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THE POSSIBILITIES OF RURAL INDUSTRY IN CHINA

In this new era of economic planning, the economist may, without immodesty, indeed often he needs must, venture out of his study to lay down lines of policy adapted to a given situation. That the advice offered by different experts is so frequently conflicting, arises as a rule either from the neglect of one or more elements in the situation, or still more from differing conceptions of the end to be attained. For though it is recognised that economics is the study of the means to an end, namely of the activities by which men seek to satisfy their wants on the material side, economists have felt it outside their province to study the wants themselves, and no other science has yet been created to do this. Thus no adequate attention has been given to defining the objectives of the industrial system and the criteria by which it should be judged. It is important, therefore, that a writer's point of view should be clearly stated. Fortunately, there is in this country general acceptance of a principle which, though it needs to be given content and definiteness, is an admirable and comprehensive statement of end, namely, the *Min Sheng Chu I*, or People's Livelihood. In this article we shall regard the raising of the general standard of living by means that 'gear in' with national, and especially rural reconstruction, as the end by which industrial development is to be tested.

Three years have elapsed since the present writer made a tentative effort to sketch the type of development calculated to do this.¹ Much has since happened to confirm the soundness of the views then taken and some progress has been made in testing their practical applicability. Without repeating what has already been said, the influence of recent events in strengthening earlier conclusions, the growth in knowledge of the China situation, and the results of some early experiments will be briefly referred to.

Some Modern Trends

The railway and steamship age, which opened about a century ago, helped to create large industrial centres and connect them with distant agricultural regions. Today when industrialisation is so much more widely

1. *China Critic*, Vol. IV. Nos. 13 and 14; March 26 and April 2, 1931.



spread, the development of road transport, of the telephone and radio is changing rural life itself. These factors and the cheap distribution of electric power are making for decentralised and even rural industry. In England the influence of improved transportation in extending the areas served by the larger markets led to the partial decay of some of the older market towns. Today this situation is to some extent being reversed through the wider and more systematic distribution of electricity under the 'grid' system, which is giving rise in various areas to a 'New Industrial Plan'. Thus in East Anglia and Kent new workshops and factories are springing up and existing ones are being extended, and there is the possibility of a coherent development of the agricultural background, preventing the further decay of subordinate centres.²

In America there is the interesting experiment of the electrification of the Tennessee Valley — a scheme which if successful will be the forerunner of many similar developments. In an area in which until recently both production and consumption have, from an American standpoint, been on a low level, an effort is being made not only to promote technical development, but to promote it on lines that will probe the roots of industrial troubles and lay foundations for a more stable economy. In many ways it is attempting — though starting from an initially higher economic environment — a policy on similar lines to those advocated in this article. It is significant that it, too, contemplates an industrialised countryside.³

Planning of this kind, like so much of what is being attempted for the unemployed, emphasizes the importance of the local community and of the region as bases for industrial integration, an aspect of social economy which has been too much neglected in the West but which is of great importance for rural reconstruction in China. It is widely acknowledged in Germany, England and America that small scale industry, with its closer regional integration, leads to less unemployment during a depression than is experienced by the great corporations. No one has yet worked out, or if so has not published, the scale of living that a community of the unemployed, given the use of plant idle during the depression and supplying one another's want, could attain. With capable organisation it would probably grow quite rapidly to a satisfactory level and thereafter

2. See 'The Region and Power Supply' by A. R. Dent and 'The New Industrial Plan' by R. G. H. Dent in the *Architectural Review*, November, 1933.
3. 'The Tennessee Valley Authority' by Dr. A. E. Morgan in the *Science Monthly*, January, 1933.



improve with each technical advance. Some principle of community is increasingly seen to be required to ensure that technical improvements shall result in a higher standard of living for the workers.

The realisation of this fact is due to the growing degree to which the mechanisation of industry is giving rise to unemployment. In February 1933 the President of the United States Steel Corporation went so far as to say that American industry from then on would require a decreasing number of workers and that the surplus would have to go on to the land. Clearly in China some other principle than the saving of labour to snatch an advantage in a competitive market is required to direct the course of mechanisation. The machine must be introduced in such a way as to be the servant and not the master of the worker, and the rapid performance of the routine work of the world must be so ordered as to give leisure to all for more interesting and creative tasks.⁴

