



**INTERNATIONAL FEDERATION
OF MASTER COTTON SPINNERS'
& MANUFACTURERS' ASSOCIATIONS
MANCHESTER ENGLAND**

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THE COTTON INDUSTRY
of
JAPAN AND CHINA



THE
COTTON INDUSTRY
OF JAPAN AND CHINA

BEING THE
REPORT OF THE JOURNEY
TO JAPAN AND CHINA

BY
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of Master Cotton Spinners' and Manufacturers'
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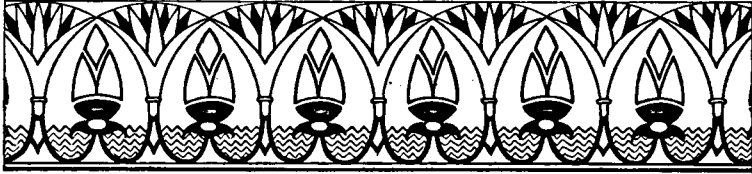


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PREFACE

IN submitting this book to the members of the International Cotton Federation and to the general public, I feel that I cannot do better than quote *in extenso* the report which has been compiled by Messrs. HAROLD CLIFF (Oldham) and JOSEPH WILD (Wigan), who, on account of their extensive technical knowledge, were delegated by the English Federation of Master Cotton Spinners' Associations to examine in detail the mass of information which Mr. Pearse had brought with him from his recent journey.

Messrs. Cliff and Wild's report reads as follows:—

“ During the very brief tour that Mr. Pearse made to Japan and China, he has collected a mass of information of great value and interest to all connected with the cotton textile industry.

His report touches nearly every phase of the industry, some of which are dealt with very exhaustively. It is a remarkable achievement in the short space of time at his disposal.

The historical survey of Japan's most important manufacturing industry and the accompanying voluminous statistics clearly trace its rapid expansion and the chief causes which have led to it.

A generation ago Japan had about three-quarters of a million spindles, and now has six and a quarter millions.

The long lead which England formerly possessed over her competitors is being rapidly overhauled. In total weight of cotton used Japan now actually leads this country, whilst the average counts spun are continuously getting finer and the cloth productions more refined.

The power of Japanese competition is not sufficiently realized by looking only at the number of spindles. Reckoned in equivalent mule spindles, they are equal to 9,408,000. But,

taking into account the hours they are run, without any Saturday stoppages and only two to four rest days per month in place of our Sundays, the working week is at least two and a half times as long as it is here, making Japan's competitive power equal to twenty-four millions of mule spindles in this country.

The number of hours which machinery can be run in Japan gives a double advantage. Not only is the earning power of the machinery proportionately increased, but it can be renewed at much shorter intervals. For example, a machine ten years old would have worked in Japan at least sixty-two thousand hours, whereas in Lancashire on full time it would have worked at the most twenty-four thousand hours. Thus, it may be that in Japan by the time a machine is worn out it has also become obsolete, whilst in Lancashire the same machine may be obsolete, but has many more years of life before its running conditions become sufficiently impaired to justify renewal.

The section of the report dealing with particulars obtained at the mills visited will be of particular interest to those technically conversant with spinning and manufacturing. There are inconsistencies in many cases, which is perhaps inevitable, considering the manner in which they were obtained. There is, however, sufficient corroboration of one mill with another to bring out many important facts, which may be enumerated as follows:—

The production of yarn and of cloth is as high as the very best mills that can be found here. Many of them show actual rate of production higher than the ideal productions quoted in textile machinists' catalogues.

The staffing of the mills on the spinning side is very little inferior to English standards. Per 1,000 ring spindles they vary from 6.5 to 13.5 operatives, the former excluding the processes subsequent to spinning, and the latter including reeling, winding, doubling, mercerising and bundling.

In weaving the staffing is more favourable than in this country, indicating the high efficiency of the Japanese operatives. The average of 5.5 looms per weaver for the whole organized industry is very high. The introduction of the purely Japanese Toyoda looms shows exceptional results, as given in examples of mills of 500 and 480 looms respectively, where one weaver looks after 50 looms with an efficiency of 95 to 96 per cent.

Regarding wages, an approximate comparison for 10 hours' work is as follows:—

Class of Operative	Approximate earning in 10 hours	
	Japan	England
Blowing Room men	3/2 to 3/7	12/6
Men on Cards	2/11	12/6
Cardroom Tenters	2/9 to 3/-	6/8 to 7/11
Ring Spinner 800 spindles on 32's ..	3/-	7/7
Winders	2/6 to 3/-	7/4
Beamers	4/4	8/4
Weavers	2/9 to 4/3	8/- to 12/-

Even after the addition of 6d. or 7d. per day for the cost of welfare, the wages rate is less than half that in England.

Welfare work is a special feature in Japan, and is an important addition to the cost of operatives' wages. Mr. Pearse gives an estimated average of 6d. to 7d. per day which should be added to the wage earnings of workpeople. Mr. Pearse lucidly explains the essential necessity for welfare work as a means for attracting labour from the country districts to the mills. From what at first glance would seem to be a burden, the Japanese employers, by skilful organization, have turned it into an advantage to themselves and to their operatives: to themselves by securing a better control of their workpeople, a surer means of vocational training and greater efficiency; to their operatives by providing living conditions superior to their normal home life conditions and improving their physical and mental equipment by judicious training and education.

