

RURAL INDUSTRIES IN CHINA

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Rural Industries in China

Rural Industries Classified

Industry, in its broadest sense, is identical with the economic activity of mankind — the effort to gratify human wants either material or non-material, and has been customarily classified into three groups, namely, primary industries, secondary industries, personal and professional services. Primary industries may be extractive such as hunting, fishing, grazing, lumbering, and mining; they may be genetic such as agriculture and fish culture. Secondary industries may be manufacturing and constructive such as weaving, steel making, engineering, building, and road building; they may be commercial such as transport and communication, merchandising, warehousing, banking and insurance. Personal and professional services, finally, include healing, teaching, protecting, inspiring, governing, amusing, etc.¹

Rural industries, broadly speaking, include all types of industries in rural districts of which the most important is of course agriculture. However, the definition of a rural district is chiefly determined by the number of population. Thus, a rural district in the United Kingdom has a population of 1,000 or below, in France or Germany one of less than 2,000, and in the United States one of less than 2,500. In that way, the rural population occupies 20.7% of the total population in England and Wales (1921), 35.6% in Germany (1925), 48.6% in the United States (1920), and 53.6% in France (1921).² The definition of a rural district according to the number of population for one country is, however, not applicable to another whose stage of industrial development is yet in a lower stage. In Japan, for instance, the districts with a population of 2,000 or less have a total population occupying only 6.50% of the national population.³ If the same criterion of a rural district for France

1. Bogart, Ernest L. and Landon, Charles E.: *Modern Industry*, New York, Longmans, 1927, p. 214.
2. Birnie, A.: *Economic History of Europe, 1760-1930*, London, Methuen, 1931, p. 278; *Statistical Abstract of the United States, 1930*, p. 46; Carr-Saunders, A. M. and Jones, D. C.: *A Survey of the Social Structure of England and Wales*, 1927, p. 36.
3. *Résumé Statistique de L'Empire du Japon, 44e Année*, Tokio, 1930, p. 7.

or Germany be applied to Japan as well, then Japan, a country which is distinctly less industrialized or urbanized than either France or Germany, appears to have a much smaller proportion of rural population. In Japan, therefore, a rural district is considered to have a population of 10,000 or less, and the rural population consequently accounts for 63.4% of the total population.⁴ In India where a rural district is defined to have a population of 5,000 or less, the rural population in 1921 accounts for 89.8% of the total population,⁵ which as compared with that in Japan in the same size of districts (44.21%) is about twice as higher.

In China, the absence of a modern census precludes the possibility of arriving at an exact determination of the rural population. Some rough idea of the proportion of rural population, however, may be gained from an analysis of the occupational distribution of population in China. According to Lieu and Chen, the agrarian population in China is estimated at 345,780,000, which is 71% of the total population of 485,508,000 (Chinese Post Office estimate in 1926). This percentage, which corresponds closely with that estimated by the Bureau of Statistics of the Legislative Yuan in 1930, 74.50%,⁶ is very much lower than that for the industrialized and semi-industrialized nations of the world today, namely, 6.8 for England and Wales (1921), 19.1 for Belgium (1920), 26.3 for the U. S. (1920), 30.5 for Germany (1925), 38.3 for France (1926), 53.1 for Japan (1920), and 56.1 for Italy, but is close to that for India (72.3% in 1921) and actually lower than that for the U.S.S.R. (86.7% in 1926).⁷

It goes without saying that agriculture constitutes the principal occupation in rural districts. In the countries mentioned above, from one fifteenth to five sixths of the rural population are engaged in agriculture. The more industrialized a country

4. *Political and Economic Annals of Japan, 1920-30*, Tokio Institute of Politics and Economics, Tokio, 1931, p. 261.

5. Narain, Brij: *Indian Economic Life*, Lahore, 1929, p. 343.

6. Statistics of farm land in China, in *Chinese Economic Journal*, March, 1928; *Statistical Monthly*, Jan.-Feb. issue, 1932; *Nankai Weekly Statistical Service*, March 16, 1931; Apr. 22, 1932.

7. League of Nations, *Statistical Yearbook, 1931-32*, pp. 44-45; *Résumé Statistique de L'Empire du Japon*, *op. cit.*, pp. 10-11.

Table 1. Proportion of agrarian and rural population to total population in the world

Country	% of rural population in total population	% of agrarian population in total population
England and Wales	20.7(1921)	6.8(1921)
Germany	35.6(1925)	30.5(1925)
United States	48.6(1920)	26.3(1920)
France	53.6(1921)	38.3(1926)
Japan	63.4(1925)	53.1(1920)
India	89.8(1921)	72.3(1921)
China		74.5(1930)
Russia		86.7(1926)

is, the smaller is the percentage of rural population engaged in agriculture. Thus England, the most highly industrialized nation in the world, has 20.7% of the total population in the rural districts, but 6.8% of the total population engaged in agriculture. On the other hand, India, a very poorly industrialized nation, has 89.8% of the total population in the rural districts, and 72.3% of the total population engaged in agriculture.

Next to agriculture the rural industries may include as many branches as industries can be defined in the broadest sense. It is hard to tell or even to estimate the relative importance of the non-agricultural industries in rural districts, as no classification of the industries in rural districts has yet been attempted in any official publication. It is only possible, under present circumstances, to confine our definition of rural industries to a narrower sense, namely, to that of rural manufacturing industries. Rural manufacturing industries, in this narrow sense, may be roughly classified into several groups according to the main factors which call into existence the various types of industries. These factors, generally speaking, include local materials, local market and local supply of labor. The industries owing their existence mainly to local materials include clay products such as bricks and tiles, food products such as wine, oil and flour, timber products such as agricultural implements, straw, willow, bramble and mulberry products such as baskets and plaited wares, textile products such as cotton, woolen or silk fabrics; those owing their existence mainly to local market include the village repairing and manufacturing artisans such as wheelwrights and carpenters, masons and bricklayers, blacksmiths, dressmakers and bespoke tailors, etc.; those owing their

existence mainly to local supply of labor include handloom weaving, knitting, lace-making, etc.⁸

The rural manufacturing industries may, however, be further classified from another and even more significant criterion, that of full-time or part-time employment. The seasonal character of agricultural occupation renders this classification very significant, because during the off seasons rural manufacturing industries become the principal dovetailing occupation to the farmers and their family members.

In China the extent of seasonal variation in agricultural occupation has been studied for the nine hsien in the six provinces of Anhwei, Chihli (now Hopei), Honan, Shansi, Kiangsu and Fukien by Professor Buck of the University of Nanking. This study reveals the significant fact that for the seven principal crops including rice, wheat, kaoliang, millet, corn, soybean and cotton, more than four fifths of the year's work, 83.7%, is concentrated in the six months from May to October, the remaining 16.3% of the year's work being left to the other half of the year from November to April. For some of these crops the monthly variation is even greater. During the busiest month 37.3% of the year's work is concentrated for cotton (August), 35% for corn (July), 31.3% for soybeans (September), 29.2% for wheat (June), 28.1% for rice (June), 26.3% for millet (October), and 16.7% for kaoliang (May). For all the crops grown in the 9 hsien in 6 provinces, more than four fifths of the year's work, 85.0%, is concentrated in the six months from May to October, the remaining 15.0% of the year's work being left to the other half of the year from November to April. The maximum monthly concentration for all the crops in some hsien is even greater, being 31.4% in Kiangning, Kiangsu (June), 30.5% in Wutai, Shansi (October), 29.4% in Sincheng, Honan (June), 27.5% in Wuchin, Kiangsu (October), 25.3% in Hwaiyuan, Anhwei (June), 20% in Pingsiang, Chihli (August), 19.7% in Suhsien, Anhwei (June), 19.5% in Yenshan, Chihli (August), and 16.8% in Lienkiang, Fukien (June).⁹

8. Woods, K. S.: *The Rural Industries Round Oxford*, Oxford, Clarendon Press, 1921, Chap. I.

9. Buck, J. Lossing: *Chinese Farm Economy*, Shanghai, Commercial Press, 1930, pp. 238-44.

Table 2. Number of farms growing 7 important crops in 9 hsien. 6 provinces, North and East Central China, 1922-1924

Hsien	Rice	Wheat	Kaoliang	Millet	Corn	Soybean	Cotton
Anhwei							
Hwaiyuan	124	124	124	124		124	124
Suh sien		286	286	286		286	286
Chihli							
Pingsiang		152	152	152		152	
Yenshan		133	133	133	133		
Honan							
Sincheng		144	144	144	144	144	
Shansi							
Wutai		226	226	226			
Fukien							
Lienkiang	161						
Kiangsu							
Kiangning	217	217			217	217	217
Wuchin	300	300				300	
Total	802	1,582	1,065	1,065	494	1,223	627

The seasonal factor in Chinese agriculture is the more significant when one considers the small amount of man labor performed on a Chinese farm during the year. According to Professor Buck's study of the farm economy in North and East Central China, "man-work units vary from 112 on farms in the smallest size-group to 519 on farms in the largest size-group. The median shows an average per farm of 190 man-work units, and this is performed by an average of two man-equivalents per farm. When one considers that out of the total number of days in the year only this small amount of productive work is done, it becomes apparent that there are the equivalent of several idle months each year for each farm operator and each family farm laborer. While there is some other work to be done, of course, and equally of course some rainy days and some holidays to be allowed for, it is nevertheless evident that these could scarcely account for only about one-fourth of the year being utilized directly upon productive enterprises".¹⁰

Place of rural industries in national economy

The manufacturing industries, which before the days of the Industrial Revolution were as a rule carried on in rural districts, have since then migrated into the towns in most of the

10. *Ibid.*, p. 231.

Table 3. Monthly distribution of total man labor for 7 important crops in 9 hsien, 6 provinces, North and East Central China, 1922-24

	Rice		Wheat		Kaoliang		Millet		Corn		Soybeans		Cotton		Total	
	Hours	%	Hours	%	Hours	%	Hours	%	Hours	%	Hours	%	Hours	%	Hours	%
Jan.	1,058	0.2	21,280	3.5									51	0.1	22,389	0.8
Feb.	6,162	0.8	19,871	3.2	7,454	1.1	2,136	0.5					1,166	2.0	36,789	1.4
Mar.	49,528	6.9	46,988	7.6	40,183	6.2	4,582	1.0					278	0.5	141,559	5.2
Apr.	27,623	3.9	35,907	5.8	72,165	11.0	26,525	6.3			83		1,722	2.9	164,025	6.1
May	70,655	9.8	45,965	7.4	109,318	16.7	34,442	8.1			1,687	1.0	8,811	14.8	270,878	9.9
June	201,115	28.1	180,663	29.2	81,099	12.4	78,681	18.6	12,919	16.8	38,433	22.6	3,201	5.3	596,141	21.9
July	156,122	21.8	56,961	9.2	49,057	7.5	36,002	8.6	26,932	35.0	44,525	26.3	3,051	5.1	372,650	13.8
Aug.	21,283	3.0	60,935	9.8	106,202	16.3	18,394	4.4	2,899	3.7	1,090	0.7	22,155	37.3	232,958	8.6
Sep.	83,651	11.7	55,659	9.0	88,011	13.5	107,524	25.5	23,369	30.3	52,978	31.3	12,090	20.4	423,282	15.6
Oct.	68,111	9.5	69,012	11.2	87,902	13.5	110,618	26.3	6,427	8.3	30,607	18.1	5,943	10.0	378,620	13.9
Nov.	12,865	1.8	3,416	0.5	5,517	0.8	1,760	0.4	4,500	5.9			433	0.7	28,521	1.0
Dec.	17,580	2.5	22,005	3.6	6,307	1.0	1,220	0.3					567	0.9	47,679	1.8
All	715,753	100.0	618,662	100.0	653,245	100.0	421,884	100.0	77,076	100.0	169,403	100.0	59,468	100.0	2,715,491	100.0

Table 4. Monthly distribution of total man labor for the farm crops in 9 hsien, 6 provinces, North and East Central China, 1922-24

	Hwaiyuan		Suhsien		Pingsiang		Yenshan		Sincheng		Wutai		Lienkiang		Kiangning		Wuchin		Total
	Hours	%	Hours	%	Hours	%	Hours	%	Hours	%	Hours	%	Hours	%	Hours	%	Hours	%	
Jan.	1,237	0.4											2,448	0.6	15,707	2.6	14,380	3.7	33,772
Feb.	1,973	0.6	11,255	1.4			1,441	0.4			26,444	1.9	5,261	1.4	9		11,923	3.1	58,306
Mar.	8,372	2.7	11,461	1.4	261	0.2	9,384	3.1	6,090	2.0	52,076	3.6	53,457	14.4	48,793	7.8	5,477	1.4	195,971
Apr.	19,000	6.2	107,307	13.5	19,093	16.2	22,657	7.4	12,019	3.5	54,591	3.8	49,745	10.9	8,046	1.3	1,505	0.4	284,965
May	46,495	15.0	82,253	10.3	15,015	12.7	22,789	7.5	51,814	15.4	154,206	10.8	62,691	16.8	71,804	11.4	12,569	3.2	519,636
June	78,091	25.3	157,300	19.7	18,380	15.6	54,251	17.7	99,003	29.4	172,825	12.0	62,305	16.7	198,127	31.4	92,591	23.8	932,873
July	43,078	13.9	118,731	14.9	23,290	19.8	42,312	13.8	18,085	5.4	189,962	13.3	27,335	7.3	116,574	18.5	88,134	22.7	667,501
Aug.	42,534	13.8	117,316	14.8	23,643	20.0	59,745	19.5	40,766	12.1	82,926	5.7	7,953	2.2	8,256	1.3	22,111	5.7	405,250
Sep.	30,363	9.8	119,064	14.9	9,745	8.2	48,000	15.7	80,062	23.8	263,547	18.4	26,992	7.2	61,542	9.8	8,752	2.3	648,067
Oct.	30,894	10.0	58,363	7.3	8,547	7.3	33,510	11.0	21,901	6.5	438,083	30.5	41,602	11.2	78,107	12.4	107,162	27.5	818,169
Nov.	4,887	1.5	4,903	0.6			11,986	3.9	6,372	1.9			21,981	5.9	11,782	1.8	4,948	1.2	66,859
Dec.	2,519	0.8	9,090	1.2			141						19,994	5.4	11,622	1.8	19,375	5.0	62,741
All	309,443	100.0	797,043	100.0	117,974	100.0	306,216	100.0	336,712	100.0	1,434,660	100.0	372,764	100.0	630,369	100.0	388,927	100.0	4,694,108

western nations such as the United Kingdom, Germany, France, Belgium and the United States, and have there developed as factory, not as home or workshop, industries. As early as 1844, Cooke-Taylor, the contemporary of the factory system, made the sweeping statement that "every branch of industry in England, and to some extent throughout Europe and America, is daily assuming more and more definitely the aspect of factory organization. This is one of those great facts over which human foresight and legislation can exercise as little control as over the direction of the winds or the motion of the tides, and hence the proper sphere for the exercise of legislative wisdom is, to perfect the system, but not to check its progress."¹¹ This statement, which has well stood the test of time in western countries, is no longer unquestionable in view of the social and economic changes over which the inventors and sponsors of factory system have pondered but little but which have engaged the best thoughts of economists and statesmen alike in many countries. As early as 1898, Prince Kropotkin, in his "Fields, factories and workshops", proposed the decentralization of industries. To quote his own words, his proposal was to "have the factory and the workshop at the gates of your fields and gardens, and work in them. Not those large establishments, of course, in which huge masses of metals have to be dealt with and which are better placed at certain spots indicated by Nature, but the countless variety of workshops and factories which are required to satisfy the infinite diversity of tastes among civilized men. Not those factories in which children lose all the appearance of children in the atmosphere of an industrial hell, but those airy and hygienic, and consequently economical, factories in which human life is of more account than machinery and the making of extra profits, of which we already find a few samples here and there; factories and workshops into which men, women, and children will not be driven by hunger, but will be attracted by the desire of finding an activity suited to their tastes, and where, aided by the motor and the machine, they will choose the branch of activity which best suits their inclinations".¹²

11. Quoted in Fong, H. D.: *Triumph of factory system in England*, Tientsin, Nankai Institute of Economics, 1930, p. 22.

12. Kropotkin, Prince: *Fields, factories and workshops*, New, revised and enlarged edition, London, 1912, p. 417.

Indeed, "each individual working in the field and in some industrial art; each individual combining scientific knowledge with the knowledge of a handicraft — such is, we affirm, the present tendency of civilized nations".¹³ Prince Kropotkin's proposal, which was substantiated by a mass of facts confirming the 'growth of an infinite variety of small enterprises by the side of the very great centralized concerns' in France, Germany, Russia, and even in the United Kingdom, is given a new impulse with the recent extension of electric power transmission to the rural districts.

