standardisation of prices and quality is a necessary factor in the case of articles intended for wholesale and foreign markets for they must pass through many middlemen before they reach the ultimate consumer. Standardisation of quality, therefore, obtains in the case of Madras handkerchiefs, lungis and kailies.

Again nowhere does the wholesale merchant place huge orders for cloth with small weavers; and the tiny weaving establishments cannot meet his demand. Unless the workers are organised in rural factories their products cannot be standardised or marketed on scientific lines.

(ii) *Organisation of hand-loom factories*

The growth of hand-loom factories has led to the introduction of new business methods in the cloth trade to some extent. Sole agency, commission sale, sale on consignment basis, mail-order house and canvassing agency are some methods of recent development in marketing. These systems of distribution are quite unknown to the ordinary weaver or the merchant dealing in hand-woven goods. The hand-loom factories push their sales in distant parts of the country through commission agents and advertisements. The agents book orders from retail merchants in North India where there is a brisk demand for the kinds of products manufactured in South Indian factories. The consumers are also attracted by advertisement and of late the mail order business is progressing. The amount of business done here, though small, promises to expand in future. Still lack of enterprising advertisement retards its progress. The chief limitation to advertisement is the low standard of literacy of the people. It may be concluded that the advent of the hand-loom factory is a new chapter in the organization of industry both on the production and marketing side; and it is full of promise for the future. If men with greater imagination, resources,

business knowledge and enterprise come into the business the future of the hand-loom is assured.

(iii) *Reduction of marketing costs*

One great handicap that the hand-loom weaver is at present labouring under is the very prohibitive cost of marketing his manufactures especially those intended for distant markets. On examining the cost of marketing hand-loom products, the conclusion is irresistible that due to various causes the hand-loom is now at a very great disadvantage. Economy in respect of freight, purchasing and forwarding commissions, other agency charges, packing cost etc., which generally obtains in the case of mill manufactures is not secured in respect of hand-loom goods as they are produced on a small scale.

(iv) *Middlemen*

It is often stated that the existence of too many middlemen in the hand-loom trade between the consumer and the producer accounts for the high price of hand-loom goods and the low wages of weavers. It is desirable to avoid the dangers of this kind of generalisation. It is admitted that there is enormous waste which can be prevented to the advantage of both the weaver and the consumer; but one cannot expect things to be very much better under present circumstances of hand-loom production in India.

It is a common belief that the existence of many middlemen in the same stage of production and distribution will result in the free play of competition among themselves which in turn will reduce the cost of that service to a minimum. If, on the other hand, middlemen exist in successive stages of production and distribution, competition cannot be so very effective as to reduce the cost of their service to the lowest margin but it may result in the exploitation of workers and consumers. A careful survey of the marketing organisation in respect of hand-loom products shows that—

(1) there are many middlemen between the actual producer and the ultimate consumer.

(2) in towns such as Madras, Salem, Madura, Conjeevaram, the presence of a large number of merchants, middle-

men and master weavers results in competition among themselves avoiding exploitation of workers.

(3) in villages which are generally served by a single merchant or a group of middlemen and merchants, there is very little competition. The weavers have to accept the wages paid to them by merchants who give them work, or they have to starve. The consumers are similarly at the mercy of the merchants. Most of the weavers belong to this category.

(v) *Low turnover*

But from these facts one should not hastily conclude that there are too many middlemen and that the weavers are underpaid; that what is legitimate is withheld from them by the merchants; and the consumers are exploited by the middlemen. An analysis of the conditions of production and distribution shows that the cost of middlemen's service per unit of manufactures is generally greater in India than in Western countries, but yet the profits of the middlemen are anything but enviable. They make a miserable living as a rule. The explanation for this is not far to seek. A village pedlar can hardly sell 30 to 50 yards of cloth per day.¹ It

¹ Certain figures of cloth retail trade relating to India and the United States of America tabulated below are interesting:—

.....	U. S. A.	India.
Volume of cloth consumed (in million yards) ...	7,000	6,000
Population (in millions) ...	105·7	352
Area of the country (million sq. miles) ...	3·02	1·8
Number of dealers and retailers of cloth ...	46,250	335,000
Average area per retailer (sq. miles) ...	65	5·4
Average population served by each retailer.	2,284	938
Average daily sale per retailer (yards). ...	464	50

According to the recent census there are about 65,000 traders in textiles in the Madras Presidency. It means that the average daily sale per trader is about 25 yards, which is only about a twentieth of what it is in U. S. A. It is no wonder that the cost of retail trade is very high in India though the merchant hardly makes a living.

is evident that the ridiculously small average daily turnover of retail dealers, their impecunious circumstances and their difficulties of making a living account for the high rate of marketing cost in India, the low business morality of traders and the primitive state of the trade.

(vi) *Transport difficulties*

The causes which explain the low turn-over of the retailer in India are quite known. First, unlike the people in U.S.A. and other western countries, the Indian population is more scattered and lives in villages and hamlets distant from one another. Though the American retailer covers a large area, he deals with a highly urbanised population which facilitates the adoption of many economic methods of marketing. Secondly, the transport facilities in India are very poor both in mileage and quality.¹ The greater transport facilities in U.S.A. enable the traders to serve a larger area and population than it is possible for them here. Also the larger the turn-over per trader, the lower is the cost of marketing. Thirdly, the people in India are very poor and live on seasonal production. Naturally, therefore, no trade is possible except on credit. Credit sales mean high cost of collection and administration. Fourthly, credit facilities to the rural merchants in India are very dear and inadequate. The average rate of interest against security is seldom below 12 per cent.

(vii) *Other disadvantages of the hand-loom*

It may now be asked: 'The system of rural retail trade is the same both in respect of the hand-loom and the power-loom products. Then, why should the products of the hand-loom alone suffer?' The answer need not be laboured. First, the cost of the hand-loom product includes transport costs twice (i) for conveying the yarn from the mill to the hand-loom weavers and (ii) for conveying the manufactures from the weavers to the consumers. In hand-loom production

¹ The total mileage of all roads in India is 254,127 including 70,127 of metalled roads and of rail roads about 42,000; while the corresponding figures for U. S. A. are 2,941,294; and 250,222; in India the inland waterways returns are not available. But the volume of the coasting trade is estimated to be five million short tons, while the inland water transport is almost negligible. In U. S. A., on the other hand, the annual freight carried exceeds 375 million short tons (excluding foreign trade).

yarn is produced in one place, cloth is made in another place and it is consumed in a third place, and all have to be linked by a number of middlemen. In the case of the power-loom no middlemen are necessary to secure yarn for weaving and no transport cost is incurred in bringing the yarn to the loom, for most mills in India have their own spinning departments. They enjoy another advantage over hand-loom. As the mills are well organised and bring large custom to the spinning and railway companies, they are in a position to bargain for special rates. The hand-loom weaver and the merchant dealing on a small scale have to send their goods invariably by railway parcel or by goods paying the general class rates which are much higher than the special rates quoted for export and port-to-port tariff for foreign goods and special rates for exports from Ahmedabad, Bombay, Sholapur, Nagpur, and other cotton manufacturing centres. No hand-loom weaving centre, however large, enjoys any such special treatment in respect of yarn imported into that area or of cloths exported therefrom. Also it deserves to be noted that both cotton yarn and cloth—irrespective of their value—are charged the same class freight.¹ Thirdly, the mills, by sole agencies and by offering special facilities to merchants, are able to effect a large sale on the basis of a small commission not exceeding 3 per cent. But the Salem merchant, for example, takes 2 annas per rupee. The turn-over of the hand-loom cloth dealer is very small and a high percentage of commission has to be charged. Also the hand-loom products, especially in the case of foreign exports, have to pass through the hands of several middlemen; they pass through a larger number of middlemen than power-loom products. Taking Ahmedabad cloth for instance, it is obtained by the sole selling agent at Madras who invariably has his branch office in

¹ Cotton piecegoods and cotton yarn and twist are placed in class six (railway risk) or class four (owner's risk). Therefore the railway rates work out at a higher percentage on value in the case of yarn. Also the rates work out at a higher percentage in the case of cheaper and coarse yarns.

The special rate for mill cloths from Ahmedabad to Madras inclusive of terminals etc. is Rs. 2-2-0 per maund while the waggon rate is still less. The ordinary goods rate is very nearly Rs. 5 while the parcel rate is over Rs. 9. It is necessary in fostering the hand-loom industry to give at least the same special treatment to hand-loom products as to mill products, if not more. The rates must be reduced if the yarn is imported for the use of the hand-loom, and also for hand-woven goods,

Madura, Calicut and Bezwada. The retailers, including the village hawkers, purchase from him and these convenient but large distributing centres render it possible to reduce the marketing cost. But in regard to the hand-loom cloth the yarn from the mill to the weaver and the cloth from the weaver to the ultimate consumer have to pass through many independent middlemen with the result that the cost of marketing service is very high. Unless the business is so organised that the daily turn-over per trader increases, that middleman service, wherever possible, is eliminated, and that mass handling of goods is effected, neither the hand-woven cloth can be cheapened in price nor can the status of the weaver be improved.

CHAPTER X

WEAVERS AND CO-OPERATION

- 'What makes all savage communities poor and feeble? The same cause which prevented the lions and tigers from long ago extirpating the race of men—incapacity of co-operation.'—J. S. MILL, *Civilisation*.
- X There must be a very great improvement in the economic condition of the weaver if co-operative organisation can be formed. . . . There is no extravagant fancy in a mental picture of a network of weaving societies throughout the Presidency, organised into central and wholesale societies which are closely in touch with yarn and cloth trade, can get the weaver his yarn cheap, can advise him what to weave, and can sell his cloth for him.'—F. R. HEMINGWAY, I.C.S., (*formerly Registrar of Co-operative Societies, Madras.*)

THE co-operative movement seeks to help weavers in three ways: (1) in providing easy credits to them and relieving them from their indebtedness to moneylenders, (2) in purchasing raw materials required for the industry at wholesale prices and selling them to members and in selling as agents the products manufactured by weaver-members, thus eliminating the profits of middlemen and (3) in organising producers' societies. An attempt was also made in this Presidency to finance the trade in hand-woven cloths by starting a sort of a loan and sale society for advancing loans to weavers on the security of their manufactures.

We shall examine in this chapter the actual achievements of co-operation in this presidency in these directions. The societies are classified under three heads: (1) Credit societies (2) Purchase, Purchase and Sale societies and (3) Production, Production and Sale societies.

The annual administration reports of the Registrar of Co-operative Societies indicate the lines of progress. They are now more informing but the changes in the classification of societies and the transfer of societies from one group to another render the reports less useful for purposes of comparative study.

I. THE CREDIT SOCIETIES

Credit societies exclusively for weavers are few. But there are some societies where weaver-members predominate. In the Administration Report of the Registrar of Co-operative Societies in the Madras Presidency for 1924-5, the number of

societies where more than 60 per cent of the members belong to weaving communities was for the first time separately stated. In 1930 there were 95 such societies in the Presidency. The following is a statement of the progress of these societies during the years 1926-30 :

	1926-27	1927-28	1928-29	1929-30
No. of societies ...	66	76	86	95
	Rs.	Rs.	Rs.	Rs.
Paid-up-share capital ...	38,574	51,117	70,657	92,582
Reserve Fund ...	27,707	35,164	42,847	54,544
Working Capital ...	399,731	520,386	553,284	610,038
Cost of management ...	4,479	5,311	4,991	10,682
Net profit ...	6,297	6,974	12,649	15,051
Net loss ...	3,356	10,403	9,813	8,319

Thus there has been progress all round. There is an increase in the share capital, in the reserve fund, and in the working capital, and a reduction in the cost of management. But it is not clear how many and how much of the loan amounts are given to actual weavers and how far the weavers are benefited by them nor is the purpose of the loans stated.

Loans in credit societies are advanced to members against the security of property or on the surety of two other members. This being the case, it is not known how far these credit societies have really benefited the weavers who are proverbial for their poverty. It is often said that loans are given mostly to cloth merchants who employ weavers for manufacturing cloths they require. Most of the credit societies are on the limited liability basis. Loans are given for useful purposes as enunciated in the bye-laws. It will be interesting to know the amount and the number of loans granted to artisans for the purchase of raw materials and implements required for the industry, for purposes of trade and for the repayment of previous loans. But the annual reports do not contain any information on these points. The societies could not have helped the poorer weavers very much for the following reasons :—(1) they are controlled by cloth merchants

and well-to-do people against whose domination the societies seek to protect the poor weavers; (2) as many of the weavers have no security to offer they are no better off for being members of the society; (3) and again the borrowing capacities of members are fixed very low. Nor are the amounts of loans large enough to help them to any great extent. The 95 societies have a working capital of Rs. 6.2 lakhs i.e., Rs. 6,500 per society on an average, which is inadequate.

The credit societies are chiefly in the districts of Chingleput, Trichinopoly, Coimbatore and North Arcot. Of the 95 societies in the Presidency, 50 societies are in these four districts with a working capital of over 4½ lakhs and reserve fund of Rs. 57,000.¹

The objects of these societies are not merely to pool the resources of the members to be utilised for loans to be disbursed among themselves for useful purposes but in some cases to act as the agent for the purchase of raw materials required for the members and for the sale of their finished products. Such transactions however are very few and no joint purchase or sale was made in 1926-27. In 1925 the societies in Coimbatore district effected joint purchase of raw materials to the extent of Rs. 43,735 and sold the finished products of members to the value of Rs. 1,711. But nothing is reported in the next year. The societies in Chingleput District sold the finished products of members to the extent of Rs. 2,871. But this purchase and sale activity of credit societies is very insignificant.

¹CREDIT SOCIETIES. (WEAVERS) IN 1930-31

District	No. of Societies	Paid up Capital Rs.	Working Capital Rs.	Loans Rs.
North Arcot	11	20,049	1,05,726	Not available
Chingleput	14	22,620	1,41,752	
Trichinopoly	12	7,319	77,166	
Coimbatore	13	10,628	1,42,576	
Presidency Total	95	95,639	6,19,585	

II. NON-CREDIT SOCIETY FOR PURCHASE, SALE AND PRODUCTION

There are two classes of societies which are properly called weavers' societies: (1) Purchase, Purchase and Sale Societies and (2) Production, and Production and Sale Societies. Before 1925 they were classed together and in that year a distinction was made between societies primarily industrial and primarily trading.

There were 52 societies as reported in 1926-27 of which only 27 societies were of more than five years' standing. Others are of recent growth. It must be remembered that in the case of these societies, it is not their number that is important; but it is the period of the working and the extent of transactions of each society that can truly indicate the progress in co-operative enterprise.

There were 42 purchase and purchase and sale societies in the Presidency during 1927-28. Their working is far from satisfactory. 26 of them had transactions for less than Rs. 500 each. In 1930-31 there were only 28 societies; thus the number of societies of this class is falling. It is the societies in Madura district and in North Arcot district that work well. The Madura Sourashtra Society is easily the best, for it accounts for nearly 90 per cent of the total transactions in respect of raw materials purchased by this class of societies in the Presidency. The Sourashtra Society mainly purchases raw materials to be sold to members; while the North Arcot Society purchases raw materials to be sold to members and also sells the finished products of members to the public.

VALUE OF FINISHED PRODUCTS PURCHASED FROM MEMBERS AND SOLD TO THE PUBLIC

Year	Purchase and Sale of Raw products by N.A. Societies		Purchase and Sale of finished products by N.A. Societies		Purchase and Sale of all societies in the Presidency	
	Purchase	Sale	Purchase	Sale	Purchase	Sale
1924-25	Rs. ...	Rs. ...	Rs. 34,626	Rs. 33,445	Rs. 38,498	Rs. 41,494
1925-26	...	...	20,223	20,342	25,434	28,161
1926-27	7,240	9,160	15,089	12,365	18,304	15,461
1927-28	8,729	8,333	13,516	15,885	26,373	25,905
1928-29	7,080	9,634	14,007	16,139	105,667	116,752
1929-30	3,174	3,174	12,971	...	22,072	23,529
1930-31	not reported		3,384	2,723	45,208	37,324

The Madura Sourashtra Society.—This society was registered in November, 1918 and the area of its operation was primarily confined to the Madura municipal limits. However, it has six member-societies which are situated in the Madura and Ramnad Districts. This is mainly a Purchase and Sale Society and it has been working with some measure of success for over ten years.

The object of the society is to improve the economic condition of weavers and dyers of Madura town. Its authorised capital is Rs. 1,00,000 while its paid-up share capital is Rs. 20,130. The borrowing power of the society is limited to five times the paid-up share capital plus the reserve fund. Each share is of the value of Rs. 10 and the individual maximum borrowing power is Rs. 1,000 while the maximum amount of loan per share is Rs. 25.

The main activity of the society is to purchase raw materials required and sell them to members. Other activities, of course, are secondary. The sale of raw materials to members is generally for cash but the society often sells them on credit, treating such sales as advances of loan. It functions as a credit society as well. But such transactions are small. The Society has a reserve fund of over Rs. 7,500 i.e. more than a third of its paid-up capital; and a common good fund of Rs. 983. There are four paid clerks in its establishment, two of them are paid Rs. 30 each and two others Rs. 15 each. The following statement shows the progress of the society during the last ten years (mainly purchase and sale of raw materials).

Year	No. of Members	Paid up share capital	Stock bought	Sale of Goods	Net Profit	Reserve Fund
		Rs.	Rs.	Rs.	Rs.	Rs.
1918-19	587	17,892	191,219	193,369	5,132	...
1919-20	659	19,257	70,673	74,887	972	4,454
1920-21	755	23,245	296,263	284,608	3,419	4,454
1921-22	779	23,824	265,769	278,354	4,533	5,038
1922-23	786	23,915	48,157	50,940	267	6,622
1923-24	781	23,917	118,699	127,813	358	7,062
1924-25	779	22,840	194,792	198,238	793	7,152
1925-26	716	21,884	193,005	186,653	301	7,152
1926-27	700	21,002	126,976	137,030	1,011	7,250
1927-28	684	20,322	99,121	97,520	not available.	

This society is not typical, but it is easily the best Purchase and Sale society in the Presidency. However, it is not such a great success as it should have been. In a town where there are more than 4,000 weaving families the number of members in the society is only a negligible fraction. Even this success of the society is firstly due to its enthusiastic panchayatdars who are intelligent and conscious of their part in the communal uplift. Secondly, the feeling of communal solidarity is also responsible for the success of the society. Thirdly, the presence of a large number of members congregated in a convenient area renders it possible to purchase and distribute yarn, dyes etc., required for the members without much extra cost. Fourthly, there is little opposition from vested interests. Fifthly, its large amount of transactions enables the society to employ paid clerks, etc.; and the introduction of payment for services, instead of honorary work (which is the cause of the want of enthusiasm in most co-operative societies) accounts for the success of this society.

The working of other societies in other districts is not satisfactory. In the first one or two years these societies seemed to work well but they soon fell on evil days. A study of the history of the societies for example in Coimbatore District will justify this remark. There are five Purchase and Sale Societies in the district. The number of members in each society is small and forms less than 10 per cent of the weaving population in the area of its operations. The following statement of the sale of goods to members and the value of stock bought by each of the societies for a period of four years shows the insignificance of their transactions and the decline in their working.

(a) VALUE OF THE SALE OF GOODS TO MEMBERS BY SOCIETIES IN COIMBATORE DISTRICT

	1923-24	1924-25	1925-26	1926-27
	Rs.	Rs.	Rs.	Rs.
Kollapalur ...	4,409	8,258	244	...
Kannanpalayam ...	3,603	...	...	2-10-0
Marianallur ...	4,049	...	4,371	...
Bavani ...	...	1,505	...	36

(b) VALUE OF STOCK BOUGHT BY THE SAME SOCIETIES

	1923-24	1924-25	1925-26	1926-27
	Rs.	Rs.	Rs.	Rs.
Kollapalur ...	5,552	7,298	...	...
Kannanpalayam ...	3,543	...	...	...
Mariadallur ...	4,380	...	4,314	...
Bavani ...	...	1,565	35-8-0	no trans- actions re- ported.

Some of these societies combine credit transactions also. They advance short term loans to members for the purchase of yarn etc. The Bavani Carpet Weavers' Society advanced in 1924-25 loans to 38 members to the extent of Rs. 1,230 for a period not exceeding three months. The main cause of the decline in the business of the society was the fluctuations in the yarn market and the financial weakness of the society to face them. Besides they did not enable their members to be entirely independent of the money-lender, the cloth merchant or the middleman.

III. PRODUCTION AND SALE SOCIETIES

In 1924-25, there were only three weavers' societies of this class in the Presidency. Now there are reported to be 10 societies. The oldest society in this group was the Big Conjeevaram Weavers' Co-operative Union in Chingleput District which is now liquidated.

The distinguishing feature of the production and sale society is mainly in the method of the distribution of profits. Yarn is purchased by the society, the finance is provided by weaver and non-weaver members, yarn is converted into cloth by weaver-members for certain fixed wages, cloth is marketed by the society, and the net profit after allowing interest on capital, depreciation charges etc., and deducting the amount for reserve fund is *distributed to member-workers as a bonus on work done for the society*. In Conjeevaram there are many small weaver societies which were affiliated to the Big Conjeevaram Union. But such organised Weavers' Unions have not yet come into existence in other districts.

The following statement of the progress of Co-operative Production and Sale Societies in the Presidency exclusively for weavers speaks for itself :

PRODUCTION AND SALE SOCIETIES EXCLUSIVELY FOR
WEAVERS

Year	No. of Societies	Value of raw materials purchased	Value of goods sold as owners	Value of goods of members sold for commission	Working Capital	Net Profit	Net Loss
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1924-25	3	581	425	1,056	7,786	...	771
1925-26	9	26,420	32,131	10,570	43,561	369	3,801
1926-27	10	22,581	26,456	2,471	47,589	556	4,209
1927-28	10	20,918	20,615	3,117	49,996	169	6,459
1928-29	10	21,020	22,543	nil	47,037	269	7,078
1929-30	5	nil	18	nil	15,416	1,019	2,776
1930-31	9	22,355	22,355	nil	34,143	126	4,265

N.B.—Of these ten societies 5 are in West Godavari Dt., 3 in Anantapur, 1 in Chingleput and 1 in Kistna.

The increase in the number of societies in 1925-26 is due to the inclusion of societies which were formerly classed as Purchase and sale Societies. That explains also the increase in the volume of transactions in that year. It must be noted that the net loss of societies is greater than the net profits. This means that this class of societies is not working satisfactorily.

A study of the progress of the Big Conjeevaram Weavers' Union will also bear out this observation.

BIG CONJEEVARAM WEAVERS' SOCIETIES.

Year	Working Capital	Value of goods		Cost of Management	Profit	Loss
		Bought	Sold			
1910-11 ...	Rs. 4,991	Rs. 8,058	Rs. ...	Rs. ...	Rs. 48	Rs. ...
1911-12 ...	...	...	...	...	...	...
1920-21 ...	9,107	15,608	17,855	759	386	...
1921-22 ...	...	...	...	...	...	...
1922-23 ...	10,266	8,400	8,991	663	...	292
1923-24 ...	9,345	4,144	5,600	481	...	387
1924-25 ...	7,776	581	1,481	...	...	771
1925-26 ...	7,271	916	1,109	112	...	1,238
1926-27 ...	8,308	...	905	186	...	1,635
1927-28 ...	7,849	749	1,465	227	...	2,175

In 1910 there were 87 members and in 1921 there were 531. Of this, less than 25 per cent were bonafide weaver-members. In spite of the increase in the number of members the Union shows signs of languishing. During the last 6 years it was working at a loss, and the transaction per member was less than Rs. 5 per year though it combined credit with all kinds of non-credit transactions.

Thus, it is seen that the co-operative movement in the non-credit section has not made any headway. There are only 120 societies, including credit societies, connected with the hand-loom industry. Their working capital is less than Rs. 5 lakhs and the sum of loans advanced to weavers, the value of goods sold and the raw materials purchased all amount to Rs. 5 lakhs. This is insignificant when compared to the value of output in the hand-loom industry every year. The annual value of cotton hand-loom production in the presidency alone is estimated to be over Rs. 5 crores and the working capital of the co-operative societies represents hardly one per cent (even when the working capital of all societies of cotton, cumbli, silk and coir weavers is included).

Economic Benefit.—Inadequate as these forms of assistance are, the economic benefit derived by society-weavers is not

insignificant. There are cases where yarn is supplied at a price 15 per cent less than the market rate; where money is advanced ordinarily at 5 per cent less than the Sowcar's rate and better prices for manufactured goods are obtained by sale through co-operative societies. But the extent of this economic benefit derived by each society is not stated anywhere either in the Registrar's report or in the auditor's report or in the annual reports of the societies.¹

WHY THE PROGRESS OF SOCIETIES IS UNSATISFACTORY

Generally speaking it is the illiteracy and ignorance of members, the incompetence of panchayats, the insufficiency of finance and, in some cases, the active hostility of vested interests that are mainly responsible for the unsatisfactory progress of weavers' societies. There are certain special reasons for the failure of each class of societies which we shall now examine.

Credit Societies.—They are mainly on the limited liability basis. Though the amount of share capital which would entitle one to become a member is fixed low and is collected in easy instalments, the weavers generally have a hand-to-mouth existence and they can hardly save anything out of their earnings to enrol themselves as members. They are proverbially poor and the majority of them have no valuable security to offer and thus derive the benefit of co-operative credit. The co-operative ideal of helping the poor and the honest seldom obtains in practice. Also it is usual that these societies are controlled by local money-lenders and merchants and the bulk of the loans are monopolised by them. Besides, the procedure of the financing banks entails undue delay in making the loans available for primary societies for distribution and the weavers are driven in the meantime to money-lenders for immediate help.

¹ The economic benefit is ascertained in the case of credit societies, by the difference between the rates of interest charged by the co-operative society and the other agencies; in the case of purchase and sale societies, by the difference between the price at which raw materials are obtained from the co-operative society and the price at which the merchants generally sell them to weavers and the difference between the price at which the weavers themselves could sell their manufactures and the price which the co-operative societies could get; and in the case of producers' societies the difference between the aggregate earnings of the weaver-members including the wages and bonuses and the wages they would otherwise get by working for sowcars independently.

The main object of a credit society is to provide members with *easy and cheap credit on reasonable terms*, and give them *considerate treatment*. Money is required by a member for the purchase of yarn and other raw materials, to maintain himself and his family while cloths are being manufactured for the market, especially during the dull season, and to repay old debts. Credit is cheaper in the society. But it is not available in time nor to an adequate extent. The borrowing capacity of the society is fixed in proportion to the paid-up share capital and the reserve fund, and this limit is low and does not usually permit accommodation to all members without raising the share capital and the reserve of the society. The borrowing capacity of the society is not as high as to permit it to borrow enough money to meet all the requirements of members. The maximum limit must, of course, be fixed with reference to the security that the society can offer to the central bank; but it should not be too low. The Central European practice of not withdrawing the dividends payable to members from the society but adding them on to the share-capital of members and to the reserve fund is followed by some societies but the practice is not universal. This practice might be useful if followed by all societies and will ultimately increase their borrowing power.

The loans are generally distributed by the Panchayats at their own discretion. It is often made a question of patronage and it raises undesirable questions of caste and political prejudices which generally lead to the liquidation of societies.

The credit society is not popular with members for the reason that the society is unwilling to give more than one loan to one member. This naturally drives members to other agencies which often make exacting terms with members of co-operative societies.

It is unfortunate that there are many cases of overdue payments and default by members. This necessarily demands caution in giving loans. Loans to individuals are not generally granted in the light of their repaying capacity. In many cases the purposes for which the loans are taken are not really productive and it is but natural that there is default. The responsibility of the society should not cease with the sanction of the loans but it should see that such

loans are applied for the purpose for which they are intended and such purposes must usually be productive in character. Co-operation cannot work successfully unless it improves the moral stature and the social consciousness of members. The repaying capacity of the member must be determined by his earning and saving capacities.¹

The Co-operative Purchase Society enables members by the elimination of profiteering middlemen to buy their requirements at reasonable prices. For the success of the

¹ In his Memorandum to the Textile Committee of the Madras Legislature in 1928, the Textile Expert examined the reasons for the failure of Weavers' Societies.

Most of the societies are organised on the limited liability principle which accounts for their financial weakness. The reasons for their failure are (1) the inability of the weavers to purchase even one share of the value of Rs. 10; (2) the unwillingness on the part of rich weavers to take a large number of shares, as dividends cannot be assured; (3) the borrowing capacity of a society is greatly restricted owing to the low security it can offer; (4) the necessity for borrowing elsewhere at high rate of interest; (5) malpractices of rich members, in many cases, well-to-do weaver merchants who happen to be members of the society take undue advantage of their status and appropriate the major portion of the raw materials procured by the societies, for their employees, leaving the poor weaver-members to shift for themselves as best as they can; (6) the comparatively higher wages paid to weaver-members than those given by sowcars to non-members and the consequent high price of cloth produced by members; (7) the lack of organisation for a regular disposal of the finished products.

And he suggested the following measures for their development :

1. Granting through Co-operative societies, advances to the poor weavers in the initial stages to the extent of the value of a share and recovering the amounts from the earnings of the weavers in small instalments.
 2. Allowing credit for the society at low rates of interest;
 3. Inducing rich weavers to take shares by guaranteeing payment of a reasonable dividend so that they may release the poor weavers employed by them to work in the society;
 4. Instituting enquiries with a view to ascertain the real debt of the weaver-member and to arrange for the gradual repayment to the Sowcar of the Weaver's debt from the latter's earnings;
 5. Arranging to grant small cash loans to weavers in case of necessity;
 6. Advancing money at low rate of interest on the mortgage of stocks of cloth properly secured and insured;
 7. Guaranteeing against loss up to $\frac{1}{2}$ of the paid-up share capital of the society.
- Other directions in which Weavers' Co-operative Societies can be assisted are also mentioned :

- (a) Granting a sum of Rs. 5,000 a year to a private organisation which will have for its object the creation of a demand for the products of hand-loom weavers;
- (b) Starting of yarn Banks;
- (c) Removal of duty on imported yarn;
- (d) Opening of spinning mills worked by Jail labour.
- (e) Linking power preparatory processes with hand looms;
- (f) Appointing a departmental officer to exercise close supervision of the working of all weavers' societies started in a particular district and to take interest in the sale of cloth.

Purchase Society it is necessary to have a large number of members, thereby enabling the purchase of articles at wholesale prices. Co-operative purchase is more successful than co-operative sale. However, the main difficulty in the Purchase Society is that it does not get the same trade commissions and facilities from wholesale dealers as private merchants do.

There are certain factors which militate against the successful working of the Purchase Society. First, the Co-operative Purchase Society does not usually sell to non-members. This naturally reduces the dealings of the society to small dimensions. But there are also difficulties in selling to non-members. Selling to non-members is not only contrary to true co-operative principles but there is difficulty also in anticipating the demand. Some Purchase Societies sell also to non-members and this is an innovation. Secondly, the co-operative society refuses to sell on credit to members. The local yarn dealers still command a large custom because they sell for credit and give timely accommodation to their customers. The rules of the societies are very inelastic in this respect. Any method of marketing to be successful must take into account the buying habit of the customers. The buying-for-credit habit of the weavers, (no matter what the disparity is between the cash and credit prices), and the strict adherence of societies to the principle of cash sales seem to be incompatible, and that accounts for the very small transactions of purchase societies. Thirdly, co-operative societies have but a very few brands of yarns, dyestuffs, etc., while the private merchant stocks a large variety allowing a wider range for choice.

However the conditions in weaving centres are favourable for the progress of Purchase Societies and their working on these lines. The requisites of success are that (1) there must be a large number of weavers in one centre which secures efficient, easy, and cheap distribution, (2) they must produce one or two varieties of cloth requiring a few varieties of yarn and other raw materials; for this will facilitate wholesale purchase and sale by societies, and (3) the weavers must belong to one caste or community which will strengthen the feeling of solidarity. These factors are present in many weaving centres in India. In most of the weaving centres the

weavers mostly belong to one community and they produce limited patterns of cloth which do not require a variety of raw materials. Also in many centres there are enough number of looms and weavers to work a Purchase Society successfully. What is wanted is human material with steady enthusiasm and loyalty of members.

The Co-operative Sales Societies are for securing the best markets for the finished products of their members. By co-operative sale members can get better prices for their manufactures again by the elimination of middlemen or by sale in the best market. Co-operative sales have not been so successful as co-operative purchase. Most of the Purchase and Sale Societies do mainly buying and only to a very small extent selling. The societies leave the selling or the marketing of members' goods to themselves and the main problem of the weaver being marketing and that being not properly tackled by the co-operative societies, they have not progressed very far. The weavers have still to depend on the local merchants and sowcars for the financing of the trade in their manufactures and the export of their cloth to distant markets. In 1929 a Marketing Officer of the grade of Sub-Deputy Registrar of Co-operative societies was appointed to organise production and sale on behalf of the Salem Weavers' Co-operative Society. The experiment has proved a success. He has standardised production, found market for manufactures in Madras and other places eliminating the costly and expensive services of the Salem Commission Chettis. This was highly commended by the Registrar of Co-operative Societies and the Economic Depression Enquiry Committee. But the Government put an end to this experiment as a measure of retrenchment. Generally the societies have not developed the marketing side of their activities. There are of course great difficulties in the way of the societies undertaking the marketing, e.g., absence of standardisation of cloths produced, lack of that personal interest of private merchants (the requisite for success in business), insufficient finance for developing the trade, and small production which does not attract the large capitalists and wholesale cloth dealers to the business.

The requisites of success for a sale society are: (1) The

finished products must be standardised in quality and the goods supplied must answer to the sample, (2) the society must be able to sell in large quantities, undertake forward contracts and perform timely deliveries, if it should attempt to push its articles through the ordinary trade channels, and (3) the society must have enough fund to finance the weavers when the market conditions demand the holding out of their manufactures. It would be a great step forward if the society develops a loan and sale function as well. It must also advance money to weavers against the security of their manufactures, say 50 per cent of their value for 6 months.

Co-operative ownership of expensive appliances: By this, expensive appliances which are not available to the individual workers are made accessible to them at a low cost. Nothing is done in this direction save that one of the societies in Conjeevaram has achieved a moderate success.

Co-operative production and sale society: Production societies are very few in number. And they have not worked satisfactorily either. The difficulty in organising successful weavers' society for production, purchase or sale is in part due to the inability of the society with little capital or credit to provide for the services of a man of sufficient business knowledge and experience of the market in yarns, dyes and cloth. A society for production and sale requires more capital than one for purchase and sale alone. The required capital cannot come from the weaver-members. Non-weavers do not invest much capital. Nor do rich weaver-members invest the necessary capital. The share capital is usually Rs 10 and in some cases Rs. 25. For a society of 100 members, to wit, producing ordinary grey cloth of 20s the minimum working capital required is Rs. 30,000 (when its annual turnover does not exceed Rs. 75,000) on the assumption that each member works for only 20 days in a month and earns 8 as. a day and that there is a stock of yarn required for three months' production and stock of cloth representing three months' output. The society can at best get Rs. 2,500 as the share capital if all shares are fully paid-up and a loan of five times the amount of share capital from the financing bank; thus its total working capital will amount to Rs. 15,000. This is absolutely inadequate and a crisis is often precipitated,

when there is a small glut in the cloth market or fluctuation in the prices of cloth and yarn. The weavers could not be given work and the weaver-members who depend on the society for work then naturally turn to private merchants for employment. It is in such cases that a Central Yarn and Cloth Bank will be useful. It can receive yarn and cloth from weavers' securities and advance loans to the weavers' society.

The trouble we meet in Production and Sale Society is the want of satisfactory arrangement for the disposal of its output. If we can secure the consumption market on a tangible basis, the organisation of producers' societies becomes a simple affair. Financing banks may be expected to give credit upto 70 per cent of the value of goods produced provided they are satisfied about the worth of the goods in the consumption market. The few Producers' Societies now in existence feel the inadequacy of the arrangement to secure the consumers' market. This is the cardinal point in the development of such societies. The Marketing Officer, appointed by the Government of Madras in Salem, had no special training in commercial organisation; yet he had secured the market in Madras and other places for the manufactures of Salem Weavers' Co-operative Society during the period of experiment. It is unfortunate that the Government should have decided to put an end to the post.

To sum up, the first requisite for the success of a Production and Sale Society is finance. Secondly, a man of good business experience and knowledge of the yarn and cloth and dye market must be secured. Thirdly, the necessary conditions for the successful marketing of cloth must be created, e.g., the cloth must be standardised, prices should be stabilised and standardised and proper marketing methods must be chosen. Fourthly, on the production side the regularity of employment of workers and standardisation of wages are necessary to ensure the loyalty of workers to the society and the utility of the society to weavers.

It is possible that better results might be obtained by the formation of strong central societies in important weaving centres, comprising individual share-holders who would put in substantial share capital (and some of whom should be men who have had experience in yarn and cloth trade) as

well as local primary societies for weavers. The bye-laws should permit the sale of raw materials to non-members. Such a scheme would probably go far to disarm the hostility of the local yarn dealers and might possibly solve the difficulty which certain weavers' societies find in marketing their cloth. The individual share-holders would supply not only the bulk of the capital as in the early stages of our district central banks, but also the initiative and business capacity required for the successful organisation and working of such a society.¹

YARN DEPOT AT ITCHAPUR, GANJAM DISTRICT

A careful study of the working of the Itchapur yarn depot and weavers' co-operative society in Ganjam District organised mainly for the purpose of production and sale is very instructive. The society was started in November 1918. The Government opened a yarn depot which purchased the yarn and distributed it to weavers through the co-operative society. The society was managed by a Panchayat of weavers while the yarn depot was under the Director of Industries. The society was paid commission for the production of cloth and the weavers were given a fixed wage of Rs. 5 per bundle plus a bonus of one rupee per bundle when a weaver had woven three bundles for the society in one calendar month. Besides, they were entitled to the dividend if the society worked at a profit. The depot undertook the sale of the cloth in Madras and later in the local shandies. This experiment continued for a period of about 14 months; the price of yarn was fluctuating and fell from Rs. 16 to Rs. 7; cheaper cloths flooded the market and the society had an accumulation of stock manufactured when yarn prices were high. The object of the Government to help the weavers at the time when high prices ruled and to cheapen the price of cloth was achieved with the fall of the price of yarn to Rs. 7 per bundle. They then decided to close the depot. But, it must be noted, this is not because that the co-operative experiment was a failure. During the 14 months the society manufactured and sold cloth

¹ Report of the Registrar of Co-operative Societies, Madras, 1921-22, page 17.

to the value of Rs. 22,700 and distributed wages to weavers to the extent of Rs. 5,150 and earned a net profit of Rs. 1,660 after all establishment and contingency charges were paid.¹

THE ITCHAPUR EXPERIMENT AND ITS LESSONS

The success of the Itchapur experiment, especially at a time of falling prices, was due to the co-ordination of the yarn depot and the weavers' co-operative society. The former purchased yarn, standardised the quality of the cloth and marketed it; while the latter distributed yarn to weaver-members and organised production. However there were certain defects in the organisation which rendered the working of the society difficult, if not impossible.

First, it was not possible to secure a decent initial capital and the society was started without any paid-up capital and hence the enterprise was financially very weak. This weakness naturally hastened the crisis when the market was unsteady and the demand for the cloth was very dull. The remedy seems to lie in the establishment of a bank which will advance money to the society on the security of cloths produced by the society. A loan and sale society would have obviated this difficulty.

Secondly, the panchayats took merely a nominal interest in the management of the society. The weavers themselves who had not the faintest idea of what co-operation meant practically regarded the depot which ran the whole show in the same way as sowcars employing them. It cannot be expected at their present stage of education that weavers will understand the full meaning and usefulness of co-operation and it would be impatience to expect a sudden and radical change in their outlook. 'Each for all and all for each' is yet the unrealised ideal, and social measures of this kind take firm hold only when they are tried patiently for years and, even then, the result will be imperceptibly slow. Experience alone will enable weavers to understand the value of co-operation and devices must be found to make the intelligent, the well-to-do and the educated members of the community take an extra interest in the management of the

¹ From the Correspondence of the Department of Industries, Madras.

society. Also co-operation is not mere charity but business, and the management, to be always efficient, must be rewarded for its labour.

Thirdly, the panchayat took no interest in the sale of cloth nor did the yarn depot concert any measure in order to instruct the society in the methods of pushing up the sale and of popularising its cloths. This is where the whole organisation was really weak. Neither the weavers nor the Government departmental officers were in any way acquainted with the cloth market. Formerly, the marketing function was performed by sowcars. When they discovered that the sales of society would prejudice their interest they stayed out. Moreover the depot in Itchapur produced a kind of cloth for consumption in Madras city which, because of its width, could not find a market there. The depot also ignored the market requirements and the buying habits of the people. It failed to adopt proper marketing methods. As the production was not on a large scale and as the cloth market was uncertain neither the consignment system nor the agency system of sale could be adopted with advantage. A business man was also found necessary to organise the sale.

Fourthly, there was no check on the vagaries of the weaver-members of the society and the society did not take any action against a weaver who absented himself for months during the busy season in order to work for the sowcar. Nor did it prohibit its members from accepting work from a private merchant which was detrimental to the interests of the society. The weavers preferred to work for the sowcar because he paid high wages during the busy season and accommodated them with advances etc., during times of need. On the other hand, the society adopted a fixed wage policy with deferred bonus for extra work done and this hardly appealed to those who believed that a bird in the hand was worth two in the bush. This is not all. The society in its anxiety to cheapen the price of cloth was giving lower wages to workers. It was noted by the then Director of Industries that the society-weaver was paid less than the weaver working for the sowcar, and it is no surprise that he deserted the society. The society was more anxious to cheapen the price of cloth than to pay competitive wages or to better the conditions of the weavers.

If only the society had sold the cloth for the best price, it could have earned greater profits and could have afforded to pay better wages to workers. A wooden policy aiming at lower wages and prices, irrespective of other circumstances, drove the workers from the society to the sowcar.