It is here that a new opportunity will arise for handicrafts. In industrial Europe they have survived especially in the field of luxury goods. But in the Age of Leisure all may enjoy the fruits of handicrafts. A very instructive example is found in Switzerland. The effect of general economic changes had led to a progressive depopulation of the higher or mountain villages, and those remaining in them did so at a low level of living. When the Peasants' Union took the matter up, they found a solution in providing textile work for the women and woodwork for the men, teaching them to employ their unwelcome leisure with improved appliances. Without this work, the peasants were obliged to content themselves with the cheapest clothes and furnishings on the market. By making such things for themselves, under instruction from the Union, they were able to furnish their homes and clothe themselves with things of real beauty. Thus this village industry was made to serve a cultural as well as an economic purpose.⁵

4. See Professor A. F. Barker's article 'Man or Machine' in the *London Times*.

5. It is impossible to discuss the important issues raised in this section in the space available. Its purpose is simply to show that there are reasons for holding that industrial progress is taking a new turn in which the village will play the central part. Those who wish to follow this further should read 'Rural-Urban Migration and the National Welfare', the Presidential address of Dr. O. E. Baker to the Association of American Geographers. *Annals of the Association of American Geographers*, Vol. XXIII, No. 2, June 1933. See especially from Section IV, the Village the Hope of the Future, onwards, particularly footnotes 43, 44, 48, 49.



Need and Opportunity in Village and Market Town

In Shansi, where an alternative occupation to farming exists in many districts in the form of mining, it is found that agriculture occupies about half the year and mining the other half. That this is not an overestimate of the time available for industry is confirmed from many sides. One of the most convincing is Professor Buck's study of farm labour, which, from samples taken over a wide area, shows that an average of only about 95 days is spent by the farmer or farm worker in definitely farm work. It cannot be too strongly stressed that it is this vast reservoir of unemployed and underemployed village labour which is the cardinal fact in the industrial situation in China. The recent study of 'Rural Industries in China' by Dr. H. D. Fong⁶ reveals districts in which such industry has grown to very large proportions, but also great areas, constituting indeed the majority of the country, in which there is an almost complete lack of industry for any but home needs. Yet the farm itself yields a very meagre income. In Paoti Hsien, east of Peiping, it is a saying that a loom is as good as fifty mow, which is a good deal more than the average size of farm.

Although, here and there, are found examples of rural industries which have resulted from modern industrial contacts,⁷ no strong movement has arisen, because the villager is still circumscribed by ancient custom and ignorant of modern possibilities. Rent is often not on an economic basis.⁸ Even where industry is practised, the absence of a modern outlook is frequently marked. Forty miles south of Peiping is a paper maker whose raw material consists of waste paper and rags from the city and old rope and bags from coal mines in the Western Hills outside. The market is in Peiping. When asked why he carries the materials forty miles and returns the paper the same distance, the only reply is that his land is there and he would not think of doing business elsewhere. A few miles from him a family is making wrapping paper from rice straw by a primitive process. But their market is good and they might readily extend the business. However, all the members of the family are satisfactorily employed and there is no thought of bringing in another family or of engaging hired labour. But perhaps the most common and serious weakness is the failure to recognise the importance of quality and the necessity of keeping up to standard.⁹

6. Bulletin 5, Industry Series, Nankai Institute of Economics.

7. *Rural Industries in China*; *China Critic*, Mar. 26, 1931.

8. *Farm and Factory in China*, p. 26, Student Christian Movement, London, 1928.

9. *Rural Industries in China*, p. 60.



Moreover, there is a lack of technical services. In recent years, despite depressed conditions of trade, several oil pressing firms have adopted a more modern screw press instead of the old press which depends on driving in wedges to exert pressure. But the new presses have been too lightly made, they will not press cotton seed, though adequate for peanuts; and they easily break. In 40% of the cases the more expensive new press has been discarded and the old one brought back into use.¹⁰

Dr. Fong has described the characteristics of rural industry as it exists today.¹¹ Needless to say it is not to industry of so undeveloped a type that we look forward in the future. We shall show that there are already signs that the villagers respond to leadership in the establishment of something better, that the financing of improvements can be met, and that rural industry can be equipped with machines not beyond the skill or pockets of the farmers, but yet productive enough to provide a rising standard of living and to enable them to meet competition in a considerable range of suitable industries.

Granted these possibilities, there are two factors which make rural industry economically feasible. The first has already been glanced at: the use of the idle time of the agricultural population. A decentralised industry which dovetails in with farming converts the farm income from the return on a year's work to one on six month's labour. It acts directly on the basic standard of living of the nation, that of the peasant. In so far as it succeeds, it makes for an equitable distribution of income and increases the purchasing power of the great mass of the people. It carries on industry where the costs of living are at a minimum and under conditions which reduce the overhead charges that form so heavy a burden on large urban industry in China.