Lately, rural manufacturing industries have attracted a great deal of attention in connexion with problems of development and resettlement of rural areas in over-industrialized countries such as the United Kingdom. Accordingly, an inquiry into the condition of rural industries in the neighborhood of Oxford was set on foot by the Agricultural Economics Research Institute at Oxford, at the suggestion of the Development Commissioners, in 1919-20. It was rather of the nature of a trial trip, an experimental inquiry to explore the possibilities of a more complete investigation, and in the following three years from 1920-23, arrangements were made with the Development Commissioners and the Ministry of Agriculture for an extension of the survey so as to bring under review the principal rural industries of England and Wales. It is here significant to note, in the preface to the reports published after the completion of the survey, the statement that "in any consideration of the development of the countryside the place and function of local industries in rural life must occupy a prominent position. Their importance in the past is obvious when the village was largely an isolated economic unit; in view of the part they might still play in maintaining a fuller life for the country dweller, in stemming the flow of population from the rural to the urban centres, and in solving some of the problems of modern industrialism, the need for a study of their present state, of the extent to which the changes in modern, social, and economic conditions demand their supersession, and of the possibility of adapting and developing them to serve these same conditions, becomes increasingly apparent. It may be that rural industries can continue to supplement agriculture in the com-

13. *Ibid.*, pp. 24-5.

plete rural community, by providing subsidiary employment for the part-time land-worker and the small-holder; by affording the chance of employment in their own homes or villages to the various members of their families; by providing certain requisites of agricultural industry. It may be possible that in the revolution of economic principles and systems which is now being made by all sorts and conditions of persons, certain human advantages in rural industries may be set against the greater production of goods by the larger industrial units of the towns. In particular, the smaller industrial concern enables a man to see the whole series of connexions between the making and using of an article, and brings his work into direct relation not only with his own life, but with that of the community of which he is a member."¹⁴

Elsewhere a number of countries are studying the problems involved in the organization and development of small-scale rural industries. In Switzerland at the suggestion of the member of a special Committee set up by the Swiss Federal Council during the sitting of December 2, 1924, an enquiry was made whose purpose was to determine the cause of the depopulation of the mountain districts in Switzerland, and to try to find a remedy by improving the economic positions of the inhabitants of the upper valleys. One of the first remedies to be studied by the Committee was the encouragement of small-scale industries regarded as accessory or seasonal occupations which would not deprive agriculture of needed labor, but would provide this labor with supplementary resources. Accordingly, a Subcommittee was set up to study the most appropriate means for attaining this object, which commenced its work in July 1926 by directing its attention to small-scale rural industries in the countries of Northern Europe, including Sweden, Norway, Denmark and Finland.¹⁵

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14. *The rural industries of England and Wales: II*, by Helen E. Fitzrandolph and M. Doriel Hay, Clarendon Press, Oxford, see Preface by C. S. Orwin of the Agricultural Economics Research Institute, 1926.
 15. Laur, E.: *Die bauerliche heimarbeit in den nordischen Staaten Europas*, Berne, 1928. An abstract of the report may be found in an unsigned article on the 'Small-scale rural industries in Northern Europe and in Switzerland', in *International Labor Review*, May, 1929, pp. 704-8.

In India where 89.8% of the total population is rural and 72.3% of the population agrarian, it is reported that "by far the greater number of cultivators have at least from two to four months' absolute leisure in the year". In such a country where rural industries are expected to supplement agriculture to a quite considerable extent, it is amazing to note the conclusion of the members of the Royal Commission on Agriculture in India in 1928 that "even with the aid of new ideas and assistance in training and marketing, the contribution which rural industries can make, in reducing the heavy pressure on the land, is infinitesimal and in the nature of things they cannot, as a rule, hope for ever to survive the increasing competition of organized industry. In some cases, we are afraid that an altogether exaggerated importance is attached to their development, whereas sound reflection would show that their possible expansion is strictly limited". This view, however, is not wholly sustainable, largely because of the Commissioners' stress that "the chief solution of the problems of the cultivator is intensification or diversification of his agriculture", as well as of their over-confidence in the success of the "increasing competition of organized industry".¹⁶ Besides, we must not forget the Commissioners' statement that "the handloom industry of India is still of great importance in the national economy and has, up to the present, shown remarkable vitality in the face of competition with factory products".¹⁷

The decline of rural industries in China

Despite the recent efforts made in various western countries for the purpose of reviving the rural industries,¹⁸ it is plain that with the progress in industrial revolution rural industries have disappeared one after the other. "The concentration of demand in large manufacturing and trading centers rendered it uneconomical to supply the demand by means of small-scale production under the craftsman system. The colossal tasks for industry, such as engineering and shipbuilding, were important

16. *Report of the Royal Commission on Agriculture in India*, 1928, Cmd. 3132, pp. 566, 575.

17. *Ibid.*, pp. 569, 576.

18. I have freely used the briefer term 'rural industries' in place of the 'rural manufacturing industries' in this paper.

factors in the rapid disappearance of the small craftsman, for technical as well as economic reasons. The uniformity of output, which became a pre-requisite to manufactures such as tool-making, was only possible under large-scale and factory production, and the change in the character of consumer's demand for ready-made but inexpensive goods hastened the introduction of

Table 5. Net Import of Raw Cotton, Cotton Yarn and Thread into China, 1867-1932
(1913=100)

Year	Cotton Yarn & Thread		Year	Cotton Yarn & Thread	
	Piculs	Index		Piculs	Index
1867	33,507	1.24	1900	1,490,732	55.15
1868	54,212	2.01	1901	2,276,309	84.22
1869	131,525	4.87	1902	2,452,864	90.75
1870	52,083	1.93	1903	2,744,974	101.56
1871	69,816	2.58	1904	2,289,842	84.72
1872	49,809	1.84	1905	2,569,644	95.07
1873	67,833	2.51	1906	2,551,027	94.38
1874	68,819	2.55	1907	2,281,657	84.42
1875	91,403	3.33	1908	1,831,624	67.77
1876	112,908	4.18	1909	2,419,404	89.51
1877	116,163	4.30	1910	2,298,012	85.02
1878	108,360	4.01	1911	1,877,166	69.45
1879	137,889	5.10	1912	2,312,528	85.56
1880	151,519	5.61	1913	2,702,851	100.00
1881	172,482	6.38	1914	2,559,443	94.69
1882	184,940	6.84	1915	2,700,592	99.92
1883	228,006	8.44	1916	2,486,004	91.98
1884	261,458	9.67	1917	2,102,335	77.78
1885	387,820	14.35	1918	1,152,881	42.65
1886	384,582	14.23	1919	1,432,553	53.00
1887	593,728	21.97	1920	1,345,101	49.77
1888	684,959	25.34	1921	1,296,640	47.97
1889	679,728	25.15	1922	1,242,038	45.95
1890	1,083,405	40.08	1923	787,649	29.14
1891	1,212,921	44.88	1924	587,058	21.72
1892	1,305,572	48.30	1925	656,132	24.27
1893	983,399	36.38	1926	460,230	17.03
1894	1,161,694	42.98	1927	304,272	11.26
1895	1,134,110	41.96	1928	294,125	10.88
1896	1,624,806	60.11	1929	241,819	8.95
1897	1,573,116	58.20	1930	169,620	6.28
1898	1,932,537	72.61	1931	74,565	2.76
1899	2,748,644	101.69	1932	102,806	3.80

**Table 6. Cotton spindles and looms in China, 1890-1930
(1913=100)**

Year	Spindles		Looms	
	No.	Index	No.	Index
1890	114,712	11.67	1,612	17.17
1891	204,712	20.83	1,612	17.17
1892	204,712	20.83	1,612	17.17
1893	204,712	20.83	1,612	17.17
1894	204,712	20.83	2,267	24.15
1895	316,488	32.20	3,827	40.76
1896	519,908	52.90	7,655	81.53
1897	546,036	55.56	8,155	86.86
1898	546,036	55.56	8,155	86.86
1899	637,976	64.91	8,875	94.53
1900	637,976	64.91	8,875	94.53
1901	637,976	64.91	8,875	94.53
1902	637,976	64.91	8,875	94.53
1903	637,976	64.91	8,875	94.53
1904	637,976	64.91	8,875	94.53
1905	706,056	71.84	8,875	94.53
1906	729,256	74.20	8,875	94.53
1907	843,380	85.81	9,389	100.00
1908	869,972	88.52	9,389	100.00
1909	898,972	91.47	9,389	100.00
1910	922,012	93.81	9,389	100.00
1911	922,012	93.81	9,389	100.00
1912	922,012	93.81	9,389	100.00
1913	982,812	100.00	9,389	100.00
1914	1,148,332	116.84	10,079	107.35
1915	1,148,332	116.84	10,079	107.35
1916	1,278,028	130.04	11,429	121.73
1917	1,388,396	141.27	11,511	122.60
1918	1,602,668	163.07	14,231	151.57
1919	1,781,972	181.31	15,741	167.65
1920	2,052,624	208.85	16,993	180.99
1921	2,805,748	285.48	20,662	220.07
1922	3,483,434	354.44	23,672	252.12
1923	3,749,288	381.49	25,818	274.98
1924	3,912,124	398.05	29,232	311.34
1925	4,046,100	411.69	29,272	311.77
1926	4,066,580	413.77	29,272	311.77
1927	4,076,626	414.79	29,272	311.77
1928	4,115,316	418.73	29,272	311.77
1929	4,132,756	420.50	29,272	311.77
1930	4,223,956	429.78	29,272	311.77

the factory system.”¹⁹ Although this conclusion with regard to the industrial conditions in England about a century ago cannot be applied with equal force to a still medieval country like China, yet the disappearance of rural industries in China, under modern industrializing influence of the western trading nations, cannot be denied. No further proof need be cited except a brief review of China’s three basic rural industries of cotton spinning, silk reeling and tea preparing. The decline of native cotton spinning is most clearly shown by the growth in the import of foreign spun yarn. Machine spun yarn, which was first imported from England to the extent of 5,000 lbs. or 38 piculs in 1821, increased rapidly to 33,507 piculs in 1867, the first year for which import statistics were published by the Chinese Maritime Customs.²⁰ Since that year the growth in the import of foreign yarn was not interrupted until the rise of native cotton mills in China around the nineties. The small import of 33,507 piculs in 1867, representing already an increase of about 900-fold over that in 1821, was raised to 131,525 piculs in 1869, 593,728 piculs in 1887, and 2,748,644 piculs in 1899—an 82-fold increase over the figure for 1867. After 1899—the peak year during the whole period from 1867 to 1932—there has been an almost continuous decline in cotton yarn import, until the lowest point of 74,565 piculs is touched in 1931. This decline in cotton yarn import, however, must not be interpreted to indicate a revival of hand spinning, but rather a substitution of imported by native yarn spun in modern mills. The total spindleage in Chinese cotton mills, 114, 712 during the first year of establishment in 1890, has been raised about 40-fold to 4,223,956 in 1930. Indeed, under the competitive influence first of foreign machine spun yarn and then of native machine spun yarn the hand spun yarn in China has almost been wiped out of existence, and the hand spinning of cotton yarn, formerly a widespread domestic industry all over the rural districts, has now become almost extinct. We may, indeed, repeat the same complaint that was launched against the rise of cotton mills in England a century ago, in 1833: “Where is the distaff and spindle, where the employment for women and children, formerly carrying comfort

19. Fong, *op. cit.*, p. 10.

20. Fong, *Cotton Industry and Trade in China*, Vol. I, p. 245, Nankai Institute of Economics, Tientsin, 1932.

Table 7. China's export of raw silk, 1895-1932

Year	White & yellow silk				White, yellow and wild silk			
	Steam		Total		Steam		Total	
	Filature				filature			
	Piculs	%	Piculs	%	Piculs	%	Piculs	%
1895	27,056	28.6	94,678	100.0				
1896	27,041	37.5	72,036	100.0				
1897	41,485	42.5	97,564	100.0				
1898	41,050	44.5	92,333	100.0				
1899	49,434	40.1	123,424	100.0				
1900	35,277	45.1	78,267	100.0				
1901	49,937	45.9	108,696	100.0				
1902	50,557	50.3	100,519	100.0				
1903	43,979	60.5	72,695	100.0				
1904	47,287	51.5	91,885	100.0				
1905	45,347	56.4	80,335	100.0				
1906	45,821	54.0	84,931	100.0				
1907	50,296	54.5	92,317	100.0				
1908	49,206	51.8	94,942	100.0				
1909	51,674	54.0	95,773	100.0				
1910	63,969	58.1	110,184	100.0				
1911	55,416	57.7	96,094	100.0				
1912	59,157	48.5	121,877	100.0	74,019	46.8	158,038	100.0
1913	69,541	58.3	119,344	100.0	70,150	47.1	149,006	100.0
1914	56,766	64.9	87,517	100.0	56,869	52.4	108,589	100.0
1915	63,139	57.9	109,093	100.0	87,364	61.1	143,097	100.0
1916	68,286	65.9	103,561	100.0	81,451	66.6	122,243	100.0
1917	73,103	67.9	107,584	100.0	87,413	69.5	125,820	100.0
1918	64,187	66.6	96,366	100.0	87,514	70.0	124,954	100.0
1919	90,038	68.5	131,506	100.0	118,028	71.5	165,187	100.0
1920	56,043	67.9	82,530	100.0	72,917	69.9	104,315	100.0
1921	87,484	76.8	113,980	100.0	118,895	78.7	151,064	100.0
1922	89,248	74.5	119,737	100.0	110,040	76.7	143,478	100.0
1923	77,470	72.2	107,227	100.0	106,827	77.2	138,423	100.0
1924	81,047	75.2	107,766	100.0	101,112	77.6	130,338	100.0
1925	103,290	78.4	131,802	100.0	136,324	81.9	166,416	100.0
1926	107,279	79.2	135,536	100.0	137,493	82.5	166,632	100.0
1927	101,889	76.8	132,656	100.0	126,582	80.3	157,580	100.0
1928	123,170	83.4	147,667	100.0	151,343	86.0	176,039	100.0
1929	123,045	81.7	150,515	100.0	152,360	84.6	180,034	100.0
1930	100,242	83.1	120,664	100.0	126,173	85.9	146,862	100.0
1931	86,736	86.1	100,793	100.0	118,886	89.4	133,047	100.0
1932	45,896	70.4	65,195	100.0	57,334	74.8	76,670	100.0

and independence to the *home* of every cottager? — all absorbed by machinery, or sacrificed to the cry of 'cheap' ".²¹

The decline of silk hand reeling is no less remarkable than that of cotton hand spinning. In 1895, the first year for which the statistics on the export of machine reeled silk, that is, steam filature silk, were kept by the Chinese Maritime Customs, hand reeled silk of the white and yellow variety still occupied 67,622 piculs or 71.4% of the total export of white and yellow silk. Since that year, however, the proportion that the steam filature silk export occupied in the total silk export rose continuously to 45.1% in 1900, 58.1% in 1910, 67.9% in 1920 and 83.1% in 1930. In 1931 the peak was reached, the proportion for the steam filature silk export in the total silk export having attained to the highest point of 86.1% during the whole period from 1895 to 1932. The rise of the proportion of steam filature silk in total silk export from 28.6% in 1895 to 86.1% in 1931 means the decline of the proportion of hand reeled silk from 71.4% in 1895 to 13.9% in 1931, a decline of four fifths in a period of 37 years!

Tea preparing, another widespread industry in the rural districts, has shown an equally rapid decline like cotton spinning and silk reeling. Taking again the export figures as an index of the decline, 1886 — the year of highest tea export during the whole period from 1866 to 1932 — serves as a good starting point for the dramatic decline. In 1886 there was a total tea export of 2,217,295 piculs, which was however successively reduced to 1,665,396 piculs in 1890 or 75.1% of the total tea export for 1886, and to 1,384,324 piculs or 62.4% in 1900. A further decline to 1,157,993 piculs in 1901, the year after the Boxer trouble, brought back in the following year a revival to 1,519,211 piculs, at which figure the export fluctuated but slightly until the peak of 1,782,353 piculs was reached in 1915. After 1915 there was a rapid decline until the lowest point of 305,906 piculs during the whole period from 1866 to 1932 was reached in 1920. The recovery after 1920, reaching the peak of 947,730 piculs in 1929, has been lost gradually since then. In 1932, the latest year for which the statistics are now available, the total tea

21. Quotation from Burrows' article on 'Machinery', in *The Advocate, or, Artizans' and Laborers' Friend*, 1833, no. 7, p. 55.

export was reduced to 653,556 piculs or 29.5% of that for the peak year of 1886 — 2,217,295 piculs.