There is an impression held in many circles in this country that the low rate of wages paid to Japanese operatives is counterbalanced by their inefficiency, and that therefore the total labour cost of producing a given quantity of work in Japan is not lower than it is here. Whatever justification may have existed in past years for this impression, the facts and figures obtained by Mr. Pearse prove that to-day it is entirely unfounded.

A striking example of this is furnished by a comparison of the piece-work wages rate paid in Japan with the rate paid here for winding 100 lbs. of ring yarn on to warpers' bobbins.

Winding 100 lbs. of Ring Yarn on to Warpers' Bobbins.

		Counts ..	20's	30's	32's	40's
			d.	d.	d.	d.
Japanese Mills	{ No. 7 ..		—	15·672	—	—
	{ No. 9 ..		—	16·368	—	—
	{ No. 8 ..		18·48	—	22·32	28·8
Average of four modern Lancashire Mills .. }			40·847	51·344	53·413	63·793

In weaving, Mr. Pearse gives the weavers' wages per yard of cloth 44 inches wide, 42's by 46's counts, 68 warp threads

by 72 weft threads per inch, as being on an average .225d. and as low as .161d. under favourable conditions, with a production of 40 yards per loom per 10 hours.

The weaving rate in Lancashire would be .75d. per yard, and the production at 180 picks per minute, with 85 per cent. efficiency, about 37½ yards per 10 hours.

No sufficient data is given to make a comparison of the wages cost of spinning one pound of yarn, but the labour cost *and* overhead charges together are given as 2.22d. per lb. for 21's in one case and 2.4d. per lb. for 20's in another case, both in bale ready for delivery, which is usually in bundle form.

Efficiency is shown by the following productions on the ring frame.

No.	Counts	Per 10 hours.		Per 48 hours Hanks	English Machine Makers' Production
		Weight in lbs.	Hanks		
No. 1 Mill	100's	.06	6.0	28.8	—
	80's	.0825	6.6	31.68	24.96
	60's	.128	7.68	36.86	30.24
	64's	.124	7.94	38.10	29.47
	20's	.516	10.32	49.54	43.48
No. 4 Mill	40's	.22	8.8	42.24	36.098
	25's	.33	8.25	39.6	40.8
	22's	.40	8.8	42.24	42.24
No. 7 Mill	30's	.272	8.16	39.168	37.20
No. 9 Mill	30's	.28	8.4	40.32	37.20

The manner in which the trade is organized has no doubt had considerable influence in the rapid expansion of the Japanese cotton industry in addition to the advantages of wages, low in comparison with European standards, long hours of work and double shifts.

It will be noted that members of the Employers' Association are obliged to supply most comprehensive particulars and statistics very promptly, at fixed and stated dates. This ensures that such information is up-to-date and enables prompt action to be taken. Coupled with the fact that approximately 70 per cent. of the spindles and 65 per cent. of the organized looms are owned by nine combines, it will be seen that control of the industry is much more possible and effective than is the case in most other competing countries.

This organized control extends from the buying of the raw cotton to placing the manufactured goods in the hands of the consumers. New styles and patterns which appeal to buyers

can be produced and delivered promptly. Policy generally in regard to buying, selling, counts of yarn spun, types of cloth manufactured can be quickly determined and concentration secured in every process to ensure the best results.

How flourishing the Japanese cotton industry is, is shown by the financial results given in Mr. Pearse's report, showing an average dividend for 1928 of over 14 per cent., whilst the market value of the shares shows a premium of 88 per cent. of par value. The average share capital of the Associated Mills is about 68s. per equivalent mule spindle, with 18s. 1d. per spindle of loan and 41s. 8d. per spindle in reserve funds.

Mr. Pearse's report shows that *China* is being rapidly developed as a cotton spinning and manufacturing country.

Wherever Japanese influence is effective, the efficiency of the Chinese worker is being raised rapidly.

The statistics of numbers of operatives employed in the mills confined to spinning only show about 33 operatives per 1,000 spindles per shift in Chinese-owned mills and about 21 operatives per 1,000 spindles per shift in Japanese-owned mills in China.

This is telling evidence of Japanese organizing ability, and gives considerable point to the invitation conveyed to Mr. Pearse that British spinners should join hands with the Japanese in developing the industry in China.

With wages at only half the rates paid in Japan, and the demonstrated possibility of raising efficiency to an equal standard, it can only be expected that the displacement of our former immense export trade to China will continue at an ever-increasing rate.

Without doubt the whole report gives food for serious reflection, and there are many features of organization which might be emulated in countries with a much longer established cotton industry than Japan."

I venture to think that this new book on the cotton industry of Japan and China is another of the many valuable cotton publications which the International Cotton Federation has issued during its twenty-five years of existence.

F. HOLROYD,

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Spinners' and Manufacturers' Associations.*

Manchester, July 19, 1929.