The other factor is the density of the population of the more fertile rural areas. Kaoyang is an example of the possibility of 'mass production' under rural conditions. Dr. Fong estimates that there are 27,600 looms employed, occupying 110,400 people. Even within four miles of a marketing centre there is frequently a population of 30,000 people. This is an ideal size for the development of a rich community life. But the contribution that industry can make to the building of rural communities is too large a subject to explore in this place.

10. From an unpublished manuscript by Mr. Chiao Shu-fan, shortly to appear in the Yenching Series on Industry and Trade.

11. *Rural industries in China*, pp. 43-44.



The Organisation of Decentralised Industry

This brief account of rural industries has been sufficient to indicate that many difficulties lie in the way of their successful development. Before the problem can be attacked with any confidence a means of meeting and overcoming the hindrances must be found. There seems to be such a means. In essence, it is the method by which agriculture, in a community of small farmers, has been organised to meet the needs of a commercial market in this scientific age. If, since the middle of last century, there has been much improvement in the technique of farming, there has been a revolution, in peasant countries, in the business end of farming. The level of farm practice has been raised by the scientific work of agricultural colleges and experiment stations, the results of which have been demonstrated to the farmers. But the chief factor in standardising and bulking the produce of the many small farm units has been the co-operative organisation for marketing. The many other needs of the small producers have been met by similar means: cooperatives and other associations for credit, supply, processing and other common wants.

It is only in ways such as these that decentralised industry can be satisfactorily established. Technical research and experimentation must be provided for each trade as a whole, and its results made available for the entire body of small producers engaged in it. The object of research will be to provide the most suitable equipment for village use, which will not necessarily be the same as for large scale organisations. The research institutions must of course be permanent bodies aiming at the continuous improvement of the industries concerned.

The improved methods or appliances resulting from the research must then be demonstrated by suitable means to the villagers. This will in some cases involve model workshops at which training for such varying periods as may be found necessary will be given, together with any other education that can be conveniently combined with it. In other cases provision will be made at rural schools, especially those at marketing and trade centres, for the practical training of their students.

But this is only a first step. The workers so trained must be thoroughly organised. The type of organisation will vary with the character of the industry. In the case of a home industry the central need is for a marketing and supply association; but this will also care for common needs in credit, trade information, pattern or designs, and so forth. Each locality will require its own association or society. Where the market is not purely a local one, and especially in important industries such as a textile



trade, a wider federation of such societies will be called for in course of time.

In workshop industries, association will be required to create and maintain standards for apprenticeship, and perhaps for masters; to keep the isolated village shop in touch with the progressive trade, by a trade paper and by visits to some well equipped central workshop; and to supply the workshops' needs in the best way. In these ways the home worker will be preserved from 'sweating' which is his bane, and the isolated workshop from stagnation.

There may speedily come to be some trades in which small factory units are desirable. In a complicated trade, like a textile, some processes will require to be mechanised and conducted in workshops or factories while others remain home industries. This is true of dyeing and finishing at Kaoyang, for example. What is being urged here is that as farmers, say in Denmark, unite to run a cooperative dairy for the processing of their milk, the cotton farmers of a *hsien* might similarly unite for a carding and spinning mill. Or the latter might be run by the weavers for their own supply of yarn. The principle would allow of vertical combination, on the cooperative principle, right from the farmer raising cotton, through ginning and baling, carding and spinning, knitting and weaving to calendering. In the case of cotton, indeed, after ginning there would be two series, the one with the fibre, the other with the seed, the latter giving rise to oil pressing, refining and manufacture, as for example soap-making. In the West Indies, the Horace Plunkett Foundation reports, there is a society of 1,700 cotton growers organised for the ginning and baling of their crop, the pressing of the oil and the manufacture of soap. Similarly with the scouring and carding of wool and the finishing of the cloth. In Iceland, for instance, the sheep farmers have organised a carding mill to which they send their wool, receiving it back to spin and weave.