Table 8. China's tea export to foreign countries, 1866-1932
(1886=100)

Year	Piculs	Index	Year	Piculs	Index
1866	1,192,138	53.8	1900	1,384,324	62.4
7	1,330,974	60.0	1	1,157,993	52.2
8	1,475,210	66.5	2	1,519,211	68.5
9	1,528,149	68.9	3	1,677,530	75.7
1870	1,380,998	62.3	4	1,451,249	65.5
1	1,679,643	75.8	5	1,369,298	61.8
2	1,774,663	80.0	6	1,404,128	63.3
3	1,617,763	73.0	7	1,610,125	72.6
4	1,735,379	78.3	8	1,576,136	71.1
5	1,818,387	82.0	9	1,498,443	67.6
6	1,762,887	79.5	1910	1,560,800	70.4
7	1,909,700	86.1	1	1,462,803	66.0
8	1,898,956	85.6	2	1,481,700	66.8
9	1,987,463	89.6	3	1,442,109	65.0
1880	2,097,118	94.6	4	1,495,799	67.5
1	2,137,472	96.4	5	1,782,353	80.4
2	2,017,151	91.0	6	1,542,633	69.6
3	1,987,324	89.6	7	1,125,535	50.8
4	2,016,218	90.9	8	404,217	18.2
5	2,128,751	96.0	9	690,155	31.1
6	2,217,295	100.0	1920	305,906	13.8
7	2,153,037	97.1	1	430,328	19.4
8	2,167,552	97.8	2	576,073	26.0
9	1,877,331	84.7	3	801,417	36.1
1890	1,665,396	75.1	4	765,935	34.5
1	1,750,034	78.9	5	833,008	37.6
2	1,622,681	73.2	6	839,317	37.9
3	1,820,831	82.1	7	872,176	39.3
4	1,862,312	84.0	8	926,022	41.8
5	1,865,680	84.1	9	947,730	42.7
6	1,712,841	77.2	1930	694,048	31.3
7	1,532,158	69.1	1	703,206	31.7
8	1,538,600	69.4	2	653,556	29.5
9	1,630,795	73.5			

Besides the three widespread industries of cotton spinning, silk reeling and tea preparing, other rural industries, although carried on to a smaller extent, have also tended to decline in recent years. The rapid increase in the import of paper, for

instance, indicates the decline in the production of native paper, even with due allowance for an increase in the demand from new sources such as newspapers. In 1903 China's import of paper amounted only to 217,726 piculs, but was quickly raised to 549,030 piculs in 1910, 1,026,511 piculs in 1920, 1,992,093 piculs in 1930, and 2,075,283 piculs in 1932, the peak year. The last figure, it may be noted, represented an increase of 10 times

**Table 9. China's import of paper, flour and kerosene oil,
1867-1932**

Year	Paper		Flour		Kerosene oil	
	Piculs†	Hk. Tls.	Piculs	Hk. Tls.	Gallons	Hk. Tls.
1870						140,080
1880				564,214*		413,612
1890				775,548	30,828,724	4,092,874
1900	217,726**	2,584,437**		3,329,868	83,580,024	13,955,582
1910	549,030	5,486,764	740,841	3,444,407	163,526,880	22,358,946
1920	1,026,511	14,159,186	511,021	2,330,215	189,588,540	54,318,290
1930	1,992,093	37,384,275	5,413,353	31,926,220	185,608,596	54,864,546
1931	2,042,339	45,404,637	5,204,788	30,920,302	171,140,380	64,549,371
1932	2,075,283	34,445,353	6,705,837	36,176,127	145,918,794	60,439,975

* 1887

** 1903

† Not including a small part of paper for which only value, with no quantity, is given.

over that for 1903. What is said of paper applies also to flour. Native flour milling, formerly a rural industry, has declined in the face of machine milled flour from home and foreign mills. With a few exceptions the import of flour has been on the increase since 1887. In that year the import amounted to Hk. Tls. 564,214, but since then it has been raised to Hk. Tls. 775,548 in 1890, Hk. Tls. 3,329,868 in 1900, and Hk. Tls. 3,444,407 in 1910, reduced somewhat to Hk. Tls. 2,330,215 in 1920, but raised rapidly to Hk. Tls. 31,926,220 in 1930. In 1932 it stayed at Hk. Tls. 36,176,127—a figure representing a 64-fold increase over that for 1887. In both flour and paper, especially flour, the native industry in the rural districts has to meet with the competition not only from the imports, but also from home production. A third industry, the pressing of rape and other vegetable seeds into oil for domestic lighting purpose, has been almost wholly replaced by the kerosene oil imported chiefly from the

United States. The import, which in 1886 amounted to 23,038,101 gallons, was raised successively to 30,828,724 gallons in 1890, 83,580,024 gallons in 1900, 163,526,880 gallons in 1910, 189,588,540 gallons in 1920—an 8-fold increase over that in 1886 in a period of only 35 years. Since 1920 there has been a slight fall to 185,608,596 gallons in 1930, 171,140,380 gallons in 1931, and 145,918,794 gallons in 1932.

The above six industries, namely, cotton spinning, silk reeling, tea preparing, paper making, flour milling and oil pressing, have either declined considerably or disappeared entirely as rural industries. Meantime, foreign productions have taken their place either in China or in foreign countries. In China, four imports, namely, cotton yarn, paper, flour and kerosene oil, have to a varying extent replaced the native products as substitutes, although in cotton yarn and flour China under the industrializing influence of the West has been able to supply a major portion of the home demand with home production. Silk and tea, the two items of export which as late as 1890 still supplied over one half of China's total export to foreign countries, have been replaced in foreign markets by productions of silk from Japan, and of tea from India, Ceylon, Dutch East Indies and Japan. Today, these two exports counted only as one eighth of the total export (12.4% in 1932).

In recent years other export industries in the rural districts, in addition to silk and tea, have also shown a tendency towards a decline. As shown in Table 10, of the 14 groups of products from China's principal rural industries exported during the six year period from 1927 to 1932, as many as 11 groups have shown a decline, these groups being, in order of relative importance of export value in 1932, silk piece goods and pongees, wood oil, paper (chiefly joss paper), straw braid, mats and mattings, vermicelli and macaroni, lace and trimmings, firecrackers and fireworks, nankeens, grasscloth, and samshu (Chinese wine). These 11 groups, with a total export value of Hk. Tls. 80,899,682 in 1927, had only an export value of Hk. Tls. 49,870,158 in 1932—a decrease of 38.4%. Only the other three groups, namely, embroidery, drawn thread work and hairnets, have shown an increase from Hk. Tls. 4,101,500 to Hk. Tls. 12,668,818 during the same period—an increase of 309%.

Table 10. China's export of products of principal rural industries, 1927-32

	1932	1931	1930	1929	1928	1927
Silk Piece Goods & Pongees	18,478,940	24,412,445	19,564,158	21,032,898	23,903,778	25,170,934
Silk piece goods	12,235,992	11,357,734	11,442,517	13,147,808	16,679,891	18,115,194
Silk pongees	6,242,948	13,054,711	8,121,641	7,885,090	7,223,887	7,055,740
Honan	1,479,913	4,870,880	2,973,080	1,912,712	3,301,882	3,533,840
Shantung	3,754,754	6,375,829	3,790,891	4,314,290	2,900,373	3,231,528
Other	1,008,281	1,808,002	1,357,670	1,668,088	1,021,632	290,572
Nankeens	1,259,938	3,621,703	2,677,644	2,742,758	2,816,626	2,507,510
Grasscloth	1,102,477	4,943,925	2,391,262	4,232,100	5,794,844	5,354,744
Coarse	209,523	724,097	264,932	492,048	527,052	445,204
Fine	892,954	4,219,828	2,126,330	3,740,052	5,267,792	4,909,540
Embroidery	6,146,802	9,012,691	4,122,013	3,457,482	2,402,286	1,815,850
Cotton & linen	3,114,636	3,757,728	—	—	—	—
Silk	3,032,166	5,254,963	4,122,013	3,457,482	2,402,286	1,815,850
Lace & Trimmings	2,208,124	3,540,265	3,196,062	2,705,697	3,132,355	4,694,127
Drawn thread work	5,162,114	4,864,388	3,740,194	2,562,880	2,169,333	1,008,202
Hair nets	1,359,902	995,634	1,313,052	1,315,345	1,021,341	1,277,448
Straw braid	2,581,302	1,504,740	1,538,923	2,151,805	2,748,398	2,612,092
Mottled	1,273,153	784,091	989,550	1,338,158	1,498,622	1,130,570
White	1,308,149	720,649	549,373	813,647	1,249,776	1,481,522
Mats and Mattings	2,291,209	7,248,649	4,907,016	3,871,831	3,680,877	3,754,697
Straw and rush mats	1,662,627	5,805,417	2,646,976	1,944,561	1,808,804	2,162,786
Other mats	155,017	879,768	1,547,183	1,317,276	1,249,924	874,554
Mattings	473,565	563,464	712,857	609,994	622,149	717,357
Samshu*	297,947	468,662	651,362	860,344	837,848	993,842
Samshu	169,945	246,473	295,257	297,173	249,188	250,952
Samshu medicated	128,002	222,189	356,105	563,171	588,760	742,890
Vermicelli & Macaroni	2,253,278	3,138,652	3,974,630	4,225,124	4,313,378	5,378,633
Paper	3,119,155	3,643,855	4,927,249	4,803,526	5,103,884	5,263,235
Joss	970,666	1,518,949	2,393,132	2,423,987	2,237,423	2,182,679
Other	2,148,489	2,124,906	2,534,117	2,379,539	2,866,461	3,080,556
Firecrackers & Firework	1,411,785	2,091,883	3,159,166	3,887,614	3,364,967	3,198,921
Wood oil	14,866,003	20,416,102	30,546,872	23,519,702	23,302,221	21,970,947
Total for 14 groups	62,538,976	89,903,594	86,709,603	81,369,106	84,592,136	85,001,182
Minus groups 4, 6, 7	12,668,818	14,872,713	9,175,259	7,335,707	5,592,960	4,101,500
Total for 11 groups	49,870,158	75,030,881	77,534,344	74,033,399	78,999,176	80,899,682
Silk, non-filature	7,199,162	6,518,901	11,024,720	15,742,714	14,666,213	17,985,859
Tea	24,761,556	33,253,158	26,283,923	41,252,428	37,133,853	31,616,949
Total for 13 groups	81,830,881	114,802,940	114,842,987	131,028,541	130,799,242	130,502,490

* Means 'thrice distilled' wine, generally produced in North China, especially Manchuria, with kaoliang as the chief source of raw material.

Present status of rural industries in China

Among the rural industries that still persist in China today, the most important is undoubtedly handloom weaving of cotton, silk, ramie and other fabrics. In respect of cotton handloom weaving, China is the only important nation in the Orient, and for that matter, in the world, where handloom weaving still predominates over power loom weaving. In 1925 there were in Japan 238,999 cotton power looms as against 126,360 cotton handlooms, while in India in 1926 the cotton cloth production amounted to 1,950 million yards from power looms as against 1,160 million yards from handlooms. In China the proportion of power weaving to hand weaving, in terms of yarn consumption, is only one to four. As shown in Table 11, of a total yarn consumption of 961 million pounds for China in 1930, the power looms consumed 207 million pounds, leaving the rest 754 million pounds or four fifths to the handlooms.²²

Table 11. Cotton Yarn and thread statistics for China, 1913 and 1930 (in pounds)

	1913		1930	
	Quantity	%	Quantity	%
Home production	200,000,000	35.84	982,070,800	102.22
Import	858,000,000	64.16	22,616,000	2.35
Minus export			43,987,064	4.57
Total consumption	558,000,000	100.00	960,699,736	100.00
For power looms	15,000,000	2.69	206,913,532	21.54
For handlooms	543,000,000	97.31	753,786,204	78.46

Cotton handloom weaving in China is carried on partly in urban districts, but chiefly in rural districts. In the latter it is a dovetailing occupation, in which almost every member in the farmer's family is engaged in one way or the other during off seasons. Wherever the cloth produced is barely sufficient for home consumption, the industry is *par excellence* in the household stage. But oftentimes the farmers work for market production in addition to meeting their own needs, in which case the type of organization is no less different from that existing elsewhere during the pre-industrial days. An excellent illustration is furnished by the farmers in the disettricts around

22. Fong, *Cotton Industry and Trade in China*, Vol. I, p. 230.

Kaoyang, of which more will be said in a later section on the "Rural industries in Hopei".

In China silk weaving is carried on exclusively by handlooms, and silk handloom weaving constitutes one of the leading rural industries in South and Central China, and even in northern provinces such as Honan and Shantung. The extent of this industry can be gauged by the statistics of silk production. According to the Encyclopaedia Britannica China's home consumption of raw silk is estimated as at least 55% of her total production, which in 1925 amounted to 9,924,000 kg., or roughly one sixth of the world production.²³ Of this total consumption of 9,924,000 kg. for silk weaving, 31,295 piculs or 1,838,000 kg. were again exported to foreign countries in the form of silk piece goods and silk pongees. This export of 31,295 piculs, which as shown in Table 12 has become rather stationary in recent years because of competition from rayon fabrics, represents an 8-fold increase over that in 1867 (4,008 piculs), a 4-fold increase over that in 1880 (8,390 piculs), and a 2-fold increase over that in 1892 (15,868 piculs).

As an illustration of silk handloom weaving, we may take the town of Shentseh, in the district of Wukiang, on the boundary line between Kiangsu and Chekiang. The town is well-known as a producer of silk textiles, but there is not one silk weaving mill, nor even one weaver, in the town. The supply comes from the neighboring villages, for which the town is only a collecting and distributing centre. The industry is conducted on a very small scale, in the villages surrounding the town, where almost all families are silk weavers. The raw silk is not produced in Shentseh, but is supplied by the raw silk firms in the town. Looms are bought from small importing firms, also in the town; so are the designs from the special designers. If the peasants need any money to tide over the period between the purchase of raw materials and the sale of their products, the brokers and commission houses in town advance them the money. Their products, when finished, are sold through the commission houses directly, or indirectly through the brokers, to the local wholesale merchants. A silk gild supplies the

23. 14th edition, vol. 20, p. 676

Table 12. Export of silk piece goods from China, 1867-1932

Year	Piculs	Hk. Tls.	Year	Piculs	Hk. Tls.
1867	4,008	2,172,370	1900	18,297	9,028,051
1868	3,568	1,947,258	1901	20,695	10,226,778
1869	3,383	1,695,259	1902	20,628	9,651,708
1870	3,791	1,896,294	1903	20,207	13,784,910
1871	4,490	2,352,781	1904	21,567	11,763,368
1872	5,302	2,607,052	1905	15,727	9,938,750
1873	5,149	2,203,342	1906	15,497	9,753,854
1874	5,778	2,374,854	1907	20,496	12,926,152
1875	6,468	4,022,538	1908	22,824	13,727,341
1876	5,889	3,986,038	1909	28,406	17,891,709
1877	6,460	4,432,121	1910	29,996	17,998,679
1878	7,440	4,507,047	1911	28,073	17,050,871
1879	6,920	4,498,992	1912	28,539	16,103,787
1880	8,390	5,421,721	1913	34,500	20,873,778
1881	7,188	4,612,273	1914	26,721	15,562,386
1882	6,598	3,396,374	1915	41,158	21,558,073
1883	7,731	4,022,749	1916	39,121	20,019,966
1884	8,808	4,426,973	1917	30,209	17,229,766
1885	10,279	4,556,470	1918	34,559	18,911,247
1886	12,495	6,754,708	1919	39,464	23,260,228
1887	14,184	6,723,149	1920	37,453	24,317,477
1888	16,036	7,893,987	1921	42,824	30,274,652
1889	14,682	7,175,038	1922	30,946	23,631,284
1890	11,140	5,320,810	1923	28,495	24,548,608
1891	13,166	6,464,689	1924	27,322	22,300,873
1892	15,868	7,371,850	1925	31,295	23,202,322
1893	17,135	8,253,087	1926	38,711	30,857,682
1894	19,081	8,415,549	1927	32,821	25,170,934
1895	23,122	11,330,697	1928	33,125	23,903,778
1896	20,850	9,723,313	1929	29,606	21,032,898
1897	20,401	10,094,747	1930	29,893	19,564,158
1898	19,319	10,044,578	1931	34,154	24,412,445
1899	18,088	9,892,525	1932	22,229	18,478,940

standard weighing scales on which all transactions are based.²⁴

The weaving of grass cloth is not so important as cotton or silk weaving, although in the provinces where the raw fibre of ramie is produced, the industry becomes an important household occupation. Grass or ramie cloth, like cotton and silk cloth, supplies the foreign market as well as the home needs. In a

24. How Chinese towns develop village industries, in *Chinese Economic Journal*, January, 1928, p. 87.

good year like 1928, the export reached 26,623 piculs valued at Hk. Tls. 5,794,844. The provinces of Kiangsi, Kwangtung, Hunan, Fukien, and Szechuen are famous for the cloth. Considerable quantities are also produced in Kiangsu, and comparatively small quantities in Hupeh, Kwangsi, and Honan. In these provinces, Kiangsi for instance, the cloth is woven by the country lasses in the slack farming season. It is the custom among Kiangsi farmers to teach their girls to weave grass cloth in autumn. When a girl can handle a distaff or spinning wheel, she is taught to spin yarn with ramie fibre. The deft fingers of the youngsters produce ramie yarn sometimes as fine as the cotton yarn of 60 counts. The spinning is usually done in an underground cellar or a dugout, as the yarn is so fine and fragile that it would break too easily if exposed to light and wind. The spinning season covers about three months from August to November, but even in the season the spinster cannot work every day in the dugout because of its dampness. The cloth, after being woven, is sold to the dealers in neighboring cities and market towns. Hankow and Shanghai, however, are the two principal markets of grass cloth in China, from which a part of the cloth is exported to Korea, Hongkong, Siam, British India, Singapore, Straits, Dutch East Indies, etc.²⁵

Besides the handloom weaving of cotton, silk, ramie and other fabrics, other branches of textile industry, such as cotton ginning, silk reeling, cotton and woolen spinning, rope and twine making, hosiery knitting, lace making, drawn thread work, hairnet making, straw plaiting, ribbon, towel and sack cloth weaving, rush or reed mat weaving, etc., can be found in the various parts of rural China. Some of these industries are carried on in small workshops, but most of them are domestic by-employments during the slack farming season. Cotton ginning, which is performed mostly in the primary cotton markets, is by its very nature a workshop industry, as no single farmer produces as much seed cotton as to justify the ownership of a cotton gin. The work, consequently, is often done in rural districts on a wage-work basis. Other industries, such as lace making, drawn thread work, embroidery, etc., are essentially home industries carried on by female labor. For the purpose of illustration, some of these industries are discussed here in brief terms.

25. *Chinese Economic Bulletin*, Aug. 22, 1925; Dec. 8, 1928.