Further the society ignored the habits and needs of the weavers and failed to accommodate them. The weavers are usually under the obligation of the sowcars for having received the timely advances from them and they find the regulation application to get loans from co-operative societies not always possible to comply with. This leads to the secession of weavers from the society. No doubt rules and regulations cannot be dispensed with but there must be greater flexibility and less rigidity in the actual administration. What was wanting in the administration of the society was the human element.

Sixthly, the society was faced with the competition of the sowcars which, apart from the payment of temporary higher wages, took another form. The sowcars tampered with the quality of cloth. They asked the weavers to put in fewer ends and picks per inch than before and sold the cloth for a price very much less than that of the society's cloth. However, it was not a serious matter as the buyers differentiated the qualities and willingly paid a higher price for the cloth made by the society.

The chief cause, however, for the failure of the societies at Itchapur and Berhampore was that at the time when they were started the prices of yarn and cloth were abnormally high and this affected the elasticity of its demand. The large stock of yarn purchased at higher prices with which both the depot and the society were saddled rendered it impossible for them to compete with the merchant. The rapid fall in the prices of yarn led to the glutting of the local market with cheaper and inferior cloths and enabled the weaver to purchase his own yarn and to find a market for his own finished products as an independent worker.

Thus it is not so much the inherent weakness of co-operative organisation as the combination of some external circumstances and bad business that accounts for the failure of the Itchapur society. The Government hastily decided to close

down the yarn depot and allowed the society with little experience and with no intelligent guidance to drift for itself. An experiment in the right direction i.e. a co-operative society aided by the yarn and cloth depot (resembling almost the yarn bank) was well begun, but before it was tried for a sufficiently long time as to yield useful lessons, it was given up. The closing of the experiment, as it was expected, led to the collapse of the society. 'The closing down of the society will deprive the weavers of the means of bettering their conditions and profession'. 'If we close the society the weavers will in time to come, by a combination of circumstances, become chained to art which is daily sinking them in depths of destitution and from which they have no power to escape unaided'. In spite of these representations by successive Directors of Industries, the Government decided to close down the depot in 1920.

Co-operation :

THE BASIS OF THE FUTURE INDUSTRIAL ORGANIZATION¹

The object in reorganising the hand-loom industry is to benefit the cottage workers. And there is no better method of achieving that end than by organising them on a co-operative basis. For the industry is best fitted for co-operative effort. Where the products of an industry have a ready sale at a more or less fixed price, co-operative societies are difficult to work; and the advantages of co-operative sale in such cases are as a rule not very great. But where the market depends on a casual purchase, or is a fluctuating or seasonal one, most

¹ On the future of co-operation the *Encyclopædia Britannica* may well be quoted :—

'The underlying issues of the individual and the mass, the section and the whole, the class and the community form the real problem of co-operations' future. Avowedly neutral in religion and politics, the international movement does not regard itself as excluded from pursuing—although on a vaster scale—the original aim of co-operative community proposed by the co-operative fathers. How far is that aim practicable? It does not stand as a design of a theorist. To any friendly constant observer it must appear as arising from the social instincts of the masses. But amongst the masses themselves, there are multitudes bound to the co-operative movement only by self-interest, and monetary ties. To make economic democracy effective, the co-operators evidently need to find profounder means than those yet employed for arousing disinterested human enthusiasm. Furthermore, to have great effect in life's varied field, a movement must be complex as well as extensive. Conscious mass power is a new thing, tremendous and far-extending, but it is not everything. Individual and personal integrity and skill will not be submerged; the

of the workers are so largely in the hands of money-lenders, who take these risks and charge very high rates for doing so, that it is not easy to help them, unless an organisation can be set on foot large enough from the very beginning to finance stocks and arrange sales.¹ All this is true so far as the hand-loom industry is concerned. The main difficulty in the organisation of industrial societies which involved dealing on a large scale lies in buying and selling and in the absence of persons of intelligence and standing acquainted with the business whose interests are yet not necessarily opposed to the success of the scheme. The cloth merchants are directly interested in maintaining the weaver in his present state of bondage, while few persons have sufficient knowledge of the business and sufficient public spirit to be able to organise it with success. The service of experts in textile technology, in business and co-operation may be secured only when the whole hand-loom industry is organised on a really comprehensive and large scale. A single weaver or society of a small number of weavers cannot employ them. And what Mr. Hemingway said some few years ago is still true. 'There must be room for a very great improvement in the economic conditions of the weavers if co-operative organisation can be formed. Careful and calculated study of these trades will be necessary but the thing can be done and there is no extravagant fancy in a mental picture of a network of weaving societies throughout the Presidency organised into central and wholesale societies which are closely in touch with yarn and cloth trade, can get the weaver his yarn cheap, can advise him as to what to weave and can sell his cloth for him'.² Registrars of

side which enlists also this latter power will also be hard to defeat. As a free movement neither class-bound nor state-bound, co-operation appears to have before it a magnificent opportunity. Both producers' and consumers' co-operation present, it is urged by co-operators, a solution of the industrial problem by showing capital as a hired yet contented servant. Consumers' co-operation further offers the outline of a new economic society in which the workshop is related to the home and economic surplus to human needs, and where industry begins to look to its human ends instead of simply to profits and money wages. Whether the movement can lead a stubborn world decisively along this co-operative road, probably will depend more and more not only on its members but also on its power to enlist intelligence and develop in all ranks a leadership capable both of creating enthusiasm and producing every day conviction among the masses of mankind.

¹ Indian Industrial Commission Report.

² *The Co-operative Manual* Madras.

Co-operative Societies and industrial leaders have often expressed their faith and hope in co-operation for the regeneration of the hand-loom and other small industries.¹

The Producers' Co-operative Society in conjunction with a Central Weavers' Society and Bank will be the solution for the industrial problem by showing capital as hired yet contented servant. The co-operative producers' societies on a comprehensive scale as contemplated above will remedy the present exploitation of workers financially weak by a few persons ignorant of the work but expert in banking and will restore to the workers similar opportunities and incentive to do honest and decent work. Their ideal is that in one area the workers in one trade or craft should combine and, pledging the services or their credit in common, obtain the necessary premises, machinery, etc., that they should work in common and share profits in common and that they should control themselves through their own elected representatives. Whenever this has been tried the workers have improved enormously not only in health and prosperity but also in morals and self-respect.

The Registrar of Co-operative Societies of Bombay emphasises the importance of Production Societies :—'It is hoped and believed that there is no greater instrument for national regeneration, both in craftsmanship and morality, than the successful and the steady growth of the producers' societies. They bring hope and ideals to every worker and every worker's family, but they need carefully prepared ground and laborious education in co-operative principles and practice. The ultimate condition of success is therefore

¹At a conference of the Assistant Registrars of Co-operative Societies held in October 1922, a resolution was passed urging the necessity for a strong central society for weavers. The resolution runs as follows :—

'The reasons for the comparatively slow progress of weavers' societies apparently are that the societies are too weak, both financially and otherwise, to meet the competition, sometimes unfair, of private individuals and firms, that the price of yarn fluctuates within such wide limits that it is difficult to secure the steady loyalty of members to the society in regard to the joint purchase of yarn they require and that there is difficulty in certain districts at least in regard to the marketing of the cloth produced. It is suggested that better results might perhaps be secured by the formation of strong central societies in important weaving centres, the members to comprise capitalists and merchants (some of whom should be yarn and cloth dealers) and also local primary societies for weavers. Sale of raw materials to non-members should also be permitted by the bye-laws.'

education—not necessarily education in the conventional three R's, but education in self-respect, self-control and higher ideals of co-operation'. Experience in other countries shows that co-operation of producers succeeds either where there is great intelligence and moral temperance among workers or where there still survives a strong communal feeling. There is a strong sense of communal unity among our weavers of various castes. There is ample evidence to show that our weavers are intelligent enough to understand the significance of changing conditions and value of new methods but intemperance is their sore point; it exists in varying degrees among different castes. The Kaikolars are noted for sobriety and producers, societies of Kaikolars may therefore succeed.

The kind of co-operative organisation suited to the hand-loom industry in India is thus sketched out by E. B. Havell:—¹

'The principle of the Danish Co-operative system as applied to dairy farming is the combination of a number of small proprietors for sending their products to a central factory in which each of them has a share proportionate to the quantity of his contribution. In the management of the factory, each member has an absolutely equal voice, irrespective of his holdings. Adapting such a system to the Indian weaving industry each weaving community would have a central establishment and its own control which would arrange the purchase of materials at wholesale rates, prepare warps for the weavers' looms and organise the sale of the finished products. The actual weaving would be carried on as at present in weavers' houses by the master weavers and their apprentices. If a system of this kind would retain the economic advantages of the factory system and eliminate its many evils, it is obvious that *the factory owned and controlled by the weavers themselves and worked only for their advantage* is a very different thing to a factory controlled by capitalists only for the purpose of exploiting the labour of their employees'.

It is also necessary to secure the loyalty of weavers to co-operative societies. It would be desirable therefore to

¹ 'East and West'.

obtain greater elasticity and variation in bye-laws in weavers' societies as in the matter of advance, management and repayment of loans. The introduction of provident fund rules will be a great step forward in this direction. The Registrar of Co-operative Societies, Bombay, has suggested that 1/50th of the wages of the first 20 years of employment and 1/100th of the wages for the next 10 years of employment should be given away to weaver-members of the production societies. This is highly commendable. It is conducive to continuity and regularity of employment and it also makes some provision for old age and this solves the difficult problem of social insurance of home workers.

Now it is true that the improvement of the status and condition of a million people who are apparently indifferent to their own improvement is not an easy task and the problem is one that must be solved by the Government in conjunction with the non-official Provincial Co-operative Federation, the primary society, and the financing central bank. At present these different agencies for the development of co-operation imagine to have conflicting duties and rights with the result a good thing fails. The Registrars of Co-operative Societies who are often recruited from the Indian Civil Service have shown ability and capacity for stern discipline which would be a virtue where administration is in confusion, but they lack initiative, imagination, human understanding and a living faith in the cause which are essentials of success of co-operation in its initial stage and of its expansion later. Civilians with judicial and revenue administrative experience but very little training in co-operative work are often shunted on to this department for a change or to suit some administrative convenience and are placed at the head of the department and no wonder they cannot and do not inspire the subordinate staff with the co-operative ideals. The non-official agency, while having a liberal creed, is often dominated by party politics which is ruinous to discipline and administrative efficiency. The individual society is lacking in practical understanding. Thus, as observed before, the wholesale importation of the principles of co-operative administration obtaining in countries, where conditions are very different, to India where the vast majority of the people are steeped in

ignorance and poverty is largely responsible for the slow progress of the co-operative movement. Especially the insistence on the principle of management of the society by members themselves must be modified. The function of the States does not stop with audit and financial control, but it must offer intelligent leadership and active financial support at the first instance. There is no need for conflict of rights among the State, the Co-operative Federation and the individual society if they remember what is best administered is best and if they work on definite lines believing that there is no more powerful lever than co-operation to aid a people sunk in utter despair and poverty.¹

¹ REPORT OF THE REGISTRAR OF CO-OPERATIVE SOCIETIES, MADRAS, 1929-30.

Nearly half the number of societies for hand-loom weavers were dormant. In dealing with the subject of forming co-operative societies for hand-loom weavers, as recommended by the Special Officer for the Survey of Cottage Industries, it was found that *attempts already made have proved a failure* as the societies always came into conflict with master weavers. The Textile Advisory Committee discussed these difficulties and considered the desirability of forming a *Central Weavers' Co-operative Society*. It was at first anticipated that through a central organisation weavers would get yarn cheap and reduce the number of middlemen between the handloom weaver and the ultimate purchaser to a minimum and that the weavers would then be enabled to get a larger share of the profits. The Government were informed of the financial assistance required from them and also of the extent of such assistance given by the *Governments of Bengal and the Punjab* to similar organisations working in these provinces. The Textile Advisory Committee after considering the scheme recommended that primary societies for weavers should be started and a *Central Society and Bank* organised for financing the primary societies and conducting the sale of their finished products. The Central organisation was also intended to arrange for the demonstration of the use of machine sized ready made warps and to popularise other improved preparatory processes and method of weaving. There was to be a business manager to study and collect information in regard to marketing of handloom products and make this information available to the weavers.

CHAPTER XI

THE PREPARATORY PROCESSES

“Preparation of warps for the handloom is the crux of the whole problem and unless material improvements are effected in the quality, regularity, and strength, combined with a reduction in the cost of producing them, the advantages gained by the general adoption of flyshuttle sley will be but slight, and progress in consequence but slow”—Sir Alfred Chatterton.

BEFORE weaving is begun the warp yarn is subjected to special treatment called preparation of the warp, so that it can bear the strain involved in weaving. The term *preparatory processes* embraces winding, warping, sizing, beaming and drawing-in and piecing the threads together. In some cases, the warp yarn has to be doubled and twisted. The methods adopted by the hand-loom weaver in respect of each process will be described in this chapter.

Winding.—Yarn for the warp and the weft is usually wound by women and children of the weaver castes. Winding is done with the help of the charka and the cone (*Thiruvattam*). Weft yarn is chiefly wound on the shuttle pins; while warp yarn is wound on cones if peg-warping is employed, and on tin cylinders if the warping mill is adopted. The preparation of the warp yarn depends on the warping method followed. In the Madras Textile Institute and in some factories improved hand-driven bobbin winding machines are introduced. It may be noted in passing that the introduction of bobbin winding machines depends on the system of sizing and the length of the warp generally in vogue. With the present method of street sizing by women and short warps in use the necessity for any radical change in the present winding and reeling processes is not keenly felt. In the beginning of this century, some improved bobbin winding machines were placed in the market by Messrs. Butterworth & Dickinson but the results were unsatisfactory.¹ A careful comparison of the results of the working of the multiple pin and bobbin winders showed that the primitive method was faster

¹ Quoted by N. Subramania Iyer, *S. I. A. Journal*, p. 179,

and cheaper—the fact being that the imported machines were too heavy for manual labour. Even today in many handloom factories hand-driven bobbin machine is not employed.

Warping.—Warping is merely the laying of a number of threads in parallel order and equal in length and in number sufficient to make the required width of the cloth. It is the function of the warper therefore to provide a sufficient number of parallel threads for a web, all of equal length and to retain their parallelism. The efficiency of weaving depends on this and the uniform tension of all the warp threads. It is in the warping process that some improvement has been made by the Department of Industries. The early method of warping was to fix a number of sticks on the ground—the distance between the sticks on either extreme depending on the length of the warp—and to fasten the yarn to the first stick and then go on unreeling the yarn in the cone round the sticks until the last one is reached when the course is repeated backward. The warp is laid on an arrangement of sticks—the distance between each successive set of sticks is 3 to 4 ft. The whole idea of the arrangement is to produce a cross, called *lease*, between every pair of sticks whereby each successive thread is kept separate from its neighbours throughout its length and to prevent the threads from getting entangled. Warping is generally done by women and children. The defect of this system of warping is that only one thread is reeled at a time and before the required number of warp threads are laid the warper has to walk several miles. This is a very tedious process and can still be witnessed in a number of villages.

The first improvement made in the warping process is the elimination of this method of warping. In peg-warping, the same process is gone through—only instead of pegs fixed to the ground, there are pegs fixed to a wooden frame or to a wall. The advantage is that the work is done in-doors and the workers need not walk several miles.

The next improvement is the adoption of the warping mill where more than one thread can be reeled at a time. The warping mill consists of a horizontal or vertical reel made of bamboos or other wood on which the warp is wound round and a reel for the bobbins from which the yarn is reeled off,

The lease in these warps is formed by a separate device attached to it.

The Department of Industries, Madras, further improved the warping process by improving this mill. Here the lease is formed at only one end and this would do for warps of twisted yarns requiring no sizing and for warps already sized in hanks. But this will not suffice where sizing is done according to old methods. There must be leases at intervals, for which the present horizontal warping mill with pegs fixed on the circumference of the reel at intervals of a yard is best suited. This mill is now increasingly employed by weavers.

The advantages claimed for a warping mill are :

- (i) it can produce warps, grey or coloured, in any length, with any number of ends;
- (ii) the warp can be made up in convenient bundles with full particulars of yarn used;
- (iii) the warp is placed within easy reach of the weaver at less cost than he can produce it himself and
- (iv) it saves him much labour.

Wherever the warping mill has been introduced, warping is carried on as a specialised function by a separate group of artisans. The yarn is given to the warper by the weaver, and sometimes by the cloth merchant, either wound on bobbins or in hanks. The warper is paid piece-rates. Likewise in sizing. This division of labour is a step in the right direction.

Sizing is a more important process than warping. The cotton yarn has a rough surface and the fibres do not unite. If the yarn is used as it is, it cannot stand the strain and friction caused in weaving. Sizing fastens the fibres together. It is the application to the yarn of a starchy or glutinous composition which, passing between the loosely compacted filaments, causes them to adhere firmly together and thus the better to resist the strain and friction involved in the weaving operations.

The primary object of treating the warps with size is to make the yarn smoother and stronger by laying down the loose ends of the fibres that project from the main body of the threads, thereby enabling them to more effectually withstand the tensile strain and friction to which they are subjected.

chiefly by the pulling action of the healds and the fingering action of the reed, shuttle and sley during weaving, together with as much retention of the natural elasticity combined in the yarn.¹

There are two methods by which warps are sized by the hand-loom weaver. One is to size the yarn in hanks before warping and the other is to size the warp itself. The former practice is said to be in vogue in Bengal. But in Madras, warping precedes sizing; and when the elasticity of the yarn is to be preserved, the yarn is lightly sized before it is sent to the winder.

The Madras method of sizing.

In Madras the yarn is sized after the warp is stretched; for, it is claimed, that if sized yarn is sent to the winder, the size is pulled off in winding and warping and the warp loses much of its strength.

The warp wound on the sticks is stretched on two pegs in the street. The size applied is of a very simple composition. Broken rice or ragi with gingelly or some other oil is boiled and it is applied to the warp and carefully brushed over and over again in such a manner that the size permeates to the interior of the yarn and the warp threads are dried uniformly and prevented from sticking to one another by constantly manipulating the lease-rods.

The bulk of sizing is now done by women and that explains why short warps are prepared. In some places where longer warps are employed, sizing is done by a number of men on a co-operative basis. The characteristic of the Madras system of sizing is its elaborate brushing process. The finer the yarn, the greater the number of times the warp is brushed. The greater the number of times the warp is brushed, the better is the warp. The difference in the quality in the sized warps of different places in the Presidency is due mainly to the varying degree of attention paid to the several details connected with the processes such as wetting, boiling, oiling and so forth. The present method of sizing is accepted to be quite satisfactory in quality but the process is tedious and

¹ D. M. Amalsad : *Hand-loom weaving in the Madras Presidency.*

costly and wasteful. And it has been often pointed out that it is here the hand-loom is chiefly beaten by the power-loom.

Drawing-in and Twisting.—‘Drawing-in’ is the operation of passing warp threads through the eyes of the healds in a sequence determined by the nature of the pattern to be produced and the order of lifting the several parts. This is necessary only when the healds are brought to use on the looms for the first time. After the first warp is woven the warp ends are not taken out of the healds completely but cut, so that when a fresh warp is required to be woven, the ends of it are twisted to the cut ends of the old warp remaining in the set of healds and reeds and the new warp is drawn through the eyes of the healds and the reeds. This is a laborious process and it may continue to be so. The automatic device for drawing-in can be used with advantage; it can save two hours for each warp.

Beaming.—The process of beaming is little known to the country weaver. It has become important since the advent of the slasher sizer. The country sizer delivers the warp in the ball form. If any attempts were to be made in distributing power sized warps to the weaver and in introducing the weaver’s beam which will give the warp the uniform tension, beaming will become more important.

The drawbacks of the present method of hand-sizing are: (1) it is extremely tedious; (2) it involves much time and labour; (3) only short warps can be sized and dried in the sun in the manner in which it is done; (4) excessive heat during the day or wet weather renders this process impossible; and (5) it is expensive in many localities where labour has to be paid for.

Mr. J. B. Clark compares the amount of human labour employed in the various processes of weaving in hand-loom and power-loom and shows that one person in the mill does what 195 persons are required to do in the preparation of the warp in the indigenous way while one power-loom weaver does the work of 16 weavers in the hand-loom.

The following table states the amount of human labour involved under respective systems of production; (1) power-loom, (2) hand-loom with fly shuttle sley and the country methods of winding, stick warping and street hand-sizing, and

(3) hand-loom with fly shuttle and weaver's beam and with hand-driven bobbin winding machine and hand sizing machine.

SPECIFICATION OF CLOTH 16S×16S, 38" 1440 ENDS, 36 PICKS
10500 YARDS

	Power-loom	Old hand-loom method (each Warp 25 yds.)	New hand-loom method (each Warp 100 yds.)
Winding	9 women	3,150 boys	250 (15 yds. per minute, 8 hrs. a day).
Warping, sizing } and beaming }	1 man 2 men	215 women	.70
Drawing-in and twisting	2 men	210 men	52
Weft winding	20 women	2,992 men	230
Weaving	71 persons (1 weaver for two looms)	1,135 weavers	875 weavers
	105	7,744	1,477

Thus it is evident that the hand-loom is weak first in respect of winding for warp and weft, secondly in respect of warping and sizing. But it must be borne in mind that the application of cheap and labour-saving appliances and methods to hand weaving should in no way interfere with the quality of the warp; for, if they should, the reputation for durability which hand-woven cloths have long been enjoying would be lost altogether.

With this object in view, certain improvements were made in the method of sizing and many kinds of sizing plant were patented. Sir Alfred Chatterton thought that sizing in hand-loom weaving should be done on a scale as it was done in power-looms, and he thought the improved Yorkshire Dresser sizer was the nearest approach to the slasher sizer used in mills; for it could retain the merits of the hand sizing and secure the economies of the slasher sizer and offer the basis for the hand-loom de-organisation. The advantages claimed for the dresser sized warp, are stated and examined below¹ :—

¹ D. M. Amalsad in his Memorandum to the Textile Committee of the Madras Legislative Council has stated the case for the Dresser Sizer.

(a) 'The dresser sized warp enables a loom to be kept employed for 45 days at a stretch as against only four days in the case of a street sized warp of 40 or 50 yards'. This is a material advantage. It saves 3 to 4 hours per warp which means an increase of about 10 per cent in the efficiency of the weaver.

(b) 'While the street sized warps are sold in the rope form, the power dresser sized warps are supplied in uniform sheets which unwind automatically as weaving proceeds, thereby saving the weaver the laborious task of spreading the warp every two hours as is necessary in the case of street sized warps'. The extent to which power sized warps can be adopted is limited by the financial ability of the weaver. In the absence of co-operative effort or other means of financial assistance, the poor weaver cannot adopt the power sized warp, however advantageous it may be. The rope warp is at present suited to his work. He can change easily the pattern of the cloth, its width, its texture etc., as is desirable. Such things are not quite easy in long warps. They can be used only where mass production obtains.

(c) 'The use of the power sized warps increases the daily outturn of the weaver by 10 to 14 yards'. Each weaver can increase his outturn by about 20 to 25 per cent and this, along with the introduction of a second loom in his family, would enable him to earn more..

(d) 'The price at which power sized warps are sold (in the Institute) at present compares favourably with the price paid by individual weavers for street sized warps'. This advantage is perceptibly great in respect of very fine yarn, as may be seen from the statements of cost of preparation under different methods. (Vide Tables pp. 136-139). But the reputation of the hand sized warp is a factor to be encountered in any attempt at popularising machine sized warps. The experiment of the power dresser sizer carried out by the Department of Industries and by a private merchant in Godavari District has not proved successful. This does not however mean that a proper trial has been made and it would be unfair to condemn the dresser sizer as an economic failure.

(e) 'If a power dresser sizing machine is set up the weaver will be able to obtain a continuous supply of warps

throughout the year, whereas street sized warps are not available during the monsoon and during the occurrence of excessive heat or wet or windy weather when street sizing has to be suspended'. This advantage of the power sized warp can now be secured by the cottage sizing plants invented by Amalsad and by Bhavaram which require less initial outlay. The latter has been more successful.

(f) 'Street sized warps when spread out on the loom take up a larger space than the power sized warp beam which requires very little space and thus enables the weaver to have two looms in the space occupied'. This is no great advantage. Even now the weaver makes most economical use of space. What he loses in space he gains in capital investment. But he would certainly stand to gain by adopting the two-loom-system.

(g) 'The power dresser sizer enables the weaver to abandon the wasteful preparatory processes and to introduce a second loom in his family. As a result of increased production obtained by increasing the number of looms operated by a weaver's family, the cloths turned out can be sold at a somewhat cheaper price, the merchant being thus enabled to find a ready market for his products particularly in localities where cheap mill made goods enter into competition'. This is the chief argument for the introduction of the dresser sizer. The adoption of the two loom system is rendered possible by it. It can increase the earnings of the weaver's family and reduce the price of hand woven cloth thus enabling it to compete with the power-loom. The power sizer and the two-loom system are so closely connected that the successful revival of the hand-loom industry depends on the success of the sizing plant which avoids waste of time and energy and reduces the cost of production. The dresser sizer has been tried at the Madras Government Textile Institute and also in Godavari District by a private merchant, but its commercial possibilities have not as yet been proved beyond doubt. There are certain difficulties in its introduction. It is rather difficult to find 200 weavers manufacturing the same kind of cloth. If different kinds of warps are used, changes in the reeds, etc., will involve a great loss of time and an increase in the cost

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of preparation.¹ Also the reduction in the cost of preparation in the dresser sizer is not enough to drive the cottage sizers from the field of competition. The street sizing—especially where small warps are in use—is distinctly cheaper than the dresser sizing. But it must also be admitted that no honest experiment has been made in regard to the commercial possibility of the dresser sizer and the establishment of warp distributing centre.

Certain improvements in the sizing plant have been made during the last 20 years. Mr. Amalsad invented one which enables the sizer to make long warps in a limited space even during rainy seasons. It is driven by hand. It can turn out 4 warps of 240 yards \times 500 ends of 20s every day, thus giving work enough for 24 weavers. The sizing plant is priced Rs. 1,500 and the working expense per pound is about 3 annas. However this sizing plant has not been a success. Except in the Textile Institute and large handloom factories nowhere is it in use. The causes of failure are firstly, it is believed that the hand-sized warp is superior to power-sized warp. Secondly, the initial cost is beyond the means of the weaver and the sizer. Thirdly, the use of the plant does not reduce the cost of sizing. Fourthly, facilities for extension of weaving by abandoning sizing where it is done by the weaver and his family are not present. Lastly, the weaver is poor and he cannot afford to invest so much capital in the purchase of long warps. There is no organisation to finance him. The cloth merchants are unwilling to finance him as the recovery of the loan would be difficult.

Another sizing plant was invented and worked by a Sourashtra, named Bavaram, in Madura. But it costs only Rs. 350. The machine requires the attention of 2 boys. About 800 yards of 240 threads are wound, warped and sized each day. It is sad to note that Mr. Bavaram had to close down his establishment as he could not have the required financial assistance from the Government for the preparation and sale of sized warps.

These hand-power sizing machines have not, however, become popular with the weavers. To be effective they must

¹ For every change in the warp, it takes nearly a day and a half to readjust the reeds etc

be so constructed that they may be capable of carrying out all the under-mentioned operations continuously and at a uniform tension without throwing even the least strain on the yarn :¹

- (a) withdrawing the yarn from the warp beam,
- (b) applying the size to the yarn uniformly,
- (c) brushing the size,
- (d) uniformly drying the yarn by blowing hot air on it,
- (e) dividing and opening the yarn,
- (f) applying oil to the yarn and
- (g) providing leases.

All the cottage sizing appliances so far placed in the market do not carry out all the operations to the satisfaction of the weaver. Besides they are highly specialised, making the treatment of different kinds of yarn difficult and costly. Their initial cost is another factor which accounts for their unpopularity with the weaver.

The advantages of the improved sizing plant like the dresser sizer, Amalsad's sizing machine and Bavaram's warping and sizing mill, over the indigenous method of warping and sizing may be stated thus :

Indigenous Method

1. The warp threads have no uniformity of tension.
2. Usually small warps not exceeding 30 yds. are prepared. So time is lost for every stoppage and joining of threads.
3. In the indigenous method, the warp is sized in the ball form which has certain advantages and disadvantages as well. For every yard or two of the warp woven, the unwinding of the warp and the shifting of the lease rod are necessary in which some time is lost.
4. The cost of production is less than in the improved sizing plant where small warps are prepared. Small warps being quite common, street sizing is difficult to be replaced.

Improved sizing plant

1. The warp is uniformly sized and has regularity of tension.
2. The time saved for piecing the warp threads is about 3 hours. In Bavaram's and Amalsad's usually the warp is 100 yards long; and in the Dresser sizer it is 500 yards. The time saved for each warp is proportionate to the length of the warp.
3. The warp is beamed and drawn through the healds and reeds and by a simple device the cloth can be wound on the beam and the warp can be unwound without much loss of time.
4. The cost of production is practically the same as in the indigenous process, perhaps a little less where long warps are prepared. But they are no practical proposition commercially where only short warps are required by the weaver.

¹ Correspondence of the Department of Industries, Madras.

The scope for the introduction of these improved sizing machines is at present very limited by the nature of the present hand-loom manufacture and the economic condition of the weaver and the weakness of the industrial organisation. So long as fashions favoured garment units the hand-loom prospered. But modern sartorial fashions depend on the tailor who requires piecegoods. Garment units may, therefore, be rapidly replaced by piecegoods in the production of which power-looms may easily claim an advantage over the hand-loom. Until the hand-loom captures the field of the power-loom and begins to manufacture piecegoods and not merely garment units, the adoption of the dresser sizer and other sizing plant cannot be an economic proposition. Even then the slasher sizer has an advantage over all the sizing plants including the power dresser sizer in respect of the cost of preparation. The object of further researches in cottage sizing should not be merely mechanical perfection but an appreciable reduction in the cost of preparation.

TABLE A.

Statement of the Cost of Preparatory Processes in Certain Weaving centres in the Presidency.

I. IN SALEM TOWN.

Rates for 20 hanks of grey or white.

	20s	40s	60s	80s	100s
	Pies	Pies	Pies	Pies	Pies
Winding ...	4	4	4	4	6
Warping ...	4	4	4	4	6
Sizing including ingredients ...	28	24	20	28	42
	RS A P	RS A P	RS A P	RS A P	RS A P
Total cost per pound of yarn ...	0 3 0	0 5 4	0 7 0	0 12 0	1 6 6

II. IN RASIPURAM.

Rates for 20 hanks of colour yarn.

	30s	40s	60s
	Pies	Pies	Pies
Winding ...	6	6	6
Warping ...	8	9	12
Sizing ...	14	15	15
	RS A P	RS A P	RS A P
Cost per pound ...	0 3 6	0 5 0	0 8 3

III. IN MADURA AND NORTHERN CIRCARS.*

Place	Count of yarn.	Winding.	Warping.	Sizing labour.	Sizing ingredients.	Total for 20 hanks.	Cost per lb.
		Pies	Pies	Pies	Pies	Pies	RS A P
Madura ...	20s	6	10	42	6	64	0 5 4
N. Circars...	"	6	6	18	12	42	0 3 6
Madura ...	30s	6	10	42	6	64	0 8 0
N. Circars...	"	6	6	18	12	42	0 5 3
Madura ...	60s	6	10	42	6	64	1 0 0
N. Circars...	"	6	6	18	12	42	0 10 6
Madura ...	120s	12	10	48	6	76	2 7 0
N. Circars...	"	6	6	21	6	39	1 3 6

* (Extracted from *Hand-loom Weaving in the Madras Presidency* by D. M. Amalsad.)

IV. IN MALLASAMUDRAM (Salem District)

Rates per 20 hanks.

					20s	40s
					Pies	Pies
Winding	...	...	...	...	3	3
Warping	...	...	...	...	3	3
Sizing	...	...	...	...	24	24
					RS A P	RS A P
Total per pound ..					0 2 6	0 5 0

TABLE B.

STATEMENT SHOWING THE ECONOMICS OF THE POWER
DRESSER SIZER

Machinery : non-recurring cost.

Winding machine, 200 spindles, warping machine, Dresser Sizer,
Mixing beek, gearing, boiler, stores, erection including. Rs. A.

20,000 0

Recurring expenses monthly.

	Rs. A.
1 Engine Driver	50 0
1 Fireman	25 0
1 Foreman for Sizing	60 0
1 Assistant sizer	40 0
1 Warp tender	25 0
Watchman and labour	20 0
Starch, oil and fallow	50 0
Fuel	200 0
10 Winders	100 0
Repairs and renewals	25 0
Rent of buildings	60 0
Depreciation on machinery at 5 per cent per annum	85 0
Interest at 4 per cent	65 0
Total per month	885 0

Production per month of 25 days : One hundred beams of 2,000 threads
20s 500 yards long each.

Net cost of production per lb of 20s : Re. 0 2 5 ps.

The reasonable price at which the warp can be sold is annas 3 per pound. The margin will be sufficient to cover charges of supervision, interest on working capital (which may be required to the extent of Rs. 10,000) and other contingent charges.

(N.B.—The estimated costs of preparation per pound of 30s, 40s, and 60s, and 80s are 4 annas, 6 annas, 10 annas and 16 annas respectively.)

TABLE C.

A Comparative Statement of the Economics of Amalsad's Hand Sizing Machine and the Street Sizing Method.

AMALSAD'S SIZING MACHINE

Price Rs. 1,500.

Production per day of 8 hours	...	{	4 warps each 240 yards long, 500 threads, 20s, can be made.			
				RS	A	P
			House Rent	...	20	0 0
			One turner	...	15	0 0
			Two attenders at Rs. 20 each	...	40	0 0
			Fuel	...	18	0 0
Cost of running for a month of 25 days as estimated by Amalsad.			Size	...	9	0 0
			Oil	...	3	0 0
			Interest and depreciation at 12 per cent.	...	15	0 0
			Repairs	...	5	0 0
			Total	...	125	0 0

			RS	A	P		RS	A	P	
Cost per day	...	5	0	0	{	Cost including winding charges	...	5	14	3
Cost per pound of 20s warp (warping and sizing only)	...	0	2	8	{	Cost per pound of 20s including winding, warping and sizing	...	0	3	2

STREET SIZING METHOD.

						RS	A	P
Winding 570 hanks at 3 pies per 10 hanks	...	...	...	...	...	0	14	3
Warping 570 hanks at 5 pies per 10 hanks	...	...	...	...	...	1	7	9
Oil, fuel and starch at 3 pies for 10 hanks	...	...	...	...	...	0	14	3
Wages for 8 men for sizing	...	...	...	...	...	4	7	3
Total Cost of Winding, Warping and Sizing 28½ lbs of 20s.	...	...	...	...	...	7	11	6

Cost per pound of warp 0 4 4

The cost of street sizing is a little exaggerated. Reduction in cost is possible in respect of warping and sizing ingredients. Still the cost of preparation in Amalsad's sizing machine is much less than in the street sizing method even if we include 14½ annas as winding charges. The sizing plant can be worked more economically in villages where house rent will be almost nominal. The saving in labour is also considerable. Still, the Amalsad Hand Sizing plant has not replaced the street sizing method for reasons stated in the text.

CHAPTER XII

THE TECHNIQUE OF WEAVING

WEAVING embraces only one section of the textile industry; for, felted, plaited, netted, hoisery and lace fabrics lie outside this definition. The process of weaving consists in interlacing two or more series of flexible materials. Notwithstanding this limitation, woven fabrics are varied in texture and have an enormous range of applications in the modern civilised society.

*Weaving Mechanism.*¹—The longitudinal threads of a fabric are called 'warp' and the transverse threads are called 'weft' or 'woof'. A loom for intersecting these several threads must provide for

- (1) shedding i.e., raising and lowering the warp threads in a predetermined sequence so as to form two lines between which the weft may be passed;
- (2) Picking or placing lines of weft between the divided warp;
- (3) beating-up or striking each weft thread into its appointed position in the fabric;
- (4) letting-off or holding the warp tense and delivering it as weaving proceeds;
- (5) taking-up or drawing the cloths as manufactured;
- (6) and for stretching the fabric widthwise in order to prevent the edge thread of the warp from injuring the reed and from breaking.

Besides these, the powerloom and all automatic looms must have mechanical contrivances to stop the loom when the weft breaks or is exhausted, or the warp is broken, or when the shuttle fails.

Shedding.—A hand-loom as used by the ordinary country weaver has all these simple devices. It has the warp coiled evenly on a beam (when the warp beam is used) or has the warp stretched on the lease rods and a part of it bundled

¹ Encyclopædia Britannica.

which is unwound whenever necessary. The warp thread passes, as weaving proceeds, alternately over and under two lease rods, then separately through the eyes of the shedding harness, in pairs between the dents of a reed and finally they are attached to a cloth roller. For small patterns healds are used to form sheds but for large ones a Jacquard or dobbie or chain device is required. Healds are usually made of twine or of twine loops attaching to bamboo shafts. Usually from 2 to 12 healds are employed in South India and the threads will be drawn through the eyes in a predetermined order. The upper shafts are suspended from pulleys and the lower ones are attached to treadles placed near the floor. The weaver depresses the treadles with his feet in a sequence suited to the pattern and thus the shedding is formed for the shuttle to pass through.

Picking and Beating.—The reed is the instrument by which weft is beaten into position in the cloth and the shuttle places the weft in the warp. The reed also determines the closeness of the warp threads and guides a moving shuttle from side to side. The reed is usually made up of cane or strips of flattened wire. It is placed in the lower portion of a batten, which is suspended from the upper frame work of the loom. In front of the reed and immediately below the warp, the projecting batten forms a race for the shuttle to travel upon from side to side. When the fly shuttle is used, a small contrivance is in use which throws it between the divided warp and catches it at the opposite selvage.

Thus now a treadle is pressed down by one foot to form a shed, the batten is pushed back till a sufficient portion of the shed is brought in front of the reed and the depressed threads lie upon the shuttle; a clear way is thus provided for the shuttle. A quick movement of the fly shuttle device projects the shuttle from one box to the other. (This is Kay's invention). The batten is now drawn forward and the reed beats up the weft left by the shuttle. As the next thread is depressed to form another division of the warp for the return movement of the shuttle the last length of the weft is enwarpd between intersecting warp threads and the remaining movements follow in regular succession.

The devices in the Indian hand-loom for holding the warp

tense and delivering it as weaving proceeds, and for drawing up the cloth as it is manufactured, are very simple. They are not automatic in most looms. The cloth is wound on a beam. The warp is bundled up. There is no uniform tension. Much time is usually lost in unwinding the warp and winding the cloth as weaving proceeds. A bamboo or a wooden stick with pointers at the end is all the device for keeping the width of the cloth fully stretched. As weaving is done, the weaver winds the cloth on the beam, unwinds the warp and stretches it and shifts the tension rod.

This is the ordinary mechanism for weaving; but large figured effects are usually produced in *draw-boy looms* where the warp threads are so controlled by separate strings that any assortment can be lifted when required. Therefore in weaving this kind of fabrics there is always a boy aiding the weaver in drawing the strings in the required sequence. But now the dobby and the Jacquard devices are taking the places of the loops, the pulleys and the draw-boy of the older shedding motions.

Between the primitive loom and the modern imported domestic hand-loom, there are many kinds of looms each differing in its construction and efficiency. Many improvements in weaving devices have been made during the last half a century to suit certain special needs. A brief study of them will be interesting.

The *pit-loom* is the most common in use in India. Formerly it was fitted with a throw shuttle irrespective of the kind of cloth it was intended to weave. But recently almost every pit-loom has been fitted with a flyshuttle. The pit-loom as found in the weaver's home is rather clumsy and primitive, but simple in its construction. The attempt to replace it by the frame-loom has not been quite successful, for it is claimed for the pit-loom, especially by weavers using very fine yarn, that (apart from the economy of space) it preserves favourable atmospheric conditions. The warp, being almost in level with the ground, enjoys the benefit of a greater humidity. Also the cost of the pit-loom is only half of the frame-loom and is decidedly cheaper and therefore is within the reach of all weavers. Its construction is simple. The village carpenter can make all repairs. In spite of the effort

to introduce frame-looms, improved and automatic looms, the pit-loom still persists, for the weaver is a hard-headed practical man. Sir P. T. Chetty, a weaver by caste and by profession, at the All-India Weaving Competition held in Madras in 1908 said: 'I am satisfied that the pit-loom with the flyshuttle arrangement attached will become the ideal loom and is bound to replace the ordinary country loom except of course in regard to the manufacture of solid bordered cloth. I have tried the Japanese, Churchill's, Raphael Bros., Hattersley and Sayaji looms but the results have not been satisfactory'.

The Frame-loom.—One of the earliest improvements made by the Department of Industries for the mechanical perfection of the pit-loom (which was defective in certain respects) was the introduction of the frame-loom. It was then very little realised that all the improvement that is now made on the frame-loom can also be made on the pit-loom. The only advantage that the frame loom now enjoys is the facility it affords for shifting from place to place. Probably the seating position of the weaver in the frame-loom is a little more comfortable than it is in the pit-loom. All this is no material consideration. And it is not a matter to be regretted if the weavers are unwilling to replace their pit-loom by frame-loom provided they adopt the flyshuttle sley which can be fitted easily to a pit-loom at a small cost of Rs. 10. It must also be noted that the wooden frame-loom is not sufficiently strong to bear the heavy treadling operations of jacquard weaving; nor can mechanical power be used in driving frame-loom without disturbing the tension and the stability of the loom.

During the last fifty years, there has been continuous experiment carried on in regard to the improvement of the hand-loom. The superiority of the power-loom lies chiefly in the automatic synchronisation and proper sequence of the different weaving operations—shedding, picking, beating, taking-up—and this tends to the rapidity of production. Compared to the hand-loom, the power-loom regulates the force and maintains the proper tension of the warp. Improvement in this respect has been the object of the non-automatic improved looms. Under this category come the Nagpur loom, Churchill's loom, Serampur loom, Lord Ampthill loom. Other improved looms are partially or wholly automatic

and some of them can hardly deserve the name of hand-loom at all. The domestic looms of Raphael Brothers and Hattersley, the automatic looms patented by Capt. Maxwell, Mr. Tikkekar and Mr. Shukla are imitations of the power-loom. A brief statement of their merits and demerits will be instructive.