There are of course some industries which do not lend themselves to a policy of decentralisation. Such are ship-building, the large steel production for constructional purposes, and other heavy industries. There is reason to think that even these gain by not being crowded into large cities, though each must perhaps create its own town; but that is rather outside our present subject. The range of rural industries is still large. Indeed, it is questionable whether it may not come, as the fully electrical age is reached, to include all the lighter secondary industries. To begin with, it will naturally comprise the processing of agricultural produce, which in North China would mean, in addition to those already mentioned



for cotton and wool, the reeling of silk,¹² the pressing of the many other vegetable oil seeds, the dessicating of the white and yolk of egg, the canning of fruit, the tanning of leather and curing of furs. These lead to others: leather tanning to leather trades, oil to chemical industries, fibres to paper-making as well as textiles, and so forth.

It will also include industries which are localised by the occurrence of mineral deposits, or by the bulky nature of their products, as brick-making, pottery, etc. Workshop trades, such as metal- and wood-working, will come to play a more and more important part, as agricultural implements and machines are improved and as village industry and local transport are more highly organized.¹³ One of the chief needs of North, and of several other parts of China, is the growth of timber of economic value and development of woodworking trades on the basis so provided.

As rural life develops a modern outlook, with rising standards of health, increased social intercourse and new interests, there will be a growing demand for better standards of housing sanitation and so forth; of lighting; of educational and recreational equipment. Local municipal or community enterprises will develop; and the closer control of water, etc. In all this industry must play its part.

There are many examples in China of scattered efforts at rural industry in the fields here indicated, but none perhaps¹⁴ organized on the basis proposed. As has already been shown, cases of the local organisation desired are to be found in different parts of the world; but nowhere is rural industry put forward as capable of playing as large a part in national development as is claimed for it here. Perhaps nowhere else is the opportunity so great. But it is time to turn to some experiments that have been recently made to test the reality of that opportunity.

Some Early Experiments¹⁵

The first experiment was in the wool industry, which in Europe has shown more vitality as a home industry than almost any other. The raw

12. In Japan, where cooperative silk marketing was practiced before the silk filature was introduced, a number of the latter were founded on a cooperative basis. Ogata, *The Cooperative Movement in Japan*. In Japan, too, the fine pottery work is being organized on a local guild basis.
13. An example of a progressive workshop built up on the supply of rural needs is found at Weihsien, Shantung. It began with equipment for raising water from wells, turned to making improved looms and is now making small engines.
14. Unless by the University of Nanking in the processing of crops.
15. The experiments to be described were conducted under the auspices of the North China Industrial Service Union, 50 Kulou Hsi, Peiping, of which Dr. Chang Poling is chairman and Dr. J. L. Stuart and W. H. Wong vice-chairmen.



material is a North China product, which is the basis of an export trade and a growing industry; while the demand for woollen goods in China is increasing steadily. A beginning was made with the technical side of the problem. It was believed that a range of appliances from the simplest hand ones up to small machine units should be prepared, so that groups of villagers might begin with those that suited their pocket and their level of industrial experience, and improve their practice by successive steps, as they were able. The task of preparing such machines was entrusted to the North China School of Engineering Practice. First of all, handcards on the European model (first introduced into Suiyuan by a Swedish missionary), the spinning wheel and handloom, and the most economical means of willowing, washing, dyeing and finishing, were selected and improved. At the same time, experiments were made with the handmule and with a carding machine. The latter was based on the type first introduced into America, and this has proved very serviceable. A machine with a wooden frame can be built locally for \$350 silver. It not only greatly increases the rate of carding, but it fluffs the wool so much more effectively for spinning, that the speed of the latter is fully doubled. Instead of being able to earn some twenty cents a day spinning half a pound, a woman using the same wheel can now earn more than the city factory wage. Such a machine supplies from twelve to fifteen spinners, so that if they combine with the carders to purchase it, the cost can be paid off in a few months. A better machine can be made with an iron frame for \$500. Both of these are readily turned by hand, and similarly with other machines. A group starting with a simple outfit costing an average of \$10 per head, can treble its output on a capital averaging \$120 per head and can considerably increase this again on an average outlay of \$300. At the same time the quality of the goods is being improved. All this is possible without the use of any but hand power, and with appliances which an intelligent village carpenter can readily be taught to keep in repair.

As soon as the Wool Centre set up to deal with this project was ready to begin training workmen-instructors or foremen, sufficient interest had been aroused to secure as many pupils as could be accommodated and to necessitate a waiting list. By the end of January 1934 over seventy had completed periods of training generally of three but sometimes of five months. Of these, sixteen were women. It was required that all should have had some previous experience and that they be sent by those in a position to guarantee that after their training they would be used to help in starting the industry in the region from which they were sent. It is interesting that eighteen local centres have begun to produce: ten in



Hopei, — five of them in the neighbourhood of Peiping where the Wool Centre is, — three in Shansi, and one each in the provinces of Shantung, Honan, Shansi, Anhui and Kiangsu.