Silk reeling under the primitive hand method, which has declined considerably in face of the competition from modern method employed in steam filatures, is still carried on to some extent in the silk producing districts. The persistence of this method in Kashing and similar silk producing centres in Kiangsu and Chekiang provinces, for instance, can be proved by the presence of raw silk dealers or collectors in these centres. These raw silk dealers or collectors handle nothing but cottage reeled silk, which is consumed chiefly in the silk weaving plants at home for the production of coarse but fine fabrics. In Kwangtung where silk reeling is also partly done by crude native methods, it is said that the silk turned out is not uniform in thickness; its color is dull. It is used chiefly for weaving crepe and other fabrics for summer wear, and is not desirable in foreign markets.^{25a}

Hosiery knitting, which grew to large proportions in the country districts, especially in the South, only during the last ten years, was, unlike cotton spinning or silk reeling, a new industry introduced by means of foreign imports. In Chekiang, for instance, this industry flourishes in various parts around Pinghu, Kashing, Shihmen and Siashih, located along both sides of the Shanghai-Hangchow-Ningpo Railway. In Pinghu the industry is, like in many other knitting districts, organized under the well-known 'putting out' or 'merchant employer' system. Here the hosiery establishments were chiefly business firms which performed the twin functions of capitalist and middleman. They provided the capital, purchased the machines, and gave out yarns to the outworkers for knitting on a piece rate basis. The outworker, in receiving yarns for knitting from the merchant employer, must rent from him a knitting machine by the payment of a special initiation fee of two dollars and a deposit of six dollars. The special initiation fee was paid once for all, but the deposit could be refunded at the return of the machine. Henceforth the outworker paid a monthly rent of two dollars per machine so long as he remained in the employment of the merchant employer, the rent being deducted directly from the wages earned during the month. This system obviously entailed excessive gain to the merchant employer, for in a year's

25a. *Ibid.* Mar. 20, 1926, pp. 157-8; *Chinese Economic Journal*, July, 1929, p. 601.

time the latter could be refunded for the cost of the machine, which, on the average, did not exceed twenty-five dollars. Whatever expenses he might have to incur for repair and maintenance of the machine amounted to very little. On the other hand, the outworkers, chiefly women and girls, also profited from this system, for previous to the introduction of the industry under the merchant employer system women of the poor families had no by-employment but the performance of household duties. The girls, meantime, had not even the necessary household duties to perform, but remained idle during most of the time.²⁶

Lace-making, like drawn thread work and embroidery, is essentially an export industry, which flourishes in centres such as Shanghai (Pootung), Wusih, Chefoo, Swatow, etc. In Chefoo the lace is made by peasant women at their homes, to the order of contractors, who supply the workers with thread and the patterns designed by the contractors in response to the ever-changing popular taste. The contractor obtains thread on credit from the dealers and after he has collected the finished lace from the makers, sells it to the dealers—his creditors. After paying for the thread and the wages of the makers, the balance is his profit. It is estimated that about 45,000 women are engaged in lace-making in Chefoo, in the surrounding villages.²⁷ In Wusih where lace-making was first introduced through a certain girls' school, the arrangement is somewhat different. The netting on which the floral decoration is traced is issued by the company—the merchant employer—to the girl applying for work, together with the thread needed. Each girl is given an account book, on which is entered the quantity of threads or the number of yards of netting. The working girl takes away the materials and keeps the book with her. When she completes her task, the finished product is submitted to the company, which receives that amount which is satisfactory and acknowledges receipt in the account book. Remuneration is calculated according to the yard, and is paid immediately upon the return of the finished product. One fourth or one half of the lace finished may first be submitted to the company and the remainder later on, and the company pays only for what is actually made. The companies, which during the most prosperous years of the lace trade

26. *Chinese Economic Bulletin*, Jan. 2, 1926.

27. *Ibid.*, June 16, 1928.

numbered approximately 150 but were reduced to 50 in 1926, are chiefly located inside the South Gate of the city, as most of the working girls are in the towns and villages near the South Gate. Each company keeps about ten agents in these places to take charge of distribution and collection. The largest company has a capital of \$10,000 and the smaller ones are capitalized at from \$500 to \$1,000. Besides, these companies have been organized into the Wusih Lace Makers' Association since 1917, for the discussion of trade matters.²⁸

Straw plaiting, which supplies both home and foreign demand, is an old industry. In Shansi it has been practised by the peasants for hundreds of years; in Hopei it thrived even in pre-railway days when the braid was exported to the southern provinces as far as Yunnan and Burma. But European demand was not created until at the beginning of the present century when the Germans from Tsingtao started to collect and export straw braid from these regions. This industry, which is characterized by its dependence upon the farm by-product of grain stalk for raw material, can be found in the countrysides all over China, especially in the northern part. In some districts such as Nanlo, Hopei province, there are more people in the district who make their living by straw plaiting than by farming, and over fifty Shantung straw braid merchants have agents in the districts buying and exporting. The plaiting is generally done by women folks from stalks of kaoliang, wheat etc. at their spare time, and the braid is sold in bundles of 20 rolls each (a roll measuring 1.8-2.3 feet) to the exporters or their agents at the fairs, by weight.²⁹

Mat weaving, another rural industry, caters also to local raw materials, and in some districts is highly organized. In Hushukwan, Soochow, in the province of Kiangsu, where the best mats are said to be produced straw mat honggs are formed for the collection and distribution of reeds as well as the purchase of finished mats. Representatives of these honggs collect the reeds from the farmers in the neighboring district of Chefang who are exclusively engaged in the growth of reeds instead of rice. After purchase coolies arrange the reeds according to length

28. *Ibid*, July 17, 1926.

29. *Ibid*, July 12, 1924; Dec. 19, 1925; June 4, 1927.

and quality, and bind them in bundles weighing about three catties each. These bundles are then sent to the straw mat hong in Hushukwan, who in turn sell them to the mat weavers, whose chief work is to cultivate rice but to weave mats during off seasons. The weavers do not employ workmen or apprentices. The family abode is the workshop, the husband and wife are the workers, and the children the apprentices. In many of the farm houses, mat weaving looms can be seen; large families having three to ten looms and small families keeping only one loom. Selling methods are different from those employed in lace or embroidery trade, as in mat weaving the product is sold by the weavers directly to the straw mat hong, of which there are about 20 at a distance of less than a mile from the railway station. Every morning the weavers convey the mats by native junk to this mat-buying centre. The hong employees then quote prices for the mats offered. If the weavers are satisfied with the quotations, transactions are completed and cash is paid. If they are not satisfied, the weavers can go to other hong for sale. But in every case the quotation of the hong is final and there is no bargaining. As the largest hong do a total yearly business of \$30,000 to \$40,000, and the average business of each hong is \$15,000, it is estimated that the total mat business of the district amounts to about \$300,000 yearly. The hong are capitalized at from \$5,000 to \$20,000 each. The best season is in April when customers come to deal with the hong in order to make ready for the summer distribution season. Considerable business is done in May also, but in the autumn very little business is done except in collecting from the weavers the mats in preparation for the next selling season. Wholesale customers are received courteously by the hong, which supply them with food and lodging. No bargaining is employed in selling, yet there is no fixed price. Prices are offered by the hong in accordance with quality of the mats and conditions of supply. But 100 pieces, of almost similar quality and size, have 100 different prices. Competition is keen and there is no cooperation in fixing the selling prices between the hong themselves. A gild, however, exists, which is composed of the hong and holds meetings twice a year.³⁰

30. *Ibid*, Feb. 13, 1926.

A second group of rural industries in China today relates to the preparation of food products, which includes rice cleaning, flour milling, vermicelli and macaroni making, brewing, oil pressing, tea preparing, fruit and vegetable preserving, etc. Some of these industries, such as rice and tea, are devoted to market production, while the rest are carried on for both market and household uses. For the purpose of illustration some of these industries are discussed here in brief terms.

The making of vermicelli is carried on in rural districts as a home or workshop industry, but in whichever case the industry is a seasonal by-employment to the farmers. The flour from which vermicelli is made is composed of beans or of admixture of beans, kaoliang and wheat. In Lungkow, Shantung, where about 700,000-800,000 packages of 160 catties each are exported yearly, vermicelli making is a home or cottage industry. The farmers in the villages make vermicelli during slack seasons, pack it in straw matting, and bring it to Lungkow in mule carts for sale to the dealers, who also import beans from Dairen as raw material for the makers. Farmers bringing vermicelli to a dealer usually take from him a return load of small bean, and sometimes contract with the dealers for small bean by forward orders. Transactions are on credit and accounts are settled every month. In Suancheng, Anhwei, on the other hand, vermicelli making is a workshop industry, being carried on in small plants operated by wealthy farmers with half a dozen hands. The principal equipment of the plant consists of an oven, a boiler, two earthen vessels containing cold water and one framework for drying purpose. About 300 plants, all in the villages, are operating in the district. They seldom suspend work except in wet and silkworm raising seasons. In summer and winter the plants also close. The output is sold to local wholesalers for export to neighboring districts. In Tacheng, Hopei, a more or less similar condition obtains. Most of the bean flour mills here are, like in Suancheng, temporary establishments, which start operations only after the autumn harvest. The flour turned out by these mills is obtained from 60% green beans and 40% kaoliang of the red seed variety. The vermicelli which is made from the flour supplies principally the local need, though it is also con-

sumed in Tientsin and Koku. The bran left over is used as feed for swine.³¹

Wine brewing and distilling, like vermicelli making, is both a home and a workshop industry. In Taihing, Kiangsu, wine brewing and distilling is carried on by almost every farmer, and is chiefly a domestic by-employment. Despite the losses that the industry imposes upon the farmers, at the rate of \$4 to \$5 per kang of spirit distilled, the farmers keep up the industry because of its by-products,—the residue of fermented grain which is ideal for feeding and fattening pigs. In Shaohing, Chekiang, on the contrary, the industry becomes a workshop one. Shaohing wine, which is well known throughout the country, is distilled by 700 distillers with a yearly output of 50,000 kang. It extends to the rural districts, Tungpu and Yuanshe being the best known market towns for wine-making. Due to excessive taxation, Shaching wine has however shown a rapid decline. In former years, the 300,000 kang were valued at \$6,000,000, each kang being equivalent to 10 pots or jars of 50 catties then selling at about \$2 per pot. In 1926, the 50,000 kang are valued at \$2,000,000, the local selling price then being \$4 per pot. In Suan-cheng farmers are engaged in distilling liquor from wheat, barley, kaoliang and rice, one third of which is exported to neighboring towns in wooden casks carried by draft animals. In some parts of the district liquors are distilled from potato and maize, the product being weak and consumed only by farmers themselves.³²

Tea preparing, another rural industry of considerable extent in the old days, still prevails in certain rural districts where the production, being not destined for the foreign markets, is carried on under the crude old hand method by the tea growers themselves. In Chekiang in 1927, it is reported that "the bulk of the tea turned out by Chekiang growers is mostly green tea, which, especially that produced in southwestern Chekiang, is prepared by the crude old method and cannot find a ready market in foreign countries."³³ Indeed, the main cause contributing to the spectacular decline of China's tea industry in the world

31. *Ibid*, Dec. 27, 1924; Oct. 13, 1928; *Chinese Economic Journal*, September, 1928.

32. *Chinese Economic Bulletin*, July 10, 1926; Oct. 27, 1928; *Chinese Economic Monthly*, Oct., 1926, pp. 439-41.

33. *Chinese Economic Journal*, August, 1927, p. 752.

market lies in the persistence of the old method of preparation by the small scale and unenterprising growers.

The manufacture of brick tea, which is carried on chiefly in the collecting and distributing centres such as Hankow, Kalgan etc., offers, however, an interesting example of the employment of farm labor in urban centres. The brick tea factories, which fluctuated from year to year in number, reached 28 in Kalgan, Kweihua and Paotowchen in 1924. It is thus stated that "under normal conditions each factory employs from 100 to 400 workers, both males and females, but in exceptional cases a plant may hire as many as 1,000. When operations are in full swing and the demand for labor is keenly felt on the local market, thousands of farmers from far-off places come to the factory centres to obtain work."³⁴ The fluctuating character of the brick tea plants, which entails the necessity of resorting to casual farm laborers, can also be observed in Hupeh, where brick tea consumed in Mongolia and Sinkiang is manufactured by the Shansi merchantile group, in brick tea plants known as Kow Chwan (口莊) from the fact that the tea is consumed outside the Great Wall. The plant and its equipment are of a temporary nature. The building is leased, while utensils and necessary tools are hired from tea brokers, for a period of several months beginning in the autumn. After the desired amount of brick tea has been turned out, the lease is discontinued, the hired articles are returned to the owner, and the workers leave their temporary factory for home. The buildings are spacious, containing sufficient rooms for offices, godowns, and packing houses, besides workshop; the largest may accommodate as many as 2,000 men. A decade ago, the owners of these buildings, i.e. tea brokers, also acted as agents for their tenants for the purchase of tea leaves, but many of the tea brokers have closed their offices owing to business depression, and the remaining operating firms have ceased to be purchasing agents. They function now no longer as brokers, except in name, but merely as inn-keepers.³⁵

Other food products prepared in the villages can be illustrated by bean oils, hams and fruits. In the villages along the Lunghai Railway there are a number of old-style oil mills, operated mostly by farmers on a limited scale. The beans con-

34. *Ibid*, Nov., 1929, p. 938.

35. *Chinese Economic Bulletin*, April 3, 1926, pp. 180-1.

sumed in such mills are chiefly produced in the farmers' own field; hence their yearly output depends on the condition of the bean crop. In a year of poor bean crop most of such old-style mills are idle.³⁶ The preserving of fruits is, in the two districts of Panshan and Taishan of Chekiang for instance, a dovetailing industry. In these districts as the yearly output of fresh plums far exceeds the local demand, the farmers have to preserve a part of their yield in syrup or salt for export. The total annual output of fresh plums for these two districts is estimated at 50,000 piculs with a value of \$400,000, of which a part is preserved.³⁷ In Kinhwa and other districts of Eastern Chekiang noted for ham production, the hogs are either killed by the farmers themselves or sold to local butchers for slaughter. In the former case the butchers make the hams themselves and in the latter case they sell the fresh hams to local ham curers, who prepare the hams for the market.³⁸

A third group of industries in the rural districts may be called the chemical industries, which include the manufacture of articles such as paper, pottery and glass, fireworks, wood oil, etc. Paper making, one of the earliest industries in China, is chiefly centered in the southern provinces because of the presence of the raw materials used—bamboo and rice stalk. Chekiang, which ranks with Fukien and Kiangsu as the largest paper producing provinces today, had in 1929 24,437 native mills scattered in the 43 districts, employing a total working force of 126,852 (92,743 men, 22,013 women and 12,096 children) and a total capital of \$5,090,028, and producing a total output of \$20,850,487. The average for each mill, therefore, amounted to a labor force of 5.2 workers, a capital of \$208.3, and an annual output of \$853.2. These mills are obviously carried on in the rural districts both as a full-time employment in the mills proper, i.e. small workshops, and as a part-time employment in farmers' homes, as can be seen from the wide discrepancy from district to district in the number of workers per mill, the amount of capital per mill, and the value of annual output per mill. In respect of the workers per mill, the largest had 17.2 in Shensien, while the smallest only 2 in Wenling. If distributed by

36. *Chinese Economic Journal*, Jan., 1929, p. 54.

37. *Chinese Economic Bulletin*, July 26, 1930, p. 46.

38. *Chinese Economic Journal*, Aug., 1929, p. 644.

Table 13. Native Paper Mills in Chekiang, 1929

Hsien	Mills	Workers		Capital (\$)		Value of Output		
		No.	Per mill	Amount	Per mill	Amount (\$)	Per mill	Per worker
Anchi	2	12	6.00	400	200.00	2,120	1,060.00	176.67
Changhua	85	487	5.73	15,935	187.47	53,248	626.45	109.33
Changshan	296	4,376	14.78	276,400	933.78	274,800	928.38	62.80
Chinyuan	54	359	6.65	10,368	192.00	71,156	1,317.70	198.21
Chiteh	4	35	8.75	852	213.00	5,400	1,350.00	154.29
Chuhsien	505	047	13.95	266,817	528.35	1,034,783	2,049.08	146.84
Chuki	1,110	6,166	5.55	206,123	185.70	724,450	652.66	117.49
Fenghua	180	1,406	7.81	21,239	117.99	169,050	919.17	120.23
Fuyang	10,069	40,675	4.04	2,355,082	233.89	8,667,912	860.85	213.10
Hsiaoshan	510	2,971	5.83	197,350	386.96	1,360,620	2,667.88	457.97
Huangyen	576	2,369	4.11	111,976	194.40	518,722	900.56	218.96
Juian	640	1,920	3.00	17,024	26.60	506,070	790.73	263.58
Kiangshan	154	2,490	16.17	168,067	1,091.34	753,336	4,891.79	302.54
Kinhua	422	1,266	3.00	44,648	105.80	308,640	731.37	243.79
Linan	786	2,909	3.70	40,973	52.13	548,028	697.24	188.39
Linhai	234	738	3.15	67,765	289.59	248,040	1,060.00	336.10
Lungyu	121	1,802	14.89	89,966	743.52	454,910	3,759.59	252.45
Pingyang	110	228	2.07	1,493	13.57	48,536	441.23	212.88
Pukiang	45	555	12.33	47,242	1,049.82	61,848	1,374.40	111.44
Shangyu	54	324	6.00	57,221	1,059.65	127,224	2,356.00	392.67
Shaohin	476	2,939	6.17	63,715	133.85	179,880	177.90	61.20
Shawchang	74	900	12.16	22,796	308.05	158,400	2,140.54	176.09
Shenhsien	46	789	17.15	9,065	197.07	87,966	1,912.30	111.49
Siaofeng	136	1,018	7.49	94,626	695.78	283,520	2,084.71	278.51
Sienku	36	205	5.69	1,658	46.00	8,988	249.67	43.83
Sinchang	60	255	4.25	8,027	133.78	16,836	280.60	66.02
Sinteng	926	3,831	4.14	131,029	1,415.00	276,307	298.39	72.12
Suian	179	1,946	11.06	83,920	468.83	239,778	1,339.54	123.22
Suichang	53	108	2.04	55,784	1,052.53	110,783	2,090.25	1,025.77
Sungyang	792	11,488	14.51	13,229	16.70	108,913	137.52	9.48
Taishun	297	1,945	6.55	19,763	66.54	685,200	2,307.07	352.29
Tangyi	45	720	16.00	23,112	51.36	155,420	2,453.78	215.86
Tientai	296	699	2.36	22,348	74.50	27,052	91.39	38.70
Tsingning	75	500	6.66	4,837	64.49	202,350	2,698.00	404.70
Tsinyun	122	1,243	10.19	66,794	547.49	274,807	2,252.52	221.08
Tunglu	1,136	5,697	5.02	112,275	98.83	465,347	356.82	71.15
Wenling	340	680	2.00	5,508	16.20	100,980	297.00	148.50
Wuyi	32	448	14.00	39,068	1,220.88	243,456	7,608.00	543.43
Yuhang	2,052	8,540	4.16	68,892	23.57	671,100	327.05	78.58
Yungchia	1,185	4,244	3.48	218,414	184.32	529,644	446.96	124.80
Yungkang	16	240	15.00	19,647	1,227.94	85,194	5,324.63	354.98
Yutsien	104	270	2.60	6,092	48.58	54,921	528.09	203.41
Yuyao	2	12	6.00	2,488	1,244.00	4,752	2,376.00	396.20
Total	24,437	126,852	5.19	5,090,028	208.29	20,850,487	853.23	164.37

class, 13 hsien or districts belonged to that of 10.2-17.2 workers per mill, while the rest 30 hsien that of 2.0-8.8 workers per mill. In respect of the capital investment per mill, the largest had \$1,415 in Sinteng, while the smallest only \$14 in Pingyang. If distributed by class, 8 hsien had \$1,050-\$1,415 per mill, 5 hsien \$528-\$934 per mill, 17 hsien \$106-\$469 per mill, and the rest 13 hsien \$14-\$99 per mill. In respect of the value of annual output, the largest had \$7,608 per mill in Wuyi, while the smallest only \$91 per mill in Tientai. If distributed by class, 22 hsien had \$1,060-\$7,608 per mill, and 21 had \$91-928 per mill.³⁹

A comparison of the value of annual output per worker in the different hsien confirms even more the fact that not all of the workers were regularly employed in paper-making, as the occupation itself assumed the character of a by-employment. The highest rate was \$1,025.75 per worker in Suichang, while the lowest was only \$9.48 per worker in Sungyang. But most hsien fluctuated around the average of \$164 per worker. Thus 25 hsien were in the class of \$109-\$336 per worker, with only 9 hsien above and 9 hsien below the class.