The Nagpur loom is a type of the ordinary frame-loom used in the Government Hand-loom Weaving Institute in Poona. There is no automatic action; it is not cheaper than the ordinary frame loom; its speciality is that the picking operation produces less noise. But this is no great advantage in increasing the efficiency of the loom. Perhaps the mental strain on the weaver may be less. The weaver may not be fatigued by the monotonous noise.

Churchill's loom.—Mr. Churchill who took out a patent in his name was a very enthusiastic worker of the American Mission at Ahmednagar. The chief advantage claimed for his loom by the inventor is that it combines some of the automatic actions of the power-loom without depending on mechanical power. Automatic looms intended to be driven by mechanical power are unsuited to the weedy Indian hand-loom weaver. A loom which can be operated by man-power and at the same time possesses certain merits of the power-loom was considered by him to be suitable to the conditions of the Indian weaver. In his loom picking, beating and taking-up are combined. Shedding is done by the weaver by pressing the treadle with his feet, and picking is effected by his hand. The rate of picking in this loom is a little more than in the ordinary flyshuttle loom, but the mechanism for timing the throw of the shuttle is defective. The warp thread often breaks because the sley has to be worked with a jerk. So the effective rate of picking is not appreciably greater. It is also found that it is not quite suited to the weaving of very fine cloths. It is now in use in certain weaving schools in Ahmednagar and Poona districts for weaving sheets and durries. Beyond that it is not in use.

There are three other looms which deserve a brief mention. Mr. E. B. Havell speaks very highly of the loom in the Weaving Institute of Serampur. The *Serampur loom*, as it is called, is an ordinary frame-loom with slight modifications.

A Sourashtra of Madura patented an improved loom, called *Amphill loom*, but the commercial possibilities were never explored; nor could new improved devices be patented by him as the banks refused to finance him. But neither of these looms is much in use. In the Punjab certain looms, called the *Japanese looms*, were imported and worked for some time. But textile experts have unanimously condemned them as being absolutely unsuited for India. They were found working in Ludhiana by Sir A. Chatterton in the manufacture of very coarse cloth. It is said it is not very much in use even in Japan.

Automatic looms.—Among the automatic looms the *Domestic Loom of Hattersley* comes first. Messrs. Hattersley are manufacturers of textile machinery of long reputation in Lancashire. They have patented a loom almost on the model of the power-loom which is automatic in respect of picking, beating, taking-up and shedding etc., which is fitted with weft-stop motion and which can be manipulated both by mechanical and man power. It has about 350 parts. The Departments of Industries of some of the Provincial Governments in India and some industrial enthusiasts thinking that rapid mechanisation of handicrafts alone could bring about industrial revival, imported a number of Hattersley Domestic Looms for the rejuvenation of the hand-loom industry. Their attempt to introduce the heavy looms with iron frame work and complicated mechanism into India where conditions are different from Europe, where these looms are said to be successful, proved a failure. In the beginning of this century a number of looms were imported but almost everywhere except in Western India (Poona, Surat and Sangli) the loom was not popular. Even in the weaving institutes it is relegated to the museum. Its failure is due to (1) its high price, (2) its unsuitability to manufacture the kind of cloth that is usually woven on hand-looms in India out of the yarn generally available, (3) its great demand on human power and its unsuitability to the temperament of the hand-loom weaver, (4) its complicated mechanism, (5) the difficulty in replacing worn-out parts, (6) the absence of cheap power which alone can make the establishment of commercial units possible as it is found in Japan, Scandinavia and Wales and (7) the

unsuitability of the country warping and sizing methods. Though the rate of picking is great, the efficiency of this loom is greatly reduced by the too frequent snapping of warp threads.

In the Salem Hand-loom Factory it was tried but was found unsatisfactory. The loom was far too heavy for the native weaver. It is satisfactory if driven by mechanical power but when the source of power is the weaver, the supply is irregular even if two weavers work; and the results are unsatisfactory.¹

In regard to the suitability of the Hattersley Domestic Loom to Indian conditions, the controversy between Sir A. Chatterton and E. B. Havell is interesting. The latter makes a very spirited defence of this loom which was severely criticised as the 'dilettantism of the artists' by Chatterton :

'Though Mr. Chatterton has condemned off-hand Messrs. Hattersley's looms as being too heavy and complicated for the weaver, the fact remains that they have been already successfully used in a hand-loom factory in Ganjam and many other places. They have been fitted up and repaired by an ordinary village blacksmith and worked by an ordinary weaver Messrs. Hattersley have made a number of hand-looms for Roumania and have revived the hand-loom weaving in the Balkan States. They have studied all the technique and local conditions under which the hand weaving in India is now carried on and have placed their manufacture on the market. A number of looms have also been imported every year for hand-loom factories. They have now overcome the difficulty of beaming and sizing warps by hand with their latest hand power beaming and slasher sizing machines designed for an output of about 50 hand-looms. These are two of the most difficult technical problems connected with Indian hand weaving. The beaming machine is for putting yarn on to the warper's beam direct from the warping bobbins by hand and the sizing machine is for sizing yarn as it passes from the warper's beam on to the loom

¹ Sir A. Chatterton.

beam. Messrs. Hattersley have produced a simple and excellent warping mill and reel, weft winder, warping bobbin, pirn winder and also special looms for weaving heavy fabrics, silk, woollen, linen etc'.¹

In spite of this application of great scientific and mechanical knowledge to the hand-loom weaving by Messrs. Hattersley, it is significant to note that very few looms have been imported and many of them remain idle.² They are not at present employed on any large scale even where hand-loom factories are established. Evidently they can become commercial units not as hand-loom but as power looms driven by mechanical power such as electricity or oil engines. In Roumania, Scandinavia, and Japan they are extensively in use because power is cheap. Till electrical and mechanical power becomes very cheap the hope of introducing these looms cannot be realised. There are other questions as facilities of finance and marketing before the weaver can be expected to adopt this loom which requires more capital. It must also be remembered that even when they are introduced it can hardly be claimed that they would revive the hand-loom industry and solve the unemployment problem but it would tend towards the dispersion of the factories and the establishment of smaller weaving units which would avoid the conflict between capital and labour and all the evils of the factory system and urban overcrowding.³

¹ E. B. Havell : *Artistic and Industrial Revival in India*, pp. 186-188. "

² The writer is told that there are about 2000 Hattersley looms working in Surat where they are driven by hand. But in Poona Sangli and also in Bangalore, where they are in use, they are driven by mechanical power. But in such cases, they can hardly be called hand-loom. The writer understands that if electric power is employed even one loom can constitute a commercial unit ; but when power is generated by an oil engine 3 to 4 looms will be necessary to make an efficient unit.

³ Sir A. Chatterton was not alone in condemning the Hattersley loom : W. A. Beardsell of Messrs. Beardsell & Co., Madras, in his evidence to the Indian Industrial Commission says : ' We imported a loom called the Hattersley, about six of them. The loom was operated by the feet. . . . We are told that it had worked very successfully in several countries in the Continent. The speed was from 200 to 250 picks per minute. Our experiment with the loom was not successful. The difficulty we experienced was that the loom was very much heavier to work than the country loom and there is a greater strain on the yarn used. We experienced constant breakages and eventually gave up any idea of making use of the looms which were finally handed over to the Industries Department.'

I. STATEMENT SHOWING THE COMPARATIVE COST, RECURRING EXPENSES AND EFFICIENCY OF DIFFERENT HAND-LOOMS IN USE.

Name of the loom	Cost		Annual recurring cost	Average daily outturn for 8 hrs. ¹	Average effective picking per minute.	Average rate of picking per minute.	deal rate of picking at competitions	Maximum count of yarn that can be used.
	Rs	Rs						
(1) Pitloom with throw shuttle.	20	...	...	Yds. 3 to 4	15	30	50-60	any counts
(2) Pitloom with fly shuttle.	25	...	...	5 to 6	25	60	80-100	80s single
(3) Frame loom with fly shuttle.	30-45	...	...	5 to 6	25	60	80-100	80s single
(4) Nagpur loom ...	45	5	5 to 6	5 to 6	25	45	80-100	80s single
(5) Salvation army .	100	10	5 to 6	5 to 6	25	45	50-60	only double yarns
(6) Churchill's loom	80	8	7	7	30	45	60-70	Do.
(7) Koshikalyan loom.	80	8	7	7	30	45	60-70	Do.
(8) Gomati loom ...	150	15	8	8	35	75	80-100	Do.
(9) Hattersley 50" width.	375	...	16	16	60	60-80	90-100	any yarn
(10) —Do.— driven by mechanical power.	...	...	27	27	100	140-160	180-200	any yarn

II. STATEMENT SHOWING THE COST AND EFFICIENCY OF CERTAIN APPLIANCES USED IN PREPARATORY PROCESSES.

Name of the plant	Price	Number of workers required.	Outturn per day of 8 hours.
(1) Country warping mill ...	Rs. 75	one	100 yds. of 2000 ends of 20s.
(2) Vertical warp mill with slide lease mechanism.	Rs. 2	one	5 to 6 lbs. of 20s.
(3) Winding for warp and weft ... (a) on charka ... (b) on hand-driven winding machine with six bobbins.	Rs. 250	one	30 to 60 lbs. of 20s.
(4) Doubling machine ...	Rs. 150	one	24 lbs.
(5) Weaver's beam with one drum.	Rs. 75	one	250 yds.
(6) Weaver's beam with three drums.	Rs. 150	one	Used for different counts and coloured warps 150—200 yds.

The *Automatic Domestic loom of Messrs. Raphael Bros.*, like Hattersley's, is for all intents and purposes a powerloom and so its defects become pronounced when worked as a hand-

¹ The daily outturn is based on the assumption that 40s grey yarns are used for warp and weft and that the width of the cloth is 50" and that the number of picks per inch is from 52 to 56.

loom. Sir P. T. Chetty got one which was tried by Sir Alfred Chatterton in Tondiarpet factory. It was found much too hard to work for the undeveloped feet of the weaver. It was made of cast iron and so its parts were often easily broken. It was also found that it could be a commercial proposition only, if it were worked in a small factory with a number of other looms driven by mechanical power. It is now realised that a power-loom converted into a hand-loom is an unsatisfactory machine owing to the irregularities in the driving force.

Both Hattersley and Raphael looms being found unsuited to Indian conditions, certain new inventions, embodying the virtues of the automatic loom but at the same time not depending on mechanical power were made. These improved looms are the Salvation Army loom, Koshti Kalyan loom and Gomati loom. All of them are partly or wholly automatic. Capt. Maxwell was the inventor of the *Salvation Army loom*. Its peculiarity is that picking is automatic depending on the movement of the sley; so the rate of picking is great; but the sley works with a jerk as the power applied to it is irregular and the efficiency, therefore, suffers. The loom works satisfactorily on coarse yarn but is found unsuitable for fine counts. The *Gomati Patent loom* can weave up to 200s. It is mainly made of wood on the same principle as the Hattersley loom without so much of complicated mechanism. It was invented by one Mr. Shukla who was an ordinary labourer in an Ahmedabad mill. He has received no special education. It is automatic in respect of picking, beating, letting-off, taking-up and shedding, but it has no device for stopping the loom when the weft or the warp thread is broken. It differs from Hattersley's in that it has the underpicking mechanism. The patent was taken out last year. Mr. Shukla himself is employing about six looms which are worked by ordinary labourers. The *Koshti Kalyan loom* patented by Mr. Tikkekar is different from Shukla's loom chiefly in respect of driving power. It has not, however been adopted elsewhere. There are certain defects in the loom which must be removed. As the driving power is applied from one of the sides of the loom, it is not possible for the weaver to supervise the whole warp when weaving proceeds. Being made of wood it is

shaky; and there is no mechanism for keeping the warp in tension. There are no proper *temples*.

A new loom was recently invented by Mr. N. Banerji of the Government Central Weaving Institute, Amritsar. It is called the *Double Production loom* where two warps are woven at the same time. The object of it is to increase the outturn of the weaver and consequently his purchasing power. Two cloths are simultaneously made one over the other. The mechanism of the loom is also said to be simple. It consists of a double production loom and a sley frame having combined sley-races with boxes on each side one above the other. The bottom sley race is fixed to the sley frame and the top sley race is moveable when required. Shuttle boxes are fixed on each side of the sley races and the upper box has a spindle; a common picker works for both boxes sliding on the spindle. The picking is done with one hand and the sley moved by the other, so that weaving is continuous. The warps are drawn through rows of eyes in a common heald-shaft and are connected and operated by treadles which also rotate separate cloth beams. The loom can easily be manipulated by hands and feet. Also it can be fitted with a dobby or Jacquard machine. Winding of cloth on beams is automatically done and consequently the number of picks is uniformly inserted into the cloths throughout. The number of picks per inch can be increased or decreased as required by adjusting the connecting rod. A mirror is placed on the left side of the loom which helps the bottom cloth as well as the bottom warp threads to be seen clearly as the warp images on the mirror and the worker can easily detect if any thread is broken. The price of the loom varies from Rs. 60 to Rs. 100.¹

Attempts to popularise the automatic looms have not succeeded. About 2000 narrow Hattersley domestic looms are said to be working in Gujarat. Domestic looms have also been recently installed in Bangalore and Poona driven by electricity, and in Sangli by oil engines. Other types of looms are also found working in certain centres; but their number

¹ Taken from the pamphlet issued by the inventor.

is negligible. The most common loom is the country loom fitted with flyshuttle sley and dobbie. Their popularity is due to their cost being low and so within the reach of the weaver, and to their serviceableness in weaving cotton cloths of counts upto 150s and in weaving silk goods even at 50 picks per minute. Besides, they are light and easy to handle yet sufficiently strong for making cloths of medium weight; they can be fixed to the existing frames in the weaver's home and they enable the weaving of wider cloths which is difficult in the throw shuttle loom.

Besides these looms certain improvements in the weaving appliances have also been made mainly by the efforts of the Provincial Department of Industries. First comes the flyshuttle sley which has doubled the production in coarse counts and has increased it by 50 per cent and 25 per cent in the case of medium and fine counts respectively. Hand-power machinery for winding, warping, doubling, sizing and beaming have been evolved. Excepting the sizing machinery others are now slowly adopted by weavers. Multiple-box sleys for weaving cloths requiring different coloured wefts, tape sleys for weaving a number of tapes at a time, swivel sleys for producing figured-spot effect in fabrics, and jacquard machines for speeding-up production of richly embroidered cloths have also been introduced. But due to their cost the jacquard machines are not commonly employed by hand-loom weavers; but small ones made in the country for weaving figured *dhoties* and *angavastrams* are now becoming popular with them.

The economies effected by several improvements made in the weaving appliances that are now generally adopted by weavers may be stated thus: (1) the flyshuttle sley has increased production by 25 to 100 per cent; (2) the dobbie has dispensed with the draw-boy and avoids the employment of children; (3) the jacquard harness saves a great deal of labour. For example, it takes twelve days for a man to lace up the threads, while in the country chain harness the same work requires 24 days for a man and a boy. For weaving a particular design it takes for a man $5\frac{1}{2}$ days in a loom fitted with a jacquard harness while in a loom with the country harness it can be done by one man and one boy in ten days.

Still there is ample scope for the improvement of the weaving appliances. The direction in which further development of the hand-loom may profitably take place lies in increasing the outturn per loom. At present the effective number of picks is only a third of the ideal number of picks. This can, of course, be improved if better qualities of yarn are obtained for hand-looms than what are at present available. Still the time now lost in mending warps and filling and changing shuttles is considerable and if these are done while the loom is working without an appreciable increase in the price of the loom, its efficiency can greatly be increased. Further lines of development of the mechanism of the loom which can be pursued with advantage are: (1) its speed must be increased approximately to that of the power-loom; (evidently this depends on the weaver himself when mechanical power is not employed) (2) the loom must be adaptable to all ordinary widths and fineness of cloth; and (3) a solid-bordered sley must be evolved; for, this would help the weaver most.

In improving the mechanism of the hand-loom or in introducing labour-aiding appliances certain conditions must be satisfied, the failure of which accounts for their not being adopted by weavers. They must be cheap so as to be acceptable to weavers. They must be capable of being manipulated by man-power, which, fortunately or unfortunately, will remain in India for a long time to come cheaper than mechanical power. They must be capable of being manufactured in the country itself so that the labour displaced by their introduction may be absorbed to some extent in their manufacture. They must have some economic advantage over the country plant if their introduction is to be successful. In short, these appliances and improvements in the mechanism of the loom to be serviceable must be simple in construction, cheap i.e. within the reach of the poor weavers, durable in proportion to cost, reliable under prolonged trial, easy to repair and capable of satisfactory erection in the homes of weavers.

CHAPTER XIII

THE STATE AND THE HAND-LOOM INDUSTRY

Early attempts made to improve the cotton hand-loom weaving in the Madras Presidency

THE rapidly declining economic condition of the weaver during the nineteenth century as a result of mill competition attracted the attention of the Madras Government. But till 1900 all that Government had done for the hand-loom industry—nay, for all cottage industries,—was to revive the artistic aspect of the industry rather than to improve its mechanical equipment or organisation. It hardly realised, in its blind faith in the mechanisation of industry, that the rejuvenation of artistic industries and luxury arts could touch only the fringes of the problem of industrial development, and that the proper method would lie in the revival and development of indigenous useful arts.

In 1900 Mr. Alfred Chatterton was placed on special duty to study the condition of the weaving industry and to suggest remedial measures for the amelioration of the condition of weavers who were hard hit by power-loom competition. As a result of his report, the hand-loom weaving section was opened in 1901 and experiments were conducted in the School of Arts and Crafts, Madras, with flyshuttle looms capable of producing a greater output of cloth than the country hand-thrown-shuttle loom. After a few years of experiment, the department made certain unsuccessful attempts to induce the weavers to leave their homes in order to receive free training in the working of improved looms including the imported automatic domestic looms. Weaving competitions and practical examinations in flyshuttle weaving were then held among the weavers and prizes were awarded with a view to stimulate their interest. As even these steps did not induce them to come forward to learn the improved methods of weaving and as the belief that the factory organisation of the hand-loom weaving could alone bring about its ultimate prosperity was gaining ground, the department started in 1906 a weaving factory in Salem and endeavoured to get local weavers to work therein. The factory worked for five years but it failed in its main objects of introducing the

imported domestic looms among the weavers and of attracting hereditary weavers to the factory. As it was then recognised that the preparation of yarn was the crux of the problem of hand-loom weaving, the department turned its attention to the improvement of the several processes preliminary to weaving. Some efforts were made in Salem factory to improve upon the crude and costly traditional methods of sizing cotton yarns. Also an attempt was made to obtain the economies of the slasher sizer by introducing power sizing of warps required for hand-looms. Power driven machinery was ordered for sizing yarns in skeins. Now the imported looms proved to be unsatisfactory and they had to be scrapped. The department now realized that the future of the industry lay not so much in the wholesale importation of Western methods and ideas but in the improvement of the indigenous processes. As mechanical sizing could not be replaced by any ingenious device which could be operated by hand, it had to be given up altogether and attention was then turned to the introduction of hand-driven warping mills of the types used in European countries to replace the second of the preparatory processes viz. the peg or stick warping which was in vogue. Further work on these lines was however cut short owing to the change in the Government's industrial policy. As a result of it the Salem factory was closed. Mr. Chatterton was then made the Superintendent of Industrial Education working under the Director of Public Instruction and he was not to 'demonstrate commercially by the establishment of factories the merits of new industries and new processes'.¹

¹ These are the words used in Government Dispatches. The Secretary of State for India by his Dispatch of 29th July 1910 made short work of the resolutions of the Industrial Conference requesting the Government to actively assist in the industrial development of the country and to have a comprehensive programme of economic development, to control education, to pioneer new industries, to improve industrial processes, to establish a bureau of industrial information and an industrial museum, to render financial assistance to industries directly and indirectly, to provide expert advice by appointing textile, dyeing, tanning and other experts and to organise a Department of Industries under a Director of Industries. The Dispatch of the Secretary of State observed, 'the utility of State effort in these directions, unless it is strictly limited to industrial instruction and avoids the semblance of a commercial venture is doubtful' 'The policy which I am prepared to sanction is that State funds may be expended upon familiarising the people with such improvements in the methods of production as the modern science and the practice of European countries can suggest; further than this the State should not go and it must be left to private enterprise to demonstrate that the improvements can be adopted with commercial advantage.'

Thus tragically and prematurely terminated a beginning well made of good intention and sound policy.

However, when in 1913 Government revised its policy and transferred the control of the weaving section from the Revenue Department to the Director of Public Instruction, it was decided that the best way to convince the weaver of the efficiency of the fly-shuttle sley was by demonstrating it at his very door and accordingly the Educational Department organised a peripatetic party for work in the southern districts of the Presidency. As this proved a success a second party was started in the following year for work in the Northern Circars. Meanwhile the control of this branch was transferred from the Department of Public Instruction to the then newly formed Department of Industries. Later on a Textile Institute was established in Madura and a building was constructed at a cost of nearly a lakh of rupees in the hope of affording instruction to weavers and dyers from all parts of the Presidency in improved methods of weaving and dyeing; but as the building subsequently proved to be ill-designed and unsuitable for the purpose of the Institute, it was finally given up. By the outbreak of the War further work was hampered. Thus during this period all that was done by the the Madras Government towards the technical improvement of this industry was the introduction among weavers of flyshuttle sleys which increased their production. But owing to the absence of facilities for marketing their goods, the weavers usually worked for shorter hours and failed to have the full advantage of increased production. Thus their economic condition after twenty years remained practically the same. In the direction of education and propaganda Government conducted certain weaving schools, organised peripatetic parties and in the field of co-operation started co-operative societies for weavers, both credit and non-credit. Beyond that very little was done by the State and this was due to the lack of a definite industrial policy.

But with the War and the Reforms came a change in the attitude of the Government of India towards industries and economic development of the country. It was thereafter to play a positive rôle in the industrial development. The Department of Industries was strengthened. The Director of

Industries now recognised the magnitude of the hand-loom problem and on his recommendation the Madras Government appointed a Dyeing Expert and later on a Textile Expert in 1919. A separate textile section was instituted in the Department of Industries. This marks the beginning of the earnest effort of Government to aid the hand-loom industry. Realising that the prosperity of the hand-loom weaver depends as much on silk weaving as on cotton weaving, the Madras Government later appointed a Sericultural Expert to develop sericulture. The Textile Expert as the head of the Textile section of the Department of Industries was charged with the duties of laying down lines on which instruction should be given in the Textile Institute. At present with an annual grant of about Rs. 1,00,000 the textile section has grown. All branches of textile industries, cotton, silk, woollen and coir have received the attention of the section and it has also dealt with dyeing, sericulture, technical education, research in textiles and propaganda. Much has been done during the last fifteen years, though much more still remains to be done.¹

WHAT THE GOVERNMENT DOES FOR THE HAND-LOOM

INDUSTRY

The assistance that Government at present renders to the hand-loom industry in the Madras Presidency through its various departments can be dealt with under the heads: (1) education, (2) research, (3) propaganda, (4) finance and (5) co-operation and business organisation.

Education.—It was recognised long ago that the work of bringing the younger generation of the weaver class under the influence of modern methods and of initiating them early into the use of improved appliances is of vital importance; but the earlier measures to impart instruction in practical weaving in the School of Arts and Crafts were both inadequate and unsatisfactory. Hence it was suggested that primary schools in weaving centres should include in their curriculum some form of manual training in weaving. Vocational schools were

¹ D. M. Amalsad, Memorandum to the Textile Committee of the Madras Legislative Council, 1928.

started by Local Bodies, the Labour Department and Missionary organisations; but the instruction given in these schools, as it was pointed out by the then Director of Industries, was not of the nature which would ultimately help the children of the weavers to take their place in the organisation of the industry as desired by the Department. This is equally true of the instruction given in the denominational industrial schools aided by government grants. The mere grant of financial assistance to schools running weaving sections was more in the nature of indiscriminate doles than of assistance to hand-weaving. The majority of them are no more than ill-equipped hand-loom factories and the training given does not help the pupils to earn an independent livelihood. Further they have failed to attract weavers' children and to turn out competent craftsmen and captains of industry. Besides, these schools were ill-equipped for teaching and were understaffed and it would be too much to expect them to carry on researches or effect improvements in the practice of weaving.¹

A central textile institute imparting a theoretical knowledge and giving a thorough practical training to students in modern methods of work and combining the power-loom and hand-loom processes was a desideratum of the industrial educational policy. It was only recently that the want was met by the establishment of the Textile Institute at Madras. It began work in 1922, and was placed under the control of the Department of Industries. The Textile Expert was to be the Principal of the Institute. Its object was to impart to the students theoretical knowledge and to give them a thorough practical training in modern methods of work, to evolve labour-saving appliances to suit the requirements of the weavers in the Presidency and to set up and work such types of power plant as could be suitably linked with the various textile cottage industries with a view to organise and place

¹ There is a considerable measure of agreement on all sides that the weaving schools and parties fail to reach, as satisfactorily as might be desired, the right classes of people and do not go far to solve the problem of rural poverty.
—*Report of the Department of Industries, Assam, 1931-32.*

Industrial schools are understaffed and ill-equipped arts and crafts depots.
—*Report of the Department of Industries, Punjab, 1930-31.*

them on a commercial basis.¹ There are two courses of instruction, (1) the supervisors' course training captains of industry who would assist in the organisation of the industries and (2) the artisans' course turning out efficient artisans. The Institute is well equipped for research work and for practical training in different branches of textile manufactures.

Education and training in this Institute has so far fitted men to be teachers in weaving schools or demonstrators in Government peripatetic parties. It has not yet succeeded in training men to set up businesses of their own on up-to-date lines. Nor has it attracted many students from hereditary weavers from mofussil parts. They will not naturally be attracted to a place so far removed from their homes in distant districts. The Special Officer for Cottage Industries recommended the establishment of a peripatetic weaving school. The suggestion, though excellent as providing education to the weavers at their very door, is not feasible. For the school to yield permanent results must be continuous and not itinerant. Unlike travelling exhibitions and weaving peripatetic parties, the work of the school is not propaganda but the rearing up of successive generations of artisans skilled in their work and conversant with modern practices. For that purpose industrial schools as well equipped as the Textile Institute must be established in suitable weaving centres. To attract weavers' children to such schools the system of paying them for work done in schools along with the practice of giving stipends must be introduced. It must be well understood that the object of the industrial school is to afford training and education in improved methods of manufacture and business organisation preferably to weavers' children with inherited skill and dexterity.

¹ The objects of the Textile Institute as stated in G.O. No. 668 are :

1. to manufacture various types of hand-loom and hand-driven warp and weft preparation machinery for the requirement of the several classes of weavers and to serve as a central distributing factory for the supply of improved weaving appliances and accessories connected with the hand-loom industry including special warp and weft preparation machinery,
2. to produce and supply machine-warps and to demonstrate to hand-loom weavers the economy of such warps,
3. to afford practical training to weavers and *maistris* engaged in hand-loom weaving in schools,
4. to serve as a permanent museum of all types of hand-woven products, improved looms and accessories, and

Research.—The Textile Institute at Madras is equipped with the necessary appliances and machinery for the improvement in the methods of manufacture and for evolving new appliances suitable to the cottage worker. A power dresser sizer, a woollen power-spinning cottage plant, instruments for the testing of cotton yarn, appliances for silk reeling and twisting and aerograph printing, a well equipped laboratory, different kinds of looms, automatic and otherwise, hand-driven machines for sizing, warping, bobbin winding, pirn winding, doubling etc. and plant for generating power are all now housed in a suitable building in Washermanpet, the weaving centre of the city of Madras.

Mainly due to the efforts of the Textile section of the Department of Industries improvement of different appliances has been made. Fly-shuttle sleys, suitable hand-power machinery for the different preparatory processes as hand-power warp and weft winding machines, hand-power beam warping mills, machines capable of sizing yarns in hank and sheet form, beaming machines for winding coloured and grey warps on weaver's beam, hand-power doubling machines for twisting twelve or more threads at a time, multiple box sleys for weaving cloths with wefts of different colours, tape sleys for weaving a number of tapes at a time, swivel sleys with rack and pinion for weaving figured spots, various types of dobbies for weaving damask etc., jacquard for weaving figured garments, cottage plant for dyeing, printing, silk reeling, have been improved to suit cottage workers. Attempts are now made to evolve a plant for sizing coloured yarns which are used extensively by hand-loom weavers in the Presidency. It is true that evolution of new cottage plant is not merely the work of the textile expert but it is the work of both the textile expert and the engineer. Further progress in research regarding textile cottage plant cannot be made unless the required technical assistance of a highly trained mechanical engineer also conversant with the practices in textile industries is forthcoming. At present the Industrial Engineer, it is stated, cannot give enough co-operation to the textile

5. to serve as a research institute in which experiments can be carried out in various problems in connection with the textile industries which will await solution.

section.¹ Considering the magnitude of the hand-loom industry it would not be a waste to appoint a textile engineer, if necessary, on the staff of the Government of India whose services will be available for the textile experts of the provinces. The research staff of the textile section must be further strengthened by the appointment of a Dyeing Expert assisted by expert dyeing demonstrators. Introduction of new designs and patterns must be the special function of the Textile Department.

Researches in the processes of manufacture as would eliminate waste of time, energy and material are equally important. Evolution of better tools and plant depends on the processes of manufacture and on the conditions under which the industry is to be carried on. The substitution of mill warping and sizing for the indigenous street warping and sizing was mainly the work of the Textile Department. The department now endeavours to eliminate the waste of labour and time involved in the indigenous preparatory processes and to reduce the cost of production by applying the principle of the power dresser sizer to the cottage sizing plant. Though the former object has been realised to some extent, the newly evolved Amalsad Sizing Machine and the cottage sizing plant have yet to achieve the latter object in view. The department attempted to distribute power dresser sized warps to weavers with a view to educate the weavers in the economies of central warp distributing factories, but the attempt has not been so far successful.

Propaganda.—The Textile section of the Department of Industries was charged with the duty of disseminating the knowledge acquired in the research section of the Textile Institute respecting improved methods and appliances and of popularising by demonstration such of those methods and appliances as are found suitable to the conditions of the weavers and promise a better future to the industry and its workers. Peripatetic weaving parties were started in 1913 but in their earlier years their work suffered very much as there was no Textile Institute and, therefore, no training could be given to the members of the weaving parties. The work

¹ Memorandum of D. M. Amalsad to the Textile Committee of the Madras Legislative Council, 1928.

of the parties was, therefore, restricted to the demonstration of flyshuttle sleys and dobbies. In recent years, however, the activities of the parties have been directed to the demonstration of the hot-air sizing machine with a view to pave the way for the ultimate establishment of warp distributing centres with power dresser sizer. Side by side with this there was the attempt to demonstrate the advantages to be derived by the use of warps made in the power dresser sizer established at the Textile Institute. But the experiment, for want of financial assistance to weavers and lack of marketing facilities, was not a success. There were twelve weaving parties at one time working in different parts of the Presidency and they are now reduced to three, partly as a measure of retrenchment and partly, it is said, as the adoption of simple appliances has sufficiently advanced there is very little work for so many parties in the districts. In a province with 225,000 looms and 400,000 weavers twelve weaving parties cannot be too many.

The peripatetic parties have carried to the very homes of the weavers the successful experiments carried out in the Textile Institute; but the one weakness of the system is that the parties do not stay long enough in any one place to get their methods firmly established. Nor do they revisit the places to help the weavers over any difficulties that may have cropped up since they adopted their methods or their appliances. The weavers must be taught the adaptability of these methods and appliances to the different kinds and qualities of cloths. Otherwise they would discard them. An organisation is necessary for helping the weavers when difficulties present themselves and for reaping permanent advantages from the peripatetic system. Permanent weaving schools in important weaving districts with proper technical equipment and trained staff may perhaps answer this purpose.

Other forms of propaganda and education that the department has adopted may be mentioned. Weaving competition was held in the earlier years. Now the publication of the departmental bulletins is the only method of propaganda other than the peripatetic weaving parties. The department must organise textile exhibitions of appliances and improved methods of designs and patterns and hold weaving competitions, award prizes for improvements effected in the appliances

used or in the methods of manufacture. This would not only be educative but will also stimulate the inventive faculties of the weavers.

Financial assistance.—Apart from the organisation of the Salem weaving factory, the experiment carried at Itchapur for a short time to run a yarn depot on co-operative basis, the grant of financial aid to weaving schools and the establishment of the Textile Institute and weaving parties, the direct financial assistance given by Government to the hand-loom weaver was nothing prior to the passing of the State Aid to Industries Act in 1923. Even now the extent of State financial aid to the weaver is restricted. The directions in which the Government can assist the weaver are many. The weaver wants financial help for different purposes, e.g., for setting up a new loom, for purchasing cottage plant for warping and sizing and jacquard weaving, for the purchase of yarns and for tiding over temporary difficulties, especially when he withholds his manufactures from the market in anticipation of a rise in their prices. The co-operative societies provide these facilities to some extent but the State must supplement their work and finance pioneer efforts.

The State Aid to Industries Act empowers Government to assist industries with finance directly and lays down the conditions to be fulfilled by industries demanding State assistance.¹ The conditions of the 1923 Act made financial aid practically unavilable for the poor weavers. An amendment to the Act was made permitting Government to sanction loans to weavers on special terms. Amounts not exceeding fifty rupees may be granted on personal securities to weavers, repayable by instalments on the recommendation of the Department of Industries. But the Act, like the Land Improvement Act and Agricultural Loans Act, has not been much availed of by weavers. The extent of help given to

¹ The Government assistance is regulated by the provisions of the Act which empowers the Government to aid new and nascent industries provided they are registered in India as rupee companies and comply with the rules framed under the Act. The assistance may be (1), by granting a loan, (2), by guaranteeing a cash credit with the bank, (3), by subsidising research on the purchase of machinery, (4), by taking up shares or debentures, (5), by guaranteeing a return on part of the capital and (6), by granting land and raw materials on favourable terms.

weavers so far under this act is very little.¹ There is ample room for the State to render direct financial assistance to hand-loom weaving by securing for the weaver cottage plant on the hire-purchase system, by starting yarn banks and taking shares in such banks and guaranteeing interest on debentures issued by them. It can establish warehouses and organise co-operative sales societies and depots and provide marketing facilities. In this connection the hire-purchase machinery clause of the Bihar and Orissa State Aid to Industries Act deserves special mention. It furnishes appreciable stimulus to the gradual improvement of the cottage industries without which they are in danger of being wiped out. The inadequacy of the finance required by weavers' co-operative societies may be overcome to some extent by the State providing capital at a low rate of interest or taking shares in the societies.

Co-operation and business organisation:—It is now well recognised that all efforts of the Government would be fruitless if the business organisation in the trade of hand-loom products is not built up. The weaver cannot do it himself. The merchant is equally ignorant, if not indifferent. Co-operation is the only method by which the business organisation can be built which would be to the advantage of the weaver. The attempts to organise co-operative societies for purchase of raw materials, sale of finished products and for production have not been quite successful. But the recent co-operative experiment at Salem with a marketing officer at its head and the co-operative endeavour at Itchapur, assisted in marketing its products by the yarn depot run by the Department of Industries, have proved a signal success. The promotion of such societies with the active co-operation of the Government is what is now needed. In the field of non-credit co-operative organisation much remains to be done and that can be done only through governmental agency. Much reliance on weavers' initiative or the enthusiasm of individuals alone cannot be placed. Co-operative hand-loom factories assisted by technical experts and marketing officers would provide the industry with the much-needed business organisation and place the industry on a firmer footing.

¹ It is said that many applications of weavers for loans have been turned down. No effort is made by the Government to supply yarn to weavers on favourable terms.

The survey of the cottage industries undertaken in 1927-28, the information and technical advice given by the Textile Expert are some other directions in which the State has been taking interest in the industry. Indirect assistance is also given by the State. But there is still ample room for Government to assist this industry. The grant of protection against mill competition, the abolition of import duties on yarn, lace and dyes—at least the rebate of such duties on goods imported by weavers' co-operative societies,—a reduction in railway rates on yarns and cloth are some ways by which the State can assist the industry. Further, direct assistance can be rendered by the State, for example by providing capital for the establishment of hand-loom factories, warp distributing centres with power dresser sizer, and bleaching, printing and finishing factories, by providing technical and business advice, by exploring the market within and outside the country for the hand-loom manufactures by the appointment of marketing officers and trade commissioners in the Federated Malay States, Africa and other places where Indian hand-woven goods are in demand, and by advising the weavers on the production of such cloths as have a demand and so on. While caution is necessary against the frittering away of taxpayers' money, it is difficult to exaggerate the necessity of the direct and keen interest that Government ought to take in the development of this important industry.

NOTE

Since this was written, the Government of India has decided to make an annual grant of Rs. 5 lakhs for five years to the Provincial Governments for the development of the hand-loom industry. At the Industries Conference held in July, 1934, it was resolved that the grant should be distributed on the basis of the hand-loom consumption of yarn and the expenditure on the development of the industry in each province. According to this scheme, Madras is expected to get Rs. 3½ lakhs spread over five years. The Madras Government prepared a scheme for improving the marketing of handwoven goods on a Co-operative basis, with a provincial Weavers' Co-operative Marketing Society having a share capital of Rs. 100,000 of 20,000 shares, and Co-operative Societies with 400 members in ten important Weaving centres. Efforts will also be made to bring about the 'linked' organisation, to open an emporium, to arrange for wholesale and retail sale, to depute marketing officers to the Federated Malay States, Burma and Ceylon.

CHAPTER XIV

THE STATE AND THE HAND-LOOM INDUSTRY

TARIFF REGULATIONS WITH SPECIAL REFERENCE TO THE HAND-LOOM INDUSTRY

In this chapter we shall review the history of the tariff regulations in relation to the various branches of the cotton textile industries in India and their immediate and ultimate effect on the hand-loom industry and, in the light of the investigation, state what should be the fiscal policy in regard to the industrial and economic development of this country.

The report of the Indian Textile Tariff Board, 1927, offers a suitable starting point for the present discussion. The conclusions of the Board are well known. The President recommended an increase of duties on yarn and piecegoods imported from Japan while the other members objected to the enhancement of the duty on yarn as it would place the hand-loom industry at a disadvantage, but they recommended an increase in the import duty on all cotton piecegoods and the grant of bounty for finer spinning. In 1927 the Government of India rejected both the recommendations; but the continued depression in the Bombay Cotton Textile industry, due to the increasing competition from the Far East, especially from Japan, compelled the Government to take some protective measures. In August, 1927, the Government sought to protect the spinning industry (postponing the consideration of the grant of further protection to the weaving industry to a later date) by a revision of the tariffs on the imported cotton twist and yarn. They substituted 'a five per cent *ad valorem* or 1½ annas per pound whichever is higher' for the then existing 'five per cent *ad valorem* duty on yarn'. In May 1929 Mr. G. S. Hardy, I.C.S., Collector of Customs, Calcutta, was appointed, on the representation of the Indian millowners, to investigate and to report on the extent and severity of external competition with the products of Indian mills since the Tariff Board had reported, and to examine the possibility of

substituting a system of specific duties for the then existing system of *ad valorem* assessment on cotton piecegoods. Here we find a new view on the effects of specific duties which has almost become an article of faith with the Government of India. By converting the *ad valorem* into a specific duty, it is claimed that a greater measure of protection can be afforded to the industry. The Government adopted this measure on the assumption (a) that the import of finer count yarn did not compete with the Indian mill product, and, even if it did, it should not be heavily taxed as it would affect the hand-loom industry, the bulk of its consumption being finer counts; (b) that the Japanese competition was most severe in respect of medium counts of 30s and 40s and (c) that the new basis of increased specific duty on coarse and medium counts would equalise the advantage of 10 per cent that Japan had by reason of its labour conditions and thus protect the Indian spinning industry, while the retention of the 5 per cent *ad valorem* in the case of costly fine yarns, which were considered to be staple products of consumption by hand-looms, would mean no disadvantage to the hand-loom industry. The assumption and the contention are untenable, if we carefully examine the facts of the case.

The increase in the import duty on yarn by imposing a higher specific duty without a corresponding increase on the imported piecegoods had the expected result; Japan ceased to export yarn to India but increased its exports of piecegoods and intensified its competition in piecegoods as the following table will clearly indicate:—

Period	Country of export		Import of yarn			Total import of twist and yarn.	Imported piecegoods
			Below 40s.	Above 40s.	Others		
			(In million lbs.)			(In million lbs.)	(In million yards)
Post war average...	United Kingdom	...	7.7	6.61	2.43	16.71	1199
	Japan	...	16.32	0.86	11.6	28.77	113
	China	...	0.92	...	...	0.93	2.3
	Total	...	31.1	...	...	49.4	1351

Period	Country of export	Import of yarn			Total import of twist and yarn.	Imported piece-goods
		Below 40s.	Above 40s.	Others		
		(In million lbs.)			(In million lbs.)	(In million yards.)
1927-28 ...	United Kingdom ...	9.04	7.74	3.7	26.47	1543
	Japan ...	7.86	0.14	8.96	16.96	323
	China ...	12.03	...	0.81	12.84	7.4
	Total ...	28.9	8.04	13.63	52.3	1973
1928-29 ...	United Kingdom ...	7.89	9.23	6.27	23.2	1456
	Japan ...	2.24	0.04	5.23	7.51	357
	China ...	10.1	0.01	0.81	10.88	13.5
	Total ...	20.2	9.33	12.60	43.7	1937
1929-30 ...	United Kingdom ...	6.86	8.81	3.73	20.1	1247
	Japan ...	2.85	0.11	7.89	10.9	562
	China ...	9.84	0.10	0.72	10.6	9.7
	Total ...	21.84	9.01	13.05	43.9	1919
1930-31* ...	United Kingdom ...	2.78	4.09	2.96	9.81	523
	Japan ...	2.85	0.08	4.65	6.88	320
	China ...	10.13	0.74	1.53	14.87	3
	Total ...	21.84	4.27	9.17	29.14	890
1931-32* ...	United Kingdom ...	2.95	5.20	3.15	10.29	383
	Japan ...	0.39	nil	5.62	6.02	339
	China ...	11.20	nil	2.01	13.19	4
	Total ...	15.31	5.25	10.73	31.57	775

(Form the Review of the Trade of India.)