The point of the wedge has been inserted but nothing has yet been done to drive it home. Knitting yarn, suitings, blankets, travelling rugs are being successfully produced, but the bigger problems of organisation have yet to be faced: the problem of marketing as production increases, and of creating a village market for woollen goods; the problem of technical leadership of a higher order than has yet been necessary; and, as the foundation of all, the problem of local organisation on a co-operative basis. This is the real crux of the whole movement.

In its early years co-operation is a plant of slow growth but once well rooted it spreads vigorously. For a decade the China International Famine Relief Commission has been fostering credit societies and its work has begun to bear fruit, of which proof has recently been made with the view of testing whether the situation is ripe for industrial co-operation. Complaints were being made in certain quarters that the Hsiho cotton, which is an important Tientsin export, was reaching the market in a watered condition and containing bunches of seed and other deleterious matter. Among the farmers raising this cotton are many who are members of the credit societies referred to. In some cases the village societies are united into unions. The field secretary of the North China Industrial Service Union chose one of these unions for the first test, which was made in the autumn of 1932. The season had been a wet one, and the pink boll worms were very numerous. There was more than usual danger of stained cotton because of the worms and of the broken seeds. The watering, which is almost universal, is done immediately after the ginning and perhaps again before the baling. The export houses are put to the expense of picking the cotton in their godowns before rebaling for export. Mr. Lu's first task was to see whether it was possible to teach the farmers the importance of standards and get the cotton as clean in the farmers' barns as it could be made in the Tientsin warehouse. The ginneries were scattered, and the farmers differed in their understanding of, and response to the situation; but it proved possible, with the aid of the more intelligent, to organise inspection, to prevent watering entirely, and to pick a large proportion of the cotton quite thoroughly.

The next point was to test the basis of mutual confidence for collective action, and the capacity for enterprise. The cotton is usually sold locally at the 'cotton inns' and paid for in cash. In this case the cotton inns were used only for the baling of cotton. It was expected that the



farmers would in most cases require to be paid a considerable fraction of the value of the cotton in advance. Money was prepared for this purpose, but for the most part it was not required. The farmers were content to ship the cotton provided the out of pocket expenses for transport, insurance and necessary charges in Tientsin were met, without any other advance and without any guarantee as to the price in Tientsin, — this being left to be arranged by negotiation with the merchants after arrival in that city.

Finally, this operation demonstrated that the banks were entirely ready to finance dealings of this kind and to offer facilities for warehousing and, if desired, for the actual sale of the produce, where that was likely to be of advantage to the farmers.

Co-operation is indeed a potent means of, and incentive to education. In the establishment of industry as well as in marketing, it will be wise to build on co-operative foundations even if this restricts the field to begin with. This does not perhaps mean that industry should only be introduced where co-operative societies are already functioning. The China International Famine Relief Commission's "mutual aid societies" point a double lesson. They suggest that those who have experienced the benefits of co-operation can be used to inject that spirit into new undertakings, and they also seem to indicate that there may be joint enterprises which are not at first organised on a full and permanent cooperative basis, but which may be made sufficiently collective to render the transition an easy and natural one. What is essential is that pains shall be taken with the early industrial groups to make them really co-operative as speedily as possible and to use the experience gained with those first established to facilitate the spread of the industries concerned on the basis thus worked out. All these considerations point in one direction: that the Union will do well at this stage to pause in its extension and ensure that the groups already at work should be properly organised before larger responsibilities are incurred.

A third experiment may be referred to because it leads into quite a different field. The village smelters of iron in the Pingtingchow region of Shansi are, despite the crudeness of their processes, making iron at about half the cost at which it is produced by the Paochin Company with its blast furnace. This is due to the villagers' very small overhead, to high costs of carriage by pack animals, the high price of coke (five times that of anthracite), and other reasons. The local smelters, however, are only able to produce a hard, brittle white iron which cannot be tooled. This is on account of the high percentage of sulphur and the low percentage of silicon their iron contains. It was at first hoped to introduce a small blast furnace



which would use anthracite, but it has been found more feasible to remove much of the sulphur by treatment of the villager's iron, while still molten, with soda ash or lime. At the time of writing, iron so treated by the villages is being assembled in order that a sample shipment may be tried out in a Peiping foundry under regular working conditions. If this is successful a collecting centre will be opened at which the iron will be tested for sulphur as it arrives from the smelters, and that which is of high enough grade will be shipped in bulk to markets on the Plain.