Elsewhere paper making is also a rural industry, as can be gauged from scattered records. In Paoting, Hopei, it is reported that "large number of paper mills are operating in various rural districts." In Chowtsun, Shantung "the paper-making centres are also found in the rural districts, the industry being pursued by the farmers as a side line." In Weihsien of the same province, "there are seven or eight villages, around Anku and Hsin Chwan where straw paper, writing paper, and paper for paper-money (i.e. joss paper) are made mostly by farm families. These families work at this industry all the year except during the busy farm work season. This home industry adds one to two hundred dollars to the annual family income."⁴⁰

Another rural industry of the chemical group is the making of pottery, including under this category also bricks and tiles, and glass wares. In Ihing, a noted centre for pottery, the industry is carried on extensively by the rural population nearby.

39. *A Report on the Paper Industry of Chekiang in 1929* (in Chinese), Provincial Government of Chekiang, 1930; *Nankai Weekly Statistical Service*, Mar. 13, 1933.

40. *Chinese Economic Monthly*, Dec., 1926, p. 532; *Chinese Economic Journal*, June, 1927, p. 548; Aug., 1928, p. 648.

The kilns are at Tingshan and Shusan 10 to 12 miles from the town, but most of the ware is shipped through Ihing, which is reached by waterway from Soochow, Wusih, Changchow, and other nearby stations on the Shanghai-Nanking Railway. The villages in the vicinity of the pottery kilns, bounded by Hupien on the east, Tungkwanshan on the west, Nanshan on the south and Kingki on the north, covering an area of over 30 square li, form the centre for the making of pottery bodies. About 60 percent of the population are pottery body makers. Among these two thirds are female, turning out principally "yellow goods", "sandy goods", and "dark color goods", and one third male, turning out "fine goods" and kongs generally.⁴¹

In Poshan, Shantung, the making of glassware in small workshops is carried on in the villages. These shops, called 'hsiao lu fang' (小爐房), do not melt glass themselves but obtain the prepared material from the 'ta lu fang' or factories in the form of glass bars and fashion them into toys, wall scrolls, glass beads, imitation jewellery and other articles. When the glass bars reach these shops they are partly remelted by heating and fashioned into any desired form before being hardened again. The market for the products, at the time of investigation in 1927, has been dull, owing to the general unsettled conditions in the country. The more enterprising shops have opened sales departments in Tsinan to dispose of their accumulated stock. Apprenticeship, lasting over four years, prevails in these shops operated by master workers. New Year festival is the only occasion when the shops suspend operation for about one month.⁴²

Brick making is one of the chief occupations of the farmers in Kashan, Chekiang, during the warmer seasons. There are approximately 500 brick kilns in all, 100 being located in Kanyaochen, 90 in Hungchiatan, 150 in Hsiat'ienmiao, 20 in Fanching, and 3 or 5 in each of the adjacent smaller villages. With all the kilns operating, the monthly output of bricks in Kashan is estimated to be from 45 to 50 million. Seventy percent of the output is consumed in Shanghai alone, the rest being distributed in Kiangsu and Chekiang. The brick making season usually opens in April and closes in November, when work has to be

41. *Chinese Economic Monthly*, March, 1926, pp. 121-124.

42. *Chinese Economic Journal*, June, 1927, pp. 586-7.

suspended until March because of the severe cold weather. In Foochow, on the other hand, quite a large number of farmers engage in tile making as a *slack* season occupation. They obtain clay from the fields at a depth of four or five feet, surface soil being unsuitable for tile-making. Over 20 kilns, employing about 400-500 hands, are operating in Foochow country districts, besides those in neighboring districts such as Changlo and Makiang. Large shipments of tiles are usually disposed of to the wealthy who are building houses or to the building contractors through the medium of carpenters and masons. There is also a class of brick and tile dealers in the city who obtain small consignments from the burners for retailing on the local market.⁴³

Another chemical industry in the rural districts, which is chiefly concentrated in Liuyang, Hunan, is the making of fire-crackers. The smaller variety known as squibs, about an inch and a half long and one quarter inch in diameter, and always used in a string, comes mainly from this district, to the extent of more than one half of the total consumption in China. Its total yearly output is valued at over five million dollars, and is not only consumed in China but also exported to foreign countries, partly for the consumption of the Chinese residents there. Liuyang squibs owe their popularity chiefly to the excellent quality of the paper of which the tubes are made. The paper, known as squib tube paper, is a special product of the district. Certain districts near Liuyang like Wantsai and Pinghsiang, in Kiangsi province, and several market towns in Liuyang neighborhood also produce certain quantities of squibs every year. In all these districts squib making is partly a cottage industry, being pursued by farmers and their home folk, in slack farming seasons. The makers sell their product to squib dealers in neighboring cities and market towns. The latter, after having the cargo decorated, branded and packed, consign the shipments to the consuming centres.⁴⁴

Elsewhere the making of firecrackers also occurs, although to a smaller extent. In Weihsien, Shantung, for instance, there are several villages, such as Nanhuchu, Peihuchu, and Tsiaerchwan, that are famous for fire-crackers. Each family makes

43. *Chinese Economic Bulletin*, Oct. 8, 1927; Sep. 1, 1928.

44. *Chinese Economic Journal*, Oct., 1929, pp. 837,839.

about one hundred dollars net annual income from this business. The product is sold both locally and in neighboring districts.⁴⁵

A fourth group of industries that flourishes in the rural districts is not considerable in extent as the above mentioned three groups and may for that reason be treated together under the miscellaneous group. In the countryside of Poshan, an industrial district producing coal, porcelain and glass wares, the rural population live chiefly by the mining industry, the majority being engaged in quarrying clay and other kinds of minerals especially coal. The well-known coal mines are located at Heishan, southeast of the city, Hsiho, northeast of the city, and Chenghsi, west of the city. Most of the mines, organized by farmers who become interested in mining after the discovery of coal on their own holdings, are worked by small operators with primitive methods. There are also a few lime burning kilns which produce limestone.⁴⁶ In Hantan, Hopei, some of the farmers are engaged in clay mining as a spare time occupation. This particular kind of clay is a sticky substance, the purest specimens being white in colour and used mostly in place of soap for washing clothing. Clay of inferior quality is used as a binder in briquetting coal dust into balls, much as the Peking coal dealers do with loess. The clay is obtainable everywhere in the country districts and is sold at 50 coppers per cartload of 1,200-1,300 cattie. In Lungkow, Shantung, clay mining is also a slack season occupation for the farmers.⁴⁷ In P'eng Ch'eng, Hopei the method by which the clay for making the finer ware of the district is worked is another example of the same dovetailing. "The clay for making the bowls is a soft grey material occurring at a depth of sixty to one hundred feet, and is extracted from localities within one or at most two miles of P'eng Ch'eng. This is done by local farmers during the enforced idleness of the winter season. A group of six or seven will join together to sink a shaft, . . . two men hewing the materials, two men pushing it to the foot of the shaft, one man to see to the hoisting at the bottom, and two men on the surface. The landlord on whose ground the shaft is sunk is paid \$5 for permission to do this, and receives in addition 3% of the

45. *Ibid*, Aug., 1928, p. 649.

46. *Ibid*, June, 1927, pp. 579-80, 587.

47. *Ibid*, May, 1927, p. 468; *Chinese Economic Bulletin*, July 7, 1928, p. 5.

output. . . . Nothing, however, is paid to landlords under whose land the galleries run. . . . It is characteristic of these simple arrangements that the workers are paid on a share basis. . . . The clay is carried by wheelbarrow or mulecart to the potteries. A gang of this kind, will, it is said, excavate nearly seven tons of clay in a day, and will then require two days to deliver that amount at the potteries where it sells for one cent per ten cattles. This works out at an average of about 55 cents per day per man."⁴⁸

Somewhat different in character from mining and quarrying is a second type of rural industry deriving its existence from animal products, such as skin curing, glue preparing, horse hair sieve weaving, and brush making. In Taying, a market town belonging to Tsaokiang in Hopei, skin curing is carried on by farmers who always go out to neighboring districts in small parties of two or three to collect the skins. The more needy ones obtain loans for capital from the local skin dealers. The bulk of the sheep and dog skins are cured in the village skin curers' establishments, most of which are opened by the skin collectors themselves, and made into coatings, overcoatings, or blankets before the skins are disposed of to the local skin dealers or at the local fairs. The season for the export of cured skins covers from August to October. The ordinary skin dealers act merely as commission agents between the exporter and the skin collectors or skin curers, but the well-financed ones also do business on their own account. The skins are exported to Tientsin via Techow. Glue making, which consists in boiling the skin and hoofs of the cattle slaughtered locally, is pursued by the farmers in Chowtsun, Shantung, as a side line. The article is of brownish color, made into rectangular pieces of varying sizes and sold at the town fairs, although special glue exporters frequently visit the town to buy in large quantities. The monthly export figure is estimated to average about 150 piculs. The making of horse hair sieves, which is carried on by women and children in the villages, is found in Anping, Hopei. The horse hair is collected principally from Kalgan, Kweihua and Paotchen by the dealers, who in turn supply it to the home workers

48. Tayler, J. B.: The Hopei pottery industry and the problem of modernization, in *Chinese Social and Political Science Review*, April, 1930, pp. 186-7.

in the villages. The sieves are used for the sifting of flour and consumed mainly in Hopei, Shantung, Shansi and Honan provinces. Besides, horse hair nets and veils are also manufactured in Anping for export to foreign countries. Huchow pens, or writing brushes, which have enjoyed a nation-wide reputation, are made from goat, skunk and rabbit hair and chicken feathers chiefly at Shanlienchen, a market town near Huchow. The town is of little importance except as regards the pen making trade, in which the local inhabitants, including those in neighboring districts, male and female, are wholly or partly engaged. With the exception of silk worm raising, pen making monopolizes all the spare time even of the farmers, who may cultivate patches of rice or mulberry, only to neglect them for the staple industry. The hands employed by the pen making establishments are of two classes, the regular and the part-time workers. The former work and board on the premises, while the latter, mostly children, women and the aged, do piece work at home. There are about 1,300 regular hands of whom two-thirds are women. The number of piece workers is variable. In Huchow there are only about 50 regular hands employed in the business.⁴⁹

Still another type of rural industry in the miscellaneous group is the production of art objects, of which painted picture is a good example. In Yangliutsing, Tsaomitien, etc. south of Tientsin, the villages are engaged in the painting of pictures, at first of joss images for the temples, but later on of scenery, figures, and historical events. The painters, mostly peasants, have over 100 subjects for their pictures, which are classified into coarse, fine and superfine, according to the technique of the artist. They are employed by shops and are paid at piece rate. Every spring the shops prepare sketches and issue them to the workmen to fill in details and color. The sketches consist of a few outlines, generally printed, indicating the subject. Nearly every member of a country household contributes to the work. One person does the human face, another fills in the details, and a third does the coloring. The daily wage averages 20 cents. At Tsaomitien there are regular picture markets from November to January, in which season the painting shops open sales agencies in the inns or establish stalls in the streets. The pictures are

49. *Chinese Economic Journal*, Dec., 1926, pp. 532-3; Oct., 1927, pp. 905-6; *Chinese Economic Bulletin*, Oct. 9, 1926, p. 215; Nov. 26, 1927, pp. 280-2.

mostly sold to peddlers, who retail them in country districts at the New Year festival. Shipments for Manchuria, Jehol and Mongolia are always exported in July or August, while those for Shensi, Kansu and Chinese Turkestan usually leave as early as March or April, for their long journey half across Asia. There are altogether about 30 painting shops in the Tientsin neighborhood, the largest being capitalized at \$170,000-\$180,000 each. Lately, a number of lithographic printing presses in Tientsin have taken up this branch of business as a side line. About 6,000 people in the Tientsin area earn a living, partly or wholly, as painters. Of the 151 households at Tsaomitien about 80 percent are painters; of the 145 households of Chowliwutsun over 40 percent are engaged in the trade.⁵⁰

A final sub-group of rural manufacturing industries in the miscellaneous group takes the form of supplying the necessary services required of a farming community. In a study of the major by-employments of the farmers in the 453 villages in Tinghsien, Hopei, the farmers, besides being engaged in agriculture, also serve as blacksmiths in one village, carpenters in 10, sawyers in 12, masons in 6, and wagon makers in 2; while for minor by-employments the farmers serve as waterwheel makers in 1 of these 453 villages, windlass makers in 1, and well drillers in 2.⁵¹ Elsewhere in Kucheng the farmers in slack seasons also turn into village smiths. There are a dozen blacksmiths' shops turning out cutlery, cooking utensils and agricultural implements, chiefly from scrap iron, to the total number of over 200,000 pieces a year, the bulk being exported to the neighboring districts.⁵²

The four groups of rural industries described here, namely, textiles, food, chemical and miscellaneous, may be further analyzed with regard to the factors for their introduction or existence, geographical distribution, systems of organization, raw materials, labor and output. The introduction of a certain industry into the rural district is often due to one or more of the several factors that may also account for its existence later on. The initiative or enterprise of the village folks is the first factor. These

50. *Chinese Economic Bulletin*, Nov. 26, 1927, pp. 278-9.

51. Lee, C. H.: *Tinghsien, a social survey*, published by the National Association of the Mass Education Movement, 1933, pp. 149-154 (in Chinese).

52. *Chinese Economic Journal*, Oct., 1927, p. 903.

village folks who, after having worked elsewhere and observed at first hand a new industry which may dovetail in with agriculture, bring back the arts of that industry and introduce them into his own village for profitable if not for philanthropic reasons. The establishment of handloom weaving industry in Kaoyang furnishes a good example in this respect. A second factor comes through the working of philanthropic motives on the part of foreign missionaries. The successful attempt of Miss Nettie M. Senger in introducing wool spinning and weaving in Chinchou through the "North China School of Mother Craft", which at present is still in its formative stage of development, may be cited as an example.⁵³ A third factor is supplied by the commercial motive of capitalists to make profit out of a rural population whose idle labor during off seasons can be easily exploited to his advantage, as is true of the hosiery knitting in Pinghu, where the women and girls, although highly sweated, are contented with the extra source of earnings derived from the new by-employment. This motive is also at work when an export industry such as lace, embroidery, or drawn thread work can be more economically carried on by female labor in the villages. A fourth factor is the villager's attempt to dispose of his surplus crop or to make use of the agricultural by-product at spare times. The preserving of plums in Panshan and Taishan of Chekiang and the plaiting of straw in North China serve as good illustrations. In this case it may also be remembered that the craft to be introduced must be simple in respect of technique as well as of equipment, otherwise it may not be worth the farmer's trouble. A fifth factor, the attempt of the farmers to utilize his spare time in processing his own crop, is at work in case of silk reeling, tea preparing, and oil pressing. Finally, the existence of a local raw material which can be most profitably worked up at the spot of occurrence, such as is true of coal or clay mining in Poshan and P'eng Ch'eng, gives rise to a further type of rural industry during the slack farming seasons.

The geographical distribution or location of rural industries is conditioned by several factors, of which the presence of raw materials, the accessibility to the market, and the possession of skill are the more important. The presence of raw materials,

53. Senger, Nettie M., *The Chin Chou Wool Project*, 1933.

which in itself is determined by natural occurrence and climatic conditions, is responsible for the rough division of rural industries into what may be for general purpose called northern or southern industries. Tea preparing, silk and ramie weaving and paper making are mostly found in South China, as the raw materials of tea, silk, ramie and bamboo or rice stalk (for paper making) can be grown only in the warmer regions; while woolen spinning and weaving and straw plaiting are found in North China for the opposite reason. The location of pottery industry in Ihing, Kiangsu and in P'eng Cheng, Hopei is due to natural occurrence of clay materials in these districts. The accessibility to market is an important consideration in the location of brick and tile industries, in the making of baskets, etc., while the presence of special skill accounts, partly if not wholly, for the rise of Shaohing wine, Ihing pottery and Tientsin paintings.