India imports all yarns of 40s and above from the United Kingdom while 40s and below come from Japan and China. The burden of the new basis of taxation being heavier on coarse and medium yarns than on finer ones, there is a fall in the import of 40s and below. But this fall is more than made good by a rapid increase in the import of cotton

* The years 1930-32 were years of vigorous campaign for Swadeshi and boycott of foreign cloth; also it was then that the duties on piecegoods were increased first in 1930, again twice in 1931 and again in 1932. Hence the fall in the imports of cloth. But even here Japan was less affected than the United Kingdom and other countries.

piecegoods from those countries whose yarn trade with India had declined. The import of yarn from Japan was reduced from 17 million lbs. in 1927-28 to $7\frac{1}{2}$ million lbs. in 1928-29 and 11 million lbs. in 1929-30 while the import of cloth increased from 323 million yards to 357 million yards and to 564 millions in the corresponding period. The same tendency can also be traced in the Chinese trade. This means that Japan attempted to avoid the burden of the increased duties on yarn by reducing its exports of yarn and increasing its exports of cloth to India. It is advantageous to Japan, to cite an instance, to export to this country cloth made of 60s and below rather than to export yarns of similar counts. For while the import duty on cotton piecegoods in India remained 11 per cent *ad valorem*, the specific duty of $1\frac{1}{2}$ annas per pound worked out at the rate of 12 per cent in the case of 20s yarn, $8\frac{1}{2}$ per cent in the case of 40s, and $6\frac{1}{2}$ per cent in the case of 60s, taking the average price for the last three years at 12, 18, and 24 annas per pound of 20s, 40s and 60s respectively. Thus the margin of difference between the customs duties on cloth and yarn diminishing and other conditions remaining the same, an increased duty on yarn will naturally encourage the import of cloth and discourage the import of yarn.

The new basis of the duty on yarn had thus a very far-reaching and disastrous effect on the indigenous textile industries. The protection to the Indian spinning industry has increased Japanese competition in piecegoods and the power weaving industry is now faced with a more severe competition. The lesson we learn from this episode is that *it is absurd to believe that protection to any industry can be given by simply revising the method of assessment*. Prohibitive tariff must be imposed to make protection effective and real.¹ Half-hearted measures and ill-conceived experiments are not only ineffective but at times are positively harmful as they have proved to be in this case. *The new specific duty has protected the Indian spinning industry; but it has increased foreign competition in piecegoods; further it has affected*

¹ Total prohibition is not unknown to history. The effectiveness of tariffs depends not on the manner of imposition of duties but on their achieving their desired ends.

the hand-loom industry by increasing the price of yarn and curtailing the profits of the hand-loom weaver.

CONFLICT OF INTERESTS

The history of the textile tariff regulations in India illustrates the conflict of interests that the Government of India was often called upon to reconcile in framing its tariff policy. First, there is the interest of the consumer with which Manchester often finds it convenient to identify its interests. Secondly, there is the Indian mill industry which is organised in its demand for preferential treatment. And thirdly there is the hand-loom weaver, helpless and unorganised, whose cause is at times conveniently espoused by Government against the demands for protection by the power-loom in India and for avoiding the odium of safeguarding Lancashire interests. In this conflict, however, there is a peculiar irony in the consistency of the policy of the Government of India, viz., that the interests of Lancashire had been so paramount throughout that nothing was done to develop either the power spinning or weaving or hand-loom industry in India till the last decade. Any measure of protection to the spinning branch of the textile industry was opposed on the ground that it would be detrimental to the hand-loom industry and protection to the power weaving industry was objected to on the ground that it would increase the burden on the consumer. The policy of the Indian Government was throughout announced to be to protect the interest of the consumer. Perhaps, this championing of the consumers' interest was intended to cloak the desire of Government to advance Lancashire's interests.

However it might be argued that the present policy is the result of the conflict of local interests. It is true that a policy of protection raises this issue. But this conflict is neither unavoidable nor peculiar to this industry or to this country. More about it later. But it must be noted here that all revisions of the basis and the rate of tariffs with a view to protect the mill industry affected the hand-loom industry adversely, as a careful study of the tariff regulations well illustrates. Before the War the import of yarn was

allowed free of duty ostensibly in the interest of the hand-loom but mainly in the interest of Lancashire which was exporting to India 40 million lbs. of yarn every year. The cloth manufactured in Indian mills was subject to $3\frac{1}{2}$ per cent excise duty and the import of piece goods was subject to $3\frac{1}{2}$ per cent *ad valorem*—both being revenue duties. But this had incidentally certain protective effect on the hand-loom industry which prospered during 1896-1916 when those duties were in force. After the War with the increasing financial difficulties of the Government of India a duty at 5 per cent *ad valorem* on yarn and 11 per cent *ad valorem* on cloth was imposed on imports while the excise duty on the cloth manufactured in Indian mills remained $3\frac{1}{2}$ per cent. Till the abolition of cotton excise in 1925 and more precisely till the revision of the tariff on yarn in 1922, there was a steady expansion of hand-loom weaving; it was during this period that the hand-loom industry was at its best; for there was a measure of protection both against foreign imports and Indian mill manufactures while both the power-spinning and weaving industries in India also progressed satisfactorily as is evident from the table below:—

Year	Production of cloth in Indian Mills	Production of cloth on hand-loom	Import of cotton piece-goods
Average for	(In million pounds of yarn)		(In million yds.)
1901-05 ...	125	231	1,988
1905-10 ...	182	259	2,175
1911-15 ...	261	262	2,528
1920-21 ...	328	287	1,405
1921-22 ...	360	297	980
1922-23 ...	362	335	1,467
1923-24 ...	359	251	1,374
1924-25 ...	410	313	1,710
1925-26 ...	409	289	1,502
1926-27 ...	472	334	1,728
1927-28 ...	510	327	1,973
1928-29 ...	400	269	1,937
1929-30 ...	506	346	1,919

The present decline in the hand-loom industry, which is not in quantitative outturn but in the human element began

with the abolition of the cotton excise duty in 1925; but the Indian mills could not take advantage of this measure owing to frequent labour troubles. The decline in the hand-loom production was significant and this was aggravated by the introduction of the alternative specific duty on yarn imposed in 1927. While the labour troubles in Bombay explain to some extent the shortage in the supply of yarn to the hand-loom in 1928-29 the decrease in the Japanese supply of medium count due to the specific duty could not be ignored. Formerly, the average import from Japan of 40s and below was 16 million lbs. (excluding twofolds); but it was reduced to 2.2 million lbs. as soon as the new specific duty on yarn was imposed. This rapid elimination of Japanese yarn from the Indian market means absence of competition in the Indian mill supply of coarse and medium yarns to hand-looms and comparatively higher prices for the same. First of all the abolition of the excise duty on cloth removed the protection to the hand-loom; and the retention of the duty on yarn placed the hand-loom at a further disadvantage. The introduction of the higher specific duty at $1\frac{1}{2}$ annas per pound of yarn increased still further the burden on the hand-loom industry, for it had the immediate result of increasing the price of yarn. The movement of wholesale prices of yarn and cloth in Bombay indicates that compared to the prices of cloth the price of yarn had risen by eleven points, as soon as the new tariff was brought into force; also that the price of yarn

Index number of prices of yarns and cloth

Year.	Price of 20s Indian Mill	Price of shirting (Indian)	Liverpool Price of American yarn	Liverpool Price of Egyptian yarn
Average for 1927 ...	100	100	100	100
January 1928 ...	109.2	98.7	105	101
April 1928 ...	109.2	98.7	103	104
July 1928 ...	113	102	102	108
October 1928 ...	113	102	102	108

manufactured in Indian mills (which supply over 250 million lbs. of coarse and medium yarns to hand-looms) rose by 4 to 8 points more than the Liverpool prices of American and Egyptian yarns.

It must be noted that over 85 per cent of the hand-loom

consumption of yarn is 40s and below, even assuming that all kinds of yarn of 40s and above imported and manufactured in Indian mills are consumed by the hand-loom only. To assume therefore, as it is done by the Government of India, that the retention of the 5 per cent *ad valorem* duty on yarn of finer varieties and the increased specific duty on the coarse and medium counts would not harm the hand-loom weaver to any appreciable degree is to betray one's ignorance regarding the kind of yarn used by him:

FUTURE POLICY

Tinkering with tariffs just to surmount some temporary difficulties or to hush the loud complaints of certain powerful interests or to placate them for political reasons will not and cannot carry us far. That would at best be a mere patch-work but it can never be an act of wise statesmanship. A more comprehensive and well designed policy regarding industrial development of well organised industries and small cottage industries with a careful estimate of the proper place of each in the national economy can alone lay the true foundations of industrially prosperous India. But it must be as clear as daylight that as between Indian manufactures and imported ones the former should have the preference and have all possible and reasonable protection against the latter. But as between the power-loom and the hand-loom the one should not be sacrificed for the other except for very valid reasons. *It is not pleaded here that the hand-loom should be protected at any cost against the power-loom, but that, at least, the dice should not be loaded against the hand-loom, as it obtains under the existing tariffs.* Now the imposition of an import duty on yarn and the abolition of the cotton excise imposed a disability on the hand-loom; for the price of yarn to the hand-loom weaver includes the 5 per cent duty while the power-loom in most cases manufactures its yarn requirements free of duty. By the substitution of the specific duty on yarn the disadvantage to the hand-loom has increased, for in effect it protects the Indian power-loom against the hand-loom and the degree of protection varies from 5 to 20 per cent according to the market price of yarn. Again the enhancement of import duties on gold and silver thread to 50 per cent *ad valorem* and on silk and rayon to 25 per cent has placed

the handweavers at a further disadvantage by increasing the price of their manufactures and thus curtailing their market; for these imports are chiefly used by hand-looms.

We have already stated that the conflict of interests between spinning and power-weaving and hand-weaving is not unavoidable. Protection to the weaving industry raises no question of conflict of interests except that there is an initial burden on the consumer. But protection to the spinning industry involves the conflict between the hand-loom and the power-loom. But this is not an unavoidable consequence of any policy. If development of the spinning industry is desirable an increased import duty on yarn is not the only means; the same end can be achieved with better results by the grant of bounties as recommended by the majority of the Textile Tariff Board.

It is proposed here that the duty on cloth should be increased to 25 per cent *ad valorem* and the duty on yarn be abolished while the hand-loom must be protected against the power-loom by an imposition of excise duty of $2\frac{1}{2}$ per cent.

The Government of India did not favour the proposal of the Tariff Board for the following considerations:

1. That the abolition of the import duties on yarn will affect the revenues of the Government of India and rouse the opposition of the spinners in India, while the advantage that would accrue to the hand-loom weaver would be almost negligible.

2. That the enhancement of the duties on imported cotton piecegoods will increase the burden on the consumer while the revenues of the Government may also suffer as a result of decreased demand for imported cloth.

We shall now examine these arguments. At present (1929) the duty realized on yarn is less than Rs. 50 lakhs. This loss is insignificant and is not to be regretted as the duty is mainly a protective one. But even this loss can be made good by an enhanced duty of 25 per cent on piecegoods; for the new revenue realised will not be less than what it is now. Unless there is a remarkable fall in prices of cotton goods or a fall in the volume of their imports, there can be no fall in the revenue. The demand for imported cloths being inelastic to a degree, there is no fear of a great

fall in the volume of imports. If it does, sooner or later Indian mills will increase their production in order to make up the deficiency which means increasing the national productivity. This would open up new sources of taxation. What is now lost in customs revenue can be regained to some extent through income-tax ultimately.

As regards the increased burden on the consumer, he will have to pay nearly 16 pies more per rupee of his cloth purchase than what he does now. But consumers of imported cotton manufactures belong to a class who will never be deterred by this increase in price and who can bear this burden. But the interest of the consumer is not all. Even a consumer is a producer himself and it is his effective productive capacities that ultimately determine his effective consumption. Therefore the interest of the producer is all important. The consumer's interest cannot be paramount unless it be that the whole nation consists of persons living upon their savings or hoarded wealth and not depending on their present productive power.

Again the abolition of the duty on yarn accompanied by bounties of 5 per cent for fine home-spun will give the hand-loom and the power-loom equal advantage. From the viewpoint of the hand-loom weaver, the abolition of the duty on yarn will in turn reduce the cost of production of his cloth. This will enable him to get larger returns. The increase in his daily earnings may vary from 2 annas in the case of finer cloth to 4 annas in the case of cloth made of 20s. This increase is not negligible to one who rarely earns 10 annas a day.

Now it is time for the Government of India to realise that the past policy of makeshifts must be abandoned as it is positively harmful to industrial development; that real protection to the industry does not depend on the methods of assessing the customs duties but in making the tariffs effective. As Sir Alfred Chatterton said, imports should even be prohibited if need be. It must be well understood that while changes in the tariffs are necessary in the common interest of spinning, power- and hand-loom industries, changes in the methods of assessment alone cannot solve the problem. In the higher interests of the Indian textile industries comprising spinning and hand-loom and power-weaving

¹ Tariffs in several countries on imports of cotton manufactures.

...	Cotton yarn singles						Cotton cloth					
	Grey		Bleached		Dye		Grey		Bleached		Dyed	
	1914	1924	-	1924	1914	1924	1914	1924	1914	1924	1914	1924
India ...	Free	5% Adv.	Free	5% Adv.	Free	5% Adv.	3½%	11%	Ad valorem		3½%	11%
U.S.A. ...	15% Adv.	4·2d. per lb.	17½% Adv.	5·38d. per lb.	17½% Adv.	5·38d. per lb.	17½% Adv.	8·5d. per lb.	20% Adv.	9·5d. per lb.	20% Adv.	11·7d. per lb.
Japan ...	...	...	...	...	...	...	2·5d.	2·1d.	per pound of cloth			3·2d.
China ...	0·3d.	1·1d. per pound	...	...	...	...	4d.	11·3d.	per piece of cloth			14·2
Russia ...	7·7d.	13·2d. per pound	...	...	...	...	...	...	...	...	...	...
Switzerland...	...	...	...	...	...	...	0·4d.	0·5d.	per pound			...
Italy ...	...	...	...	...	...	...	3·3d.	5·3d.	per pound			4·4d. 7d.
Germany ...	...	...	...	...	...	...	2·7d.	3d.	per pound			4·1d. 5·4d. 5·9d.

—the main industries of India—protection is necessary against foreign competition. If this means imposing higher tariffs, they are not necessarily harmful. In America there is a 40 per cent import duty on cotton manufactures.¹ Indeed even

in India during the last five years the duties on cotton piece-goods have been considerably enhanced. They stand to-day at 25 per cent (British) and $31\frac{1}{4}$ per cent (non-British), with a specific duty of $4\frac{1}{8}$ annas per pound of grey. If the needs of our industries demand protection the Government of India should not hesitate to increase the duties on imported cloth. It should abolish duties on yarn and grant bounties to the spinning industry¹ and assist the hand-loom and thus foster all branches of the cotton textile industry which support eight million persons or 25 per cent of the industrial population in India.² -

¹ 'For the reasons given elsewhere the majority are of opinion that any assistance given to the spinning industry is best given in the form of a bounty.' —P. 175, Tex. Tariff Board Report 1926.

² Recently many changes have taken place in cotton tariffs. At present as a result of Hardy's Report, the Ottawa Agreement and the financial crisis, the duties have been enhanced; there is discrimination between British and non-British goods, and discrimination between grey and other classes of cotton piecegoods in the rate and manner of taxation. But these conditions while being favourable indirectly to the development of the hand-loom, are unfortunately accompanied by an unprecedented depression which has affected the demand for the manufactures of the hand-loom. Also the disadvantage on account of the import duty on yarn, artificial silk and silk which are mainly used by hand weavers still persists handicapping the hand-loom against the power-loom in India.

CHAPTER XV

THE WEAVER

THE rapid break-down of caste monopoly of occupations has not affected very much the hand-loom industry; for still over 60 per cent of the hand-weavers are mainly weavers by caste. The *Kaikolars*, *Devangas*, *Salês* and *Sourashtras* are the important weaving castes found in the Madras Presidency and a brief survey of their social customs and characteristics is not out of place.

Each caste has different surnames. The *Kaikolars*, *Sengundars*, *Sengunda Kshatriyas* are the names of a certain group of Tamil weavers. There are more than 400,000 *Kaikolars* in this Presidency found mainly in the districts of Coimbatore, North Arcot, Salem, South Arcot, Chingleput, Trichy, Tinnevely, Tanjore and Madura, stated in the order of importance. 50 per cent of them follow their hereditary occupations. They claim to be the descendants of Virabahu. Their original home is Conjeeveram wherefrom they migrated to other places. The whole community is divided into 75 *nads* which are all administrative divisions, the most important divisions being Conjeeveram, Elur and Salem. The premier *nad* is that of Conjeeveram where the *Mahanattan* resides. The caste guild is an important institution which regulates their social relations. There are various officers and committees—all honorary—which decide caste disputes. Each *nad* has a committee consisting of (1) *Periathanakaran*, (2) *Nattamaikaran*, (3) 12 *Kariakarans* and (4) *Sangudi*. The first two officers are hereditary; and the rest, elected. The function of the guild is mainly social and it has nothing to do with the trade or industry. However, there is a strong caste-feeling among them which can be used to advantage in the reorganisation of the industry.

The *Sales* come next in importance. There are about 350,000 persons belonging to this caste and again 50 per cent of them follow their hereditary occupations. They are scattered all over the Presidency but they are mainly found in the Circars and Ceded Districts. They are Telugu speaking

people and their big colony in the south is found in Ramnad District. There are two important sub-divisions in this caste. (a) the *Patu-Sale* and (b) *Padmasale*. In Tamil districts the *Patu-Sale* speak Kanarese and mainly manufacture silk fabrics and fine cloths while the *Padmasale* speak Telugu and weave coarse cloths—mainly cotton coloured fabrics. The *Saliyans* of Kornad and Ayyampet in the Tanjore District resemble them closely in customs and manners but belong to a different caste.

The *Devangas* are numerically as strong as the *Sales* and their customs also closely resemble theirs. Of the 290,000 *Devangas* in the Presidency the districts of Coimbatore and Salem account for nearly a third. They are also found in Ramnad, Chingleput, South Arcot and North Arcot districts. They call themselves by different names, *Chettis*, *Jedars*, *Naidus*, *Seran*, *Sendan*, *Chettukaran*. *Devalan* is their legendary ancestor and his killing the *asuras* in battle is associated with the nature of their work—for they invariably work on coloured fabrics. Their original home is Hampi, and to this day the headquarters of their headmen is in Amarakundi to whom appeals against decisions of local panchayats are said to be referred.

The *Devangas* are divided into two groups (1) Kanarese and (2) Telugu. They do not intermarry. Their caste panchayats have control over their social affairs. Disputes are decided by *Pangalans* presided over by a *Chetti* (or headman). The majority of the *Devangas* are Saivaites unlike *Sales* and wear lingams. The caste is socially self-contained; they have their own *dasis*, and other social institutions.

The *Sourashtras* or *Patnulkarans* are the most progressive of the weaver-castes. They belong to the caste of Surat silk weavers who were induced to settle in Madura by one of the early Naik kings and this patronage accounts for their higher prosperity in Madura. The other theory is that they have migrated to the south from Guzerat due to Musalman invasion and famines.

There are 90,000 *Sourashtras* in the Presidency; Madura accounts for 40,000 and Tanjore, Trichy and Ramnad districts are other important centres. However, they are mainly urban artisans and found practically in the cities of Madura,

Tanjore, Trichy, Salem, Kumbakonam, Arni, Rasipuram and Tirupathi producing silk and fine cloths.

Compared to other weaving communities, their social consciousness and solidarity is remarkable. As a caste they are self-sufficient; as workers, they manufacture mainly non-competitive goods—silk or laced cloths; as a mercantile community they have advanced far and the trade in cotton textiles, dyes, gold thread and silk in Madura and Kumbakonam is mainly in their hands. They are very skilful and industrious. Sir A. Chatterton writes about them: 'In various ways the *Sourashtras* of Madura have furnished evidence that they are a progressive community, particularly in the attention which they pay to education and the keenness with which they are on the look-out for improvements in the methods of their hereditary craft'.

A large number of the *Vellalas*, *Musalmanas*, and *Panchamas* in Tamil districts and the *Baliya* and *Mala* in Telugu countries are also engaged in weaving; and 30 per cent of the workers are drawn from them.

It is interesting to note that the workers in most of the cotton hand-loom factories are mainly of non-weaver castes, especially in the West Coast.

There is a persistent tendency for the weaver castes to give up their hereditary calling. With the technical progress of the industry, weaving fails to maintain the former number of workers and this means that the hereditary weavers are worse affected.¹ However the *Sourashtras* and the *Devangas* are still adhering to their traditional occupations. The work

¹ Percentage of persons of the weaving castes following their hereditary calling.

	1911		1921	
	Men	Women	Men	Women
Devangas	72	76	55	53
Kaikolar and Sengundas	62	43	48	43
Sales	63½	61½	51	46
Sourashtras	...	...	66	71

of the Sourashtra being of a better order, the decline in their numbers following their hereditary occupation is small. Dyeing, specially with turkey red, and weaving of fine fabrics or silk and cotton with lace, require great skill. The Devangas are mainly weavers of coloured goods and dyers of yarn, and dyeing requires more skill than weaving. The Kaikolars and the Sales are fast being driven out of their hereditary calling. The improvement in warping and sizing led specially to the decline in the number of women workers of the Devanga and Sale communities. Among Kaikolars, women seldom warp and size. The 'chungudi sari' industry of Madura accounts for the high percentage of Sourashtra women workers.

The most literate community among weavers is the Sourashtra. 35 per cent of Sourashtra men are literate i.e. can read and write vernacular while $4\frac{1}{2}$ per cent of them have received some English education. The Kaikolars come next in literacy with 26 per cent but the percentage of literates in English is low. The Devangas are slightly backward but the Sales are the least advanced. Only 15 per cent of them are literate.

The influence of education on the social and economic conditions of the community can hardly be exaggerated. The Sourashtras are educationally much advanced and therefore they have economically progressed very far, when compared to the other weaving communities. The Sourashtra Sabha of Madura maintains a High School and has enabled many members of the community to receive technical education in Bombay, and they have used their education to the advancement of their industry and trade. They have the practical monopoly of the dyeing industry and trade in dyestuffs and dyed yarns and fabrics. They have also the control of the silk industry and trade. They have the credit of inventing some weaving appliances.¹

The Kaikolars come next. Though they weave cloths which directly compete with mill production they are able to resist

¹ In Madura Mr. Tulasiram, B.A., B.L., improved Turkey Red Dyeing.

Mr. Bavaram, improved sizing and warping.

Mr. Kuppasami Iyer has patented a device in the shedding apparatus.

In Kumbakonam Mr. Varada Ayyar has developed jacquard weaving.

its competition successfully by slight adjustments which their education to some extent suggests. Slowly they are now taking to weave non-competitive fabrics, and they are adopting such labour-saving appliances as would help them in their struggle for existence. The Sengundars' educational institutions deserve special mention. It is the education of Kaikolars and Sourashtras that has enabled them to work co-operative societies successfully and improve their status, the condition of their industry and trade. They are also inventive. A Mudaliar of Salem has invented a jacquard device and has made it very cheap. The other weaving communities of Devangas and Sales are less progressive. In most cases they are improvident, illiterate and rather addicted to drink. Co-operation and education have made very little progress among them. The material and moral progress of these two communities must be attended to first. Again it is the members of these communities that are in the grip of the money lender, the sowcar or the merchant and they are sweated by their employers.

The skill of the Indian weaver is unequalled and is a matter of universal admiration. His unrivalled skill and artistic temperament explain the supremacy of the Indian hand-loom weaving. James Mill, speaking of the Indian weaver, wrote: 'It (weaving) is a sedentary occupation and thus in harmony with his predominant inclinations. It requires patience, of which he has an inexhaustible fund. It requires little bodily exertion, of which he is always exceedingly sparing; and the finer the production, the more slender the force he is called upon to apply. But this is not all. The weak and delicate frame of the Hindu is accompanied with an acuteness of external sense, particularly of touch; which is altogether unrivalled; and the flexibility of his fingers is equally remarkable. The hand of the Hindu, therefore, constitutes an organ adapted to the finest operations of the loom, in a degree which is almost or altogether peculiar to himself'.¹

No systematic study has been made regarding the health of the weaver, and the influence of occupation on the health

¹ *History of India*: Vol, II, page 8.

of the worker. But any casual observer can at once see the effects of the conditions of living and work of the weaver on his health. The position in which he works for long hours in ill-lighted and ill-ventilated rooms explains his apparent lack of industrial discipline and many of his sedentary habits. The weavers who are manufacturing coloured goods, especially the Sourashtra and the Devanga, have a peculiarly anaemic constitution. They are pale, weak, and underfed. Poverty and drunkenness¹ have undermined their health and efficiency.

Most of the weavers live in thatched hovels made of mud invariably with two rooms, unlit and unventilated. A large space is occupied by the loom. The lodgings and surroundings of the weaver are really abominable. His dwelling and the working place are the same. In each house live many families. There is very little privacy. Even a few hours of peaceful rest cannot be had; it is almost a luxury unknown to many of the weavers; for unceasingly the tick of the fly-shuttle goes on; the woman is at the buzzing wheel; the children are at the dobbie or are winding for the bobbin. Under such strain, drink is the only pleasure and aid to forgetfulness. The weaver knows no other luxury. In his house there is no furniture. His workshop, if it can be so called, has no costly or elaborate equipment. One or two looms, a few hand-wheels, a number of *thiruvattams*, a few mud and brass vessels and trade-mark pictures are all his possessions. His women wear few jewels. His food is extremely frugal and simple. Rice or ragi is his staple food. Vegetables, ghee, mutton and fish are very rare delicacies.

The weavers are poor as a class except the Sourashtras of Madura and Kumbakonam. They have no money to purchase raw materials. Hence they take advances of either money or yarn from sowcars or chettis. They are worse off for doing so. Nearly 80 per cent of the weavers are in debt and the extent of their indebtedness varies from Rs. 50 to Rs. 500. The rate of interest in most cases is ruinous. Where the advance is taken from the cloth merchant for

* ¹ The investigation of the writer in Salem District shows that practically more than two-thirds of the Abkari revenue comes from the weaving centres.

whom the weaver works, the rate of interest is usually 12 per cent but his wages are also a little lower than the ordinary rate. But where the loan is taken from the local cloth merchant with whom he contracts to sell, his prices are very much less than the market price. But where the loan is taken from the money-lender, the interest varies from 3 ps. to 2 as. per rupee per month. The emancipation of the weavers from this position can be effected only by their education, their increased employment and income and by co-operation.

The present economic condition of the weaver is nothing too enviable. He earns miserable wages. The average wage of a skilled weaver does not exceed ten annas a day, while one weaving plain cloths of coarse and medium counts earns hardly six annas. Better wages are, however, earned in handloom factories and by the silk and laced cloth weavers. The weaver in the West Coast gets twelve annas and sometimes more. The silk weaver gets eight to twelve annas a day. But the ordinary weaver is not very much better off than the average agricultural worker. Besides, the period of unemployment of the weaver is considerably long and tends to extend.

The uncertainty and the seasonal character of the demand for his manufactures, the fluctuation in the prices of yarn and cloth, the insufficiency of his income, the interest on his loans and the fraud of the merchants make the position of the weaver still worse. His condition really invokes pity. The precarious nature of his business with a fluctuating market and a perpetual burden of debt requires a higher daily income than what he gets now to keep him above actual destitution.¹ Bad harvests, wars, epidemics, famines and changes in the currency and fiscal policy of the State and

¹ Hobson, speaking of the human claims of labour, in his book *Work and Welfare* writes thus about the effects of fluctuations in wages:

'Rapid and considerable fluctuations of wages, even with full employment are damaging to character and ability of standards; but irregularity of employments is the most destructive agency to the character, the standard of comfort, the health and the sanity of wage-earners. The knowledge that he is liable at any moment, from commercial or natural causes that lie entirely outside his control, to lose the opportunity to work and earn his livelihood, takes out of a man that confidence in the fundamental rationality of life which is essential to the soundness of character. Religion, Ethics, Education can have little hold upon workers exposed to powerful illustration of the unreason and injustice of industry and of society.'

many other factors beyond his control have equally affected his economic conditions.¹

The conditions of the weavers in the Madras Presidency are very peculiar. Comparing the conditions of weavers in Madras and those in Bihar and Orissa, J. B. Clark, Textile Expert to the Government of Bihar and Orissa, writes: 'The weavers in Madras live together in large colonies. They are generally the most skilful and make fine cloth with intricate patterns, while the weavers in Bihar and Orissa—98 per cent of them—live in districts and are scattered amongst entirely agricultural population. They are partially dependent on agriculture. They make plain cloths mostly with 20s yarn. The Madras weavers cater for the urban middle classes, while the weavers of Bihar and Orissa meet the demand of the ryots. But both of them are competing with the mill products; the former depending for their supply of yarn on foreign imports compete with foreign goods, while the latter getting their supply of yarn from Indian mills compete with the

¹ The estimates of the earnings of the weavers at different periods indicate that their nominal wages have increased, but their real wages have remained the same; probably they have not declined:

Year of Estimate	Estimate made by	Earnings of Weavers
1912 ...	Sir A. Chatterton ...	Rs. 7-8-0 per mensem by the throw-shuttle weaver; Rs. 10 per mensem by the fly-shuttle weaver.
1912 ...	N. Subramania Ayyar.	Rs. 10 by the Kaili weaver on a country loom and Rs. 12-8-0 by him on a fly-shuttle loom; Rs. 2 per mensem by the Tape weaver (woman) at Peddapuram.
1918 ...	.....	Monthly earning of Rs. 24 in Srivilliputhur and Rs. 20 in Sholingar.
1923 ...	Pamphlet of the Department of Industries, Travancore.	As. 4 to 8 per day in Travancore.
1927-29 ...	Special Officer for Cottage Industries.	As. 12 to Re. 1 <i>per diem</i> by weavers of special cloths in Madura and Dindigul. As. 8 in Jayankondam and Thoraiyur. As. 6 to 8 in Tirunageswaram for ordinary cloth. As. 10 to 12 in Karur factory. As. 12 in Conjeevaram. As. 14 to 16 in Coimbatore (Turban cloth weavers).
1929 ...	By the Author ...	Wages in Kumaramangalam: In 1921—Re. 1 4 0 per day. ,, 1925—,, 0 14 0 ,, ,, 1929—,, 0 7 0 ,,

products of Indian mills. But the conditions of weavers in Madras, though they are more skilful and manufacture better kinds of cloth are definitely worse. They are largely in the hands of merchants and receive very poor pay for fine work; for most of them are debarred by caste from dealing directly with the consumer. But the weavers in Bihar and Orissa whenever possible sell their manufactures directly to consumers and receive a higher rate of pay for coarse work than Madras weaver does for fine'.

In sacred books weaving is spoken of very highly. The Tamil Literature is full of reference to its importance. Great emphasis was laid on the skill of the weaver, his business morality and his contribution to social welfare. Conditions have now so changed that hand-loom weaving is now regarded as a relic; the weaver is the object of pity; his work commands no dignity. The present environment and the conditions of work and life of the weaver can only lead to social evils of drunkenness, insanitation, improvidence, extravagance, dishonesty and growing poverty. These conditions, damaging to character and prosperity, which obtain in the case of over four million people who are on the path of preventible ruin, demand our immediate attention.

NOTE ON THE CHANGES OF THE ECONOMIC CONDITION
OF THE WEAVER

A study of the changes in the economic condition of the weaver is important. But so far no proper and systematic enquiry was made. An attempt is made here to present the statistical material now available, insufficient as it is, in the form of a table of index numbers of the hand-loom production, the margin of profits and the level of prices which indicate the changes in the economic condition of the weaver since 1874.

Year.	Hand-loom output in Million yards.		Index Number of			Remarks.
	Yards	Index Nos.	Margin of Profits.	Retail price of Food-grains.	General level of Prices.	
1874-1875	33·3	61·7	80·6	5% on cloth and 3½% on yarn imported. All duties on cloth and yarn were abolished.
1875-1876	...	...	54·0	56·2	71·6
1876-1877	...	...	8·4	60·0	74·6
1877-1878	...	...	37·5	89·0	92·0
1878-1879	...	...	46·0	107·5	103·0
1879-1880	41·5	99·0	94·0	
1880-1881	...	...	33·3	73·0	81·3
1881-1882	...	...	46·0	59·2	73·8
1882-1883	...	...	50·0	58·6	73·0
1883-1884	...	...	46·0	58·6	73·8
1884-1885	37·5	61·0	79·9	
1885-1886	...	...	33·3	61·8	79·1
1886-1887	...	...	37·5	65·0	76·9
1887-1888	...	...	46·0	72·0	77·6
1888-1889	...	...	16·6	76·0	82·9
1889-1890	16·6	73·5	87·3	5% import and excise duty on cloth and yarn.
1890-1891	...	...	41·5	74·7	87·3
1891-1892	...	...	58·3	84·5	89·6
1892-1893	...	...	58·3	91·0	98·4
1893-1894	...	...	37·0	79·5	92·0
1894-1895	67	70·4	91·0	3½% import and 3½% excise duty on cloth—duty on yarn abolished.
1895-1896	...	...	67	74·0	89·5
1896-1897	784	96	36	96·0	98·0	
1897-1898	924	113	42	113·0	114·0	
1898-1899	948	116	42	86·0	93·0	
1899-1900	880	} 100	100	100	100	
1900-1901	692					
1901-1902	880					
1902-1903	960	117·5	104	87	95	
1903-1904	872	106·8	87·5	78	91	
1904-1905	878	101·3	71·0	72	90	
1905-1906	1084	132·7	125·0	81	101	
1906-1907	1148	140·5	116	110	118	

Year.	Hand-loom output in Million yards.		Index Number of			Remarks.
	Yards	Index Nos.	Margin of Profits.	Retail Price of Food-grains.	General level of Prices.	
1907-1908	1168	135.3	104	110	125	
1908-1909	1116	136.2	133	142.5	134	
1909-1910	896	109.4	98	120	120	
1910-1911	908	111.0	71	100	112	
1911-1912	1044	128.0	79	100	116	
1912-1913	1040	127	121	117	130	
1913-1914	1068	130.8	115	123	136.0	
1914-1915	1184	145	98	137	139.5	
1915-1916	1048	128.5	118	135	136	
1916-1917	816	100	125	124	138	Cotton import duty raised to 7½% ; excise duty remained at 3½% .
1917-1918	812	99.5	125	125	132	
1918-1919	1048	128.5	250	167	160.5	
1919-1920	564	69.0	200	246	224.5	
1920-1921	1148	140.5	150	221	225	Cotton import duty raised to 11% ; import duty of 5% on yarn levied.
1921-1922	1190	145.6	429	231	204	
1922-1923	1341	164.1	308	195	198.5	
1923-1924	1005	123	225	160	193.5	
1924-1925	1256	154.8	162.5	162	192	
1925-1926	1160	142	206	183	198	
1926-1927	1336	163.5	175	187	194	Excise duty of 3½% abolished.
1927-1928	1312	160.5	138	185	...	Specific duty on yarn.
1928-1929	1060	130	125	181	...	
1929-1930	1384	169	163	192	..	Increase on the duty of cloth and specific duties on cloth.

The above table is based on certain assumptions: (1) that the weaver's earnings can be indicated by the difference of the prices between the mill cloth and the mill yarn; and that there is a correspondence, though somewhat remote, between the weaving margins of mills and the weaver's earnings, (2) that the extent of hand-loom production has got a direct influence on the earnings of the weaver and (3) that the cost of living of the weaver can be roughly measured by the general level of prices, more properly by the retail prices of

food-grains; for, food-stuffs account for more than 60 per cent of his expenditure. A study of these sets of figures along with the incidence of famine, currency and fiscal policy and the general economic condition of the country will indicate broadly the changes in the condition of the weaver. And it must be noted that these figures are not purposely correlated; nor are the *per capita* earnings or even the aggregate earnings of the weavers worked out. The table is given for what it is worth.

It indicates however (a) that the condition of the weaver is affected adversely by the rapid fluctuations in his aggregate outturn as well as in his earnings; (b) that his condition was at its worst during the last century, especially during the period of free trade in India; (c) that wars, famines and the currency and fiscal changes have affected his prosperity; and (d) that there is nothing to show that his economic condition has materially improved during the last sixty years.

CHAPTER XVI

HAND-LOOM VERSUS POWER-LOOM

'It is generally believed that the hand-loom weaving industry is doomed. I am not so pessimistic as that. Indeed I am confident that it is capable of great expansion. Handweaving is capable of competing with power weaving in a factory The weaver in the cottage has got everything to his advantage. His stores cost very little; he has no depreciation, no interest or excise duty. The only thing against him is production.'—B. D. MEHTA, *ex-Manager, Empress Mills, Nagpur, at the Indian Industrial Conference, 1907.*

'If the hand-loom can compete with the power-loom in England, where the cost of skilled labour is many times greater than it is in India, where the perfect weaving machinery worked by steam and electricity is in use, what a much greater prospect must there be in India, where you have an unlimited supply of the most skilful hereditary weavers, content with earnings of three to eight annas per day. There are splendid possibilities open to the hand-loom industry in India, and it is a preventible loss to India that the skilled weavers should day by day leave their looms and add to the already overgrown agricultural population.'—*Bulletin of the Department of Industries, of Bihar and Orissa.*

The critics of the hand-loom are generally of opinion that hand-loom cannot hope to supersede the power-loom, nor can it resist for long its advance. They conclude from their experiences in western countries that man-power cannot compete with mechanical power and ere long all handicrafts will give place to factory and machine production.¹ They assign one reason for this inevitable consummation which, according to their wisdom, applies with equal force to all handicrafts; further, they believe that because the rate of production in the hand-loom is far less than it is in the power-loom, the cost of production on the hand-loom must be greater. We shall examine the truth of this conclusion.

¹ A writer in the *International Labour Review*, June 1928, shows the remarkable expansion of handicrafts in many industrial countries and their persistence elsewhere in spite of the growing competition of large scale industries. The data, he has collected, are instructive. In Germany out of 1,000 non-agricultural workers, 373 are still employed in handicraft undertakings. According to the French occupational census of 1921, out of 551,141 undertakings in the transforming industries alone employing 4,027,335 wage-earners, 466,036 employ fewer than 5 wage-earners each. In Great Britain 40 per cent of the industrial workers are employed in undertakings not using motive power. In Switzerland 328,008 are handicraftsmen out of a total of 827,624 workers. Japan, Russia, U. S. A. and the Balkan States are no exceptions.

The writer further points out that the modern handicrafts are not the relic of the past but play a very important part in modern industrial organisations. They have a great future as indicated by the industrial policies of Russia and Germany.

RATE OF PRODUCTION AND ITS RELATION TO THE COST OF PRODUCTION

The production on the power-loom is ordinarily five times as much as it is on the hand-loom. This, however, does not mean that the cost of production in the power-loom is only a fifth of the cost on the hand-loom; for, besides the cost of labour, there are other items of expenditure which must be included in the cost of production on the power-loom e.g. overhead costs arising from expensive machinery, building, and other equipments; their repair and maintenance charges, taxes, fuel and power charges, cost of establishment, supervision etc. The high initial cost of equipment and the recurring cost of maintenance and the scarcity of skilled labour in Indian industrial centres are some of the factors which may outweigh for a long time all the advantage of the speed of power-looms. In India the minimum cost of erection per loom in a mill is Rs. 600 and the average cost is Rs. 800 while an efficient hand-loom fitted with a flyshuttle sley and weaver's beam can be set up for Rs. 30. A comparison of the rate of production may be instituted between 20 hand-looms and one power-loom if the initial cost alone is the basis for comparison, for, 20 hand-looms can be set up for the cost of one power-loom. Now the quantity of production on 20 hand-looms will be nearly five times as much as it is on a power-loom. But this comparison is equally fallacious. The real efficiency of the power-loom and the hand-loom can be measured only in the light of initial cost, running and other costs. It is loose thinking if one states that the power-loom is superior to the hand-loom because the production in the former is four times greater; it is equally wrong to say that the power-loom weaver is more efficient than the hand-loom weaver because the former attends to four looms in India and to nearly twelve looms in U.S.A. and produces over 80 yards a day, while the poor hand-loom weaver struggles to manufacture 10 yards. 'Efficiency' without reference to the cost of production has no meaning. The high speed of production does not minimise the cost on the power-loom and it has no relation to the cost of production which alone can determine the real advantage of mechanical power over man-power.

This brings us to the question of mechanical power versus man power. The main cause of the introduction of machinery and the employment of more capital than labour in an industry is the comparative cheapness and efficiency of capital. Generally speaking, in industrially advanced countries labour compared to capital is dearer from the producer's point of view and therefore the tendency in rationalising industry is in the direction of increasing employment of capital in the form of machinery and improved implements. In countries like India and China, on the other hand, labour is abundant and is cheaper than capital in spite of its low productive power. And this explains the hesitation in increasingly employing capital in agriculture and industry in these countries. Costly plant driven by power cannot be employed in many branches of industries as long as its introduction has not got a decided advantage in reducing the cost of production (e.g. in spinning mills) or in eliminating time and space (e.g. in transport industries). In many cases the advantage accruing from its introduction is only temporary; for labour, unfortunately, in certain countries is prepared to compete with capital for employment on any terms. Where time is not an essential factor in production, labour in such countries competes successfully with capital and mechanical power. This is the condition in Indian industries, particularly in textile industries today. So long as there is this abundance of labour and skill which cannot find more remunerative occupation, the present quantum of production can be, and will be, well maintained by hand-loom. Further so long as the present economic order is not thoroughly changed increasing substitution of mechanical for man-power cannot be hoped for and where it does, it creates unemployment.

(The remarks of E. B. Havell will bear repetition. After carefully considering the ethics of machinery and the limits of hand-loom weaving, he concludes, 'Weaving is not one of those operations in which steam or electric power has an inherent superiority over hand-loom labour. There are many operations in which the superiority of the former is incontestable as wielding a huge mass of iron, railway engines and steamships. But a loom is a machine in which the force re-

quired to work it does not usually exceed the strength of one man and any excess of the force required absolutely prevents good weaving. In all countries where skilled manual labour is plentiful and cheap, the power-loom has no inherent superiority over the hand-loom, provided that the latter is made as mechanically perfect as the former, so that the working power of the hand-weaver is not wasted. The only question is whether the unit of mechanical power can be produced at a cheaper rate than the average cost of manual power'.¹)

To come back to the original theme, we have found that it is very nearly impossible to ascertain the exact point at which any useful comparison can be made between the hand-loom and the power-loom; that neither the initial cost, nor the rate of production, nor working expenses can alone prove useful and that it is the final cost of production per unit of output on the power-loom and the hand-loom that can determine their real efficiency. The retail prices of hand-loom and power-loom manufactures will not afford us any basis for this purpose, for the trade and commercial organisations for the mill and hand-loom products are different and any conclusion based on the difference of their retail prices will be misleading. For our present enquiry the prices of cloth ex-mill and ex-handloom must be ascertained. This we shall do in the next chapter. Definite data as to the cost of production in the mill are not available. Yet certain inferences regarding the cost of production in the mill and in the hand-loom can be made from certain observations and statements of writers on the cotton textile industry; and on that basis we shall ascertain the differences in the cost of production and examine whether the hand-loom can manufacture the same cloth at the same cost as the mill does, if not at a lower cost; and if so, under what conditions it is possible.

First there is the statement regarding the cost of production in mills prepared by Sir Victor Sassoon in 1926 and presented to the Royal Commission on Indian Currency. The statement is published as an appendix to the memorandum presented by the Bombay Millowners' Association to the Cotton Textile Tariff Board (Refer: Statement A). He

¹ E. B. Havell : *Artistic and Industrial Revival in India*, p. 163.

has given the cost of production of a piece of standard shirting cloth with 20s warp and 20s weft with details of the cost of converting raw cotton into finished cloth. Deducting three annas per pound of yarn used as the spinning cost¹ when cotton sells at Rs. 300 per candy, and four annas per pound when cotton sells at Rs. 700, the cost of weaving, according to Sir Victor Sassoon, is $5\frac{1}{2}$ annas per pound of cloth (inclusive of size) when cotton sells at Rs. 290 per candy and 6 annas when it sells at Rs. 700 (the difference being due to the weaving waste and insurance). The cost does not include the excise duty on cloth. The statement does not give anything about the ends and picks per inch, the amount of size in the cloth and other relevant details.

Secondly, there is a statement of cost in the memorandum presented to the Textile Tariff Board, 1927, by the Bombay Mill Owners' Association (Statement B). This does not give any specifications of the cloth taken for costing. Nothing is said about the dimensions of the cloth, the counts of yarn used and the ends and picks per inch. Like Sir Sassoon's, it includes the cost of spinning and weaving but not of spinning and weaving waste. It includes also the cost of dyeing and excise duty. Deducting the cost of dyeing and excise duty and 3 annas as spinning cost, the cost of weaving per pound of cloth comes to a little less than 4 annas. It must be remembered, however, that no reduction is made for the size in the cloth and the cost given here is for the weight of cloth and not for the nett weight of yarn used.

Thirdly, there is the statement of the cost of maintenance per loom in Bombay, in up countries and in Ahmedabad in the Report of the Indian Tariff Board 1927 (Statement C). The average daily cost in Bombay is 517 pies and in Ahmedabad and up country mills 470 pies. The average production per loom depends on the kind of yarn used and the kind of cloth woven. The average output of cloth of

¹ The cost of maintaining one spindle according to the report of the Tariff Board is 10.6 pies in Bombay and 9.4 pies in upcountry mills. The average outturn per spindle of 20s is $6\frac{1}{4}$ oz. and is seldom less than $5\frac{1}{2}$ oz. Assuming that 3 spindles can produce one pound of 20s the maximum cost of production is 32 pies in Bombay and 28 pies in other places. We have assumed throughout that the cost of producing one pound of 20s is 36 pies. This error will underestimate the weaving costs in mills.

20s is about 10 lbs. of cloth or 50 square yards and if we deduct the size used in it, 10 per cent of the weight of cloth, the daily output is 9 lbs. The cost of weaving a pound of cloth is 47 pies in Ahmedabad and 52 pies in Bombay. The cost of size used must be added to this, which will make the cost of weaving for an ordinarily sized cloth in Ahmedabad $4\frac{1}{2}$ annas per pound and in Bombay 6 pies more.

There are yet two other statements regarding the cost of production on power-looms in India prepared in 1930, by Arno S. Pearse of the International Master Spinners' Association, Manchester. In a first class mill in Ahmedabad (Statement D) whence he collected details regarding costing of cloth with $24\frac{1}{2}$ s warp yarn, the cost of spinning per pound of yarn is 3.04 annas and the cost of weaving is 4.98 annas per pound. He has also prepared a statement showing weaving charges per piece of cloth of different sorts in Indian mills. The cost of weaving varies from 9 pies to $13\frac{1}{4}$ pies per yard and from 45 pies to 67 pies per pound of yarn. The Statement E (p. 202) can be briefly stated thus :

Name of cloth.	Dimensions.	Reeds.	Picks.	Count of		Weaving charges per	
				Warp.	Weft.	Yd.	Lb.
						Pies.	
Dyer's cloth ...	41" × 36 yds.	36s	36	24s	20s	9	49
Shirting ...	35" × 22 "	56s	52	24s	20s	$12\frac{3}{11}$	45
Dhoti ...	28" × 7 "	48s	52	$24\frac{1}{2}$ s } 2/32	20s	$11\frac{1}{2}$	67
Dhoti ...	39" × 10 "	48s	52	$24\frac{1}{2}$ s } 2/32s	20s	$13\frac{1}{4}$	59
Dhoti ...	49" × 11 "	48s	48	24s	34s	$13\frac{3}{11}$	$58\frac{1}{2}$

In the above statement excepting for shirting where the cost of weaving per pound of yarn is 3 annas 9 pies only, in all other cases, it does not seem in any way to compare favourably with that on the hand-loom. It must also be noted that the cost of production per yard of cloth is one anna where the picks per inch are 52 and the width of the cloth is 36 in. and it is 9 pies per yard where the picks per inch are 36.

The costing sheet of an up country mill prepared in respect of grey chaddar in 1908 is appended herewith as Statement F. Even though trade union activity was then less effective and so wages were low, though the burden of taxation was light and though the general level of prices was low, the cost of wearing in 1908 was $5\frac{1}{4}$ annas per pound of cloth and 3 annas 9 pies per yard excluding railway charges and excise duty.

How far these widely differing estimates of the cost of production can be relied upon is a legitimate question. But let us for the purpose of comparison take the lowest estimate i.e. $3\frac{1}{4}$ as. per pound of cloth, though it does not obtain in most of the mills in India.

COST OF PRODUCTION ON HAND-LOOM

Two statements regarding the cost of production on hand-loom are appended to this chapter as Statements G and H one from the memorandum of the Textile Expert presented to the Textile Committee of the Madras Legislative Council (1928), and the other from the writer's enquiry in Kumaramangalam in Salem District (1928). According to the former, the cost of winding, warping, sizing and weaving of one pound of yarn is 4 annas 9 pies. If we include the weight of size so that this can be compared with mill cloth, the cost of manufacturing one pound of cloth will be 4 annas 4 pies on the assumption that 10 per cent of size is retained in the cloth. And in Kumaramangalam in Salem District the cost of production of cloth per pound of yarn of $18\frac{1}{2}$ s varies according to the prices of mill cloth in the market between $3\frac{1}{4}$ annas and $4\frac{1}{2}$ annas. But this cost will go up by 2 pies in the case of 20s and this is more than set off against the weight of size in the cloth which will reduce the cost of production per pound of cloth. In a village in Chingleput district the cost of production per pound of grey cloth is 2 annas 3 pies.¹

The writer is aware of the dangers of so many assumptions and hypothetical calculations but he ventures to state that if the weight basis for comparison of cost on power-loom

¹ The Report of the Special Officer for Cottage Industries.

and hand-loom is taken the error will be very negligible. If linear basis is taken the results will be very misleading unless the cloths of power-looms and hand-looms are comparable in all respects. Also he is aware that in the hand-loom industry, there is nothing like costing. The handweaver is content to make a living and accepts whatever price he gets for his manufactures as a result of the mill competition. His earnings have all the characteristics of profits rather than of wages.

However, a careful examination of the cost of production shows that the minimum cost in mills is 4 annas per pound of cloth of 20s with size but excluding the excise duty while the cost runs upto 6 annas where the yarn used is about 25s. In the hand-loom the respective costs are $3\frac{1}{2}$ annas and 5 annas. Thus it is clear that the cost of production on the hand-loom, if not always lower than it is on the power-loom, is not much higher. For, the hand-loom weaver adjusts himself according to trade conditions and accepts higher or lower wages and competes with the mill.

This persistence of competition of the hand-loom with the power-loom brings out certain facts which one must bear in mind in any scheme of industrial reconstruction. The abundance of cheap skilled labour and the comparatively high and sometimes prohibitive cost of capital equipment are two limiting factors in the expansion of cotton mill industry in India. This explains why still a-fourth of the total consumption of cloth in India and four-fifths of the consumption in China, where labour is abundant and cheap, are still produced on the hand-loom. Now, one cannot deny the advantages of mechanised mass production. But there is a limit to the concentration of the industry and with the increased cost of land transport and labour troubles on the one hand and the possible abolition of customs duties on imported yarns, the weaving section of the Indian mill industry will have to face a serious situation,¹ in which the hand-loom

¹ The great losses that many weaving mills are sustaining and the number of weaving mills that are annually going into liquidation are clear indications that these mills driven by power have their own difficulties which the hand-looms have not to face. The weaving mills as a rule fare worse than spinning mills which means that power-loom weaving is not as economically sound as it is generally assumed. Eighteen Indian cotton mills with an authorised

weaver may probably triumph if he is now properly organised. It would be either stupendous folly or wickedness to waste the inherited skill of the Indian weaver by forcing him to power-loom factories as a means of educating him in the science of modern industry. 'Rationalisation'—that magic word of modern industrial organisation—is not open only to power driven factories but also to small scale industries. But it is not courageously advocated by its well-wishers, for they are haunted by the fear of gigantic machines driven by mechanical power. This fear is unfounded. How the mill industry is rationalised and how the hand-loom industry can be modernised will be indicated in a later chapter. It is attempted here to show that the case for the mill industry is exaggerated; and it is loose thinking that leads to the conclusion that the higher the speed of production the lower is the cost of production. It is made out in this chapter that the cost of production in mills is not very much lower than in hand-loom though the speed of the power-loom is greater. It may safely be asserted that if the import duty on yarn is abolished and the industry is properly organised in its technical and commercial aspects, the hand-loom in India can turn the tables against the power-loom.

capital of Rs. 4.7 crores, fifteen mills with Rs. 2.36 crores, twenty-three mills with Rs. 4.97 crores went into liquidation in 1925-26, 1926-27 and 1927-28 respectively. The Lancashire mills fared no better. The liquidation of the weaving mills was more common than that of the spinning group. All schemes of cartellisation and rationalisation have so far proved ineffective. It is wrong to imagine that since India imports 1,000 million yards and manufactures over 2,000 million yards in indigenous mills that power weaving is flourishing. A number of mills have been forced into liquidation and what is most striking is that the average dividend paid by the Lancashire weaving mills for the past several years ranges only from 2 to 3 per cent. In fact very few mills are working very satisfactorily in spite of the great financial assistance given by the bankers. These mills can be said to be run merely to find employment for the people; and in spite of the huge outlay invested in maintaining and running 1,200 weaving concerns with 739,000 looms the number of persons employed is comparatively insignificant. This is due to the fact that it is not possible on the one hand to employ the minimum labour by installing labour saving appliances in order to obtain adequate return on the capital invested and on the other to provide employment instead of doing large sums of money to the unemployed. It is for this reason that the placing of the hand-loom on an economically sound basis so as to provide adequate remuneration to the weaver is urged as a means of preventing the unemployment problem assuming such large proportions in India as to necessitate the grants of doles to the unemployed.—Mr. Amalsad, *Cotton Cloth Impasse*, pp. 13-14.

STATEMENT 'A'

Allocation of cost as given by Sir Victor Sassoon in 1926 before the Indian Currency Commission, page 385 of Vol. II *Evidence: Indian Tariff Board (Cotton Textile)*, 1927.

ALLOCATION OF COST OF STANDARD SHIRTING 9 LBS. 40
YARDS 20S WARP AND WEFT WITH COTTON

	Price of cotton per candy of 784 lbs.	
	at Rs. 290.	at Rs. 700.
Raw cotton	45.46 annas	109.82 annas
Waste in spinning	6.80 "	16.47 "
Waste in weaving	3.96 "	7.67 "
Insurance, spare parts	3.01 "	3.01 "
Stores	7.44 "	7.44 "
On cost	11.21 "	11.21 "
Power	5.82 "	5.82 "
Mill management	5.22 "	5.22 "
Wages	30.93 "	30.93 "
Commission	1.91 "	1.91 "
Total	121.76 "	199.50 "

Taking the cost of spinning at 3 annas per pound when raw cotton sells at Rs. 290 and 4 annas per pound when it sells at Rs. 700, the cost of spinning and weaving may be analysed thus:—

	COTTON			
	@ Rs. 290		@ Rs. 700	
Cost of cotton	45.46 As.	37.35%	109.82 As.	54.90%
Cost of spinning including spinning waste	27.00 "	2.19%	36.00 "	18.85%
Cost of weaving including waste in weaving and size	49.30 "	0.46%	53.82 "	26.85%
Cost of weaving per yard of cloth	1.23 "		1.345 "	
Cost of weaving per pound of cloth	5.48 "		5.98 "	

If 10 per cent size were to be allowed the weaving cost per pound of yarn used will be from 6.08 annas to 6.64 annas,

STATEMENT 'B'

Cost of production of 1 lb. of cloth in mills as given by the Bombay Millowners' Association in their Memorandum to the Cotton Textile Tariff Board.

Coal	...	...	10.09
Stores	...	...	14.46
Labour	...	...	39.69
Office supervision	...	...	3.41
Fire Insurance	...	...	1.67
Municipal and other taxes	...	...	1.57
Interest	...	...	5.66
Commission on cloth	...	...	4.60
Agents' Commission	...	...	0.83
Excise duty	...	...	9.35
Dyeing charges	...	...	4.40
Income and super-tax	...	...	1.94
		Total ...	97.67*
		Total less excise duty and dyeing charges	83.92
		Total less spinning and dyeing charges and excise duty	47.92

* This includes the cost of spinning, weaving, dyeing and the excise duty. Deducting 36 pies for spinning and 4.4 pies for dyeing and 9.35 pies for excise duty, the cost of weaving including preparation of warp and finishing and folding and baling of cloth is 3.95 annas per pound of cloth. If we allow 10% for the weight of size the weaving cost will be 4.4 annas per pound of yarn used in weaving.

STATEMENT 'C'

Expenses per loom in Mills.¹

In Bombay.	517 pies.
In Ahmedabad.	470 pies.

This does not include the cost of size, nor the excise duty.

The rate of production on the power-loom is 35 yards to 60 yards per day of ten hours. It depends on the nature of the weave, the kind of yarn used and the number of picks per inch. The average daily outturn is 35 yards per loom when 26s to 30s yarn is used and the pick per inch is 64. It is 60 yards when 14s yarn is used and the pick per inch is 42. It is about 50 yards per loom when 20s yarn is used and the pick per inch is 52.

¹ Report of the Indian Cotton Textile Tariff Board, 1927.

STATEMENT 'D'

COSTING FOR 24½S WARP YARN IN ANNAS PER POUND OF YARN

Arno S. Pearse in his book on the *Cotton Industry of India* gives the costing as furnished by a mill in Ahmedabad, 1929.

Spinning Department		Weaving Department	
ANNAS		ANNAS	
Spinning wages	... 0.87	Stores including yarn purchased	... 2.05
Card and frame wages	... 0.36	Wages	... 1.51
Engine wages	... 0.25	Coal	... 0.25
Coal	... 0.36	Depreciation	... 0.28
Stores	... 0.37	Interest charges	... 0.20
Depreciation	... 0.35	Brokerage	... 0.17
Interest charges	... 0.25	Agency commission	... 0.52
Commission	... 0.04		
Ground rent	... 0.07		
Water rates	... 0.05		
Miscellaneous	... 0.07		
Total spinning charges.	3.4	Total weaving charges.	4.98

Spinning and weaving charges per pound of yarn used in cloth is 8.02 annas.

STATEMENT 'E'

Statement showing weaving charges per piece of cloth of different sorts in Indian Mills.

(From Arno S. Pearse: *The Cotton Industry in India*).

Description of cloth	Dhoti				Dyer's Cloth			
	a	b	c					
Width of cloth	...	32"	46"					
Speed of loom	...	205	190					
Reed	...	48s	36s					
Picks	...	52	36					
Warp counts	...	{ 24s	24s					
Warp counts	...	{ 2/32s col.						
Weft counts	...	20s	20s					
Dimensions of cloth	...	28" x 7 yds.	41" x 36 yds.					
Charges per piece in pies	1900	1910	1914	1928	1900	1910	1914	1928
Preparatory engine and other charges	22	29	29	57	71	95	96	232
Weaving wages	7	9	10	24	34	39	42	92
Total	29	38	39	81	105	134	138	324
Efficiency per cent	...	56.09	61.9	65.7	...	67.4	63.2	67.3
Cost of production per yard of cloth	4½	5½	5½	11½	2½	3½	3½	9

Shirting <i>d</i>				Dhoti <i>e</i>				Dhoti <i>f</i>			
46"				46"				56"			
190				190				170			
56s				48s				48s			
52				52				48			
24s				24s				24s			
20s				2/32s col.				34s			
35" × 22 yds.				39" × 10 yds.				49" × 11 yds.			

<i>d</i>				<i>e</i>				<i>f</i>			
1500	1910	1914	1928	1900	1910	1914	1928	1900	1910	1914	1928
.65	91	74	185	...	...	44	97	...	...	53	96
33	38	40	85	...	...	18	38	...	...	23	50
98	129	134	270	...	...	62	135	...	...	76	146
—	60·1	61·2	67·05	...	...	64·3	66·3	...	...	66·7	68·4
4 $\frac{1}{2}$ _{fr}	5 $\frac{1}{2}$ _{fr}	6 $\frac{1}{2}$ _{fr}	12 $\frac{1}{2}$ _{fr}	...	...	6 $\frac{1}{2}$ _{fr}	13 $\frac{1}{2}$ _{fr}	...	...	6 $\frac{1}{2}$ _{fr}	13 $\frac{1}{2}$ _{fr}

STATEMENT 'F'

The cost of production¹ in an up-country mill in 1907 is given below for a piece of grey chaddar No. 4000, 65" wide, 6 yards long with 56s reed and 56 picks.¹

Warp 17s.	@ 0-14-2	2 lbs.	Rs. A. P.
Size	@ 3 as. per lb.	7 $\frac{1}{2}$ oz.	... 1 12 4
Weft	@ 0-12-3	1 lb. 12 $\frac{1}{2}$ oz.	... 0 1 4·9
			... 1 5 0
Total weight of unfinished cloth 4 lbs. 4 oz.			
Winding, warping, drawing and sizing for 2 lbs.	...	...	... 0 1 4
Weaver's wages	...	...	... 0 4 6
Fixed charges on 4 $\frac{1}{2}$ lbs.	...	...	... 0 5 4
Folding, baling, weaving stores, nett loss in waste, etc.	...	...	... 0 5 8
Railway charges	...	...	... 0 7 1
Duty	...	...	... 0 3 2 $\frac{1}{2}$
Depreciation	...	...	... 0 1 4
Total cost			... 4 15 4
Cost of yarn			... 3 1 4
Cost of production less excise duty			... 1 14 0

¹ This costing has been furnished to the writer by his friend who was employed in Indian cotton mills.

			Rs. A. P.
Cost of production excluding excise duty and railway freight	...	...	1 6 6
Do.	per pound of cloth	...	0 5 3
Do.	per pound of yarn used	...	0 6 0
Do.	per yard of cloth	...	0 3 9

These rates include cost of baling, folding and other charges. Still the cost of production in the hand-loom is nothing prohibitive.

The cost of production in mills at present is twice the cost of production in 1910 according to Statement E. On this basis the cost of production at present will be 10 As. 6 Ps. per pound of cloth, 12 As. per pound of yarn used and 7 As. 6 Ps. per yard of cloth in the above case.

STATEMENT 'G'

Cost of production on the hand-loom.—Cost of producing one yard of cloth (4.75 oz.) of 20s warp and weft on the hand-loom as stated by Mr. D. M. Amalsad in his Memorandum to the Textile Conference.

Specification of cloth:—Length 1 yd.; breadth 48"; ends 48; picks 52; weight of 1 yard of cloth 4.75 oz.; add 10 per cent size.

			Rs. A. P.
Cost of yarn	...	...	0 3 6
Cost of winding, warping and sizing	...	...	0 0 6
Cost of weaving and winding	...	...	0 0 11
Total cost			0 4 11

Cost of weaving 1 lb. of cloth with size	...	4 annas 4 pies.
Cost of weaving 1 lb. of yarn	...	4 annas 9½ pies.
Cost of weaving 1 yard of cloth with size	...	1 anna 5 pies.

STATEMENT 'H'

Cost of weaving in Kumaramangalam in Salem District (1928.)

Specification:

Grey Veshti with thin black border 18½s warp and weft; picks and ends per inch about 50; length of the warp 84 yds.; breadth 45".

Yarn for the warp.	228 hanks, i.e.	...	...	12.2 lbs.
Yarn for the weft.	228 hanks, i.e.	...	...	12.2 lbs.

Total yarn ... 24.4 lbs.

Add 10 per cent size; weight of cloth is ... 26.8 lbs.

			Rs. A. P.
Wages paid for the warp in 1923	...	...	7 0 0
Wages paid for the warp in 1928	...	...	5 0 0
			1923
Cost of production per lb. of yarn used	...	0 4 7	0 3 3½
Cost of production per lb. of cloth	...	0 4 2½	0 3 0

Details of cost ---

			Rs. A. P.
Winding and warping	...	...	0 10 0
Sizing cooly	...	...	0 8 0
Cost of size	...	...	0 4 6

Total preparatory charges ... 1 6 6

Weaver's gain in 1928 ... 3 9 6

CHAPTER XVII

HAND-LOOM VERSUS POWER-LOOM

IN this chapter we propose to explore the possibility of resuscitating the hand-loom industry and to examine in greater detail the commercial basis for its reorganisation.

The lay opinion is that hand-woven cloths are dearer than mill cloths and it is usually attributed to the higher cost of production on the hand-loom. This may be true in some cases and in some places but the higher price of the hand-woven cloth is not mainly due to the higher labour cost. Cost of labour is not the only factor that determines the cost of production. There are other factors as well to be considered such as cost of yarn, overhead charges, cost of marketing etc. The hand-loom industry as at present organised for the purchase of raw materials, for the production of cloth and for marketing accounts for the higher price of cloth; and economy in these directions will reduce the cost of production. The yarn from the mill passes through many hands before it reaches the weaver and so does the cloth pass through a series of middlemen before it reaches the consumer. But where the weaver himself markets the cloth in the shandy the price is sometimes much lower than that of the mill cloth. Again the weaver gets his yarn from mills and his price includes (a) the profits of the spinner, (b) profits of the middleman through whom the yarn passes and (c) the duty on yarn. In a place 15 miles from Coimbatore, to cite an instance, the price of yarn per pound of 20s is 9 pies higher than the retail price in Coimbatore. The power-loom gets its yarn at a price which does not include middleman profits and duties and thus enjoys another advantage over the hand-loom. Again there is a psychological factor. There is usually less size in the hand-loom products than in many Japanese and Ahmedabad mill cloths which are neatly filled and finished; and the latter therefore compare favourably with hand-woven cloth where the weight or the appearance of the cloth is the determining factor. It must also be remembered that the hand-loom weaver, not being able to dictate the price for his labour, sells his cloth for whatever price it fetches him. Cost of production does not regulate his output

or determine the price of his cloth. He is willing to slave for hours on any terms so long as it gives him a living. On the other hand the cloth merchant for whom most of the weavers are bound to work tries to get the best price for the cloth. He knows that buyers are willing to pay more for hand-woven cloths and takes full advantage of this. Thus it is not because that the cost of production in the sense that relative cost of labour is higher on the hand-loom than in mills that the hand-woven cloth is dearer but it is due to the cost in other respects viz., in the distribution of yarn to the weaver, the marketing of cloth and the import duty on yarn. The one great advantage the power-loom enjoys is in the preparatory process. The slasher sizer is decisively cheaper than street sizing or even the Yorkshire dresser sizer. It is also asserted that the higher price of the hand-woven cloth is not too much when the quality of the cloth is considered. There is much to be said for this view. But these impressions are the results of personal prejudices and individual judgment and they are not helpful in determining whether the hand-loom or the power-loom is more commercially advantageous.

The hand-woven cloth is not standardised and therefore it does not lend itself to a comparative study of costs. Even where there are fairly standardised products, the cost of production varies from place to place and time to time according to the demand for cloth and the necessity of the weaver. We cannot therefore state with any certainty the difference between the cost of production on the hand-loom and on the power-loom.

We must pursue a different course of enquiry: 'Can cloths of stated quality be produced on the hand-loom at the same cost as on the power-loom?' To answer this question one must ascertain the kind of the cloth, its dimensions, its weight, the nature of the weave, the percentage of size in it, the count of yarn used for warp and weft, the number of ends and picks, the weight of different yarns used, the price of yarn, its quality, the nett cost of that cloth in the mill, the cost of manufacture per pound and per yard of cloth, whether at such rates cloth can be produced on the hand-loom and if so, under what conditions. These are points which must

be fully investigated. The present writer has examined some mill cloths on the lines indicated above from the data given in the report of the Indian (Cotton Textile) Tariff Board, 1927, and the evidence of the Bombay Millowners' Association and the result is appended to this chapter as Statement B. Absolute accuracy cannot be claimed for it, for the difficulty of obtaining accurate information from the mills in a fluctuating market is obvious. The selling price of the cloth is for ex-mill delivery during the last quarter of 1926. It is not stated in the report nor is it stated in the evidence at what price the cost of yarn was taken so that we can calculate the weaving cost in mills. To be on the safe side the cost of yarn is based on the top price of cotton during 1925 i.e. the year previous to that when the prices of cloth were ascertained by the Board and the Millowners' Association, though the average price of cotton in 1926 was Rs. 360 per candy of 784 lbs., i.e., $7\frac{1}{2}$ annas per pound. The following prices for different counts of yarn are adopted on the basis of 9 annas per pound of cotton and spinning rates mentioned in column 3 in the accompanying table:—

Count of yarn	Price of cotton	Spinning charges per pound ¹	Price of yarn per lb.
14s ...	9 annas	$1\frac{1}{2}$ annas	$10\frac{1}{2}$ annas
20s ...	9 "	3 "	12 "
24s ...	9 "	$3\frac{1}{2}$ "	$12\frac{1}{2}$ "
30s ...	9 "	5 "	14 "
36s ...	9 "	$6\frac{1}{4}$ "	$15\frac{1}{4}$ "
40s ...	9 "	7 "	16 "
44s ...	9 "	$8\frac{1}{2}$ "	$17\frac{1}{2}$ "

¹ The spinning rates adopted here are overestimated when compared with the rates calculated on the cost of maintaining a spindle in Bombay mills as given in the Cotton Textile Tariff Board Report. On the basis of 10·6 pies per spindle in Bombay and on the basis of the number of spindles required to produce a pound of yarn indicated in col. 2 below the probable cost of spinning different counts of yarn is given below:—

Count	Spindles per pound	Cost of spinning per lb. at 10·6 pies per spindle
10	1·25	13 pies
20	2·50	$26\frac{1}{2}$ "
30	4·30	45·6 "
40	6·66	70·7 "

When definite information is not forthcoming, many things have to be assumed. As regards the rate of production and the cost of production on the hand-loom, the ordinary weaver can furnish no reliable information as he maintains neither production sheet nor costing sheet. Mr. Chatterton observed in his book that the average rate of picking in a country-loom is about 30 per minute.¹ It is over 40 in a country-loom fitted with a flyshuttle sley. A weaver can do six to fifteen yards in a day of 10 hours, varying according to the

¹ THE AVERAGE RATE OF PICKING IN HAND-LOOM
COMPETITION

	20s warp. 20s weft.	30s warp. 30s weft.	100s warp. 100s weft.
Best country-loom with throw shuttle.	31	...	...
Improved pitloom with flyshuttle ...	45	...	47
Frame loom with flyshuttle ...	62½	66½	48½

The average rate of picking in the Government Textile Institute, Madras, in respect of different sorts of cloth and different kinds of looms is given below:—

Loom	Kind of cloth	Width	Warp and weft	Rate of picking
Flyshuttle	Longcloth	44"	20s × 20s	36
Do.	Fine dhoti	46"	60s × 60s	27
Do.	Plain striped shirting	35"	2/64 × 30s	60
Do.	Towels with dobby border	34"	20s × 20s	36
Do.	Twill shirting	38"	20s × 20s	38
Drawboy harness	Saree	44"	2/64 × 30s	27
Flyshuttle loom	Fancy shirting	43"	60s × 40s	31
Do.	Grey cloth	24"	2/42 × 20s	45
Hattersley's	Do.	24"	20s × 20s	54
Flyshuttle	Coating with different cotton weft	36"	2/36 × 16s	32

dimensions of the cloth, the count of yarn used, the number of picks per inch, the pattern woven and the kind of loom used. In Statement A, a scale of wage-rates varying in proportion to the number of picks, the width of the cloth and the count of yarn used is adopted to ascertain the probable cost of production on the hand-loom. The weaving rates are so arranged that the weaver gets at least 10 annas a day, for this is 25 per cent higher than the general level of wages. He is given 15 pies per yard when the picks to an inch are 64, 12 pies when there are 52 picks and 9 pies when 40 and below. If he increases his rate of picking, which he can easily do if he uses a frame loom with weaver's beam, he can earn more than 10 annas. Now neither do the average earnings of the most fortunate weaver, nor the daily earnings of the ordinary weaver or the agricultural worker generally work at the rate of 10 annas a day.

A perusal of Statement A shows that the cost of manufacturing cloth in Indian mills is 3 annas 9 pies per pound of yarn of 14s, 5 annas per pound of 20s, 7 annas per pound of 24s, 8 annas per pound of 30s, 8 to 10 annas per pound between 30s and 40s and 12 annas for 44s. It is evident from Statement A that almost all cloths of counts below 40s, not even excepting shirting and drill, (for, the prices of yarn in those cases are overestimated), can be manufactured on hand-looms at the same cost as on power-looms. But in counts above 40s the hand-loom is handicapped because of the very high price of yarn which is maintained at the level.¹ But it may be observed that the cost of production on the hand-loom does not include the cost of supervision, stores, insurance, interest and commission which amount to about 12 to 15 per cent of the cost of production of

¹The sudden jump in prices of 40s and 50s is very suggestive in the following prices of yarns (in 1928).

Price of grey yarn in Madras in 1928 March.

40s mule	Rs. 1-2-6	per pound.
50s medio	Re. 1-14-0	"
60s	" Rs. 2- 1-6	"
80s	" Rs. 2- 9-0	"
100s	" Rs. 2- 0-0	"
120s	" Rs. 3- 6-0	"

cloths in mills.¹ The expenses on this count may not be so much on the hand-loom but at least a portion of it will be necessary when the hand-loom is organised on the lines indicated in this book. Against this can be set off the import duty on yarn which the hand-loom pays and the mills in India do not which, at the rate of $1\frac{1}{2}$ annas per pound or 5 per cent *ad valorem* whichever is higher, works at 12 per cent when yarn sells at 12 annas per pound. The savings on account of the abolition of the import duty on yarn will be considerable i.e. $1\frac{1}{2}$ annas per pound. Again, it might be pointed out by the advocate of the power-loom that the hand-loom cloth is not finished, folded and baled as the mill cloth. The cost of production in mills includes the cost of finishing, folding and baling which must be deducted from the cost of production in mills in order to make it comparable with the cost of production on hand-looms. The cost of this ordinary finishing and baling in mills will be from 6 to 9 pies per pound of cloth. Now as against this, there are two items in favour of the hand-woven cloth: (1) the cost of production is cheaper on the hand-loom than on the power-loom by a few annas as indicated in col. 23 of Statement A, and (2) the cost of yarn is calculated on the basis of 9 annas per pound of cotton while the average price of cotton in the year 1925-26 was $7\frac{1}{2}$ annas per pound thus leaving a margin of $1\frac{1}{2}$ annas per pound. Also the price of yarn to the hand-loom weaver includes the profits of the spinners and the commissions of the agents. Though it is not possible to ascertain with any precision the extent of the difference in prices on account of profits, etc., it is not too much to assert that the cost of production on the hand-loom will not at any rate be higher than it is on the power-loom, provided the industry is organised on proper lines.

¹ PROPORTION OF MANUFACTURING AND OVERHEAD CHARGES PER LOOM.

	In Bombay	Percentage of total cost	Up-countries	Percentage of total cost
Manufacturing charges.	453.7 ps.	88 per cent	400.3 ps.	85 per cent
Overhead charges ...	60.36 ps.	12 „	70.9 ps.	15 per cent
Total cost ...	514.16 ps.	100 per cent	471.2 ps.	100 per cent

STATE-
STATEMENT REGARDING THE COST OF PRO-

DESCRIPTION OF THE PIECE	Grey Drill	3640 Gusto Shirting	Waller Yama Mfg. Shirting	AAAA Shirting
(1) Width, length and weight of the piece.	30 × 40 × 13½	36 × 40 × 13½	36 × 40 × 12	36 × 40 × 12½
(2) Count of warp ...	14	14	24	24
(3) Count of weft ...	14	14	24	24
(4) Reed ...	3/40	40	60	2/60
(5) Picks per inch ...	42	44	64	64
(6) No. of warp ends ...	1940	1600	2380	2360
(7) Tape length in yards...	44	43½	42½	43
(8) Size per cent ...	16	28	34	40
(9) <i>a</i> Weight of warp yarn. lbs.	7.25	5.91	5.05	4.64
(9) <i>b</i> Weight of weft yarn. lbs.	4.49	5.59	4.77	4.77
(10) Total weight of yarn in the piece. lbs.	11.74	11.5	9.82	9.41
(11) Cost of yarn. Rs.	7 11 5	7 6 10	7 11 1½	7 11 1
(12) <i>a</i> Cost price of cloth per piece (to the mills.) Rs.	10 6 9	10 4 6	12 0 9	12 7 9
(12) <i>b</i> Net C. I. F. Price of Japanese goods. Rs.	11 5 9	...	...	11 5 9
(13) <i>a</i> Selling price ex-mill. Rs.	11 8 4	11 6 11	13 10 2	14 6 0
(13) <i>b</i> Selling price of Japanese goods. Rs.	13 0 0	...	...	13 0 0
(14) Cost of production per piece excluding profits on power-looms (12 <i>a</i> —11). Rs.	2 11 14	2 13 8	4 5 7	4 12 8
(15) Cost of production per pound of yarn used. Annas.	3.7	3.9	7.07	7.7
(16) Cost of production per yard of Cloth. Pies.	13	12½	20.8	21.75
(17) Cost of production per pound of Cloth in mills Annas.	3.2	3.14	5.8	5.9
COST OF PRODUCTION ON HAND-LOOM				
(18) Cost of winding, warping and sizing and beaming on dresser sizer. Rs.	0 14 6	0 11 9	0 15 2	0 15 2
(19) Weaving charges per yard. Rs.	0 0 9	0 0 10	0 1 3	0 1 3
(20) Weaving charges per piece. Rs.	1 14 0	2 1 4	3 2 0	3 2 0
(21) Cost of production on the hand-loom. Rs.	2 12 6	2 13 1	4 1 2	4 1 2
(22) Savings in hand-loom: (difference between Cols. 21 & 14.) Rs.	+0 1 2	+0 0 7	+0 4 5	+0 11 6

N.B.—Cols. 1 to 8, 12 and 13 are taken from the Report and Evidence includes 5% for contraction and a similar allowance is made for wastage. Cost Hand-loom versus Power-loom, How much of coloured yarn is used is not

MENT A

DUCTION ON POWER-LOOM AND HAND-LOOM

Ali Shirting	Toyo Shirting	3938 Gusto Shirting	9999 Cotton Japan	Toyo Shirting	44000 Shirting	36210 Shirting
36 x 40 x 12	36 x 40 x 12	38 x 38½ x 10	40 x 38½ x 10½	36 x 40 x 5½	44 x 38 x 6½	38 x 38 x 5½
24	24	30	30	36	40	36
26	26	30	36	36	44	46
2/60	2/64	64	68	2/52	2/56	2/56
64	64	60	68	42	48	56
2360	2520	2680	3290	2050	2720	2350
43	43	40½	40½	42½	40	40
42	34	40	17	11	28	12
5·03	5·38	4·31	5·02	2·88	3·24	3·11
4·42	4·42	3·68	3·67	2·10	2·27	2·20
9·45	9·80	7·99	8·69	4·98	5·51	5·31
7 8 7	7 12 9	6 15 7	8 4 8	4 13 6	5 13 6	5 7 11
12 3 9	12 8 0	10 13 0	13 4 3	7 11 6	9 10 3	9 9 0
11 5 9	12 3 9	10 14 9	13 1 8	6 1 6	...	...
14 1 6	14 5 0	12 15 6	15 2 7	8 13 6	11 1 7	11 2 6
13 0 0	14 0 0	12 8 0	15 0 0	7 0 0	...	...
4 11 2	4 11 3	3 13 5	4 15 7	2 14 0	3 12 9	4 1 1
7·9	7·6	7·7	9·2	9·25	11·0	12·2
22·5	22·5	20	25	13·75	19	17·5
6·25	6·25	6	7·6	8·36	9	11·1
0 15 3	1 0 6	0 15 0	1 1 6	0 12 11	0 15 5	0 14 0
0 1 3	0 1 3	0 1 2	0 1 4	0 0 9	0 1 0	0 1 1
3 2 0	3 2 0	2 12 11	3 5 4	1 14 0	2 6 0	2 9 2
4 1 3	4 2 6	3 11 11	4 6 8	2 10 11	3 5 5	3 7 2
+0 9 9	+0 8 9	+0 0 6	+0 8 11	+0 3 1	+0 7 4	+0 9 11

of the Indian Cotton Textile Board. In Col. 8(b) the weight of weft yarn of yarn in Col. 11 is arrived at on the basis of the prices noted in Chapter on stated in the report.

STATE-

CERTAIN FACTS RELATING TO THE PRODUCTION ON HAND-

Particulars.	Longcloth Loom No. 1.	Fine cloth with Dobby harness Loom No. 2.	Plain Striped Shirting Loom No. 3.	Towels with Dobby Border Loom No. 4.
Count of warp	20	60	2/64	20
Count of weft	20	60	30	20
Count of reed	44	72	72	48
Picks per inch	48	72	80	48
Width of warp in reed (inches) ...	44½"	46"	35½"	34½"
Width of cloth on the Counter (inches).	41½"	42½"	32¾"	32½"
Weight of warp per yard of cloth (in ounce)	2 oz.	1½ oz.	1.55 oz.	1.65 oz.
Weight of weft (in ounce) ...	2½ oz.	1½ oz.	1.85 oz.	1.65 oz.
Contraction in warp	5%	5%	5%	5%
Contraction in weft	6½%	8%	7%	6%
COST OF PRODUCTION PER YARD	Rs A P	Rs A P	Rs A P	Rs A P
Cost of yarn	0 1 3	0 2 9	0 2 6	0 2 1
Cost of weft yarn	0 1 4	0 2 9	0 1 7	0 2 1
Cost of warp preparation including sizing.	0 0 6	0 0 8	0 0 3	0 0 5
Cost of weft preparation and weaving.	0 0 11	0 2 4	0 1 0	0 1 0
Cost of bleaching and Dyeing...	...	...	0 0 3	...
Cost per yard of cloth ...	0 4 0	0 5 9	0 5 7	0 3 6
Cost of production per yard includes preparation and weaving charges only.	0 1 5	0 3 0	0 1 6	0 1 5
Production per day of 8 hrs. (actual results).	10 yds.	5 yds.	10 yds.	10 yds.
Weaver's earnings per day Rs.	0 9 2	0 11 8	0 10 0	0 10 0
Length of cloth per pound (in yard).	3½ yds.	6½ yds.	4½ yds.	4.6 yds.
Cost of production per lb. of yarn used in the cloth excluding the price of yarn and charges for bleaching and dyeing.	0 5 6	1 5 4	0 5 10½	0 6 10

MENT B

LOOMS IN THE GOVERNMENT TEXTILE INSTITUTE, MADRAS.