The system of organization among the rural industries is quite varied, and in most cases assumes a transitional character. It is also elastic in that an industry, organized under the master craftsmen system, can be equally well operated under the merchant employer system. On the whole it may be concluded that the pre-industrial systems of organization that prevailed at one time in western countries such as the United Kingdom can also be found in China today.⁵⁴

The household system of organization, under which the industry is carried on within the household with own raw materials, labor and tools for own consumption, may be illustrated to a certain extent by the preparation of food products from farm crops such as tea, wine, oil, fruits, ham, etc. But it is difficult to find an industry in the villages which is exclusively carried on under this system, but more frequently with another system, usually the master craftsman system, at the same time. A part of the wine distilled in Shaohing, for instance, is destined for own consumption, but an even larger part may be produced under the master craftsman system for market purpose.

The craftsman system may be further sub-divided into the family craftsman and master craftsman systems. Generally speaking, under the craftsman system the craftsman, with own tools and own place of work, purchases the raw materials and

54. Fong, H. D.: *Triumph of Factory System in England*, 1930, passim.

works them up into finished products for sale to the consumers or merchants. Under the family craftsman system, however, the craftsmen are usually family members instead of male adults, and the employment is often part-time instead of full-time. The technique too is simple, with no requirement for costly tools or separate premise for the workshop, while the sale is made usually to the dealers or at fairs, seldom directly to the consumers. In the industries described above, straw plaiting, mat weaving, silk reeling, and ramie cloth weaving offer interesting examples of the family craftsman system, while wine distilling, pottery making, glassware making, paper making, and firework making, illustrate the master craftsman system.

The merchant employer system is at work when the merchant employer, the pivotal figure under the system, purchases the raw materials, puts them out either directly from the office or warehouse, or indirectly through his own agents or some other middlemen, to be worked up into finished or partly finished products by the outworkers. Hosiery knitting in Pinghu is an excellent illustration of this system, while lace making in Wusih offers another. In the former case the raw material is given out directly by the merchant employer at his office, while in the latter agents are employed to distribute the raw materials and collect the finished products. The determining factor here is chiefly one of the dispersion of outworkers and the distance to be travelled. This system, however, does not always operate alone, as in the case of cotton handloom weaving in Kaoyang it works together with the master craftsman system. In time of brisk demand the risks of manufacturing may be left entirely to the merchant employer, while during slack seasons the outworker, being partly or wholly unemployed, has to bear his own risk in purchasing the raw materials, marketing the finished products, and in short, financing the little enterprise entirely on his own resources.

The factory system, under which production is carried on in a single premise under single control, and on relatively larger scale, may be found in rural industries such as paper making, pottery making, coal mining, etc. This system, however, is not so adaptable to the rural districts except under special circumstances. Its requirement for regular and uninterrupted operation does not fit in well with the labor situation of a farm com-

munity, although the presence of raw materials or special skill may justify the erection of factories in rural districts, as is true with pottery making or wine distilling.

The raw materials employed in rural industries may be classified in respect of source of supply, stage of production, ownership, and method of purchase. In respect of source of supply, the raw materials employed in rural industries are derived either from the peasants' farms, such as cocoons for silk reeling, tea leaves for tea preparing, fresh fruits for fruit preserving, straw stalks for plaiting, or from the neighborhood such as glass bars for glassware making, clay for pottery, etc. They may have been imported from far-off districts, such as beans for bean oil pressing, cotton yarn for cotton weaving, or from foreign countries such as rayon for rayon weaving in Kaoyang. In respect of the stage of production, some raw materials employed in the rural industries may be raw materials in the true sense, such as rice or kaoliang for wine distilling, beans for oil pressing or vermicelli making, tea leaves for tea preparing, silk cocoons for silk reeling, but others such as yarn, lace, paper (for squib making) etc. have already been transformed into finished or semi-finished products. The ownership of raw materials depends upon the type of organization in operation. Under the craftsman system the materials are owned by the peasants, whether produced on the farms or purchased from outside, usually from dealers to whom the finished product is sold, but sometimes at fairs, as is true of the cotton yarn in Kaoyang. When the materials are supplied by the merchant employer, as in hosiery knitting, lace making, embroidery, etc., they are distributed directly or indirectly by agents, together with the necessary patterns.

Labor in rural industries has its unique features. It is, in the first place, seasonal in character, as rural industry is essentially a dovetailing occupation. Secondly, such labor is usually composed of family labor, embracing husband, wife, children and others. In case where deftness is required, such as for lace making, embroidery, ramie cloth weaving, female labor, especially of a juvenile character, is employed; but where strength and skill are needed, man labor is resorted to. A third feature is the lack of organization, for rural labor is mostly dispersed, and seldom pulls together for united action. Sweating is common, so also

is lack of discipline resulting in irregular production of inferior and heterogenous output. A fourth feature is the simple but backward technique employed. The backwardness of technique, which is chiefly responsible for the rapid decline of two of China's basic rural industries, silk and tea, is also causing the decline of other industries such as straw plait, pottery, etc. The simplicity of technique is characteristic of rural industries, especially of those of a by-employment character, as no one engaged in a dovetailing occupation can afford or cares to take the trouble of going through a severe discipline of apprenticeship. Consequently, many of the rural industries, such as mat weaving, straw plaiting, lace making, and hosiery knitting, can be easily learnt in a short period of time, sometimes in the so-called "schools" such as the "lace schools".

The products from rural industries are largely for local consumption such as bricks and tiles, but in a large number of cases they figure prominently in domestic or foreign exports. In a previous section on the "Decline of rural industries in China", we have already seen the importance of some 16 groups of foreign exports which are contributed largely by rural industries, many of these exports also counting as important items in domestic exports. Some of these exports are ordered before hand, through own agents or dealers who are sometimes accommodated with credit facilities by the exporters, such as the lace made in Chefoo. But more frequently the products from rural industries are sold in ready-made form by the peasants to the dealers, who in turn sell them to the wholesalers—the exporters. In exceptional cases, in glass ware making in Poshan for instance, the small masters establish own sales departments in Tsinan for the disposal of their products.

Rural industries in Hopei

Because of the lack of comprehensive information, the above survey on the rural manufacturing industries in China gives but a rough picture. For Hopei, however, a rather complete census has been taken of the home industries in the rural districts, that is, of those industries in the rural districts carried on at home mostly as a by-employment, although in the absence of official definition it may be reasonably presumed that some workshop industries, requiring full-time employment, may have been included. In the 129 hsien of Hopei covered by the census,

Table 14. Value of the products of home industries in Hopei for the year 1928
classified by kind

Kind of industry	Value		Kind of industry	Value	
	Total (\$)	%		Total (\$)	%
Textiles	91,554,217	88.2	Hat	28,730	—
Reeling, Silk	96,000	0.1	Ware	162,520	0.2
Spinning	2,794,870	2.6	Food	841,812	0.8
Cotton yarn & thread	2,726,870	2.6	Dates	11,540	—
Woolen yarn	50,000	—	Flour, Green Bean	20,844	—
Hempen rope	18,000	—	Molasses, Rice	400	—
Weaving	82,060,974	79.1	Oil, Peanut	2,728	—
Cotton	45,939,557	44.3	Tobacco	6,300	—
Cloth	45,072,427	43.4	Vegetables, Salted	800,000	0.8
Small ware	867,130	0.9	Chemical	3,943,624	3.8
Towel	72,940	0.1	Chalk	598	—
Ribbon	274,990	0.3	Firework	3,112,960	3.0
Bag	509,200	0.5	Paper	830,066	0.8
Other	10,000	—	Miscellaneous	7,517,100	7.2
Cotton & rayon cloth	31,640,000	30.5	Artificial flower	26,000	—
Silk cloth	27,160	—	Bamboo screen	16,000	—
Woolen blankets	54,609	0.1	Broom	64,500	0.1
Cow hair blankets	3,600	—	Charcoal	1,280	—
Rush mat	4,388,848	4.2	Fur preparing	6,969,690	6.7
Kaoliang mat	7,200	—	Ink grind	28,500	—
Knitting	18,009	—	Iron-ware	14,520	—
Cotton hoses	17,919	—	Joss stick	81,050	0.1
Woolen sweaters	90	—	Needle, Mat-making	15,000	—
Plaiting	6,584,364	6.4	Pen, Hair	90,000	0.1
Willow, bramble and mulberry	1,626,594	1.6	Reed	480	—
Straw	4,957,770	4.8	Sieve	210,000	0.2
Plait	4,766,520	4.6	Tin-ware	80	—
			Total	103,856,753	100.0

home industries were found in as many as 127 hsien during the year 1928. These industries, 44 in number, are classified into four groups of textiles, food, chemical, and miscellaneous in Table 14, in the same way as the rural manufacturing industries in China have been classified in this paper. According to Table 14, the value of products of the home industries in Hopei for the year 1928 reached \$103,856,753, of which \$91,554,217 or 88.2% belonged to the textile group, \$814,812 or 0.8% to the food group, \$3,943,624 or 3.8% to the chemical group, \$7,517,100 or 7.2% to the miscellaneous group. Among the 44 individual industries in the four groups of home industries, the most important eight industries claimed \$100,303,909 or 96.6% of the total value of products from the home industries in Hopei during 1928. These eight industries, in order of relative importance, are as follows:

Cotton cloth weaving	\$ 45,072,427	43.4%
Cotton and rayon cloth weaving	31,640,000	30.5%
Fur preparing	6,969,690	6.7%
Straw plaiting	4,766,520	4.6%
Rush mat weaving	4,388,848	4.2%
Firework making	3,112,960	3.0%
Cotton yarn and thread spinning	2,726,870	2.6%
Willow, bramble and mulberry branch plaiting	1,626,594	1.6%
All	\$100,303,909	96.6%

Of the total output value of \$103,856,753 for the 127 hsien in Hopei during 1928 \$81,817,624 or 78.6% were, as shown in Table 15, produced by 21 hsien each of which had an output value of over one million dollars. Among these 21 hsien Kaoyang led with \$31,620,000 or 30.4%, and was followed by Shulu with \$7,005,289 or 6.7%, Yutien with \$4,588,300 or 4.4%, Jenchiu with \$4,451,000 or 4.3%, Tsingyuan \$4,170,000 or 4.0%, Tsunhua with \$3,561,000 or 3.4%, Tinghsien with \$3,175,050 or 3.1%, etc.

A further examination of Table 15 shows that the per capita value of output for Kaoyang, \$215.2, is the highest among

Table 15. Value of Products of the Home Industries in Hopei Distributed by Hsien, 1928

Hsien	Products		Population	Per Capita Value of Products
	Value	%		
Kaoyang	31,620,000	30.4	146,923	215.2
Shulu	7,005,289	6.7	362,558	19.3
Yutien	4,588,300	4.4	313,454	14.6
Jenchiu	4,451,100	4.3	266,533	16.7
Tsingyuan	4,170,000	4.0	407,312	10.2
Tsunhua	3,561,000	3.4	416,880	8.5
Tinghsien	3,175,050	3.1	351,803	9.0
Paoti	3,025,000	2.9	315,065	9.6
Nanlo	2,880,650	2.8	214,496	13.4
Lih sien	2,282,245	2.2	183,286	12.5
Paoyang	1,967,690	1.9	364,209	5.4
Wanhsien	1,626,500	1.6	157,282	10.3
Pingshan	1,600,000	1.5	245,387	6.5
Fengshun	1,550,000	1.5	669,130	2.3
Tsienan	1,415,000	1.4	687,869	2.1
Tsingfeng	1,292,600	1.2	316,051	4.1
Kaocheng	1,248,000	1.2	243,722	5.1
Chuchow	1,190,000	1.1	209,820	5.7
Changyuan	1,070,200	1.0	244,264	4.4
Feihsiang	1,050,000	1.0	135,125	7.8
Siangho	1,049,000	1.0	148,211	7.1
Other 106	22,039,129	21.4	21,268,824	1.04
All	103,856,753	100.0	27,668,204*	3.75

*Not including 461,388 for Tientsin and 111,830 for Laiyuan, the two hsien contributing nothing to the value of the products of home industries in Hopei province in 1928.

the 21 hsien, but lowest for Tsienan, \$2.10. Among the other 19 hsien the per capita value of output from the home industries is, in order of relative importance, \$19.3 for Shulu, \$16.7 for Jenchiu, \$14.6 for Yutien, \$13.4 for Nanlo, \$12.5 for Lih sien, \$10.3 for Wanhsien, \$10.2 for Tsingyuan, etc.

As shown in Table 16, the 21 important hsien, which claimed 78.6% of the total output value for the home industries in Hopei during 1928, had fully 100% of the total output value for furs, 99.9% of that for cotton and rayon cloth, 90% of that for firework, 85.4% of that for cotton yarn and thread, 79.0% of that for straw plait, 65.9% of that for cotton cloth, 49.2% of that for rush mat, 41.5% of that for willow bramble and mulberry branch plaiting, and 50.7% of that for the other 36 industries. This

Table 16. Distribution of the value of products of 8 principal home industries in 21 important hsien in Hopei by hsien, 1928 (in dollars)

Hsien	Straw plait		Firework		Fur		Willow, bramble & mulberry wares		Other		Total value	
	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%
					6,969,690	99.5			35,599	0.5	7,005,289	100.0
17.5									27,300	0.6	4,588,300	100.0
1.1											4,451,100	100.0
2.9							150,000	3.6			4,170,000	100.0
14.7			2,700,000	75.8			225,000	6.3	96,000	2.7	3,561,000	100.0
5.5											3,175,050	100.0
0.8											3,025,000	100.0
	2,880,000	100.0							650	—	2,880,650	100.0
											2,282,245	100.0
	1,820	0.1					63,994	3.2	1,876	0.1	1,967,690	100.0
1.0							20,800	1.3	89,500	5.5	1,626,500	100.0
											1,600,000	100.0
28.4			100,000	6.5					800,000	51.6	1,550,000	100.0
							170,000	12.0	720,000	50.9	1,415,000	100.0
	881,600	68.2							21,000	1.6	1,292,600	100.0
											1,248,000	100.0
											1,190,000	100.0
									10,000	0.9	1,070,200	100.0
											1,050,000	100.0
0.4							45,000	4.3			1,049,000	100.0
10.1	1,003,100	4.6	312,960	1.4			951,800	4.3	1,750,919	7.9	22,039,129	100.0
4.2	4,766,520	4.6	3,112,960	3.0	6,969,690	6.7	1,626,594	1.6	3,552,844	3.4	103,856,753	100.0
%	79.0	%	90	%	100%		41.5	%	50.7	%	78.8	%

	Yarn & thread		Cotton cloth		Cotton & rayon cloth		Rus
	Value	%	Value	%	Value	%	Value
Kaoyang					31,620,000	100.0	
Shulu							
Yutien			3,760,000	81.9			801,00
Jenchiu			4,400,000	98.9			51,10
Tsingyuan			3,900,000	93.5			120,00
Tsunhua			15,000	0.4			525,00
Tinghsien	2,326,250	73.3	674,400	21.2			174,40
Paoti			3,000,000	99.2			25,00
Nanlo							
Lihsien			2,282,245	100.0			
Paoyang			1,900,000	96.6			
Wanhsien			1,500,000	92.2			16,20
Pingshan			1,600,000	100.0			
Fengshun			210,000	13.5			440,00
Tsienan			525,000	37.1			
Tsingfeng			390,000	30.2			
Kaocheng			1,248,000	100.0			
Chuchow			1,190,000	100.0			
Changyuan			1,060,200	99.1			
Feihsiang			1,050,000	100.0			
Siangho			1,000,000	95.3			4,00
Other	400,620	1.8	15,367,582	69.7	20,000	0.1	2,232,14
Total	2,726,870	2.6	45,072,427	43.4	31,640,000	30.5	4,388,84
% for 21 hsien in total output		85.3 %		65.9 %		99.9 %	

table also shows that among the 21 hsien cotton cloth counted for fully 100% of the total output value in Lihsien, Pinghsan, Kaocheng, Chuchow and Feihsiang, 99.2% in Paoti, 99.1% in Changyuan, 98.9% in Jenchiu, 96.6% in Paoyang, 95.3% in Siangho, 93.5% in Tsingyuan, 92.2% in Wanhsien and 81.9% in Yutien; while cotton and rayon cloth counted for fully 100% in Kaoyang. For 5 of the remaining 7 hsien, fur counted for 99.5% in Shulu, straw plait counted for 100% in Nanlo and 68.2% in Tsingfeng, firework counted for 75.8% in Tsunhua, and cotton yarn and thread counted for 73.3% in Tinghsien. Both willow bramble and mulberry branch plaiting and rush mat weaving are scattered in different hsien, and are not so concentrated as the other six industries. Among the 21 important hsien here included the highest percentage for rush mat weaving, 28.4%, is found in Fengshun; and that for willow, bramble and mulberry branch plaiting, 12%, is found in Tsienan.⁵⁵

Because of the preponderant importance occupied by cotton and rayon cloth weaving in the home industries of Hopei during 1928, an importance which is clearly shown by the fact that \$71,712,427 or 73.9% of the total output value from the 44 home industries in Hopei in 1928 was contributed by cotton and rayon cloth, the Nankai Institute of Economics, Nankai University has chosen to make an intensive field investigation of the industry in Kaoyang, the largest weaving district in Hopei. The investigation was commenced in January of this year, and will, it is hoped, be completed by July of this year. In the following paragraphs the rayon and cotton cloth weaving in Kaoyang, which as shown above contributed \$31,640,000 or 30.5% of the total output value from the home industries in Hopei, is sketched in some details.