Twill Shirting Loom No. 5.	Fancy Shirting Two (Shuttles) Loom No. 9.	Sari (draw boy harness) loom.	Looms 27 & 28 (two weavers) Double loom.	Salvation Army Loom No. 33.	Hattersley Domestic Loom No. 35.	Coating (multiple Shuttle) loom.
20	60	2/6	2/20	2/42	20	2/30
20	40	30	10	20	20	16
52	80	72	40	52	44	60
64	84	72	40	50	48	72
33½"	46"	4½"	48"	23½"	44"	35½"
30½"	43"	42½"	46½"	22"	40½"	32½"
1½ oz.	1.3 oz.	2¼oz.	4 oz.	1½ oz.	2 oz.	3 oz.
2.15 oz.	2 oz.	2¼oz.	4 oz.	1½ oz.	2 oz.	3.1 oz.
4½%	6%	5%	6%	4%	5%	6%
10%	7%	5%	3½%	7%	8½%	9%
Rs A P	Rs A P	Rs A P	Rs A P	Rs A P	Rs A P	Rs A P
0 2 4	{ 0 1 6 0 1 6	0 3 11 0 1 7	0 2 10 0 1 9	0 1 2 0 0 8½	0 1 3 0 1 3	0 2 9 0 1 9
0 0 6	0 0 9	0 0 3	0 0 3	0 0 1½	0 0 6	0 0 0
0 1 3	0 2 6	0 2 6	0 0 8	0 0 8	0 0 9	0 1 9
...	0 1 0	...	...	...	...	0 1 9
0 4 1	0 7 3	0 8 3	0 5 6	0 2 8	0 3 9	0 8 0
0 1 9	0 4 3	0 2 9	0 0 11	0 0 9½	0 1 3	0 3 6
yds.	5 yds.	5 yds.	24 yds.	12 yds.	15 yds.	6 yds.
0 10 0	0 12 6	0 12 6	0 8 0	0 8 0	0 11 3	0 10 6
4 yds.	4½ yds.	3½ yds.	2 yds.	6½ yds.	3½ yds.	2½ yds.
0 7 2	0 15 9	0 9 9	0 1 10	0 5 4	0 5 0	0 5 3

CHAPTER XVIII

COTTON FABRICS

MR. PATEL, a former Director of Agriculture and Industries of Baroda, prepared an estimate of the quantity of different kinds of cloth consumed in India and the extent of supply from (1) foreign imports, (2) Indian mill production and (3) hand-loom production in India.¹

(In Million yards).

Class	Counts of warp	Counts of weft	Hand-loom supply		Indian mills	Foreign imports	Total consumption of cloth	
			Patel's	Corrected ²			Patel's	Corrected ²
Coarse ...	20s	6-20s	900	600	60	300	1,260	960
Coarse-medium ...	20-26s	20-40s	150	100	500	1,100	1,750	1,700
Medium ...	26-40s	30-50s	450	300	40	750	1,240	1,090
Fine ...	over 40s	over 50	150	100	...	350	500	450
Total...			1,650	1,100	600	2,500	4,750	4,200

It is not stated how he arrived at the output of hand-looms. He evidently estimated the hand-loom supply on the basis of 6 yards to a pound of yarn. The Indian Textile Tariff Board (1926) took 4 yards of cloth to a pound of yarn and on that basis the corrected figure in the above table is arrived at. The Tariff Board (1930) considered this to be an over estimate. While 3 to 10 sq. yards of cloth can be manufactured from a pound according to the count of yarn and nature of the cloth, we are safe to assume that on an average a pound of yarn is equal to 4 yards of cloth.

The above table was prepared in 1906-07. As denoting generally the relative importance of cloths of different fineness, it is fairly accurate. The bulk of the consumption of cloth i.e. 60 per cent was made of coarse and coarse-medium yarns. Medium accounted for 25 per cent. This is

¹ *Indian Review*, 1907.

² (Corrected 1 lb. = 4 yards of cloth.)

nearly so even today though the relative importance of the hand-loom, the Indian mill and foreign cloths has changed.

From the available statistics the changes in the hand-loom and in mill consumption of yarn cannot be correctly stated. But certain conclusions are possible from Mr. Patel's table. The bulk of coarse cloth i.e. over 65 per cent was prepared by the hand-loom; the shares of the Indian mills and foreign imports in coarse-medium amounted to 90 per cent; and regarding cloth of the medium and fine counts, the foreign imports accounted for nearly two-thirds of the supply while the hand-looms supplied the other third. The share of the Indian mills was insignificant, though of late it has increased considerably.

THE NATURE OF THE SUPPLY AND CONSUMPTION OF CLOTH

Though definite statistical information is not available on this point, it is possible to state broadly the extent and nature of the supply from the three sources of (1) hand-looms, (2) Indian mills, (3) foreign imports. In 1926-27 which was a normal year and when there were no heavy protective duties nor boycott of foreign goods, the estimated Indian consumption of 5290 million yards was made up of 1758 million yards of foreign imports, 2166 million yards of Indian mill goods and 1366 million yards of hand-woven cloth.

The cloths can on the basis of the fineness of yarn used, be grouped under three heads:

(a) coarse : below 24s

(b) medium : 24-40s

(c) fine : above 40s.

On a careful study of the cloth market and the literature on the subject the following points suggest themselves:—

(1) Regarding imported cotton piecegoods, the bulk of the import is of medium counts i.e. 24s to 40s. The bulk of the Japanese cloth imported is of the coarser variety. As regards the coarse and grey cloth events have shown that Lancashire has lost much ground in competition with the east. It is observed by the Committee on Industry and Trade (U.K.) that the fall in the exports of coarse grey cloth to

India was great after the war and the Indian mills captured the local market. Now the total imports of foreign piece-goods have declined, and the fall is greater in the common varieties of grey coarse goods than in finished goods. But how far this decline is made good by the Indian mills and hand-loom respectively, it is difficult to state. Lancashire is now said to be specialising in the production of non-competitive goods. It stands to reason to assume that there has been a slight increase in the import of non-competitive piecegoods, such as finer grey cloths and white and coloured piecegoods of fine counts.

(2) As for the Indian mill production, the nature of the mill consumption of yarn is determined by the progress in the spinning section of the mills. The mills were producing about 600 million yards in 1906 and today they produce nearly 3,000 million yards. An examination of the quantity of the different counts of yarn spun in Indian mills suggests that the mill production of cloth is mainly in counts from 16s to 36s. The consumption of fine counts yarn is still small.¹

PRODUCTION OF YARN IN INDIAN MILLS
(in million lbs.)

Counts	1903	1913	1926	1931	1931
1 to 10	149	131	115	114	109
11 to 20	342	362	401	400	453
21 to 30	123	167	248	259	274
31 to 40	22	20	27.5	60.7	91
above 40	2.7	2.7	11.5	27.3	42

¹ Mr. Hardy, I.C.S., in his *Report* estimates that over 90% of the goods produced in Indian mills is of counts below 30 and that the consumption of counts above 40 is less than 4%. The consumption of finer counts by hand-loom is comparatively larger. The writer is of opinion that the hand-loom has not been worsted by the power-loom in India in respect of fine cloth manufacture. But the scope for the extension of its manufacture is limited. Those who talk of hand-loom taking to the production of finer counts cloth are not evidently aware of the difficulties of the hand-loom such as (a) the limited demand for such goods, (b) the dependence for yarn supply on Lancashire which enjoys a practical monopoly of it, and (c) the more formidable opposition of foreign interests.

At present the export of yarn to other countries is almost negligible being less than 3 per cent of the total manufacture. Nearly the whole quantity is consumed by Indian mills and hand-looms. It is difficult to estimate the exact quantity of different kinds of yarn consumed by mills and by hand-looms respectively. But it is safe to assume that weaving mills which are also spinning mills mainly produce such kinds of yarn as are required for their own consumption. Foreign imports of cloths made of coarse-medium and medium count yarn and hand-loom manufactures of medium grey cloths having declined, the increase in the production of cloth in Indian mills must have been in the class of fabrics employing yarns from 16s to 36s.

(3) The hand-loom manufactures have increased from 260 million lbs. in 1907-8 to 320 million lbs. in 1926-7, and 390 million lbs. in 1932-33. But the increase is mainly in the production of cloths made of coarse and coarse-medium yarn (14s to 36s) obtained from local mills. Regarding the province of the hand weaving industry, it is well known that cloth of coarse yarn is the monopoly of hand-looms, that the bulk of very coarse cloths is woven on them from Indian mill yarn. This is made from very inferior cotton. Some of the mills in Bombay tried to produce this class of cloth but the yarn could not stand the speed of the power-loom. They had to give it up as a bad business.¹ This cloth is very thick, warm and durable and is made everywhere in the country for local sales. This may, therefore, be considered as coming within the absolute sphere of the hand-loom. Foreign cloth of this class was being once imported but with the increased local production the foreign imports have practically ceased; but before 1935 Japan was a formidable competitor.

In regard to the production on hand-looms certain conclusions are possible: (a) the coarse counts yarn is the monopoly of hand-looms; (b) hand-looms consume practically all the imported yarn, (It was estimated that of 47 million lbs. of yarn imported in 1920-21, 44 million lbs. were used by the

¹ Mukerjee's *Foundations of Indian Economics*.

hand-loom);¹ (c) that the rest of the yarn consumed by hand-loom is from Indian mills of counts 12s and above. On this assumption the following comparative table of the hand-loom production for 1908-09 and 1926-27 and 1931-32 is made out:—

Yarns available for hand-loom
(In million lbs.)

	1907-1908	1926-1927	1931-1932
I. Below 10s. Indian yarn ...	148½	108	114
II. 11s. to 40s. Do. ...	77	166	174
III. Above 40s. Do. ...	nil	4 ^a	13 ^a
IV. 11s. to 40s. foreign yarn. ...	26½	29	16
V. Above 40s. imported yarn ...	7½	8½	13
Total ...	259½	315½	330

The progress in the hand-loom production is mainly in the class of goods produced from the coarse-medium and medium and also fine yarns. There is a decline in the output of very coarse yarn which is used for the manufacture of jamakkalams, durries, dhupatis, carpets, and for making cotton ropes and strings. The coarse medium from 16s to 26s is employed in the manufacture of coloured goods and sarees. The medium yarn is used for lungis, kailis and sarees. Grey cloths such as towels, dhoties, bedsheets etc., are also produced from the coarse and medium counts. Grey and bleached men's wear such as dhoties and upavasthrams and faced cloths are usually manufactured from fine yarns.

THE CHANGES IN THE RANGE OF GOODS SUPPLIED BY HAND-LOOMS, INDIAN MILLS AND FOREIGN IMPORTS.

The case of *the hand-loom* can be dismissed with a word. There is no statistical information regarding the quantity

¹ Ainscough, *British Trade in India*, 1921, p. 34.

² It is assumed that yarns above 40s produced in Indian mills are shared equally by the hand-loom and the power-loom.

and varieties of goods manufactured on the hand-loom. The difficulty of collecting information systematically and comprehensively regarding the volume and kinds of output in this cottage industry is obvious. All that can be said is that the production has increased about 20 per cent mainly in coloured cotton fabrics and cloths with solid border, or some special weave or having a mixture of silk, artificial silk or gold lace.

To begin with *foreign imports*. Before 1910 nearly 60 per cent of the demand for cloth was met by foreign imports. In 1927 they did not exceed 30 per cent of the total consumption of cloth. In 1931 they declined to 14 per cent. A comparison of the various items of imports during 1907-08 and 1933-34 will be interesting and indicate in what lines there is either an increase or decrease. (*Vide Tables below.*) The imports are grouped under three heads: (a) grey, (b) white or bleached and (c) coloured, dyed or printed. Each group is again sub-divided according to the trade name of the cloth (a) dhoties, sarees and scarves, (b) drills and jeans, (c) T-Cloths and domestic, (d) longcloth and shirting, (e) nainsooks, (f) prints and chintz, (g) jaconets, madapolam, mulls and cambrics and others.

IMPORT OF COTTON PIECEGOODS INTO INDIA

(In million yards)

(A)

1907-8

	Grey	White	Colour	Total
1. Dhoties, sarees and scarves ...	501	79	50	630
2. Longcloth and shirtings ...	581	156	62	799
3. Jaconets including cambrics, madapolam mulls ...	139	200	73	412
4. Nainsooks ...	...	247	...	247
5. Prints and Chintz...	...	...	200	200
6. Others...	32	51	159	242
Total ...	1,253	733	544	2,530

(B)

1925-26

	Grey	White	Coloured	Total	Percentage of 1907-1908
1. Dhoties, sarees and scarves ...	428	72	29	529	81%
2. Longcloth and shirting ...	170	94	72	336	42%
3. Jaconets, cambrics, madapolam, mulls ...	80	177	34	291	70%
4. Nainsooks ...	...	77	...	77	31%
5. Prints and Chintz...	...	...	56	56	28%
6. Others... ..	22	45	174	241	...
Total ...	700	465	335	1,530	66.4%

(C)

EXTENT OF THE FALL IN IMPORTS IN 1925-26 AS COMPARED WITH THE IMPORTS IN 1907-08.

(In million yards)

	Grey	Bleached	Coloured	Total	Percentage of decline
1. Dhoties, sarees and scarves ...	73	7	21	101	16%
2. Longcloth and shirting ...	411	62	+10	463	58%
3. Jaconets, cambrics, Madapolam, mulls ...	59	23	39	121	30%
4. Nainsooks etc. ...	...	170	...	170	69%
5. Prints and Chintz...	...	...	144	144	72%
6. Others... ..	10	6	+15	1	...
Total decline ...	553	268	179	1,000	39.5%
Percentage total decline	44.2	35.5	32.9	39.5	

The following points are well brought out:—

(1) The fall in the import is greater in the case of grey goods than in that of bleached and coloured ones. The market is now captured by Indian mills.

(2) Of the first five classes of cloths enumerated in the table which themselves represent nearly 85 to 90 per cent of the total imports, the greatest fall quantitatively, however, is in respect of longcloth and shirting and dhotis and sarees. They declined from 1429 to 865 million yards—a drop of 564 million yards. This fall is made up by an increase of 671 million yards of longcloth and shirting and dhotis produced in Indian mills. The drop is also great in respect of prints and chintz of the coloured group and nainsook of the bleached group.

Production in Indian Mills has increased from 800 million yards in 1907-8 to 2,200 million yards in 1926-27 and over 3,000 million yards in 1932-33. The production is classified under three main heads (1) grey and bleached; (2) coloured piecegoods and (3) cloths other than piecegoods i.e. hosiery, cotton mixed with silk or wool. The first group is again sub-divided into ten heads according to the trade names of fabrics. If the volume of production of grey and bleached goods is separately stated, it would enable us to note the direction in which the mill industry has advanced.

The accompanying table will indicate in what lines the mill production in India has advanced since 1907-08.

PRODUCTION OF CLOTH IN INDIAN MILLS
(In million yards or dozens or pounds)

	1907-1908	1926-1927	Increase or decrease
(1) <i>Grey and Bleached Piecegoods—</i>			
Chaddars yds ...	42·8	65·5	+ 23
Dhoties	237·9	585·7	+ 348
Drills and Jeans	21·5	79·7	+ 58
Prints	7·7	20·9	+ 13·2
Shirting and longcloth ...	207·2	580·0	+ 373
T. cloth, domestics, sheetings ...	120·3	93·0	- 27
Khadi, dhungri and Khaddar ...	26·1	98·7	+ 72·6
Tent cloth	2·5	6·7	+ 4·2
Other sorts	14·0	42·7	+ 28·7
Total of Grey and Bleached goods...	680·0	1,577·2	897·2

	1907-1908	1926-1927	Increase or decrease
(2) Coloured piecegoods ... yds. ...	128.3	681.5	+ 553
(3) Grey and coloured goods other than piecegoods ...	0.46 dozens	1.01	+ 0.55
(4) Hosiery ...	0.27	0.35	+ 0.12
(5) Miscellaneous ...	0.19 lbs.	4.29	+ 3.1
(6) Cotton goods mixed with silk or wool ...	—	2.31	+ 2.31
Total ..	808.4	2,255	+ 1450

Thus it is evident that there has been an increase in the output all round except in the case of T.-Cloth, domestic and sheetings. The increase is important, however, in respect of coloured piecegoods, longcloth and shirtings, dhoties and drills and jeans stated in the order of importance. Of the total increase of 1,450 million yards, coloured piecegoods, longcloth and shirting, and dhoties alone account for 1,250 million yards. The increased Indian output in coloured goods is not the result of corresponding fall in foreign imports which indicates that the imports under that head are of the non-competitive type.

Since 1926-7 there has been a further decline in foreign imports followed by an increase in the Indian mill production due mainly to the policy of protection. The following table will indicate that while total consumption of certain staple varieties remains more or less constant, Indian mill goods are rapidly replacing foreign imports:—

	1926			1934		
	Foreign imports	Indian Mills	Total	Foreign imports	Indian Mills	Total
Grey and White						
(1) Dhotis and Saris ...	619	590	1209	102	1073	1175
(2) Chaddars ...	1	65	66	...	59	59
(3) Longcloth and Shirting	336	587	923	207	827	1024
(4) Drills and Jeans ...	20	80	100	5	117	122
(5) Cambrics and lawns ...	16	3	19	6	113	119
(6) T.-cloth, Domestic and Sheetings ...	24	84	108	3	159	162
(7) Coloured, dyed or print- ed ...	429	645	1074	341	734	1075

Jaconets, madapollams, and mulls besides fine dhoties, sarees, longcloth and shirting, and coloured fabrics are the only varieties of foreign imports that have maintained themselves against Indian mills competition.

THE RANGE OF PRODUCTION ON HAND-LOOMS

The products of the hand-loom can be classified with reference to the fineness of yarn used in their manufacture, the colour of goods produced, and the arrangement of the warp and weft threads. These variations constitute the various patterns which are produced,

- (a) by the use of different coloured yarns,
- (b) by the use of more than a single pair of treadles,
- (c) by both these means,
- (d) by specially interweaving yarn on a set system as the weaving of the fabric proceeds, and
- (e) by processes subsequent to the weaving as needle work and embroidery.

To this classification must be added patterns which are the result of printing and dyeing.

It must however be remembered that this classification is neither exhaustive nor exclusive and there is a great confusion with reference to the names of fabrics in the various districts. Again it would be tedious, uninteresting, probably out of place to mention all the details regarding ends, picks, warp, weft, weave, colour, texture etc., of all hand woven fabrics. Therefore, they would be considered under three main heads :—

- I. Plain woven grey materials.
- II. Plain woven coloured or printed fabrics.
- III. Patterns requiring more than one pair of treadles, coloured, printed and white.

I. *Plain woven uncoloured materials.*—The typical fabrics of this kind are dhupatis, bedsheets, dhoties, thundus, chaddar, munduhs. They are usually of coarse count yarn obtained mainly from Indian spinning mills. The yarn used is usually coarse. With the increased handspinning which supplies coarse yarn plain shirtings are also now woven. The counts used vary from 8s to 24s. According to quality the

number of threads varies from 24 to 48 per inch. They are all strong thick material as closely woven as the yarn used will permit. This kind of fabrics is used generally by the poorer classes for clothing, bedsheets, blankets, and wrappings. The fabrics under this group differ only in respect of their length and width rather than of materials used. The dhoti is used as the loin cloth, the thundu or dupatta is a sort of scarf worn loosely round the neck or over the shoulders or sometimes as the head dress. The materials of which these are made vary according to taste, caste and wealth of the consumer. The plain coarse white cloth of 6 yards is usually favoured by the Vellala women in the south.

Fine upavasthrams, and veshties and turban cloths are also woven in various parts of the country. The yarns used vary from 40s to 200s. The ends and picks vary from 60 to 80 per inch. Plain muslins and white sarees are also woven with nice coloured borders or with gold lace and silk borders.

II. *Plain woven Coloured Fabrics.*—Under this head come the coloured checks and stripes used by men and women for apparel, such as sarees, pyjamas, urumals, turban cloths, carpets, bedsheets, Madras handkerchiefs, lungis and shirtings with stripes and check effect. The carpets are specially made of very coarse yarn. The lungis generally have 32s warp and 36s weft. The Madras handkerchiefs have 40s and 50s warp and 60s weft. The texture and the number of ends and picks per inch vary in respect of each cloth. But on an average 42 to 64 picks are put in per inch, though in the case of lungis and handkerchiefs, the picks and ends are twice as many. But the bulk of the production under this group consists of sarees made of coarse count yarn with or without figured borders, and they are worn generally by the poor agricultural and the lower middle class women.

III. *Patterns requiring more than one pair of treadles.*—Twills, drills, satins and figured cloths fall under this group. They are produced in hand-loom factories in the West Coast, Madura, and Salem Districts. Sateens are still produced in Ayyampet in Tanjore District.

Another classification of the hand-loom products is based

on the nature of the border: (1) solid bordered cloth, and (2) cloth with ordinary border. The former requires more than one shuttle and one weaver, as the weft yarns for the border and the body of the cloth are different e.g. Bangalore sarees.

ANALYSIS OF MILL CLOTHS

We shall now examine the reeds and picks, the counts of warp and weft yarns, the nature of the weave and the finish of the chief classes of mill goods, both foreign and Indian, with a view to see the extent to which they can be produced on hand-loom; for the future of the hand-loom industry depends on its regaining its lost ground.

Longcloth and Shirting. The total consumption under this head is more than 1,000 million yards: 200 million yds. from other countries and 820 million yds. from Indian mills. *Longcloth and shirting* are plain woven cloth, grey bleached or coloured, manufactured in various widths. 36s for warp and 38s for weft for imported longcloth and 32s for warp and 40s to 50s for weft for imported shirtings are used. There are different qualities both in longcloth and shirting, the reeds and picks varying from 42 to 46 per inch.¹ The Indian longcloth and shirting are coarser and more heavily sized.

Dhoties, Sarees, and Scarves total 1,150 million yards, 90 per cent being from Indian mills. All of them are plain-weave, while in the case of dhoties and sarees the border is also 'crammed' and coloured. The imported dhoties and sarees are made of 30s/40s for warp and 36s/46s for weft and have from 56 to 66 ends and picks per inch. Imported dhoties are of three kinds: (1) shirting dhoti where the warp is less than 40s, (2) jaconet dhoti where the warp is from 40s to 48s, (3) mull dhoti of finer warps.² The sarees are of similar texture and pattern but the border design and the

¹ The term '*shirting*' is often used with reference to quality. In the sizes given above very little cloth woven from finer yarns than 40 to 44s is shipped to India and shirting quality is therefore used to indicate a cloth not exceeding this limit of fineness. However white shirting is often made from the finer counts yarn and is normally 40 yards in length,

² Hardy's *Report*.

length of the piece are different from those of dhoties. The scarves are most loosely woven with 44 to 60 ends and 36 to 60 picks; and from 28s to 34s for warp and from 32s to 40s for weft are employed.

Next in importance come the *Jaconets*, *Mulls*, *Nainsooks*, *Madapollams* and *Cambrics*. *Jaconets* are plain grey cloths with 64 ends and 52 picks, woven with 38s for warp and 40s for weft. They are made of all widths but generally from 18. to 22 yards in length. *Mulls* are plain woven cloths, mainly bleached with 64 to 80 ends and picks woven with different kinds of yarn from 60s to 100s, both for warp and weft. *Nainsooks* are also plain bleached cloths made in various qualities from the fineness of cambrics downwards. *Cambrics* are fine woven plain cloths with 60s warp and 50s weft. *Madapollams* are bleached plain cloths used by ladies for underwear. They have from 72 to 80 picks and 84 to 96 ends and are woven with yarns from 50s to 60s for warp and weft. *Domestics* are plain heavy grey cloths; the warp is finer than the weft and the length is from 20 to 66 yards with various widths.

T.-Cloth, *Domestics* and *Sheetings*. They are heavy piece-goods. *T.-Cloth* is a plain heavy grey cloth. The warp and weft are usually of the same count and the length is 24 yards with different widths. *Domestics* have a finer warp than weft. *Grey sheeting*, as known in the Indian trade, is a plain heavy grey cloth and has the warp coarser than the weft, the usual dimensions being 35 ins. by 40 yards weighing from 14 to 17 lbs. per piece. *Voile* is an open mesh wiry fabric of a plain weave and hard twist cotton. *Printers* constitute a class of coarse grey cloths of special dimensions and specially surfaced to receive a printed pattern. The machine-printing industry has always been very small but there is a considerable output in the Indian mills which is used for hand-printed quilt covers. *Prints and chintz* form a particular class of coarse printed goods of special dimensions. In the 'dyed' print goods printing is done on dyed cloth, while in 'printed' this is done on grey or white pieces. The *lungi* is a coloured garment generally with a pronounced check and is worn in Burma with the two ends stitched together. The length is from 2 to 2½ yards. The *sarong* is the Malay equivalent of

the lungi and like the latter is a nether garment. The cotton *lungi* or *sarong* is worn by the poorer classes of Burma, men and women alike, and by certain classes of men in East Bengal, Ceylon, and the Muslims in South India. *Dungri*, *khaddar* and *khadi* are coarse cloths woven from the lowest counts of yarn. They are sold in competition with the hand-loom cloth from hand-spun yarn. *Coatings* and *trouserings* are terms applied to a variety of heavy coarse fancy cloths, sometimes loaded almost to the consistency of serge or felt; tweeds and checks are similar to coatings and trouserings. *Checks*, *spots* and *stripes*, as applied to white goods, imply self-coloured patterns woven by the use of different kinds of white yarn or by modification of the weave in different parts of the cloth.¹

The nature of *the weave* is also an important point for investigation. It is well known that the texture of a cloth is largely dependent on the manner in which the warp and weft threads are interwoven. The 'plain' weave which is adopted for the majority of cloths is that in which each thread in either direction runs alternately under and over another in the opposite direction. Another common weave is the 'twill' in which the method of interlacing warp with weft describes a uniform diagonal line on its surface. There are some special weaves as *bird's eye pattern* (produced on four shafts), *sateen* and *Italian* (generally of five shafts or more), *honey comb* and *mat weave*.

Cotton fabrics can again be classified into three kinds according to their finish (a) grey, (b) bleached or white, and (c) coloured. Cloth can be finished in different ways by (i) filling and finishing with starch and additional weight, (ii) calendering, (iii) mercerising, (iv) bleaching, (v) printing, and (vi) dyeing. Cotton fabrics can also be classified into (i) garment units and (ii) piecegoods. The former is distinguished from the latter by 'borders' and 'headings'. At present the hand-loom produces more garment units than piecegoods.

¹ W. Hough, *Cotton Fabrics*. Hardy's Report and Industry Year Book, Calcutta.

We can now divide the cotton fabrics according to their weave, finish and tradenames as follows:—

Plain weave		Special weave	
Garment units	Piecegoods	Garment units	Piecegoods
GREY— Chaddars, dhoties, sarees and scarves	Jaconet, mull, madapollam, cam- bric, longcloth shirting, printers sheeting, T.-cloth and domestics	...	Drills and jeans
WHITE— Chaddars, dhoties, sarees and scarves	Mulls, jacanets, madapollam, cam- brics, muslins, lawns, nainsooks, longcloth and shirting	...	Checks, spots and stripes; drills and jeans and twills
COLOURED— Chaddars, dhoties, sarees and scarves, lungis, sarong	Cambrics, mado- pallam, muslins, mulls, jacanets, shirting	...	Checks, spots and stripes, drills and jean twills
PRINTED GOODS— Printed dhoties, sarees, etc.	Prints and chintz	...	...

Regarding the manufactures in Indian mills more than 95 per cent relate to the fabrics woven out of coarse and medium count yarn i.e. from 14s to 32s and nearly 80 per cent of them are plain weave.

Now we shall make a comparative table of the relative importance of the foreign imports, the Indian mill production and the hand-loom manufactures in the Indian market in 1926 and in 1934, the former representing the post-war protection period and the latter representing the present day of discriminate protection and Imperial preference:—

SUPPLY OF CLOTH
(In million yards)

Cloths of	1926					1934				
	Imports	Indian Mills	Hand-loom	Total	Percentage of total consumption	Imports	Indian Mills	Hand-loom	Total	Percentage of total consumption
Coarse counts : 1s-25s	250	1675	985	2910	53.4	...	1950	1000	2950	53.9
Medium counts : 26s-40s	850	500	215	1565	29.8	37.5	1025	275	1675	30.6
Fine counts : Above 40s	650	25	100	775	14.8	50.6	225	125	850	15.5
Total ...	1750	2200	1300	5250	100	875	3200	1400	5475	100

[N.B.—It is assumed that 4 yards of cloth can be manufactured from one pound of coarse yarn, 4½ yards from medium counts and 6 yards from fine yarn.]

It is evident from the above table that

- (1) the total consumption of cloth has increased under all three heads: coarse, medium and fine;
- (2) the imports of coarse cloth have practically ceased and of medium and fine qualities have declined 56 per cent and 23 per cent respectively;
- (3) the fall in the imports is made up by increased Indian production; but the benefit to the hand-loom is very insignificant;
- (4) there is a tendency for greater preference for cloths of medium and fine yarns due partly to the system of protection; but there is no marked change in their percentage of total consumption. This suggests unmistakably that the scope for fine goods which the well-wishers of hand-loom weavers desire them to produce is limited, for the demand for the fine goods at their prices is almost inelastic. It is also doubtful whether fine goods can be produced on hand-loom as economically as they are produced on power-loom. Further

TABLE A

DETAILS OF COTTON PIECEGOODS IMPORTED FROM OTHER COUNTRIES AND PRODUCED IN INDIAN MILLS IN 1927-28 (IN MILLION YDS.)

Names of cloths	Imported from other countries						Indian mills		Grand Total
	Grey	White	Coloured				Grey and bleached goods	Coloured goods	
			Printed	Dyed	Woven	Total			
Dhuti, Sari, Scarves and Chadder ...	528	72	23	24	3	50	66 (Chadder)	...	716
Saris and Scarves ...	...	...	30	3	5	38	616 (Dhuti)	...	654
Jaconets, mulls, madapollams, cambrics, muslins ...	80	16	...	...	...	...	...	...	} 304
Mulls ...	...	208	...	...	...	...	...	...
Cambrics and lawns ...	...	8	...	...	...	...	5½	...	13½
Longcloth and shirting ...	223	112	...	...	...	...	...	...	} 1,053
Sheeting ...	...	...	29	39	20	88	620	...	
T-cloth and Domestic sheetings ...	23	...	...	...	...	...	39	...	62
Drills and Jeans ...	11	7	31	10	23	64	92	...	174
Checks, spots, stripes ...	...	14	2	10	7	19	...	...	33
Nainsooks ...	...	93	...	...	...	...	...	...	93
Twills ...	...	15	15	13	12	40	...	...	55
Flannels and Flannel ...	...	...	12	4	4	20	...	...	20
Sarong and Lungis ...	...	...	11	...	9	20	...	...	20
Prints and Chintz ...	...	...	68	2	...	70	...	...	70
Sateens and Italians ...	...	...	5	25	...	30	...	...	30
Velvet and Velveteen ...	...	...	...	...	2	2	...	...	2
Coating and Trousering ...	...	...	...	...	9	9	...	...	9
Printers ...	...	...	...	...	...	...	20	...	20
Tent cloth ...	...	...	...	...	...	...	6	...	6
Khadi, Dungri and Khaddar ...	...	...	...	...	...	...	116	...	116
Unspecified ...	1	11	9	28	17	54	41	681	788
Total ...	876	556	235	158	111	504	1621½	681	4238½

TABLE B

DETAILS OF COTTON PIECEGOODS IMPORTED FROM OTHER COUNTRIES AND PRODUCED IN INDIAN MILLS IN 1934 (IN MILLION YDS.)

Names of cloths	Imported from other countries				Indian mills		Total of all goods
	Grey	White	Colour- ed	Total	Grey & bleach- ed goods	Colour- ed goods	
Dhoties, Saries and Scarves ...	92.9	8.9	...	101.8	1073	...	1174.8
Saries and scarves ...	...	...	22.6	22.6	...	...	22.6
Sarongs and lungis ...	...	...	14.0	14.0	...	...	14.0
Chaddar ...	0.7	...	...	0.7	59.1	...	59.8
Khaddi, Durgri and Khaddar ...	...	...	...	...	101.6	...	101.6
Cambrics ...	...	...	44.2	44.2	112.7	...	162.9
Lawns ...	...	6.0	...	6.0			
Jaconets, Madapollems, Muslins and Mulls ...	23.2	23.3	...	46.5	...	...	177.8
Mulls ...	...	131.3	...	131.3	...	...
Longcloth ...	134.5	...	...	134.5	827.3	...	1116.0
Shirting ...	...	...	81.5	81.5			
Longcloth and Shirting ...	...	72.7	...	72.7	...	...	...
Twills ...	...	6.4	13.6	25.0	...	...	25.0
Nainsooks ...	...	14.1	...	14.1	...	...	14.1
Drills and Jeans ...	0.8	4.1	52.2	57.1	117.0	...	174.1
T.-cloth, Domestic, and Sheeting ...	2.5	0.1	...	2.6	158.6	...	161.2
Checks, Spots, and Stripes ...	...	4.2	14.4	18.6	...	...	18.6
Flannels and Flannets ...	...	0.1	9.4	9.5	...	...	9.5
Printers ...	...	...	...	...	18.9	...	18.9
Prints and Chintz ...	...	...	23.4	28.4	...	...	28.4
Sateens and Italians ...	...	...	23.2	23.2	...	...	23.2
Velvet and Velveteens... ..	...	...	6.3	6.3	...	...	6.3
Coating and Trouserings ...	...	...	3.4	3.4	...	...	3.4
Embroidered ...	4.1	...	2.7	6.8	...	...	6.8
Tent cloth ...	...	...	...	...	5.7	...	5.7
Unspecified ...	1.0	2.1	19.7	22.8	...	734.4	757.2

TABLE C

THE COUNT OF YARN IN THE WARP AND WEFT, THE NUMBER OF PICKS AND ENDS PER INCH AND THE NATURE OF THE WEAVE OF CERTAIN CLOTHS USUALLY IMPORTED INTO INDIA.

Name of cloth	Warp	Weft	Ends	Picks	Nature of weave	Size used	Remarks
1. Dhoti ...	30s-40s	36s-46s	56-	56-66	Plain weave with coloured borders.	...	Mainly grey.
2. Saris ...	Do.	Do.	Do.	Do.	Do.	...	Colour-ed.
3. Scarves ...	28s-34s	32s-40s	40-60	36-60	Plain weave.	...	...
4. Longcloth	36s	38s	72	72	Do.	...	Cockle finish.
5. Twill ...	36s	38s	64-76	76-108	Twill weave.	10% Size.	...
6. Shirtings.	32s	40s-50s	64-76	60-76	Plain weave	Heavily sized	striped.
7. Printers ...	36s	42s	...	...	Plain grey cloth.	25-100%	27", 28" and 31" width.
8. Domestics.	18s-24s	36s-40s	56-64	56-64	Plain weave	...	grey.
9. Cambrics.	60s	50s	90-100	90-110	Plain weave	...	Fine.
10. Jaconets.	38s	40s	64	52	Do.	...	Grey 18-22 yds.
11. Mulls ...	60s-100s	60s-100s	64-80	61-80	Do.	...	Bleach-ed.
12. Nainsooks.	40s-60s	36s-50s	...	...	Do.	...	18 yds. piece.
13. Madapol-lams ...	50s-60s	50s-60s	72-80	84-95	Do.	...	Bleach-ed.
14. Muslin ...	80s-100s	80s-100s	48-96	48-84	Do.	...	Bleach-ed. Printed and Dyed.
15. Voils ...	2/100s	2/100s	58	58	...	...	...
16. Drills ...	32s-36s	36s-42s	112-128	60-80	Five shaft weave.	...	...
17. Lungis ...	32s	32s-40s	60	60	Plain.	...	Poor quality
18. Kerchief.	32s	46s	96	80-100	Plain.	...	Good quality.
19. Jeans ...	16s 20s	20s-32s	80-90	52-60	Three shaft twill weave.	...	...

[From W. Hough : *Cotton Fabrics.*]

CHAPTER XIX

THE RE-ORGANISATION OF THE HAND-LOOM INDUSTRY.

'If the cottage industry is to survive as a means of livelihood the hereditary craftsman, the artistic patron, the philanthropic helper—all these uneconomical elements of the present systems must be modified in conformity with modern industrial ideas or else be eliminated. But if the inherent obstinacy and conservatism of individuals in the cottage industry prove to retain economic vitality, it must be so modified as to bring about the salvation of the worker.'

'The improvement of the hand-loom industry if undertaken at all must be done on a comprehensive scale and by tackling the problem from all sides.'—DAVIES, I.C.S., *Formerly Director of Industries, Madras.*

'Any method by which the hand-loom weaving can be preserved deserves a prolonged trial and it may be pointed out that there are no justifiable grounds for any undue pessimism regarding its future.'—*Maclegan Committee on Co-operation.*

THE PROBLEM

The problem of the hand-loom and of the hand-weaver is only a part of the larger problem of poverty and unemployment in India. It is a sad feature of the present industrial system that everywhere factory workers have to face a very severe competition from poor-paid workers in handicrafts and unorganised industries. Sir Alfred Chatterton noted the significance of this.¹

The consequences of the development of industries with the aid of imported machinery are many. Unemployment has increased. There is no appreciable improvement in the economic conditions of the Indian working classes. If there is any betterment, it is more the result of world forces than the consequence of internal development. And what is gained by the few is nothing compared to the sufferings of the many. It is now becoming increasingly clear that merely mechanising production cannot solve our problems. It is on this consideration that the revival of the handicrafts in general, and of the hand-loom in particular, is here advocated.

We may now proceed to state our objectives. Firstly, in view of the peculiar economic condition in India we have

¹ 'Industrial Evolution', p. 22,

to evolve an industrial system whose chief aim should be 'to employ human power to the greatest extent possible and in the way more advantageous to the individual.' This end cannot be realised by the mere development of large scale industries without a radical change of the present social, economic and political system. But one cannot deny the necessity for providing employment. Every power-loom and every mill hand displaced, it must be noted, can provide employment to at least four persons. The extent of the increased employment depends on the extent to which the hand-loom can capture the province of the power-loom. The defence of the machinery by the Classical Economists fails in this case, as no new avenues of employment as indicated by them have so far been opened to absorb displaced labour. In India the introduction of foreign machinery has created permanent unemployment. This ugly feature cannot be found if the hand-loom is developed. It is a simple machine which can be made in India and does not displace labour.

Secondly, we must increase the national income, by all possible means and secure its proper distribution. The benefit of increased production to be permanent must be shared by the whole community. This is what is meant by the co-ordination of production and distribution. Economic progress consists not merely in the increased earnings of workers individually, but in the number of workers sharing this prosperity. If the present mill outturn in India is made on the hand-loom the aggregate earnings of workers will be about Rs. 12 to 15 crores i.e., an increase of 50 per cent of the purchasing power of the working class. This is not negligible. The extent to which new purchasing power of the community is created depends on the extent of the replacement of the power-loom by the hand-loom.

Thirdly, we should bring about the much desired co-ordination between agriculture and industry. The development of the handicrafts, particularly the hand-loom, will benefit agriculture by creating a larger demand within the country for the products of Indian agriculture, will increase the purchasing power of the rural population by providing

additional means of livelihood and will enrich the Indian rural life by establishing rural factories.

The organisation of the hand-loom industry has its limitations. It is not advocated here that all capital and organisation should be wiped out immediately. The transformation must take place gradually. Further, this preference for the hand-power is not for eternity. It is a necessary intermediate phase. Other limitations are also noted. Having in view all these considerations the following suggestions on the reconstruction of the hand-loom are made.

Before we proceed to sketch out the lines of reorganisation and the revival of the industry, we shall recapitulate the following facts which bear on the re-organisation of the industry: (a) The scope for weaving special patterns of cloths and for encouraging hand-loom to use more of finer counts is limited, and the market for very fine cloth cannot expand to any appreciable extent unless there is a great increase in the purchasing power of the agricultural population. And so long as very fine count spinning is a practical monopoly of Lancashire, Indian hand-loom cannot compete with Lancashire in the production of such fine varieties as mulls, muslins etc.¹ (b) The prosperity of the hand-loom cannot be looked for by devoting attention to the artistic aspect of weaving alone; the industry cannot prosper unless it regains much of its lost ground in common varieties; and the weaver will continue to sink in poverty if the industry does not expand. (c) Lastly, the expansion of the hand-loom industry is determined by the nature of the demand for cloth, the nature and extent of the imports and Indian mill production and the possibility of manufacturing them at the same cost, if not lower, on hand-loom. Now more than 80 per cent of cloths consumed in India, it is estimated, have warps with counts below 40s. A large portion of it is plain weave. Taking the grey plain cloths alone produced in Indian mills,

¹ Machinery for fine count spinning, it is said, is a British monopoly. The cost of erecting a spindle is nearly twice in India as it is in England. Hence the very high cost of production of fine counts in India. In this connection it must be noted that Japan successfully competes with Lancashire and India in the manufacture of many kinds of cloth, because Japan manufactures her own looms and spindles and this, besides other advantages, reduces its cost of production. (Refer Arno Pearse, 'Cotton Industry in Japan and China',

the annual consumption is not less than 2,000 million yards. Add to this 500 yards of grey cloth imported. The bleached and coloured, printed or dyed piecegoods differ from grey ones in their finish. There is not much difference in weaving which would render the manufacture of such cloths on hand-looms impossible or unprofitable. The bulk of the manufactures of the Indian mills is of coarse-medium counts varying from 14s to 32s and that of the imports, of medium counts from 24s to 50s. Only when the hand-loom is organised to produce these types of cloths without increasing the cost of production, can we look forward to the amelioration in the conditions of the weavers and the solution of the problem of unemployment and misery of the rural population.

It must also be noted that the immediate objects in organising the hand-loom industry are: (1) to increase the earnings of the weaver and his family by giving him a continuity of employment and by substituting the more remunerative work of weaving for preparatory operations; (2) to standardise hand-loom products, which does not mean a creation of monotony of patterns or absence of varieties, but the introduction of that principle of business which makes the product answer to the sample and, in general, the improvement of the trading and manufacturing systems; and (3) to standardise wages by eliminating exploitation of all kinds, and lastly (4) to realise the other objectives mentioned in the beginning of this chapter.