Kaoyang, a third class hsien in the centre of the province of Hopei, has an area of 1,440 square li and a population of 154,130, giving a population density of 107 per square li (which is equivalent to 792 per square mile), and is well served by rail, motor and boat transport from all directions. About 70 li north-west of the hsien is Paoting, an important terminus on the Pei-

55. *Administrative Statistics of the Province of Hopei, 1928* (in Chinese); *Nankai Weekly Statistical Service*, May 29, 1933. The materials on the Kaoyang industry are supplied by Chih Wu, the field supervisor of the investigation on the industry for the Nankai Institute of Economics, Nankai University.

ping-Hankow railway, while 30 li northeast of the hsien is the market town of Tungkowchen on the eastern edge of Peiyangting, a swampy lake which is served by the Tatsingho river flowing towards Tientsin, the leading commercial port of North China, at a distance of about 300 li. Besides, motor bus runs daily from Tientsin to Kaoyang, also for a distance of 300 li.

The rise of cotton and rayon handloom weaving as a rural industry in Kaoyang is attributed to several factors, of which the most important is the high density of population in a district which because of its infertile soil renders agriculture an unprofitable means of livelihood. According to the hsien's report to the provincial government in 1931, Kaoyang, with a total land area of 510,000 mow or 944 square li, only 351,398 mow or 69% were arable, the remaining 158,602 mow or 31% being frequently flooded or too alkaline in soil content for farming purpose. Under such circumstance the need for some rural industry to supplement the scanty income from farming was keenly felt, and was met with by a group of Kaoyang residents in Tientsin whose training in weaving was acquired at the Textile Department of the Training Institute established in 1906 and its successor, the Higher Technical School. These residents returned to Kaoyang partly because of their regard for the development of some supplementary industry in the home district, but largely because of severe competition from weaving plants in Tientsin organized by the graduates of the Institute and the School. Other factors favoring the development of handloom weaving in Kaoyang included the excellent location in respect to transport, and the stoppage of foreign import as a result of world war since 1914.

After a short period of rapid development since 1914, the renewal of foreign competition after 1919 prompted the Kaoyang weavers to improve their designs and to hasten the introduction of Jacquard weaving, with the loom and Jacquard being made in Tientsin and imported into Kaoyang through local merchants. Around that time rayon was also introduced as a weft, with cotton yarn as the warp. In 1925 with the invention of rayon sizing thus rendering the yarn more tensile in strength for warping purpose, pure rayon fabrics, instead of cotton and rayon mixtures, were woven, and a further expansion in the industry took place. Recently, however, because of a combination of factors with regard to organization, production and marketing,

the industry has passed the peak of development in 1929, and is going downward towards a rapid decline, of which more will be said at the end of this section.

Handloom weaving in Kaoyang is chiefly organized under the merchant employer system, and represents perhaps the highest development of that system in China. Under this system the weavers are dispersed at their homes in the villages, while the merchant employer, who purchases the yarn, puts it out to the weavers in exchange for the woven fabrics to be finished in own plants or in those operated on a commercial basis by another set of capitalists, resides in the town. At times the weavers, after several years of hard work and because of proximity to the town, may manage to weave on own account under the craftsman system, and sell the woven fabric to the cloth merchants in town or at the fairs. Besides, a few factories of modest size for weaving purpose may also be found, although because of their requirement for regular operation and overhead charges, these factories are owned only by those in control of a minimum amount of assured demand in a constantly fluctuating market. In the following paragraphs the merchant employers and the outworking weavers, together with the necessary marketing and financial institutions, are dealt with in greater detail.

The merchant employers in Kaoyang are of two classes, namely, puhsichuang (布線莊) or grey yarn and cloth merchant and yihsichang (染線廠) or dyed yarn and cloth merchant. The grey yarn and cloth merchants, numbering 61 at the time of the Institute's investigation during the first part of 1933, perform the following functions:

- (1) To purchase yarn at the wholesale yarn market in Kaoyang, or through branch office in Tientsin, Tsingtao or Shanghai (only the larger merchants, numbering about a dozen, purchase yarn through the branch office);
- (2) To sell a part of the yarn purchased either at the Kaoyang wholesale yarn market or at the yarn fair, in the latter case generally to the peasant weavers;
- (3) To put out yarn to the village weavers on the recommendation of the merchant's acquaintances, usually old weavers; and to collect from the same the woven fabrics on the payment of a piece rate;
- (4) To buy cloth at the cloth fair in addition to what is woven by the outworking weavers;

- (5) To have the cloth finished, i.e. dyed, calendered, etc, by the various finishing plants;
- (6) To transport the finished fabrics to outport branches for sale, of which the largest merchant has as many as nine, with one as the minimum and two to three as the average;
- (7) To remit cash received from sales to the native banks in Tientsin either for yarn purchase or for remittance to Kaoyang again.

Since the chief function of a grey yarn and cloth merchant lies in the putting out of yarn for weaving and in the purchase of additional cloth from the fairs in the first place, and in the sale of cloth through the outport branches in the second, large capital is usually necessary in order to finance his operation during the interval from the purchase of yarn to the final disposal of the cloth, which requires from three to seven or eight months. The largest merchant has thus a capital of from one to two hundred thousand dollars, while the smallest has to possess at least several thousand dollars. The average size, however, is from twenty to thirty thousand dollars. In respect of the staff members employed in the premise of a grey yarn and cloth merchant in Kaoyang, the number varies from over ten to sixty, being composed of the manager, accountant, sub-managers for the branch offices, employees, apprentices, janitors, and a cook.

The dyed yarn and cloth merchant, whose scale of operation is smaller than that of the grey yarn and cloth merchant, numbers 30 in 1933, of whom 11 are located in the town. Of the other 19, as many as 11 are concentrated in the single village of Yuliutso (于留佐) southwest of the town. The functions of these merchants are to purchase yarn at the wholesale yarn market and to have it dyed at own plant with own workers, to put out the dyed yarn to the weavers for the production of stripes and checks, to collect the fabrics after being woven, and to transport them, by means of mulecarts, to the town warehouses for sale. The capital investment of these merchants is small because of smaller scale of operation and quicker turnover of output, varying from one to over ten thousand dollars and averaging about three to four thousand dollars. The staff is composed of the manager, accountant, three or four employees and apprentices, and three or four dyers. The weavers are not recommended, through acquaintances as in the case of grey yarn and cloth merchant, but through chi-tou (機頭) or head weaver who has usually worked for the dyed yarn and cloth merchant for a long

time with good standing. The chi-tou, besides being responsible for the moral integrity of the weavers whom he introduces to the merchant, also supervises the putting out of yarn and the safe and prompt return of the woven fabrics. In case the weaver fails to deliver the fabric, the chi-tou helps to get back the unwoven yarn from him for the merchant. For all these services the chi-tou is remunerated with food gifts during the three festivals by the merchant, each gift worth from five to ten dollars, as well as with the privilege of getting by with slight defects in the cloth woven by himself and of dining at the merchant's plant whenever the cloth is delivered. Besides, the cloth woven by the chi-tou is often transported by the weavers under his supervision. A dyed yarn and cloth merchant usually employs from two to four or five chi-tou, each of whom is responsible for the supervision of several tens to over a hundred weavers.

Most of the weavers in the rural districts work for the merchant employers, while not a few also weave on own account with hired hands. In still other cases the weavers may pull together in renting a common workshop, while taking care of their own business individually. Again, as in Yuliutso where 11 of the 30 dyed yarn and cloth merchants in Kaoyang are found, a peculiar type of cooperative enterprise prevails among the stripe and check weavers from Anping, a hsien 100 li south of Kaoyang. When Anping weavers first came to Kaoyang for work they joined together in groups of from eight to ten, secured four or five apprentices, purchased five or six looms, and rented a few rooms for the common undertaking. The dyed yarn was purchased on credit from the dyed yarn and cloth merchant, while the cloth, after being woven, was entrusted to the merchant for sale at town. Besides, the merchant might advance a loan to the cooperative workshop to the tie over its need. Such loans, together with the transactions on the purchase of yarn and the sale of cloth, were usually settled at the end of the year. The difference, which the merchant returned to the workshop, constituted the gross earning, from which was deducted the expenses incurred during the year. Whatever might be left over became the net profit for the cooperative undertaking, and was divided up among the weavers on a previously arranged share basis.

Besides the merchant employer and the outworking weaver, other institutions and merchants in the city connected with the

handloom weaving industry, such as wholesale yarn market, yarn and cloth fairs, wholesale yarn merchants, cloth merchants, and finishing plants, may be described in brief. At the time of the Institute's investigation in 1933, there were four wholesale yarn merchants in the town, whose function was to purchase yarn in large quantities from outports and to sell it again to local merchants, usually through the wholesale yarn market. Sometimes these merchants may also be engaged in the selling of dyes. Because of their extensive scale of operation a minimum capital of one hundred thousand dollars is required. The cloth merchants, including both puchuang (布莊) or those with and puti (布店) or those without outport branches, are operated on a smaller scale than puhsichuang or grey yarn and cloth merchants. The functions of a puchuang are similar to those of a puhsichuang, except in the fact that a puchuang does not put out yarn for weaving by the outworker. In Kaoyang there are 31 puchuang, with an average capital investment of five to six thousand dollars and a maximum of twenty to thirty thousand dollars. A puti with no outport branch usually sells to a puchuang or puhsichuang the cloth which it has purchased from the country weavers at the fairs. There are at present 33 puti, each of which has an average capital investment of about one thousand dollars, with a maximum of three to four thousand and a minimum of several hundred dollars.

Hsitzé (線市) or wholesale yarn market, first established in 1913, has two business periods during the day, the early period from 10 to 12 in the morning and the late period from 4 to 6 in the afternoon. Strictly speaking, the wholesale yarn market is engaged in the transaction of cotton and rayon yarn, but in the absence of local banking facilities, it has taken over the functions of a domestic exchange market. Exchanges on Tientsin are freely purchased and sold as in the case of cotton and rayon yarn, according to telegraphic advices from Tientsin, Shanghai and Tsingtao, as well as the state of mind at the market. Because of the important role the market plays in the commercial and industrial life of Kaoyang, almost every merchant in the town is a member by the payment of a small membership fee of two dollars, and despatches daily from one to several clerks to participate in the market transactions, which are concluded on verbal promises or written slips. Speculation

is also engaged in, although with no official regulations and in secrecy.

Besides the wholesale yarn market, which is run on a more or less organized manner, there are the various fairs for grey yarn, dyed yarn, rayon, grey cloth, checks and stripes, and rayon fabrics. These fairs are either held in a fixed place, or on the street, for six times per month. The fairs for grey yarn, dyed yarn and grey cloth are held on the 4th, 9th, 14th, 19th, 24th and 29th of each month in lunar calendar; those for checks and stripes and rayon fabrics on the 3rd, 8th, 13th, 18th, 23rd and 28th; and those for rayon on the 2nd, 7th, 12th, 17th, 22nd and 27th. Whereas on the wholesale yarn market the unit of transaction is one half of a bale of yarn (each bale being composed of 40 bundles, each bundle having a weight of ten pounds and four ounces), on the grey yarn fair it is reduced to one bundle. On the dyed yarn fair the unit may be by bundle or by skein. The number of skeins in the bundle varies with that of counts. For yarns of 14's or less it is twice the number of counts; for yarns of higher counts, it is the same as the number of counts.

The subsidiary industries in Kaoyang, all of which are developed in one form or another in connection with the weaving trade, include the machine dyeing and calendering plants, native dyeing and calendering plants, Shansi dyeworks, printing plants, native calendering shops, etc. In 1933 there are 12 machine dyeing and calendering plants, four of which grow out of the business of the various types of yarn and cloth merchants. The capital investment varies from several thousand to thirty thousand dollars, and because of severe competition these plants have united into the Dyers' and Calenderers' Association. The native dyeing and calendering works, 22 in number, have a capital investment of one to two thousand dollars, which at times have a part of the cloth calendered at the machine dyeing and calendering plants. The Shansi dyeworks, 9 in number, are operated by natives from that province, for the dyeing of blue fabrics, and have a maximum capital of but 800 dollars. The printing plants, also 9 in number, are owned by small masters with the assistance of apprentices, and have a capital investment varying from a few hundred to one thousand dollars. Their business is to print the rayon fabrics, bedding sheets, etc. The

calendering shops, 10 in number, are very small in scale, having only a couple of hundred dollars as capital and being engaged in hand calendering. Other plants and workshops include 3 card making shops, 2 rayon sizing shops, 1 Jacquard shop also selling bicycles, and 2 shops engaged in the repair and sale of accessory parts.

The raw materials for the handloom weaving industry in Kaoyang, composed chiefly of cotton and rayon yarn, are, as described above, purchased through puhsichuang and hsichuang. Both classes of shops have branch offices in Tientsin for the purchase of cotton yarn from the local mills, but more frequently from the shaohao or yarn shops. The offices are located either in the Kacyang Merchants' Guild or in the inns. When a transaction is concluded between the branch office and the local yarn shop through the medium of a runner, a bill is issued by the runner stating the brand, the count of yarn, the number of bales, and the price per bale, to be replaced by another one from the yarn shop with which the office may apply for delivery at the yarn shop's warehouse. A part of the selling value may be paid for in advance, but the transaction is generally settled at the end of the month. The delivery bill is usually turned over to the boat carriers or mulecart drivers for transport between Tientsin and Kacyang. These carriers and drivers, who have been in the business for over a decade, seldom fail to deliver the yarn promptly.

Since most of the cotton yarn consumed in Kaoyang is purchased from Tientsin, it is possible to estimate from the credit collectors, who are sent from Tientsin to Kaoyang at the end of the year for the clearing and settlement of accounts, the total volume of yarn purchased and consumed by the weaving industry in Kaoyang. In 1929 when the industry had reached the peak of prosperity in Kaoyang, the total volume of yarn so purchased reached 100,000 bales of which 20,000 bales were resold to the weavers in Tsingyuan, Suning, Jenchiu and other neighboring hsien. During the last few years this amount of 80,000 bales of cotton yarn consumed in Kaoyang has been reduced successively until in 1932 the lowest figure of 30,000 bales was reached.

About 70% to 80% of the yarn consumed in Kaoyang is of 20 and 32 counts, the rest being of 16 or 42 counts. Formerly

most of the yarns were imported from Japan, only the coarser variety of 12 and 16 counts being spun at home. Since the Manchurian incident of November, 1931, attempt has been made to boycott Japanese yarn, as a consequence of which the proportion of home spun yarn has risen to 30% to 40% of the total consumption.

Rayon yarn, which was not extensively introduced into Kaoyang until 1925, was directly purchased from Shanghai by one merchant at first, but by 2 in 1927, 6 in 1928, and 11 in 1929—the peak year. As time went on, however, supply was also secured from Tientsin importers. In 1929 it is estimated that of the 20,000 boxes of rayon yarn purchased about 12,000 boxes were consumed by Kaoyang weavers. Each box is composed of 200 lbs. of rayon bound in 20 bundles, and is commonly of 120 or 150 deniers. In 1932, the amount of rayon yarn imported, like that of cotton yarn, was considerably reduced from 20,000 boxes in 1929 to only 8,000 boxes.

Table 17. A comparison of wage cost for cotton and rayon cloth weaving in Kaoyang, 1933

	Wages for weaving 8 <i>p'i</i> of grey cotton cloth on one loom in 8 days (100 by 2.5 <i>ch'ih</i> per <i>p'i</i> , weighing 8 catties)			Wages for weaving 10 <i>p'i</i> of rayon cloth on one loom in 10 days (52 by 2.1 <i>ch'ih</i> per <i>p'i</i> , using 120 deniers for weft and warp, with 3,000 warps)		
	Labor (days)			Labor (days)		
	Man	Woman & Child	Wages (\$)	Man	Woman & Child	Wages (\$)
Sizing	1		.40	½		.20
Warp winding		4	.80		7	1.40
Warping	½		.20	1		.40
Drawing-in	1		.40	1		.40
Weft winding		6	1.20		3½	1.05
Weaving	8		3.20	10		4.00
	10½	10	6.20	12½	10½	7.45

Note: For rayon weaving the card is purchased from professional makers, and the wage for weft winding is more costly because of resort partly to apprentice labor.

In respect of labor required of cotton or rayon cloth weaving Table 17 gives instructive comparison. For the weaving of 8 *p'i* of grey cotton cloth with a length of 100 *ch'ih* and a width of 2.5 *ch'ih* per *p'i*, or a total area of 2,000 square *ch'ih*, the

wage cost amounts to \$6.20, thus giving an average wage cost of 0.31 cent per square *ch'ih*; while for the weaving of 10 *p'i* of rayon cloth with a length of 52 *ch'ih* and a width of 2.1 *ch'ih* per *p'i*, or a total area of 1,092 *ch'ih*, the wage cost amounts to \$7.45, thus giving an average wage cost of 0.68 per square *ch'ih*, a wage cost which is more than twice that for grey cotton cloth.

On the basis of labor requirement for the weaving of cotton or of rayon cloth as given in Table 17 the number of looms in the rural districts of Kaoyang can be estimated. Calculating on the basis firstly of $\frac{1}{2}$ bundle of cotton yarn per day for cotton weaving and of $\frac{1}{4}$ bundle of rayon yarn per day for rayon weaving, and secondly of 320 working days to the year (allowance being made for rest days and holidays etc.), the 80,000 bales or 3,200,000 bundles of cotton yarn and 12,000 boxes or 240,000 bundles of rayon yarn consumed in Kaoyang in 1929 would have required 20,000 cotton looms and 3,000 rayon looms—a total of 23,000 cotton and rayon looms. Allowing for 20% of looms being idle or unemployed during busy farming seasons or for other reasons, the total number of looms, both employed and unemployed, would have reached 27,600 in the rural districts of Kaoyang. Since not every member of a weaver's family is at work all the time because of household and other duties, we may safely assume that one loom on the average would have required the labor of four men, women and children for the preparatory and weaving processes. The 27,600 looms in Kaoyang, therefore, would have kept a total rural population of 110,400 at work, of whom about one third are male weavers in charge of sizing, warping, drawing-in and weaving. The other two thirds, women and children, are not always at work, and have to be counted as part-time workers.