LINES OF ORGANISATION

I. LINKING OF THE WEAVERS AND HAND-LOOM FACTORY WITH SPINNING MILLS

The future of hand-loom weaving depends on the improvement of the loom, the preparatory processes, the business organisation and the system of education and industrial training. Leadership, organisation, co-operation, technical and general education, technical assistance, better business arrangements for producing and marketing are obvious necessities.

The first step in the reorganisation of the industry is to

ensure a steady supply of yarns of reputed count and quality ✓ to hand-loom weavers at reasonable prices. At present the weaver depends on the mills for the supply of yarn. In spite of the semblance of competition the price of yarn to the weaver is higher than it need be. Due to the presence of import duties on yarn, its price to the hand-loom weaver is further enhanced. In the case of mulls, muslins, etc., the difference between the price of cloth and the price of yarn at market rates is so low that it raises the reasonable suspicion whether it is sufficient to cover the cost of preparation, weaving and finishing in mills and whether the price of yarn is not artificially maintained at a high rate.¹ While the price of raw cotton lags behind the general level of prices and the level of wages the rise in the price of yarn is higher than that of

¹ 'I find it strange that the cost of yarn we import is greater than the imported cloth of the same weight. It is not possible to produce mulls of the well known 1703 type even at the cost they are sold in the bazaars though we use the same yarn and weave at the lowest possible cost. My experience tells me that the price of imported yarn is specially raised by some combination of foreign spinners and cloth manufacturers'.—*Mr. Churchill of Ahmednagar at the Industrial Conference, 1908.*

The writer has examined some foreign cloths in 1928 in the manner given below and the examination substantiates the view expressed above, viz., that the price of fine yarn is artificially maintained.

Specifications.	9000 Glasgow mull.	1703 Bleached mull.	'Lady' grey mull.
Length	20 yds.	20 yds.	20 yds.
Width	52"	52"	49"
Weight of the piece	1.9 lbs.	2.9 lbs.	2.9 lbs.
Ends	84	84	80
Picks	84	90	80
Warp (apparent count)	116s	80s	66s
Weft (do.)	114s	80s	64s
Percentage of size	1.5	2.5	3.5
Weight of yarn	{ 0.90 lbs. 0.93 lbs. }	{ 1.3 lbs. 1.4 lbs. }	2.6 lbs.
Price of yarn excluding yarn duty 5 per cent	Rs. 6- 3-0	6-10-0	5-10-0
Price of the piece excluding cloth duty of 15 per cent	Rs. 11- 0-0	10-12-0	7-5-0
Difference* being the cost of production	Rs. 4-13-0*	4- 2-0*	1-11-0*
Cost of production per yard	Re. 0- 3-10	0- 3-4	0- 1-4

* This includes the cost of preparation, weaving, finishing, baling, transport to India, and other incidental charges. In the case of the grey mull the cost of production works out at the rate of one anna and four pies per yard and this cannot cover even the cost of preparation and weaving of even medium cloths in India. Refer appendix XII.

cloth and of raw cotton.¹ It means either that greater economies have been secured in the production of cloth than in the production of yarn or that the price of yarn is artificially maintained at a high level. The latter seems to be more probable. Taking the index number quoted in the *Indian Trade Journal* since July 1914, the rise in the American yarn in the Manchester market is 65 per cent while the rise in the price of cloth is only 52 per cent in 1928. The difference between the rise in the prices of Egyptian yarn and cloth is still greater. Regarding the supply of Indian mill yarn and cloth, the same tendency is observed. Taking again 1914 prices as 100, the index numbers of the prices of raw cotton, yarn and cloth are 136, 225, 170 respectively in July 1928. The conclusion is irresistible that in the absence of any radical inventions or changes in business practice which can reduce the cost of weaving in mills, the high level of prices of yarn is maintained artificially.

There is no regularity or steadiness in the supply of yarn to weavers; when the price of cloth tends to fall, more yarn is sold to them; and when the price of cloth is rising more yarn is used in mills and the weaver cannot have his quantity of yarn unless he is willing to pay a premium for the yarn. The fluctuations in the price of yarn due to causes other than the fluctuations in the price of raw cotton or in the cost of spinning, make the position of the weaver depending on the mills for the supply of yarn absolutely insecure.

As regards the quality of the yarn sold to the weaver, it is distinctly inferior. It was observed by Mr. Churchill in 1908 that the spinning mills prepared two qualities of

¹ *The movement of the prices of raw cotton, yarn and cloth:*

The price of yarn may be regarded broadly as the price of cotton plus the spinning margin and the price of cloth as the price of yarn plus the weaving margin. When the index number of yarn is above the index number of raw cotton, the implication is that the spinning margin has risen in greater proportion than the price of raw cotton and where the index number for yarn is below the index number of raw cotton the implication is that the spinning margin has risen in smaller proportion than the price of raw cotton. A similar statement is made *mutatis mutandis* regarding the relation of yarn and cloth prices as bearing upon the weaving margin.

The figures suggest that the spinning margin in the case of American cotton has been consistently higher relatively to 1913 than the price of raw American cotton. This holds good of Egyptian yarn too.

The weaving margin rose on the whole less proportionately than the price of yarn upto 1925 but lately when yarn prices were reduced the weaving margin did not fall in proportion.

yarn, one for their own use and the other for the market. Besides, the cotton yarns supplied by many Indian mills are badly reeled, contain many knots, do not possess the tensile strength necessary for warp and are often not of the declared count. It is suggested that false labelling and short reeling should be penalised.¹ The system of double numbering practised by certain Ahmedabad mills to pass off low count yarn as superior one is a great defect of which special mention was made by the Indian Textile Tariff Board.² The method of bundling and packing, the weight of the bundle, the number of knots in a bundle and the number of hanks in a knot, the method of stamping the count of yarn and its quality must be standardised.

In order to ensure a regular supply of specified qualities of yarn in the required form it may be necessary for the State to impose certain conditions on spinning mills regarding hall-marking of yarn. But these conditions may prove vexatious and it may be difficult to enforce them. It is necessary in that case to organise weavers' societies to arrange with spinning mills for the supply of yarn and where that is not possible, to start spinning mills in suitable centres for the supply of yarn to weavers through co-operative societies or other suitable agencies. Spinning mills as adjunct to weavers' societies will be the ideal condition for the steady supply of good quality of yarn at reasonable and competitive prices.

II. ESTABLISHMENT OF WARP DISTRIBUTING CENTRES.

The second step in the reorganisation of the industry is the reduction in the cost of the preparatory processes as

¹ Amalsad, *Cotton Cloth impasse*.

² There is reason to believe that in Indian mills generally efforts are made to spin a finer count of yarn than the quality of the cotton justifies, the result of which is inferior yarn. Instances were given of 18s yarn being supplied as 20s with the consequence that the length was reduced to make up for coarser counts. This practice appears to have led to the stamping of double numbers. It was, for example, stated that yarn from Ahmedabad stamped as 28s x 40 was being placed on the market. The representative of the Ahmedabad Millowners' Association admitted that in some instances, 28s yarn had been placed in the market in bundles of 40 knots but explained that this was done at the request of the merchants and that although the yarn was marked 28s x 40 the price realized was that for 28s only. They considered that marking in this manner made it perfectly clear what the count actually was but we are told that the supply of 28s yarn in bundles of 40 knots facilitates its being passed off as 40s. The practice is obviously undesirable and should, in our view, be discontinued.—*Report of the Textile Tariff Board, 1927*,

practised in the country system and the distribution of ready warps to weavers which is most essential for the standardisation of cloth. The economics of the dresser sizer and Amalsad sizing plant have been considered in an earlier chapter. They have not reduced the cost of preparation as much as it is desirable for enabling the hand-loom to have the same advantage that the power-loom enjoys from slasher-sizer.¹ Therefore the problem of reducing the cost of preparation in hand-loom weaving remains still unsolved. But both the dresser sizer and the various hand-driven sizing plant can eliminate the waste of time and labour involved in country sizing, and enable the weaver's family to take to more remunerative occupations than winding, warping and sizing. Still, however, the improved hand-driven sizing machines have not become common nor has the dresser sizer under the Department of Industries or under private management in Ganjam District proved a success. The weaver who is to find out the market for his manufactures prefers to have small warps in ball form to long beamed warps so that he can change the designs, textures and weaves as easily as possible. The warp distributing centre which saves to the weaver the time lost and trouble involved in the country method of warp

¹ The following table will show that the introduction of the dresser sizer reduces slightly the cost of preparation which now obtains in some centres :—

The count of Warp	Cost per pound of warp of specified count											
	Under the indigenous processes									Under the Dresser-sizer		
	Madura			Rasipuram			N. Circars					
RS	A	P	RS	A	P	RS	A	P	RS	A	P	
20s	0	5	4	...			0	3	6	0	2	9
30s	0	6	11	0	3	9	...			0	3	6
40s	0	8	0	0	5	6	0	5	3	0	4	9
60s	1	0	0	...			1	0	3	0	7	3

The cost of preparation on the slasher-sizer is considerably low; even two pies in some cases.

preparation and which gives him long warps and thereby saves the time lost in piecing the warps cannot become a practical proposition unless it provides the finance required by weavers and undertakes the marketing of cloth, and has the regular custom of 200 weavers. At present it is not difficult to find centres with 200 weavers producing the same kind of cloth. But the real problem is to find a regular market for the increased outturn. The weavers, poor, ignorant and unaided, cannot be expected to explore the possibilities for extending the market. The warp distributing centres can become a success only when they undertake the marketing of hand-loom manufactures and also introduce the second loom or more looms in the weaver's family.

There are other advantages of the central warping mill. Yarn can be tested regarding its count, strength, colour, finish and suitability for the purpose required. The length of the warp and the number of ends supplied can be guaranteed to the weaver. The fraudulent practices of the mills and the merchants may be prevented, thus improving the quality of the cloth.

The case for the central warp distributing agencies rests on one more ground. The economy of mechanical power is greater in preparatory processes than weaving. Secondly the spinning mill, the warp distributing centre and the finishing and dyeing house around which can flourish the hand-loom weavers working in their cottages will lead to the establishment of rural factories which, while rationalising production, would correct the evils of excessive industrialism and extreme ruralisation.¹ In the woollen industries in Wales, hand-loom cottage weavers flourish in the neighbourhood of small spinning mills driven by water-power. The merits of rural factories cannot be exaggerated. They avoid the evils of urban factory life but still adopt mechanical

¹ The weaving industry seems to me eminently suited to the Indian craftsman working in his own village, if his circumstances can be bettered and if I am correctly informed, the success achieved by Japan has been due largely to a splendid organisation of cottage weaving centred round factories which only collect and finish the fabrics. Whether we achieve a similar result by the individual weaver, the group of weavers, or the hand-loom factory is a matter of local circumstances purely but it cannot ordinarily be by any development of mills.—Maxwell-Lefoy, *Silk Industry*.

power within necessary and desirable limits. They possess the advantages of handicrafts without foregoing the essential economies of large-scale production. Also, these rural factories are the essence of the linked system¹ which is said to be adopted in Switzerland. 'There are a number of hand-loom linked to a factory which does all preliminary work of spinning, warping and beaming and the weaver begins his work direct with weaving. By this, the weaver saves a lot of time which he used to spend upon the processes uneconomically and is thus able to produce more cloth than before'.² It will of course take a long time to make the weaver adapt himself but yet a beginning in this direction must be made to facilitate his work and thus make his production more rapid and perfect. The keynote of the Swiss system of cottage industries is expert control and a constant market and also a reasonable intelligence on the part of the working population. The difficulties in introducing the linked system in India are many. The hand-loom weavers are scattered over the whole presidency and there are difficulties in having the combination to the same extent as in a small country like Switzerland. But the scheme is not an extravagant imagination impossible of realisation if it is given a fair trial.³

III. INTRODUCTION OF MORE LOOMS IN THE FAMILY

The third step would be the introduction of the two-loom system. The object of it is to increase the earnings of the weaver's family by substituting weaving for the unremunerative preparatory processes now done by the members which take more time and labour than weaving without any corresponding advantage. But still these preparatory

¹ *Indian Fiscal Commission* : Evidence Vol. III, pp. 596-604.

² There are many mills in India to which the weavers can be linked ; especially with the growth of new mills in the upcountry the growth of the linked system can greatly be facilitated.

³ By 'linking' is not meant that there should be a factory system of labour at all. The weaver will take the product to his own home and weave it there. He will be supplied with yarn by the mill. Economies of power and large scale production in some respects are secured without the attendant evils of overcrowding, and other industrial problems.

processes are done by the members of his family because some income is better than none at all. The weaver himself cannot be persuaded to give up the preparatory work unless there is scope for increased production and income and there is an organisation which can prepare the warp for him at the same, if not lower, cost. The tendency to increase the looms in the family is evident even now in a number of centres where special warping and sizing agents exist. But that is possible only when there is an increased demand for the hand-loom product. But in the general scheme of re-organisation we cannot hope for the weaver to take the initiative. To be more effective and for the results to be permanent, an external organisation for production and marketing, preferably on co-operative lines, is necessary.

The two-loom system is nothing radical and strange in industrial rationalisation. We find this principle adopted in spinning and weaving mills. Where speeding up the machinery is not possible, the usual step towards economy is by increasing the outturn per worker by increasing the number of looms or spindles he will have to attend to or by a more intensive use of capital equipment by increasing the shifts of employment. It is also based on the modern idea of increasing the efficiency of the worker, which aims not so much at obtaining a higher efficiency per machine as per operative. In the hand-loom organisation the efficiency or the income of the worker's family as a whole rather than of the weaver alone is to be aimed at.

At present where there is one loom in the family and winding and warping are not done by its members, and the adult male works the hand-looms, the daily earnings of the family according to the statement on the next page are from 9 to 13 annas. If the warp is prepared by the family, its earnings will be from 13 annas to a rupee. But where the two looms are introduced the family earnings are from 15 to 20 annas though the cost of production falls by about 25 per cent. Add to this the advantage of a greater regularity of employment.

The difficulties in the introduction of more looms in the family are many. Firstly, while the weaver with his one loom cannot find a market for his product, how can he sell

his increased outturn? This difficulty can be obviated by the marketing organisation proposed herein and also there will be an increased demand for the hand-loom product as its price can be lowered and its quality improved. Secondly women in India, it is stated, cannot stand the strain involved in weaving. This is not quite true. Women are found to work silk looms and also cotton looms in certain centres. In Japan women and young girls are mostly employed in hand-loom sheds.¹ There will be no difficulty in inducing women in India to take to weaving. Thirdly, there is the financial difficulty. This can be overcome by the system of State-aid and co-operative finance outlined below.

Details of the cost of production per yard of cotton cloth made on hand-loom (1927).

	a	b	c	d	e
Cloth	Coarse dhoties	Women's sarees	Fine dhoties	Turban cloth	Angavas-thram
Count of yarn ...	20s	40s	60s	80s	100s
Length ...	1 yd.	1 yd.	1 yd.	1 yd.	1 yd.
Width ...	48"	48"	48"	48"	48"
Weight ...	4.75 oz.	3 oz.	2.3 oz.	2 oz.	1.8 oz.
Ends per inch ...	48	60	72	80	90
Picks per inch ...	52	64	72	80	90

(A) Under the single loom system where winding and warping are done on indigenous lines.

	a	b	c	d	e
	RS A P	RS A P	RS A P	RS A P	RS A P
Yarns ...	0 3 6	0 3 9	0 3 9	0 5 4	0 5 6
Sizing ...	0 0 6	0 0 7	0 0 8	0 0 10	0 0 10
Weaving ...	0 0 11	0 1 9	0 2 4	0 3 4	0 4 5
Cost of production ...	0 1 5	0 2 4	0 3 0	0 4 2	0 5 3
Output per day in the family ...	10 yds.	6 yds.	5 yds.	4 yds.	3 yds.
(a) Earnings per day of the family where warp preparation is not done by the weaver.	0 9 2	0 10 6	0 11 8	0 13 4	0 13 3
(b) Daily family earnings if warp preparation is done by the family.	0 13 3	0 13 6	0 14 6	1 0 0	1 0 0

¹ Freda Utley. *Lancashire and the Far East.*

(B) Under the double loom system where Dresser sized warps are supplied.

	a			b			c			d			e		
	RS	A	P	RS	A	P	RS	A	P	RS	A	P	RS	A	P
Yarn ...	0	3	6	0	3	9	0	3	9	0	5	4	0	5	6
Power preparation ...	0	0	4.5	0	0	6	0	0	7	0	0	8	0	0	9
Weaving ...	0	0	9	0	1	4	0	1	6	0	2	3	0	3	3
Cost of production ...	0	4	1.5	0	1	10	0	2	4	0	2	11	0	4	0
Output per day in the family ...	20 yds			12 yds.			10 yds.			8 yds.			6 yds.		
Daily family earnings.	0	15	0	1	0	0	1	1	6	1	2	0	1	4	6
Reduction in the cost of production ...	0	0	4½	0	0	6	0	0	8	0	1	3	0	1	3
Percentage of reduction in the list of production ...	26			21			22			30			22		
Percentage of increase in the daily earnings of the family ...	13			18			21			12			25		

IV. ESTABLISHMENT OF A CENTRAL CLOTH EXAMINING BOARD

The fourth step in the organisation of the hand-loom industry is the introduction of a device for uniform picking in weaving and the establishment of a central cloth board for examining and passing the cloth manufactured.¹ It is said, and it is true to some extent, that uniform weaving can be obtained if weavers are trained and paid by results and if the product is closely examined as it was done in the Itchapur Weavers' Co-operative Society and as it is now done in the case of Madras handkerchief and Salem Weavers' Co-operative Society. However, the possibility of introducing in the ordinary loom a simple mechanical device for uniform wefting, as it obtains in Hattersley's hand-loom, is worth investigation.

V. ESTABLISHMENT OF CENTRAL PRINTING, DYEING, AND FINISHING FACTORIES

Since our object is to substitute the hand-loom product for the mill cloth, it is necessary to finish the former and

¹ The establishment of a cloth examining board attached to the Co-operative Society or other marketing organisation for examining the picks and ends of the cloth and stamping it as of specified length, width and picks and ends cannot be a costly one. It is estimated that it will be less than 0.5 pie per yard.

his increased outturn? This difficulty can be obviated by the marketing organisation proposed herein and also there will be an increased demand for the hand-loom product as its price can be lowered and its quality improved. Secondly women in India, it is stated, cannot stand the strain involved in weaving. This is not quite true. Women are found to work silk looms and also cotton looms in certain centres. In Japan women and young girls are mostly employed in hand-loom sheds.¹ There will be no difficulty in inducing women in India to take to weaving. Thirdly, there is the financial difficulty. This can be overcome by the system of State-aid and co-operative finance outlined below.

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Length ...	1 yd.	1 yd.	1 yd.	1 yd.	1 yd.
Width ...	48"	48"	48"	48"	48"
Weight ...	4.75 oz.	3 oz.	2.3 oz.	2 oz.	1.8 oz.
Ends per inch ...	48	60	72	80	90
Picks per inch ...	52	64	72	80	90

(A) Under the single loom system where winding and warping are done on indigenous lines.

	a			b			c			d			e		
	RS	A	P	RS	A	P	RS	A	P	RS	A	P	RS	A	P
Yarns ...	0	3	6	0	3	9	0	3	9	0	5	4	0	5	6
Sizing ...	0	0	6	0	0	7	0	0	8	0	0	10	0	0	10
Weaving ...	0	0	11	0	1	9	0	2	4	0	3	4	0	4	5
Cost of production ...	0	1	5	0	2	4	0	3	0	0	4	2	0	5	3
Output per day in the family ...	10 yds.			6 yds.			5 yds.			4 yds.			3 yds.		
(a) Earnings per day of the family where warp preparation is not done by the weaver.	0 9 2			0 10 6			0 11 8			0 13 4			0 13 3		
(b) Daily family earnings if warp preparation is done by the family.	0 13 3			0 13 6			0 14 6			1 0 0			1 0 0		

¹ Freda Utley. *Lancashire and the Far East.*

(B) Under the double loom system where Dresser sized warps are supplied.

	a			b			c			d			e		
	RS	A	P	RS	A	P	RS	A	P	RS	A	P	RS	A	P
Yarn ...	0	3	6	0	3	9	0	3	9	0	5	4	0	5	6
Power preparation ...	0	0	4.5	0	0	6	0	0	7	0	0	8	0	0	9
Weaving ...	0	0	9	0	1	4	0	1	6	0	2	3	0	3	3
Cost of production ...	0	4	1.5	0	1	10	0	2	4	0	2	11	0	4	0
Output per day in the family ...	20 yds.			12 yds.			10 yds.			8 yds.			6 yds.		
Daily family earnings.	0	15	0	1	0	0	1	1	6	1	2	0	1	4	6
Reduction in the cost of production ...	0	0	4½	0	0	6	0	0	8	0	1	3	0	1	3
Percentage of reduction in the list of production ...	26			21			22			30			22		
Percentage of increase in the daily earnings of the family ...	13			18			21			12			25		

IV. ESTABLISHMENT OF A CENTRAL CLOTH EXAMINING BOARD

The fourth step in the organisation of the hand-loom industry is the introduction of a device for uniform picking in weaving and the establishment of a central cloth board for examining and passing the cloth manufactured.¹ It is said, and it is true to some extent, that uniform weaving can be obtained if weavers are trained and paid by results and if the product is closely examined as it was done in the Itchapur Weavers' Co-operative Society and as it is now done in the case of Madras handkerchief and Salem Weavers' Co-operative Society. However, the possibility of introducing in the ordinary loom a simple mechanical device for uniform wefting, as it obtains in Hattersley's hand-loom, is worth investigation.

V. ESTABLISHMENT OF CENTRAL PRINTING, DYEING, AND FINISHING FACTORIES

Since our object is to substitute the hand-loom product for the mill cloth, it is necessary to finish the former and

¹ The establishment of a cloth examining board attached to the Co-operative Society or other marketing organisation for examining the picks and ends of the cloth and stamping it as of specified length, width and picks and ends cannot be a costly one. It is estimated that it will be less than 0.5 pie per yard.

make it answerable in all respects to the latter. It must be bleached, printed, dyed or finished in the same manner as the mill cloth and for this purpose small cottage plant for printing, dyeing, bleaching and finishing may be attached to the warp distributing factories. Thus it is the warp distributing centres with small cottage finishing plant that will constitute the real rural factories round which can flourish hand-loom weavers. The weavers with no knowledge of modern methods of finishing cannot be expected to manufacture those finished products made in mills. Central factories for this purpose in suitable centres can alone help them to get the upper hand in mill competition.¹ Thus it is necessary to link the hand-loom with the spinning mill and the warp distributing centre on the one end and the finishing factory on the other. Then it would be possible to work co-operation—in all spheres successfully and effect various other measures of improvement in the quality of the product, in the conditions of the industry and the position of the weaver.

VI. THE ESTABLISHMENT OF (a) A CENTRAL RESEARCH INSTITUTE, (b) A MUSEUM OF DESIGNS AND PATTERNS AND (c) A RURAL INDUSTRIES INTELLIGENCE BOARD

The future of the hand-loom industry depends on the improvement of the designs, patterns and quality of its output, as dyeing and calico printing play an important part in the development of the industry. The Bihar and Orissa Government made a good beginning in 1926-27 by appointing a staff consisting of a dyeing demonstrator and four maistries to conduct dyeing demonstration and to teach the weavers dyeing fast colours. The Madras Government Textile School has introduced autograph printing. Further progress in this respect depends on the establishment of a museum where different designs and patterns are collected. At a conference held in Simla of the Directors of Industries, 1920, Sir Alfred

¹ The economics of the cottage finishing plant have not been fully investigated by the writer. But so far as he can see the practices in Switzerland and Italy encourage him to believe that they are not unsuitable to India. Switzerland and Italy import cloths from the United Kingdom, finish them in their small factories and export them to other countries.

Chatterton, pleading for the establishment of central experimental workshop for hand-loom weaving, stated: 'What we now want in India is a Central Research Institute intimately connected with some of the larger schools in the country, so that the results of experimental work, on what may be termed a laboratory scale, may be given a more extended trial on what will be generally semi-commercial conditions'.

After enumerating the work of the research institute in the direction of improving the preparatory processes combining the advantages of indigenous methods with the productive capacity of the machine used in factories and of evolving suitable cottage plant, he emphasised the need for the establishment of a museum of designs and patterns. 'Even more important than the improvement of appliances is the provision of patterns and designs to meet the demand for change and variety if new markets are to be opened out both in India and abroad'.¹ While the research institute will make new designs, a museum for the collection of patterns and designs must be established with a view to educate the weavers and to enable them to produce for foreign and home markets.

Besides, each province must have an institution like the Rural Industries Intelligence Board, London, to offer advice on designs, to maintain a workshop for experiments, to run a library, to collect samples and to publish tracts and journals. The Department of Industries has done much work in this direction. But it can probably be more effectively done by an independent non-official body. Organising weaving competitions and textile exhibitions in important weaving centres will give a great impetus to the industry. The publication of magazines in vernacular will be highly educative.

VII. The next problem is the avoidance of mill imitation of hand-loom products for which there is a great demand. Buyers are often deceived by unscrupulous dealers in mill goods. Legislation on the lines of the Irish Hand-loom Weavers' Act² will give the hand-loom the necessary security against mill imitation and competition. By legislation it is

¹ *Proceedings of the Conference of the Directors of Industries, Simla, 1920.*

² The Irish Hand-loom Weavers' Act of 1909 compels the term 'handwoven' to be stamped in all goods manufactured on hand-looms, and prohibits such a description of cloth woven in mills.

not sought to prevent the mills from producing the kinds of cloth that are usually woven on hand-loom but to prevent the possibility of palming off mill goods as hand-woven ones. The existing laws of copy-right and trade marks are inadequate and the weavers are too ignorant and poor to take full advantage of the same.

VIII. Then the further possibility of the export trade in hand-loom products must be explored. There is even now a great demand in other countries for many kinds of cloth made on Indian hand-loom. Handkerchiefs to the extent of several millions of rupees in value are exported from Madras every year; and lungis and kailis and other coloured goods are usually in demand in places where Indians have settled. But during the last few years we witness a decline in the export trade, especially in the Madras handkerchiefs. It must be noted that the expanding market will not come to us; it will have to be made. A Trade Commissioner must be appointed to create a market for hand-loom products in other parts of the world who will educate the manufacturer and acquaint him with the requirements and the changing tastes of the distant consumer. The establishment of a central co-operative wholesale depot will be a great source of help especially to weavers manufacturing for distant markets.¹

IX. There are two other important lines in which the industry needs re-organisation, viz. (1) business and (2) finance. In regard to both of them the industry has very little organisation to speak of. The primitive character of his trade places the weaver at a disadvantage. What can be achieved in this direction is indicated by the experience of Japan. 'Not a little of the industrial success of Japan is due to the attention that has been paid not only to the educational and technical training of cottage workers but to the building of business organisations which take over the products of the industry and dispose them all over the world.' Therefore the urgent and immediate step in the permanent amelioration of the conditions of the weaver is to provide him with an agency for marketing his goods on fair commercial terms. The maximum benefit from the

¹ Cf. Export Development Society for cotton goods, Japan.

introduction of improved working processes can be derived only when the business organisation relating to the purchase of raw materials and to the sale of finished products is systematised.¹ The appointment of a marketing officer by the Government of Madras in 1931-32 was a successful experiment. The sales of hand-loom products developed greatly but the experiment was given up too soon. The present wasteful methods of middlemen and the primitive and crude indigenous system of marketing must give place to a more economic and effective method of distribution. The organisation of the trade depends on a proper survey of production, the demand for the products, advertisement, experimental production and so on. All these cannot be done by the individual weaver. The hand-loom factory or any other central organisation with some governmental assistance can do much for extending the market. Mr. Davies, a former Director of Industries, Madras, said that the only hope of the weaver was in the hand-loom factory. But it is often supposed that the hand-loom factories are unsuited to the habits of the weaver and the failure of the Salem hand-loom factory is often cited in support of that opinion. But the prosperity and growth of hand-loom factories in South India and elsewhere indicates that future business organisation of the hand-loom industry lies in some sort of co-ordination and not in the present independent, wasteful and uncoordinated system of cottage production.

The market for the hand-loom product can expand only with proper transport facilities. Reduction in the railway rates, lowering the rates for yarn,² special concessions in regard to hand-loom products and yarns required for

¹ Prince Kropotkin says in respect of small industries: 'In the immense number of trades it is not the superiority of the technical organisation of the trade in a factory nor the economies realised in the prime motor which militate against the small industry in favour of the factories but the more advantageous conditions for selling the product and for buying raw materials which are at the disposal of the big firms. Whenever the difficulty has been overcome either by means of associations or in consequence of a market being secured for the sale of the produce it has always been found first that the condition of the worker has immediately improved and next that a rapid progress was realized in the technical aspects of the respective industries.'—*Field, factory and workshop*.

² 'At present both yarn and cloth are charged the same freight with the result that foreign countries and mills in India prefer to trade in cloth rather than in yarn as the finished cloth is of less freight than the yarn.'—*Travancore Industrial Bulletins*, No. 15,

hand-loom, abolition of the import duty on yarn and gold and silver lace and abolition of professional and other local taxes on looms are some other ways of bettering the industry.

In respect of financial assistance to the hand-loom industry the establishment of yarn bank which can purchase yarns, advance loans to weavers against yarn and cloth pledged to it or the organisation of a bank on the lines of the Home Manufacturers Bank in China will be of great help to the weaver. Certain facilities must be given to the bank. Capital should be provided by the State with necessary safeguards. The bank should purchase and sell yarn to recognised co-operative societies of weavers. Concession rates in railway transport and exemption from duties on yarn imported by the bank and provision of free audit by Government are some directions in which the State can assist the bank and the weaver. The present State-Aid to Industries Act must be so amended that weavers can be adequately supplied with funds without undue insistence on the furnishing of real securities. Co-operative organisation for credit, purchase, and sale and production must be strengthened, for there can be no more powerful lever for the uplift of a community steeped in poverty, ignorance and vice than co-operation.

The finance required by the state for the establishment of central warping and finishing factories, and the museum of patterns and designs and for making the present work of the Department of Industries more effective and all-embracing can be obtained by imposing a small duty on yarn for the special purpose of assisting the hand-loom industry. At present the amount spent on education, propaganda, and research connected with the hand-loom industry in different provinces cannot be definitely ascertained; but it is negligible. If a tax of one pie per pound of yarn consumed in mills is levied it will yield more than Rs. 30 lakhs. This tax cannot be exorbitant, for even on the basis of the present prices of yarn it is hardly $1\frac{1}{2}$ per cent. The opposition of the mill owners to this excise duty can be changed into active co-operation if the duty so collected is not used for general purposes by Government but is earmarked for the development of the hand-loom industry. The Department

of Industries can extend its activities in different directions without being as at present unduly handicapped in its work for want of funds.

X. The mere organisation of the industry which does not improve ultimately the conditions of weavers nor modernise them is not commendable. Their economic and social conditions must be bettered.¹ The home-workers are at a special disadvantage in regard to bargaining; they cannot easily be reached by organised effort to better their wages; thus they do not benefit by the gains which trade union organisation has secured for the factory worker. How to create and work an organisation if home-workers on trade union lines is the problem. The influence of the trade union on home-workers has been slight except in Soviet Russia, in the cigar trade in Germany and to a small extent in the clothing industry of France.²

Legislation in the interest of industrial home-workers began in England with the factory laws but it was inoperative as they could not be reached and effectively regulated by inspectors. The Trade Boards Act of 1908 introduced the minimum wage and it achieved some measure of success. In the U.S.A. the system of licensing was introduced, especially in respect of cigar-making in tenement houses. The object of the legislation was to improve the sanitation of the work-place. Another law provided that the tenement where industrial home-work was carried on was to be inspected every six months. But it was not possible to carry out inspection thoroughly. In Germany the law provides that employers should register all their home-workers and the social legislation relating to home-work concerns itself with sanitary conditions and wages of the home-workers. It determines piece rates and fixes the hourly minimum rates. Industrial home-workers in Russia are now brought under Producers' Co-operation and Governmental Agencies.

There is very little legislation in India in the interest of

¹ 'The isolated weavers require an organisation to protect their interest against those of manufacturers and merchants who provide the yarns and have performed the necessary preparatory processes. Otherwise they would, by under-cutting, destroy their own standard of living.' Forrester: *History of the French Cotton Industry*, p. 62.

² *Social Science Encyclopaedia*.

home-workers. Recently some effort was made to safeguard the interests of workers in the beedi industry in Madras and the Central Provinces. It is obviously difficult to deal with the entire organisation of cottage industries which is built of the merchant, the contractor, the entrepreneurial home-worker and the home-workers who are members of the family and the hired home-workers.¹ Nevertheless some attempt must be made to improve their lot and strengthen their bargaining power and improve their sense of self-respect and thus educate them to better their standard of living. The present system of remuneration of labour and the payment of wages based, not on the needs of labour but determined by supply and demand, ignores the human claims of labour, especially so in regard to cottage workers. Mr. Hobson says: 'To accept the view that to buy labour power, like other commodities at a price determined purely by relations of supply and demand is a policy dangerous to the life and well-being of the individual whose labour power is thus bought and sold, to those of his family and society. . . . The private human needs of a working family should be regularly and securely met out of their weekly and fortnightly pay. The life and health of the family and the sense of security which is essential to sound character and regular habits, to the exercise of reasonable foresight and the formation and execution of reasonable plans, all hinge on their central demand for a sufficiency and regularity of weekly income based upon the human needs of the family'. Though this is not possible of realisation fully all at once something can be done by the constitution of the Trade Boards.

Boards consisting of employers and workers and representatives of the Government must be constituted in different areas for the regulation of wages and hours of

¹ The problem of protecting the home-worker from the evils of sweat shop conditions is not solved. Licensing home-workers or the place of home-work will not destroy child labour which is easily concealed. Registration is desirable but useless without effective inspection. Indirect control of home-work through general social legislation is equally faulty. Hours cannot be regulated when the work is performed during leisure time or on 'rush' orders. If the fixing of wage rates by the Trade Board is effective it would probably destroy the entire home-work and leave without means of support many persons unable to secure work in the factory. The problem is full of difficulties.

work, conditions of employment and welfare. More than that there must be an organisation on the lines of All India Spinners' Association which will give the worker the full reward of his labour, prevent sweating and exploitation, develop the technique of the industry and the morale of the worker and organise production, purchase raw materials and sell finished products. But to wait for such an organisation to appear spontaneously would be to miss the opportunity not only of the very immediate remedial action but also of acquiring accurate information with regard to the hand-loom and other valuable handicrafts.

The education of the weaver is equally important in the regeneration of the industry. At present the education given in the industrial school is not of the nature which will ultimately enable the children of the weaver to take their place in the organisation of the industry. The majority of the schools are in practice not regular schools but small hand-loom factories and the training offered does not help the people to earn an independent livelihood. The weaving schools should not be mere charitable institutions but effective centres where better types of artisans and captains of industry from among the community are reared up. More vocational schools at suitable centres for the education of weavers' children must be established under the control of the Department of Industries. A technological institute for the study of problems in connection with dyeing and textile technology should also be started. A weaving institute under a weaving expert for the improvement of processes and mechanism of hand-loom weaving and a large increase in the number of peripatetic parties to control and assist in the economic regeneration, specialised education and the improvement of manipulated processes are desired.¹

¹ 'The question of practical importance is how the great changes stated herein are to be brought about; how a new generation of weavers is to be created, who will at any rate ply their trade on terms of equality with other artisans. Education alone can do this and that to be effective it must be begun at an early stage. Besides provision for the training of the rank and file adequate arrangements must be made for the education of those who will be leaders in the trade and the masters of the future associated groups of weavers. For them a high grade technical school is required where the art may be studied in all its varied branches and experimental work can be carried on.'—Sir A. Chatterton: *Industrial Evolution*.

In the absence of a sound organisation, technical instruction and state patronage will prove futile. A practical spirit is wanted. It is because of the insuperable difficulty of modernising the independent weaver who, as long as he remains the entrepreneur, will not move out of the deep rut in which his ancestors have travelled, that those who believe in the future of the hand-loom industry advocate the erection of the hand-loom factory. In such a case, a private capitalist, preferably educated, would install a certain number of improved looms in his own premises, engage weavers on a monthly salary, and set them to work upon the kind of fabric for which he has discovered there is a market. Thus ✓the organisation of the industry on a factory basis will facilitate an early regeneration of the industry. The moral and material conditions of workers would further improve if the factory is organised on co-operative lines. But this factory organisation of the hand-loom would be useful, though not as indispensable as the warp distributing factory, for the revival of the industry. Nor need it be feared that the establishment of the factory will result in the recrudescence of all those evils of large-scale industries which we are anxious to avoid.

Another way by which the industry can greatly be ad- ✓vanced lies in the perfection of the tool the weaver uses and of the methods he adopts. The possibility of introducing a mechanism for automatic and uniform wefting, must be explored. The strain involved in weaving must be minimised. But such improvements must be simple and cheap and within the reach of the weaver. When the use of power is considered desirable and when electric power becomes cheap and easily available, the weavers must be encouraged to use it.¹

In this connection it must, however, be noted that the mere adoption of labour-saving appliances will not do.

¹ The prospect of rapid development of electrical power raises the question of the advisability of applying that power to the hand-loom. (There is no standing prejudice to the use of mechanical power if it does not take one's bread out of his mouth.) Weaving in that case will cease to be hand-done but may continue to be a cottage industry. When power becomes so cheap as to be of universal application and work becomes so properly distributed as causing no extremes of poverty and opulence, employment for a few and unemployment for many, the introduction of machinery and the application of electrical or other mechanical power will be to the great advantage of all workers.

Saving of labour is not always a matter of importance; for, it is often gained by the introduction of absolutely automatic plant driven by mechanical power. But the invention of tools which do not eliminate man-power to the same extent as machines, and which do not reduce the weaver to a mere automaton, is what is desired in countries like India.

Finally, the attempt made in the past in this Presidency having been confined mainly to certain technical aspects of the industry, the economic condition of the weaver did not materially improve; for, the improvement in the technique resulted not in actually increasing the production of the weaver but in cutting short his hours of work owing to the absence of marketing facilities for him. Further, the other aspects, finishing and baling of hand-woven cloths and placing them on a marketable basis as in the case of mill goods so that regular and extensive business may result, were not considered; and they remain still unsolved.

The organisation of the industry in all its economic and commercial aspects requires the co-operation of officials and non-officials. All Government departments must act together. The textile expert, the research engineer, the co-operator and the business organiser must combine their efforts. The development of the hand-loom industry, if undertaken at all, must, be carried on a comprehensive scale by tackling the problem from all sides. There are difficulties; of course the improvement of the status and conditions of a million people who are indifferent to their own improvement is not an easy task. But if we approach the rising generation on a basis of enthusiasm tempered by knowledge, we need not despair of success. What is now wanted is concentration of efforts along definite lines.

CHAPTER XX

CONCLUSION

'There can be no true progress in industry unless that progress is reflected in the conditions of the masses and workers who make industry possible, an advance in which they do not share would be a transient advantage. Healthy and permanent progress are bound up with a steady improvement of the human and the economic status of the rank and file of the industrial army. It is the well-being of all the persons engaged in the industry which constitutes the contribution that industry makes to national wealth.'—THE RT. HON'BLE J. H. WHITLEY.

'The world's most pressing problem has come to be not a further increase of power to produce but the devising of means for the full use of the productive resources already at hand.'—G. D. H. COLE.

'Whatever be true of "labour as a whole in the long run" here is enough, in my judgment, to make it likely that in the next half-century the march of science and the growth of capital will continue to reduce large groups of work people to a state bordering on economic worthlessness for long periods of time; and will thus subject a society based on the correspondence of reward with economic worth to greater strains than it has ever previously known.'—D. H. ROBERTSON: 'Is Mechanisation a Danger?'—*Times of India*, December 1933.

In preceding chapters the case for the resuscitation of the hand-loom industry has been stated. It is to be preferred to the power-loom as it causes less unemployment, as it suits the peculiar economic conditions prevailing in India, as it distributes work and welfare with greater justice and equality. The plea for the revival of hand-loom weaving—all other small industries as well—raises certain important questions of policy and ideology which deserve a fuller treatment in this chapter.

The first question is: in the natural selection in industrial evolution is it not an inexorable law that smaller industries wear out and larger organisations take their place? Is it not inevitable that human power is replaced by mechanical power? Is it not true that small industries lack the basis of permanence and stability and that their protection, is therefore, unwise and unnatural? The answer to the last question has been given. Reference has been made to an exhaustive enquiry into small scale organisations in the countries of the world, a summary of which was published in the *International Labour Review*, June 1928. Even the Council of the People's Commissaries and the Minister of

National Economy of the Reich have recognised the importance of small scale industries. In a decree of May 1927 the Soviet Council declared: 'For a long time to come large scale industries will not be able to produce sufficient for the needs of the country, *nor will it be able to absorb all the surplus labour*. Small scale handicraft industries will use this surplus labour especially among the poorer strata of the peasantry, and will to a great extent satisfy the needs of the rural and urban markets. This explains the enormous importance of the small industries for the national economy of the Socialist Soviet Republic'. The Reich Minister declared himself in favour of the handicrafts in no less unequivocal terms. 'The handicrafts-man has held his own in production and has even succeeded in gaining some contested ground but he is no longer the handicraftsman of old historic times with methods of working handed down from bygone centuries'.

The answer to the first question is given by Richard Gregg and Theodore Morison. The latter, while recognising the place of machinery in the progress of civilisation, states: 'It is not a law of nature that steam power should supersede hand-power. It has been the consequence of the special conditions of Europe. . . . When the power required is not in excess of that which can be supplied by human body, it is a calculation of the relative cost which decides whether steam power or hand power shall be applied to manufactures'. Hand-power is expensive in the west of Europe; hence the attempt to substitute steam-power but in India at the present day hand-power is cheap and to the employer, generally, more economical than steam power. This consideration of comparative costs will be dominant and cannot be eliminated at least so long as the society is organised on a capitalistic basis and production is for profit and not for consumption; and so long as that consideration prevails the substitution of mechanical power for human power cannot always be effected. It must also be remembered that as the human skill, intelligence and dexterity cannot be replaced by machines completely, however perfect they may be, there is always a place assured for handicrafts employing human power in the industrial scheme. The proposition that in the

industrial evolution small scale industries are mercilessly and invariably wiped out by large scale organisations stand discredited. 'The more one examines', says Dr. Radhakamal Mukerjee, 'the present state of the small industries in this country, the more one is inclined to think that they have been steadily developing and conquering new fields for the last fifty years. The petty trades are not killed and cannot be killed. Like Proteus they change their aspects. It is a fallacy to suppose that natural selection in industrial evolution is only a process of larger organisations surviving and wearing out the smaller. . . . There is always a place for the smaller industries in the course of industrial development—a place which can never be abolished, but will always grow simply because it cannot be filled by large industries'. Leading industrialists and economists of the world have declared that small industries and handicrafts are not mere relics of the past but form an integral part of the future industrial order.

Another question of practical importance arises out of the advocacy of protection of the hand-loom against the power-loom. One may ask, 'Is it a wise policy to pit the low paid homeworkers against the better paid factory labourers?' 'Will not such a policy lead to the lowering of the standard of living?' 'Is it not a novel method of economic reconstruction which seeks to depress the elevated classes rather than to elevate the depressed classes?' Generally speaking, it is true that it is not wisdom to promote an unhealthy competition between a well paid worker and a low paid one. The State must allow the process of natural selection to have its course. But the special circumstances prevailing in India demand, however, such an action. It is a truism that competition tends to level down wages in different areas and industries.¹ The high wages now obtaining in Indian factories cannot for long remain far above the average level of wages that the actual resources of the country and the stage of economic

¹ 'Modern power-driven machinery and large-scale industries will mean a rapid advance in material prosperity but only upto a point. The existence of backward communities and countries and the possibilities of cheap labour working on modern automatic machinery will worsen the situation by increasing unemployment and imperil the relatively high wages which the workers in those industries and countries at present receive.'—G. D. H. COLB, *The Intelligent Man's Guide through World Chaos*, p. 176.

development of the country can warrant. Also a difference in the nominal wages does not necessarily reflect a difference in the relative efficiency of the workers concerned; nor even a difference in their conditions of living. A high nominal wage is not always indicative of a better living or cultural advancement of the person receiving it. Further the present higher wages in urban areas, in industries, or in even highly advanced industrial countries cannot be maintained by any amount of trade unionism and governmental buttresses if there is a large working population living on lower wages with no legal or political obstacles in their way to compete with better paid workers. When such extremes of poverty exist, it is not just to invoke the argument that the State interference with the natural selection in industrial development of mechanised industries and cottage industries is unwise as it results in the lowering down of the standard of living of workers in the former. One cannot afford to make a cult of the standard of living especially when that standard of living is not shared by all. While it is desirable to increase material comforts and maintain a high standard of comfort, it cannot be arbitrary, much less exclusive. It is conditioned and dependent on a number of factors such as the resources of a country, its population, its productive powers, the degree of its productive efficiency, and others. But the existence of the extremes of poverty and riches, of luxury and want, the presence of a large population remaining unemployed and under-employed are in themselves the manifestation of an unstable economic order and can promote nothing but economic insecurity which slowly increases with the widening of the gulf between the groups of workers in the society. It is folly to maintain—even to tolerate—great disparities in wages, as it is folly to maintain disparities in wealth and income. For, it can lead to only one end which every one fears and none has the strength and vision to avert—*Revolution*. Apart from the fear of anarchy it might create, it is heartlessness to suggest that the State should not interfere in the natural ordering of the economic system—however hideous its manifestations may be—as evolved by the forces of competition and economic freedom while a large section of the people live for

ever on the verge of starvation and a fraction thereof enjoy the extremes of opulence. The State would fail in its duty if it does not eradicate such preventible economic and social diseases as threaten the stability of society and the advance of civilization and if it does not regulate the economic progress in a manner that its blessings are shared equally by all individuals and classes. That the State exists for all and not for the few is not a meaningless truism. It is a hard reality which every civilised Government is seeking to realise. Its function is not merely to maintain political order but to secure economic and social stability; and it is now realised that the State is not an instrument of exploitation, much less a partisan organisation but a creative institution, the highest expression of social justice and harmony.

In these days of rationalisation and mechanisation of industries, one often hears a wholesale denunciation of all industries which cannot pay a decent wage making a decent life possible for workers. 'No civilised society' it is said, 'can tolerate the existence of such industries as cannot permit enough leisure for men employed in them for their cultural development and as cannot afford enough returns to workers for their comfortable standard of life'. Home industries are specially covered by this sweeping condemnation, for it is the home workers that are as a class poorly paid, are weak in bargaining, are not easily reached by trade unionism or state protection, live in squalid surroundings and slave for long hours. As an ideal to be realised in the future economic order, it is excellent that sweated industries are weeded out. But as an immediate practical proposition in India—perhaps, in all countries of the world—the desire to suppress all home industries is nothing but an empty aspiration. Cottage industries and small scale organisations, however uninviting their conditions of work may be, have not been wiped out and they cannot be wiped out by all the wondrous mechanical inventions and scientific progress. There is a permanent utility, an inexhaustible vitality, in them. True, they produce certain monstrosities in the life of the workers and in the conditions of employment under the stress of competitive production for capitalist profit which aims at cheap production. Cheap

production is not an ultimate good. It is good only if it leads to a right distribution and if it is limited by the demand of the workers for tolerable human conditions of labour'.¹ The remedy does not lie in the total suppression of the homecrafts, cottage workshops or rural industries, as it is often contemplated, but in placing human values above economic values and in guaranteeing sufficient returns to workers and tolerable human conditions of labour in all economic activities which are essential to sustain the life of the society.

This plea of the writer for the revival of the hand-loom, his love for homecrafts and small industries, his argument for the cautious introduction of machines and his half-concealed admiration for the socio-economic experiment now carried on in Russia—all this makes a hotch-potch of economic ideals. What is the place he gives to machine in the industrial order? What is the economic creed that he would wish India to possess? An attempt will be made here to answer these questions and avoid possible misunderstanding. While he has no hesitation in equating economics with human welfare, in accepting the liberal and social doctrine of 'maximum of production with minimum of effort' and the socialist theory of just distribution and the province of Government, and while he does not deny the material basis of civilisation and the need for increased production, he has his own difficulties in accepting the methods by which the end is realised; he has his own misgivings in adopting the machine as the medium by which the economic salvation is to be attained. The working out of the economic ideal in practice must vary according to the circumstances in which each country is placed. The blind imitation of the methods and the indiscriminate absorption of the ideas of the West

¹ G. D. H. Cole, observes: 'There are serious obstacles in the way of introducing mechanical power in its most developed forms in countries like China and India. It is hard enough for Soviet Russia, to abstract at the expense of the low standard of life of the great mass of her people, enough capital to finance her ambitious schemes of industrial reorganisation. But Russia as a country is thinly populated in relation to the countries of the Far East and in their case the density of population, the very small size of their crowded peasant holdings, and their extreme poverty, put even greater difficulties in the way of any comprehensive plan of economic development.' *The Intelligent Man's Guide Through World Chaos*, p. 139.

and their haphazard, or even unflinching, application to India will spell disaster. The philosophy of machinery which has transformed Western Europe and increased its material wealth is sound theoretically; and it has also achieved a great measure of success in practice. But it must be recognised that even in those countries it has prospered on the ruins of humanity, on the miseries of millions and it has left its permanent marks of devastation on mankind. It must also be recognised that the philosophy of machinery has its own limitations. It cannot be realised in all countries and at all times in the same manner as it is done in Russia today or as it has been done in any other industrial country of the world. Though India and China may require a thorough-going reconstruction of their entire economic systems on lines of large scale collective organisation based on the use of mechanical power in its most developed forms, and though they may stand in need of a thorough-going communism, these ideas require a great deal of adaptation before they are applied to the different economic circumstances of these countries.¹ There is ample scope for increasing the total production, even of necessaries and comforts of life in India; there is a crying need for shortening the hours of work and reducing the physical strain of labour and increasing the wages of workers; all this seems possible only by the mechanisation of industries and large scale organisation on the collectivist principle.* But, still, 'the doubt persists if all the mechanical inventions yet made have lightened the day's toil of any human being'.² 'The direct evidence drawn from the most highly evolved machine industry', writes J. A. Hobson in his *Evolution of Modern Capitalism*, 'seems to justify the general opinion expressed by Prof. Nicholson "it is clear the use of machines, though apparently labour saving, often leads to an increase in the quantity of labour, negatively, by not developing the mind, positively by doing harm to the body"'.³ Even granting that mechanisation of industries increases the leisure for the working

¹ G. D. H. Cole, *World Chaos*.

² J. S. Mill, *Principles of Political Economy*.

³ Pp. 338-40. Mr. Hobson cites certain instances of machinery increasing the intensity of labour. 'The general opinion seems to be that in spinning mills, roughly speaking, 75 per cent. of the increased output per operative

classes and decreases their physical strain, it often leads to the degradation of human personality and sows the seeds of social disintegration, especially when such production is unaccompanied by a just system of distribution. For there is the danger of ignoring the human problem in the enthusiasm for the development of the technique of industries. 'The technician', as observed by G. D. H. Cole, 'tends to regard industry merely as a technical problem; whereas it is fundamentally a human problem as well, and its object is not merely to create the maximum of goods, but to create them with the minimum of human suffering and inconvenience and in such a way as to promote the best distribution of wealth'. This danger may be avoided in a perfectly controlled economic and social order. The difficulties in transforming the present society to such a highly communistic state as contemplated are many. Perhaps they should not deter us. 'To do great things a man must live as though he had never to die.' But this unshakable faith in the cause and optimism in the rectitude of our own conduct must not at the same time blind us to certain realities, certain difficulties which can be tackled only by patience, knowledge and intelligence. It must be understood that even in a communistic society it is hard to realise the principle of justice in distribution. That principle to be a fact and not a dream must base distribution not merely, subjectively, on individual needs but also, objectively, on his capacity and opportunity for work; and there can be no divorce of work from remuneration, of responsibility from privilege; and such a close relation which is absolutely essential for the permanence and stability of the social order, would be very difficult to realise, and even if realised, difficult to maintain, in such a vast country, with such a vast population living in abysmal ignorance and stark poverty as India when it is rapidly industrialised and transformed with the help of machines. For, apart from the danger arising from the

may be imputed to improved machinery and 25 per cent. to increased intensity of labour in regard to quantity of spindles or speeding up.' 'The driving system in looms by which the overworkers are paid a bonus on the product of the looms under their charge has admittedly induced, as it was obviously intended to do, an increased intensity of labour',

limitations of the human vision, rectitude and intelligence, it undermines the basis of distribution. It is possible, though it seems extremely unlikely, there may not be enough work for all. If, as it were by the wave of a magic wand the whole world in all its economic activities is transformed with automatic machines which can be manipulated by a couple of millions of men and if they can produce by working for a couple of hours all that the community needs, distribution of work and wealth will become extremely difficult. This is not an impossibility, a mere figment of the imagination; for, as we see it today, the recent phase in the development of mechanical invention and scientific progress has been in the direction of transferring human intelligence to machines.¹ If this is carried far enough and proves a success the place of man in industry will be lost and the cupidity of the few who have the control over the economic machinery will result not merely in shattering to pieces the fabrics of a socialised State but it will cause all evils of unemployment, poverty and miseries. The theme of this book is not to dwell upon these political and economic scares, nor to deal with these highly improbable nightmares which might frighten us to inaction, but to stress on the limitations of the capacity of the machine in realising human happiness; to emphasise the importance of work to human development as also to the realisation of distributive justice; to emphasise the necessity of advancing cautiously the progress of economic development with the sole assistance of mechanical power so that human sufferings may be reduced to the minimum; to compel recognition of the rightful place of small industries and handicrafts in the industrial scheme; and at the same time to urge the need for appreciating human values likely to be lost in the craze for industrial progress which seeks unfortunately to substitute the cult of the machine for the love of humanity.

¹ Cf. G. D. H. Cole, *The Intelligent Man's Guide Through World Chaos*, Chapter on 'Machinery and Men', pp. 139-49.

APPENDIX I

A study of the census of hand-loom in Salem District*Sources of information*

There are four distinct sources from which we can gather information regarding the distribution of the hand-loom industry in each district. First come the village statistics published along with the census reports. They refer to the number of weavers in each village. But this reference was omitted since 1901. There is no separate grouping of weavers in the present village statistics. By the discontinuance of this practice we are deprived of a very useful source of information regarding the migration of the weaving community. At the time the writer commenced his work he was told that the original returns 'were destroyed as soon as the Census report was completed as they were considered to be of a confidential nature'.

The second source of information is the returns on the minor industries which the Tahsildar is asked to make at the time of the *Jamabandhi*. (Ref. Taluk Office Manual.) But these returns are seldom made and, even where they are submitted, they are rarely reliable.

Thirdly comes the village register maintained by the village officers. They enumerate from year to year the population of the village, the classification of the land, the extent of land cultivated etc., all with reference to the revenue administration of the village. Returns are also noted as to the number of artisans as blacksmiths, weavers, carpenters etc., and also the number of indigo vats, country oil presses, sugarcane presses and hand-loom. The village registers are a very satisfactory source of information regarding the revenue administration of the village but they are thoroughly unreliable so far as the agricultural stock, the industrial returns and other things not directly connected with the collection of revenue are concerned. Many village registers do not contain returns under these heads at all. To cite an instance of how returns are entered by the village officers: the sum of the number of hand-loom returned in the two previous quinquennial censuses is mentioned as the present number of hand-loom. No attempt is made to verify these figures. The village officers are not to blame; they have neither the intelligent guidance nor the practical training in the collection of statistics.

Fourthly come the quinquennial cattle census returns. They are no better than the village register, being returned by the same village officers. The higher revenue officials do not scrutinise the returns

In many cases the forms are not even completely filled up. We cannot expect anything better in the returns in the near future unless the status of the village officers is improved and their strength is increased. Many of the village returns are not even available in the Taluk Office.

Considering all this the writer proceeded to take a census of the hand-loom in each Taluk with the help of the Revenue Inspector of the firka. But that was an uphill work for a single person. He was just then informed that a special hand-loom census was taken by the Weaving Superintendent in 1926. The writer is much obliged to him for the copy of the returns he had given him. The returns were made in the form prepared by the Director of Industries.

The following remarks regarding the conditions of the hand-loom industry in Salem District are based on the returns of the Weaving Superintendent.

THE NUMBER OF HAND-LOOMS

Nearly all the villages in the district made the returns except the villages in Hosur Taluk and some in Harur Taluk. The working of hand-loom—cotton, silk, kora, and kumbli—is reported in 245 revenue villages. There are 29,052 hand-loom of which about 1,600 looms are reported to be idle. The distribution of looms according to the census of the Weaving Superintendent and according to the returns of the Statistical Atlas of the Madras Presidency, 1921, and the density of the population Taluk-war are given below :—

Taluk	Density of Population per sq. mile	Number of hand-loom	
		Census of the Weaving Superintendent	Statistical Atlas, 1921.
Hosur	153	496	1,082
Krishnagiri	255	364	355
Uttangarai (Harur) (Harur firka only)	168	200	287
Dharmapuri	229	1,439	1,483
Tiruchangode	552	5,550	3,000
Rasipuram	439	5,502	8,674
Salem	472	10,846	4,467
Omalur	420	3,090	3,052
Namakkal	470	1,564	1,049
Attur	276	...	441
Total	—	29,051	23,890

It is evident that nearly 80 per cent of the looms are found in the Taluks of Salem, Omalur, Tiruchangode and Rasipuram. The difference in the number of looms noted in the two censuses

cannot be explained. But the concentration of the industry in that belt is striking, and may be explained by the following facts :—

1. concentration of population and hence a local market ;
2. proximity to Salem which is the trading and financial centre for the industry.

IMPROVEMENTS ON LOOMS

More than 55 per cent of the looms are fitted with flyshuttle sleys. The localisation of the industry also leads to its rationalisation. In other taluks looms are most primitive and crude. They are mainly pit looms with throw shuttles.

Number of looms with and without flyshuttle sley.

Taluks	Number of looms fitted with flyshuttle	Number of looms with throw shuttle	Percentage of flyshuttle looms
Hosur	7	489	1.5
Krishnagiri	58	306	16
Harur	64	136	32
Dharmapuri	706	733	48
Tiruchangode	3,314	2,206	60
Rasipuram... ..	3,265	2,237	58
Salem	6,526	4,320	60
Omalur	1,526	1,564	49
Namakkal	454	1,110	27
Attur ... ..	...	...	...
Total ...	15,950	13,101	56

Many looms in the taluks of Salem, Tiruchangode, Omalur and Rasipuram are manufacturing fine fabrics and solid bordered cloth ; therefore throw shuttles are used.

The village officers do not note returns of dobbies and warping mills in use. These are not generally working in the industrially backward taluks. There are many in operation in Omalur, Salem and Rasipuram but no returns are made. Satisfactory returns are, however, available for the taluk of Tiruchangode—at least so far as the Tiruchangode firka is concerned—where the Superintendent himself directed the collection of data. On the whole, 74 warping mills and 273 dobbies are noted. Their introduction is due to the indefatigable propaganda of the Weaving Party. Of the 74 warping mills, 34 are of the vertical type. 55 looms are fitted with weaver's beam which economises space occupied by the loom and saves time and labour involved in the shifting of lease rods and the arrangement of threads under the old system. Besides, 18 warping mills in Namakkal and 5 in Harur are also noted. But it is surprising that no warping mills, or weaver's beams or dobbies are noted in Salem. Salem is

easily the first and foremost in weaving industry. And it was here that the Department of Industries tried its experiments in hand-loom factories with all the modern equipment, and one would naturally expect there a large number of time-saving appliances in use. But no returns are made regarding this. This is an obvious error of omission. It is reported that there are only 24 dobbies in Salem Taluk. Salem weavers make special designs on the body and border of the cloth and they are exactly the province of the doobby and the jacquard harness. It is possible that the prohibitive initial cost of the jacquard harnesses might stand in the way of their adoption. But the failure to introduce simple and cheap dobbies in the draw-boy looms is unaccountable; perhaps they were not properly and carefully noted. In this connection it must be said that a local weaver of the Mudaliar community who is an expert in textile designing, has made a simple and cheap harness for elaborate design weaving. The country chain harness is cheap and therefore everywhere in use. The introduction of the new harness will benefit the industry.

THE NATURE OF YARNS USED

The Counts of Yarns Used.—Details of yarns used by looms are available for 20,500 looms. No information regarding the kind of yarn employed is noted in the case of 8,500 looms in Salem Taluk. It may be safely assumed that Salem being the centre noted for fine cloths, the count of yarn generally employed is above 30s. Of the 20,500 looms, 11,760 are using yarns of 40s and below, while many of the rest employ yarns varying from 20s to 100s. It is not definitely known how many looms are actually engaged in weaving cloths of count above 40s. But it is estimated that about 30 to 35 per cent of the looms manufacture fine cloths.

The Extent of Colour Yarn Employed.—13,887 looms are employed in manufacturing coloured fabrics. They use colour yarn wholly or partially. Only about 6,600 looms are using pure grey or bleached yarns. It is in the latter case that more fine counts are employed. A careful analysis indicates that the survival of the hand-loom is in no small measure due to the kind of fabric it manufactures. It employs more coloured yarn and manufactures such fabrics as are intended to suit local tastes, and as are not produced on power-looms. The looms using coloured yarn are mainly looms manufacturing sarees.

The Classification of Looms according to their Employment of Silk or Artificial silk or Cotton alone.—This classification is made in order to understand how much of hand-loom production is directly

competing with mill product. Power-looms cannot compete so successfully against the hand-loom in the manufacture of mixed or purely silk fabrics. It is also said that hand-looms survive because they have now taken to the manufacture of silk or rayon.

The returns under this head are as usual incomplete. The writer is aware that there are at least 50 looms in Rasipuram which employ silk alone; but nothing is mentioned about silk looms there. Again, many looms employing both silk and cotton are manufacturing the celebrated Salem *Gundanjoo* which has a narrow silk border. Again, it is not mentioned how many looms are manufacturing solid bordered cloths which are not generally produced on power-looms. The village officers who have noted returns do not seem to appreciate what is meant by 'solid border'. Imperfect as these returns are, certain facts are worth noting. 66 per cent of the looms employ cotton alone while others employ silk, or silk and cotton, or rayon and cotton.

**TALUKWAR DISTRIBUTION OF LOOMS USING DIFFERENT
KINDS OF YARN**

Taluk	Number of Looms Using Yarns of						
	40s and below	Above 40s	Grey yarns only	Coloured wholly or partially	Silk alone	Cotton only	Mixed silk, cotton, rayon
Hosur ...	465	...	77	388	...	105	360
Krishnagiri ...	240	...	12	228	...	100	140
Dharmapuri ...	1,332	20	84	1,268	...	1,110	242
Harur ...	200	...	55	145	...	200	...
Namakkal ...	1,480	480	312	1,248	...	1,146	414
Omalur ...	2,137	853	1,453	1,537	...	1,890	1,100
Tiruchangode ...	4,155	1,291	1,708	3,738	...	3,895	1,551
Rasipuram ...	1,926	3,636	2,705	2,857	...	3,635	1,927
Salem ...	251	2,326	199	2,378	72	1,423	1,154
Total ...	11,786	8,606	6,605	13,787	72	13,504	6,888

Finer count is used more in the Taluks of Rasipuram, Salem, Tiruchangode and Omalur. Looms manufacturing grey cloths employ more fine count yarn than looms manufacturing sarees. It is remarkable that in this district the extent of lungi and kaili manufacture is limited. And where fine count is employed it is used for the manufacture of laced cloth. Most of the saree looms are manufacturing sarees for peasant women. Looms manufacturing high class saree and urumal are found in Salem and Rasipuram and in a few other centres.

The Range of Fabrics Woven on Looms in Salem District.—
The range of fabrics woven on hand-looms in Salem district is

wide. In pure grey cloths, dhoties with or without border, towels, duppaties and shirtings are important. There are laced and silk-bordered cloths also. Sarees with or without solid border, cloth for bodice, angavasthram or upper cloth, urumals, peethambaram, are some of the important silk fabrics. The celebrated *Mayilkan* (peacock's eye) for which there is a craze among well-to-do Hindus is a staple article of manufacture in Salem town and Ammapet. Carpets, bedsheets, jamakkalam, sarees with or without solid border are some of the prominent manufactures of pure coloured cotton. There is now a demand for certain kinds of cloths made of mercerised yarn and artificial silk thread, and their manufacture is now expanding.

**CLASSIFICATION OF LOOMS ACCORDING TO FABRICS
MANUFACTURED.**

The looms can be classified under the following heads :—looms manufacturing 1. sarees or other mainly colour fabrics, 2. veshtis or other cloths, mainly grey, and 3. both grey and colour cloths about which there is no definite information.

Information under this head is available for 20,500 looms, of which 55 per cent are employed in the manufacture of coloured cloths of some kind or other. The manufacture of the coloured cloths of the kind in demand in rural parts is the province of the hand-loom, and this accounts for its survival. The remaining 45 per cent of the looms, except so far as they manufacture solid bordered and laced cloths, compete directly with power-looms.

**NUMBER OF LOOMS IN EACH TALUK ACCORDING TO THE
KINDS OF FABRICS THEY USUALLY MANUFACTURE.**

Taluk	Number of Looms Manufacturing		
	Sarees only	Grey or bleached cloths only	Both coloured and grey
Hosur	388	77	...
Krishnagiri	162	12	66
Dharmapuri	925	84	427
Harur	93	55	52
Namakkal	487	299	774
Omalur	1,076	1,453	560
Rasipuram	1,069	2,787	1,706
Salem	1,524	241	884
Tiruchangode	2,941	1,918	598
Total	8,645	6,926	5,067

N. B.—Details for 8,200 looms are not available in Salem taluk. There are about 5,000 looms in Salem alone. Roughly speaking, the whole of Arisipalayam is manufacturing silk bordered grey and bleached cloth for men

with yarns of counts 40s. to 80s. There are about 500 such looms. In Gohai there are about 2,500 looms and all of them employ colour yarn. They manufacture carpets and sarees. Here is the big colony of Devangas. In Ammapet there are 200 pure silk looms worked by Kaikolar Mudaliars. They manufacture costly cloths with silk and cotton and gold lace, sometimes with beautiful patterns. In Salem town there are nearly 1,000 looms and 60 per cent of them manufacture silk and rayon fabrics. There are a few saree looms which prepare very costly cloths, say from Rs. 150 to Rs. 500 sometimes.

THE SIZE USED

The census of hand-looms indicates that the weavers use no special size for the warp. They prepare their own size with the locally available materials as ragi or rice with sesame oil.

CASTES OF WEAVERS

The investigation reveals that nearly 85 per cent of the weavers are weavers by caste and by hereditary occupation. The important weaving castes are Kaikolar Mudaliars, Devanga Chettis and Naidus and Jedars. The following groups are not weavers by caste:—Padayachi, Siveyar, Sembadavar, Pulavar, Lingayats, Vellalas, Muslims, and Adi-Dravidas. The Sourashtras are weavers by caste, and they are found in Salem and Rasipuram towns only. There are about 300 to 400 families of Sourashtras in the two centres. The following table shows the distribution of certain weaver-castes.

Taluk	Number of families of				
	Devangas	Kaikolars	Jedars	Adi-Dravidas	Kurumbars
Hosur ...	360	...	...	6	...
Krishnagiri ...	78	...	...	...	...
Dharmapuri ...	231	1,069	...	41	...
Harur ...	...	130	...	55	...
Omalur ...	1,250	1,600	...	...	...
Tiruchangode ...	1,338	1,550	986	36	...
Rasipuram ...	859	2,650	...	...	...
Namakkal ..	700	810	...	87	...
Salem ...	1,425	...	...	...	...
Attur ...	...	...	...	...	...
Total ...	7,542	7,809	986	225	...

The census of the castes of weavers is very imperfect. But some conclusions are possible. The caste weavers account for 80 to

85 per cent of the weaving population, the Devangas and the Kaikolars being the two important sects. The Sourashtra and the Jedars come next. The Thogatars weaving dupatties, the Padmasales weaving sarees, and the Kurumbars weaving kumblis are important weaving castes found in Hosur, Krishnagiri and Dharmapuri Taluks. Adi-Dravida weavers are found in non-weaving taluks e.g. Harur, Namakkal and Dharmapuri. They are the relics of the old village communities.

Caste Specialisation.—Thus far we have proceeded on the basis of the hand-loom census. But certain features of the industry are not brought out by the census which can be gathered only from personal investigation. The first thing that strikes one is the fact that there is a conventional caste specialisation in the manufacture of products. The Devangas and the Sales generally manufacture only coloured goods such as sarees, jamakalams, etc. The Kaikolars specialise in the manufacture of grey and bleached goods, dhoties, towels, dupatties and towels. The Sourashtras mainly manufacture costly cloths of silk. There is very little specialisation among other castes.

As in fabrics, so in the counts of yarn employed there is some sort of specialisation. The Sourashtras and the Kaikolars employ fine count yarn, silk or lace. The Devangas and other communities use coarse and medium count yarns for dupatties, sarees and carpets.

Another factor worth noting is that there is a sort of local specialisation also. Salem and Rasipuram are noted for their high class fabrics: silk and cotton cloths with lace, dupatas, angavasthrams, sarees, etc. Dharmapuri is noted for its sarees for the middle class people. There are many villages where generally a particular variety of cloth alone is manufactured. There are certain advantages in this local specialisation: e.g., in the purchase of yarn, in the preparatory processes etc.

Tendency of the Industry to Localise

The next important feature of the industry is its tendency to localisation or concentration in a particular locality. The tendency is getting stronger now. Scattered artisans are now coming to towns or some semi-urban centres. With the passing away of the self-contained nature of the village and its isolation, the village weaver and the oil-monger are the first to come out of the village for they are not directly dependent on the agricultural industry. The carpenter, the blacksmith and the cobbler are necessary and indispensable artisans in the agricultural community—the carpenter must repair the plough or the mhote, the blacksmith will have to replace the worn-out parts of some agricultural

implements, the cobbler must provide the hide for the pickkota and keep it in proper repair. And for doing all this their immediate presence is necessary. But that is not the case with the weaver or the oil-presser. The demand for their services is neither so continuous nor so urgent as it is for the service of the primarily rural or agricultural artisans.

Besides, the weaver is attracted to the town or to the place where there is a weaver colony, for two other reasons: 1. There is economy in the preparatory processes in large weaving centres where they are done by classes of workers who specialise in each process. The advantage is that firstly, the cost of preparatory processes is reduced and secondly, some time is saved. This enables the weaver to increase his earnings by increasing his output. 2. The presence of the capitalist, specialising in cloth trade and financing the industry and trade, attracts the impecunious weavers who suffer for want of work and lack of capital. There are other advantages incidental to localisation: easy availability of the accessories to weaving such as flyshuttle, reeds, healds etc.; direct touch with the cloth and yarn market; knowledge of the changes in the demand; and a greater scope for work.

Rationalisation of the Industry

Though the investigation attempted to obtain facts regarding rationalisation in the matter of organisation of production, the material obtained is very scanty and unsatisfactory. The number of independent workers and the hired labourers and the size of each unit of production have not been properly ascertained. So nothing can be said regarding them. Nor is there any basis for comparative study of the recent changes in the condition of the industry.

But there is ample evidence to show that the rationalisation of the industry on the technical side is going apace. Now, the old system, where the weaver did everything from winding to weaving with the help of the members of his family, is giving place to a more rational system of division of labour. The tendency to specialisation and adoption of improved appliances deserves notice. The old peg warping has now given place to warping mills, except in the upland tracts where the industry is carried on by isolated workers. In those places, of course, all the preparatory processes are done by women and children of the weaver. But in all centres where weaving is of some importance, warping mills are found. But winding and sizing are done in the old way. Children and old persons do the bobbin winding at 2 to 3 pies per ladi or 10 hanks. Warping is the special function of some persons who are mainly

weavers by caste, and their rates for warping vary according to the weight and count of yarn. Sizing is slowly becoming a specialised process. In some places it is done by weavers themselves on a co-operative basis. Those that help the weaver are given a nominal remuneration of 2 annas each per warp. In Salem and Rasipuram and other centres where weaving is the chief industry of the locality, sizing is done by special groups of workers. This obtains only where long warps are prepared. In Salem, sized warp is also sold by the merchant. Where short warps are prepared—say for sarees in Rasipuram—women do the sizing. But where longer warps are needed—more than 30 yards or so—sizing is done by men only.

The following facts become clear from a study of this hand-loom census :—

(i) improved weaving appliances are generally in use ; more than 50 per cent. of the looms have flyshuttles. Drawboy harnesses, multiple sleys, and warping mills are also used. Only sizing and winding are done on primitive lines.

(ii) The tendency to localisation of the industry, the adoption of specialisation in processes and manufactures and the general tendency for the rationalisation of the industry are now in evidence ;

(iii) nearly a third of the looms are producing cloths in direct competition with power-looms ;

(iv) and the industry is not so primitive in its technical equipment as is often stated.

APPENDIX II

THE HAND-LOOM CENSUS: A CRITICISM

The authors of the various provincial census reports in 1921 recognised that census figures as at present compiled, could not afford any useful information regarding the progress of the hand-loom weaving industry. This is true in all cases of small industries in India. It was observed by Mr. Talents: 'we must on the whole conclude that any estimate of the tendency of the home weaving industry based on the census figures is at present inconclusive. But the record of the hand-loom census if it be continued may afford material for a better estimate at a future census'. Sir Alfred Chatterton also emphasised on the need for the collection of useful occupational statistics: 'We desire to draw attention to the unsatisfactory means provided by the ordinary census for the collection of useful occupational statistics and to suggest the adoption of special enquiries; for, the object is at least as important as the ethnological discussions that have hitherto figured largely in the census report'. Mr. Amalsad, Textile Expert to the Government of Madras, writes: 'It is found that it is extremely difficult to estimate the decline in the condition of the cottage workers in India as no figures exist which will enable one to compare the past condition of the industry with that of the present. The census statistics are usually compiled by persons not in close touch with the industry and the classification of the various branches of the textile trade adopted in these figures affords very little help. The statistical publications regarding Cotton Mills in India give figures regarding the consumption of yarn in terms of weight without stating the counts of yarn. This conveys no meaning whatever regarding the decline in the industry and the changes in the economic condition of the weaver'. The quantity of yarn used by the loom, the daily outturn, the number of days the weaver gets work in the year, the counts of yarn used and the kind of fabric woven, the subsidiary occupation of the weaver, the average prices of yarn and cloth and other raw materials required for weaving, are essential data to gauge the changes in the economic status of the weaver and the progress of the industry and in some measure the economic progress of the country. The census of 1931 while offering no basis for comparison is yet an improvement on previous censuses. The workers are divided into three groups (a) persons following it as principal occupation, (b) persons following it as subsidiary occupation and (c) those who are 'working dependents'.

The Director of Industries, Madras, passing orders on the resolutions passed in the Handloom Conference in 1925 and recognising the value of a survey of the weaving industry observed that a certain amount of information in the form below would be helpful if collected by Weaving Superintendents.

Statistics of Hand-loom

1. Name of the weaving centre visited.
2. Taluk and district.
3. Village population.
4. Weaver population in the village : Men, Women—Total.
5. Probable number of persons engaged in
 - Winding
 - Warping
 - Sizing
 - Dyeing.
6. Classification according to weaver's caste.
7. Number of looms in the centre—Total.
 - (1) Looms fitted with flyshuttle sley.
 - (2) Ordinary looms with throw shuttles.
8. Number of looms lying idle.
9. Number of improved appliances at work.
 - (a) Dobbies, (b) warping mill, (c) sizing plant,
 - (d) jacquard harness, (e) weaver's beam etc.
10. Particulars of fabrics manufactured.
 - (1) Details—Sarees or dhoties, solid or other bordered cloth, plain weave or otherwise etc.
 - (2) Counts of yarn used (colour, grey or bleached).
 - (3) Nature and count of silk and artsilk thread used.
11. Character and composition of the size used.
12. Nature of dyes used.
13. Number of weaving factories.
14. Number of co-operative societies

}	Total number of members.
	Number of weaver mem-
	bers.
15. Nature of any other textile industry followed there.
16. Remarks.

If the survey of the industry is carried on these lines periodically—say every ten years—it will indicate the tendency of the industry to localise, the movement of the industrial population, the changes in the range of articles manufactured in hand-loom, the technical progress of the industry, the mobility of labour and its employment, the changes in the caste monopoly in industrial occupations, the tendency or otherwise of the industry to concentrate in

factories, the changes in the sex distribution of workers in the industry and in the various processes connected with the industry etc., etc.

But there is one great omission in this survey. It fails to get at the human factor in the industry. The two main objects of a study of an industry are 1. industrial progress, and 2. human progress. A study of the former without reference to the latter is necessarily incomplete; and what the Textile branch of the Industries Department has so far done is that its attention was mainly focussed on the technical progress of the industry and nothing was so far done to ascertain the changes in the economic status of the weaver. It is true that if a comprehensive statistical census along with the general census is taken, nothing more can be done. But this must be supplemented by special surveys in selected centres. A special survey will require workers with efficient training in practical economics, who have the training, tact and patience necessary to investigate the household budgets of a number of weavers, their general indebtedness to capitalists, the actual output of the loom with and without fly-shuttle, the wages of cooly workers for different operations, the prices of yarn and other raw materials, the sale of manufactured articles and their prices in different shandies and many others.¹ A special staff is necessary to collect data simultaneously in all centres. Mere statistics on the lines suggested by the Director of Industries is of no value. And it is unscientific to collect data in a few centres at random and apply them to the industry as a whole. The census of the hand-loom industry and all other important small industries must be taken periodically and must be supplemented by special investigation on the human side². One cannot say how far the census of production contemplated by the Government of India will realize the objectives of the census of hand-looms stated herein.

¹ The Research Department of the University can carry on this work systematically with the help, and through the co-operation, of the Industries and the Co-operative Departments.

² The recent investigation in the Madras Presidency carried out by a special officer for cottage industries is a welcome departure in the industrial policy of the Government. But, unfortunately, for various reasons for which the special officer is in no way responsible, neither the enquiry nor the report is fruitful from the point of view of either technical and commercial organisation of the hand-loom industry or economic and social regeneration of the weaving community.

APPENDIX III

Questionnaire

I. GENERAL CENSUS.

1. Name of the village and Taluk.
2. Population :
 - Men
 - Women
 - Children (below 10).
3. Number of weaver families.
4. Total weaving population (including dependents) :
 - Men
 - Women
 - Children.
5. Number of actual workers in
 - (a) cotton, (b) silk, (c) mixed, (d) others :
 - Men
 - Women
 - Children.
6. Number of looms (a) working and (b) idle.
7. Number of looms fitted with flyshuttle sley
 - with throw shuttle sley
 - with lever doobby
 - with jacquard harness
 - with country chain harness
 - with weaver's beam
 - with multiple sley box
 - with other mechanical improvements
8. Number and kind of warping mills used.
9. Number and kind of sizing plant in use.
10. Number of yarn depots in the locality.
11. Number of cloth dealers in the place : (a) dealers who are weavers themselves, and (b) dealers who are not.
12. Castes of workers.
13. Number of actual workers (a) winding, (b) warping, (c) sizing, and (d) weaving, and number of men, women and children in each.
14. Number of (a) textile dyers, and (b) textile bleachers.

15. Civil condition of workers :
 - (a) literate or illiterate.
 - (b) age of workers—Below 10, 11–15, 16–60. Above 60.
 - (c) sex of workers.
 - (d) married, unmarried and widowed.
16. Extent and means of subsidiary income of the family.
17. Number of persons owning their looms.
18. Number of persons owning their houses and place of work.
19. Number of weavers who are members of the Co-operative Society.
20. Number of families and workers who are—
 - (a) independent cottage workers
 - (b) hired or wage earners (independent)
 - (c) dependent on the sowcar
 - (d) master craftsmen
 - (e) capitalist workers.
21. Number of looms manufacturing—
 - (a) sarees (ordinary).
 - (b) grey cloth
 - (c) sarees with solid border or lace or grey cloth with solid border or lace
 - (d) special kinds of cloths.
22. Number of families where all the preparatory processes are done by the members of the families themselves or at least part of the processes is done by them. Mention the processes that are done by them.
23. Number of looms using—
 - (a) grey yarns below 40s
 - (b) „ above 40s
 - (c) coloured yarns below 40s
 - (d) „ above 40s
 - (e) mixed cotton, silk, and rayon.

APPENDIX IV

Questionnaire

II. CENSUS OF HAND-LOOM FACTORIES.

1. Name of the factory, name of the place etc.
2. Nature of the company : Private or public.
 Limited or otherwise.
 Jointstock or partnership or individual basis.
3. Number of looms : Working
 Idle
4. Number fitted with flyshuttle
 " with dobbies
 " with weaver's beams
 " with jacquard harness
 " with swivel or multiple sley.
5. Number of looms manufacturing—

KINDS OF FABRICS WOVEN.

- (a) coating
- (b) shirting
- (c) sheetings
- (d) others
6. Number of workers : Men
 Women
 Children.
7. Number of Weavers : Men
 Women
 Children.
8. Number of Warpings : Men, Women and Children.
9. Winding : Men, Women and Children.
10. Dyeing : Men, Women and Children.
11. Castes of workers.
12. Number of families
 (1) Where only one member works in the factory.
 (2) Where two members work in the factory.
 (3) Where more than two members work.
13. Number of workers with whom weaving is the hereditary calling.

14. *Wages*: for pirn winding
 for bobbin winding
 for warping
 for sizing
 for dyeing
 for weaving.

(State wages per operation in respect of different kinds of clothes woven, different kinds of yarns used, and different textiles used, as cotton, silk and rayon) and also the average earnings of workers.

15. Systems of remuneration—
 (*a*) period : weekly, or monthly etc.
 (*b*) piece rate or time rate
 Wages for overtime work.
16. Hours of work per day.
17. Hours of work for the week.
18. Fines etc.
19. Provision for provident fund, profit sharing, bonuses etc.
20. Provision of sanitary and other amenities in the factory.
21. Provision of facilities for education, purchase of things etc.
 in the factory.
22. Details of improved appliances used.
23. Number, pay and qualification of special technical staff
 (*a*) weaving foremen, (*b*) dyer, (*c*) business manager etc.
24. Special investigation on BUSINESS SIDE.
 (1) Amount of capital invested.
 (2) Amount of working capital.
 (3) Amount of borrowed capital. Rate of interest.
 Securities offered, if any.
 (4) Average monthly turnover. Quantity and value.
- Examination of the day sheet of workers in different processes.
- Examination of the costing sheets in the factory.
- Other matters of interest, e.g., study of balance sheets etc.

5. Joining the threads.
6. Rolling on the beam.
7. Weaving.
8. Others.

III. Economic Status of the Weaver to be studied in respect of each group.

1. Classification of workers (*a*) according to their industrial status
 1. Master craftsman.
 2. Independent cottage worker.
 3. Hired labourer.
 4. Indentured worker.
 5. Others.
- (*b*) Classification according to the kinds of cloth woven.
 1. Cloths that are also produced in mills.
 2. Cloths that are the special province of hand-loom.
2. The weaver's family: Number of members: number of workers—men, women and children; number of dependents.
3. Income: Number of looms working: Work available daily. Number of full working days in the year. Kinds of operation done by the members of the family: Nominal and real wages of workers and of the family.
4. Family budget: Expenditure (*a*) rice and other staple food grains and other food articles, (*b*) clothing, (*c*) housing and lighting, (*d*) education, (*e*) industrial equipment, (*f*) drink, (*g*) conventional extravagances etc.
5. Indebtedness of the family: Causes of indebtedness: Economic condition of the family in the last generation. Extent of debt: Interest: Secured or not: Capacity of repayment. When was the debt contracted.

APPENDIX VI

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