Table 18. Workers in subsidiary industries in Kaoyang, 1933

	No. plants	Dyers	Calenderers	Printers	Apprentices	All workers
Machine dyeing & calendering plant	12	153	84		145	382
Native dyeing & calendering plant	22					
Shansi dyeworks	9	96	50		132	278
Printing plants	9			10	28	38
Native calendering shops	10		30			30
All	62	249	164	10	305	728

Besides the 110,400 workers and assistants in the rural districts, there are in the city of Kaoyang in 1933, 423 workers and 305 apprentices in the 62 dyeing, calendering and printing works. The 423 workers include 249 dyers, 164 calenderers, and 10 printers.

The handloom weaving industry in Kaoyang, as here sketched, has shown a rapid decline since the peak year of 1929. Whereas in 1929 Kaoyang's consumption reached 80,000 bales for cotton yarn and 12,000 boxes for rayon yarn, in 1932 it has been reduced to 30,000 bales for cotton yarn and 8,000 boxes for rayon yarn. In 1933 the industry has reached an even more critical state. According to the Institute's investigation which is still under way, only one half or less of the looms operating in 1932 are now at work. This dramatic decline, if prolonged, may wipe the whole industry out of existence, and may bring about a state of affair much harder for the rural population to withstand than in the early days of wholly agricultural development. An examination of the factors responsible for the decline is, therefore, a pre-requisite for any attempt to resuscitate or to revive the industry.

The factors for the decline of the handloom weaving industry in Kaoyang are of two types, namely, external and internal. The external factors, which lie beyond the control of the industry in Kaoyang, include the decline in the purchasing power of the rural population, the dumping of Japanese and Russian piece goods on the Chinese market, the competition of silk with rayon fabrics, etc. The principal markets for Kaoyang cloth, which embrace the North China Plain, the Northwest, and the Yangtze Basins, have in one way or the other been affected adversely by civil war, foreign invasion and world-wide depression. The Northwestern provinces of Shensi, Kansu, Ninghsia, Shansi, Suiyuan, Chahar and Jehol depend largely upon the export of native products such as wool, skins, hides and leather to foreign countries for their prosperity, but with the spread of world economic depression, the export has declined greatly, from 37.7 to 18.8 million haikwan taels for skins, hides and leather, and from 10.2 to 3.3 million haikwan taels for wool during 1931 to 1932. The Japanese occupation of Manchuria in November, 1931 and the Sino-Japanese war in Shanghai during 1932 and along the Great Wall during 1933 have both contributed to hasten the

break-up of China's whole economic structure which has already been strained to its utmost limit during the years of incessant civil war, in Szechuen, in the communist stricken area of Hupeh, Kiangsi, Hunan and Fukien, and in North China during the Anti-Yen-Feng Punitive Expedition. With the spread of internal or external warfare, there is a stronger tendency for the rural population to migrate to the coastal ports for safety and protection. The well-to-do peasants have converted whatever property in their possession into ready cash, and have remitted them to the banks in the towns and port cities for safe deposit. The village is thus deprived not only of the energy and resourcefulness of these classes who are taking refuge in the towns, but also of their credit reserve which they have brought along with their departure. Credit becomes tight, and interest is correspondingly raised in the villages, while in the towns the contrary situation develops. The Kaoyang weaving industry, which depends largely upon the interior villages for its market, can no longer push the sales of its products. The dumping of cotton goods on the Chinese market by Japanese and Russian importers is another factor for the decline of handloom weaving industry in Kaoyang. These foreign merchants, with better product and lower price on the one hand, and with closer marketing organization and stronger financial backing on the other, have competed severely with the Kaoyang merchants who are now as dis-organized as ever. The price for Japanese or Russian cotton piece goods, it is reported, is lower than that for the Kaoyang cloth by 20 to 30 percent. Under such circumstance, Kaoyang merchants have reverted to the suiciding practice of depressing the price of their own products to the level of Japanese and Russian products, not by an economy in the cost of production, but by a reduction in the quantity and quality of the yarn used for weaving. Other factors, such as the rapid fall in the price of raw silk and cotton yarn, the higher price for rayon in terms of silver, etc. have also contributed to the decline of the handloom weaving industry in Kaoyang. The decline in the price of Chinese silk which on the New York market is from G\$ 2.64 per pound for January to G\$ 1.76 per pound for June in 1932, a decline of about one third, has diverted a part of the purchasing power for silk fabrics which would have been monopolized by rayon fabrics. Because

of the erratic and on the whole downward fluctuation in the price of cotton yarn, from Tls. 168.50 during the first week of 1932 to Tls. 133.50 during the last week of May, 1933 for man and bell brand of 16's for instance, a decline of about one fifth, the merchant manufacturers in Kaoyang have preferred to live from hand to mouth in the purchase and putting out of yarn, so as to avoid the risk of having to purchase the yarn at a high price market and to sell the cloth at a low price market. The rayon fabrics, whose price has tended to fall rather to rise in face of the increasing cost of rayon due to silver depreciation, is another factor causing the decline of the weaving industry in Kaoyang.

The internal factors for the decline of the weaving industry in Kaoyang can all be summed up under poor organization or lack of organization. The extent to which the industry has been built up in Kaoyang during the last twenty years cannot be said to be small, for according to a recent census the total value of the output for that industry during 1928 amounted to the huge sum of over 31 million dollars. Yet for an industry of such a magnitude many of the necessary institutions ordinarily required of efficient manufacturing, marketing or financing is totally absent. The industry, in the first place, would have required at least the erection of a fair-sized power plant to supply the mechanical power for finishing processes such as calendering, if not for weaving. In Kaoyang, no plant of this character has yet been thought of, and the economy to be derived from the spread of power transmission to the rural districts is still foreign to the merchant manufacturers and weavers in Kaoyang. For finishing processes where the need for mechanical power is most urgent, the 12 larger plants have resorted to the generation of steam power on own premises, but have not cooperated to establish an electric plant for common utilization. Similarly, no warehouse has been established for the storage of yarn or of cloth. The stock is usually piled up at the rear of the merchant manufacturer's office, with no attempt to insure it against fire or to grade it in a systematic manner for better and easier disposal. With the accumulation of stock in this primitive manner at a time of poor business and slow turnover, considerable capital must have been tied up. Were a modern warehouse to be established and operated on a modern com-

mercial basis, much of the capital so tied up could have been released in the form of liquidable warehouse certificates, disregarding other benefits frequently derived from such an institution. The absence of a modern bank to finance the huge operations of the weaving industry is even more striking, and under no circumstances from modern commercial viewpoint can the industry be left to its present state in financial accommodation. As has been remarked in a previous paragraph, financial needs of the community are supplied through the exchange operations on the wholesale yarn market, which is itself poorly organized for an extensive industry. For local circulation, however, the clumsy system of "pa-tyau" (撥條) or promissory note is in operation. If merchant A buys a certain quantity of yarn from merchant B, the former usually issues a pa-tyau to the latter as a means of payment. Meantime, merchant C, selling another lot of yarn to merchant B, may be paid with merchant A's pa-tyau, by merchant B if the amount involved be the same as that for the transaction between merchants A and B. If not, a new pa-tyau will be issued by merchant B to merchant C. In this way, pa-tyau, the form for which is designed in a uniform manner by the local Chamber of Commerce, passes as medium of circulation on the Kaoyang market, while cash money, which is seldom found, commands a premium over pa-tyau. In case merchant A is in need of cash for paying his weavers or for other similar purposes, he must have his pa-tyau cashed at a fluctuating rate of discount. In order to avoid this loss, he usually hires certain number of runners to have the pa-tyau traced to its source. The runner will first trace the pa-tyau to the issuer, say merchant B. Merchant B, however, will not pay off his pa-tyau with cash money if he can produce the pa-tyau of some other merchant to whom he is a creditor. The runner, in other words, simply exchange B's pa-tyau with C's, and C's with D's, and so on until the ultimate debtor is located who has to produce cash for the payment of the pa-tyau. Merchant A, in this manner, has the pa-tyau cashed for at par value, not at a discount, but has to suffer about the same loss arising from the employment of runners. A large merchant in Kaoyang, it is said, has to cash his pa-tyau five or six times a year, each time employing about a dozen or so of runners. In short, this system of pa-tyau, which operates in the absence of a central

clearing-house, has to bear a heavy cost in the form of runner's wages or of default of payment by the issuer of pa-tyau.

Other illustrations of the poor organization or of lack of organization of the handloom weaving industry in Kaoyang can be easily multiplied. With an annual production as large as 31 million dollars for 1928, no agency has ever been founded for the collection and distribution of information on market conditions. Every merchant manufacturer trusts to his own judgement for the purchase of yarn, as well as for the production and marketing of cloth. When a collapse in the market takes place, each and every one in the industry is caught unaware and in a disorganized state. No attempt is made to estimate the character, source, magnitude and requirement of the demand, nor is any information ever collected on the new technical developments elsewhere. In other words, in the midst of a highly competitive world, the industry in Kaoyang is completely lost in its blind dependence upon a fortuitous market. Competition is met with not by an improvement in its own production, but by the suiciding practice of imitation and deterioration.

Rural industries in China's reconstruction

Despite the recent rapid decline of rural industries in China, the place that rural industries may still occupy in China's reconstruction cannot be totally ignored. Provided that proper measures be taken to eradicate the external and internal factors for the decline of China's rural industries, such industries have still their functions to perform in Chinese national life, functions that may be either economic or social in character. The most important of the economic functions that rural industries may fulfill is the utilization of spare time labor, important chiefly because Chinese agriculture, the means of livelihood for 74.5% of the total population, is fundamentally seasonal in character. Aside from Professor Buck's study quoted above, Professor Cressey's geographic researches have indicated that in China the growing season may vary as much as from 100 days in Khingan Mountains in Western Manchuria to fully 365 days in the hills of Liangkwang. For the North China Plain where the density of population is 647 per square mile of land and 978 per square mile of cultivated land, the growing season is only 200 days. For other important agricultural regions the growing

season is 150 days for the Manchurian Plain, 175 for the Loess Highlands, 300 for the Yangtze Plain, and 325 for the Red Basin of Szechuen.⁵⁶ All this tends to confirm the prevalence of idle labor during the non-growing season in the various parts of China. Indeed, in a recent Memorandum to the Rockefeller Foundation, the North China Industrial Service Union has well presented the issue in the following terms: "In North China, the smallness of the farms and the nature of the farming—the raising of field crops—combine with the long hard winters to render agriculture a part-time industry. The farming community, except where subsidiary industries exist, has five or six months of idle time. A conservative guess would put the under-employment of those members of the farming families of the nation between the ages of 15 and 54 as equivalent to the whole time unemployment of about 55,000,000 people. Moreover, the climate with its uncertain and ill-distributed rainfall renders agriculture an insecure livelihood. These conditions impart an immense vitality to such rural industries as now exist, despite the lack of scientific services and industrial organization in country districts."⁵⁷

A second economic function to be performed by rural industries is the utilization of local resources and by-products. As we have seen in the preceding sections, most of the industries in the rural districts today derive their existence mainly from the utilization of local resources, e.g. quarrying and mining, brick works, food production and conservation such as oil pressing, flour milling and vermicelli making, wine distilling, fruit preserving, textiles such as wool, ramie or silk weaving, etc. Agricultural by-products, such as reed or rush for straw plaiting, form the basis for another group of rural industries. In the United Kingdom or India it is also this group of industries utilizing local resources that has been most developed in the

56. Cressey, G. B.: The geographic regions of China, in *Annals of the American Academy of Political and Social Science*, Nov., 1930 (China number); *Nankai Weekly Statistical Service*, Feb. 29, 1932.

57. In an unpublished Memorandum to Dr. Selskar M. Gunn of the Rockefeller Foundation entitled *Proposals for industrial research and training, a phase of rural reconstruction*, dated June, 1933, by the North China Industrial Service Union.

rural districts. In India the Royal Commission on Agriculture in 1928 concluded that "as the economic relations between industry and agriculture grow closer, the number and variety of these primary processing factories in rural areas [e.g. cotton ginneries, rice mills, sugar refineries] may be expected to increase greatly and seasonal employment in them may come to be an important factor in the cultivator's economy. 75% of the labor employed in the 15 large sugar mills situated in Bihar and Orissa is agricultural."⁵⁸

A third economic function to be performed by rural industries is their contribution to farm income, which by providing for a more generous margin of existence helps to insure against famine, banditry and communism. Although on the farms covered in Professor Buck's study for the 12 localities in the five provinces of China the average percent of income from home industries amounted to only 2.9% of the total farm income, such a percentage was as high as 14.8% in Kiangnin, Kiangsu and 10.4% in Hwaiyuan, Anhwei.⁵⁹ In another survey of 25 farms in Mount Omei, Szechuen by Dr. Brown, the home industries were said to have contributed \$15.40 or 8.8% of the total income (\$176.10).⁶⁰ The size of such income, however, is not uniform for all farmers, but varies with the size of farm and the type of land tenure. In Dr. Brown's study of 50 farms on the Chengtu plain, it is stated that "on 58% of the farms there is some income derived from home industries. This item includes silk culture, weaving etc., and averages \$11.90 on all farms. Considering only the farms with home industries, the average is \$20.51 which is a considerable item in the meagre budget of the farm. Only 40 per cent of the owners engage in home industries and 40 per cent of the partowners but 79 per cent of the renters make some money in this way. It runs as high as \$70 on a 5 acre farm of 9 occupants. The renters average \$18.35 income in this way, the part-owners \$7.80, and the owners \$6.13. The indication is that the renters on the

58. Report, *op. cit.*, p. 576.

59. Buck, *op. cit.*, p. 98.

60. Brown, Harold D.: A survey of 25 farms on Mount Omei, Szechuen, China, in *Chinese Economic Journal*, December, 1927, p. 1071.

smaller farms have more time to give to home industry and also are under more pressure to supplement their income by this type of work".⁶¹

Other economic functions to be derived from rural industries include the provision of local needs, the increase of community income either through a decrease in imports or through an increase in exports, the levelling up of rural standard of living, the development of rural craftsmanship, etc. A final function, which in view of the present status of Chinese agriculture cannot be realized in the immediate future, is the utilization of machinery and transport in conjunction with agriculture. The increasing use of power and machinery is one of the features of large scale farming. Small farmers who constitute the majority if not the whole of Chinese agrarian population would be less at a disadvantage in this respect if machinery, engines, and motors, which they would only require at certain seasons on the farm, could be turned to account for some form of manufacture at other times.

The social functions of rural industries are equally important as the economic functions. The general form of economic development which is characteristic of small-scale or decentralized industries in the rural districts makes it relatively easy to avoid the recognized evils of mechanisation and to secure that the machine shall be understood by and be the servant of the worker. Again, rural industries may introduce into rural life a different or manufacturing element which makes life more interesting and people more intelligent, alert and progressive. The educative values of rural industries, too, cannot be ignored. This is especially so if the rural industries can be organized on a co-operative basis, and the newly introduced co-operatives can fulfill the rôle that has been so well played by the folk high schools in Denmark. Indeed, "independent or small group production combined with membership in the larger co-operative or other association develops both personal responsibility and the virtues of team work. The traditions of a peasant society provide a suitable soil for such developments, while through

61. Brown, Harold D.: A survey of 50 farms on the Chengtu Plain, in *Chinese Economic Journal*, Jan., 1928, p. 60.

these new industrial groupings the way is prepared for wider social co-operation. The [North China Industrial Service] Union has learnt of striking examples of the fine leadership which has arisen under similar organization in both France and Germany, and which has found its sphere in the executive posts of co-operative society and handicraft association.”⁶²

The dilemma in China today is that on the one hand rural industries have definitely important functions of an economic and social character to perform, while on the other the rural industries now in existence are rapidly declining or even disappearing. What, then, are the difficulties or handicaps that are confronting these industries? Some of the difficulties, such as the superior economy of large scale machine production, are fundamentally beyond the capacity of small-scale rural industries to cope with. Cotton spinning, in which large-scale machine production is supreme, must in the course of time disappear totally as a small-scale rural industry. Other difficulties, however, may be faced with by an improvement in technique or in organization. Rural industries have been at a disadvantage through the lack of facilities for obtaining the information, education, and training necessary for a type of production which must, to hold its own on the market, be adaptable and able to produce article of good quality. This difficulty can be dodged through the establishment of rural workshops devoted to extension work, as has been successfully done for agriculture through the establishment of experimental stations. Again, the workers have too often been at the mercy either of employers or of dealers who took advantage of their ignorance of markets and market values, and of their urgent need, to keep down the prices. Depression reacts on quality, and thus the distinctive character which makes the rural product marketable is lost. This difficulty is inherent in the prevalent systems of organization, the craftsman and the merchant employer systems. But in the future development of rural industries, a new form of organization, the co-operative society, can be substituted in their place. This form of organization, which has already had a good start in Hopei, Chekiang, Kiangsu, and other provinces

62. Proposals for industrial research and training, *op. cit.*, p. 4.

in respect of credit provision in particular, can be well adapted to the needs of the rural industry, both for buying where the material is not produced on the spot, and for selling where the manufacturer is not in direct touch with the customer. Meantime, such societies need not necessarily dispense with the services of a private dealer. Middlemen there must be between producer and customer, whether these are the servants of a co-operative society or independent merchants, but there must not be too many of them and they must render efficient service both to producer and to consumer.⁶³

63. Tayler, J. B.: A policy for small scale industry in China, in *China Critic*, Mar. 16, 1931; Woods, *op. cit.*, Part I, Ch. IV.