Coal, clay and iron mining are all being carried on at lower cost by indigenous than by modern methods. The instance given above shows that manufacture, sometimes at least, is also more economical by indigenous methods. There are thus probably cases in which it is better to build up from current practice rather than to sweep away the existing enterprises as too primitive and substitute western models. The former course is strongly urged for such an industry as pottery, in the higher branches of which there is so much scope for skilled craftsmanship.¹⁶

The success of any technique depends on its conformity with the aptitudes and attitudes of those who are to operate it, as well as on its technical efficiency. The human agent must be modified in his skills, his ideas, the forms of his associations with others, as the technique changes. One of the features of peasant industry is the small group which works as an independent unit. This is met with in many of the occupations mentioned above: in pottery, in mining, in various forms of paper making, and so on. The value of such voluntary grouping, even in large industry, is being recognised particularly in France, where there exists an 'Association pour le Development des Contrats Cooperatifs de Travail.'¹⁷ It will be wise to build on and develop such faculty for association of this kind as already exists among the farmers. In such a group the members choose their own leader and both divide the work and apportion the pay, which is a lump sum received for the task as a whole, among themselves. Such a system, in its measure, does for industry what co-operation does for agriculture: 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 provides a suitable soil for such developments, while through these new industrial groupings the way is prepared for wider social

16. The Hopei Pottery Industry, Yenching Series of Chinese Industry and Trade, No. 1.

17. *La Cooperative de Main-d'oeuvre* and *La Republique industrielle*, both by H. Dubreuil, 30 Rue des Villegranges, Les Lilas (Seine).



co-operation. 'The North China Industrial Service Union has learnt of striking examples of fine leadership which has arisen under similar organisation in both France and Germany, and which has found its sphere in the executive posts of co-operative society and handicraft association'.¹⁸

The Next Steps

If the analysis and argument of this article are correct, certain general conclusions would seem to emerge for the guidance of further experiment in this field of rural industry.

1. It will be wise to carry out initial projects, as far as possible, in those areas in which the cooperative movement is already established and has produced intelligent and enterprising leadership. It is here that the organisation of the industries can be most readily worked out. Once this is done it will not be difficult to spread the movement, as far as the industries concerned are involved, to other areas.

2. When special opportunity or need for a new enterprise exists elsewhere, it will be necessary to see that those responsible for its initiation are competent to direct its organisation into cooperative channels, and that steps to secure this are taken from the very beginning. A certain amount of educational propaganda may be required, for which literature may be necessary.

3. As the technique and method of organisation for any industry are established, they should be brought to the attention of schools and organisations with rural interests, so that the movement may spread and influence education in a practical direction. The movement will also require to co-operate with adult education agencies in preparing literature and courses for its own special needs.

In regard to the higher experimental and scientific work which will be necessary for the progressive improvement of the decentralised industries, the part of wisdom will be to interest universities and technical institutes and secure their co-operation. It is of the utmost importance that the relations between education and industry in China should be of an intimate character. People have to be trained for industry which does not exist until they create it. This seems to mean that the institution must create the industry on a small scale for purposes of training, so that men can go out from it fully competent to conduct it elsewhere. Fortunately, in the case of these decentralised industries, this does not place any great financial responsibility on the institution.

J. B. Tayler

18. Quoted by Dr. Fong, *Rural Industries in China*, pp. 66-67.



RURAL MANUFACTURING INDUSTRIES IN CHEKIANG

Rural manufacturing industries constitute the principal dovetailing employments for the farm labor in an agricultural country like China. In a rice producing province like Chekiang where one half of the year's work for the rice growing farmers is, according to the researches of Professor Buck of the University of Nanking, concentrated in the two summer months of June and July, these industries are of paramount importance. For, they not only bring in additional income to the family which helps to supplement the scanty return from farming — scanty because of the small size of holding and of the various forms of implicit and explicit exactions such as rent, usury and tax, but also provides a useful form of activity for the idle time during off seasons which would have been otherwise spent in the acquisition of undesirable habits, e. g. gambling and narcotic taking.

As shown in the Appendix to the present article, the manufacturing industries of Chekiang are estimated to have a total value of output of \$219,121,199. These industries are usually small in scale, and dispersed in distribution. With the exception of a few modern industries such as cotton spinning, filature silk reeling, flour milling, paper making, match making, electric and water supply, and machine making, the staple industries are to be found chiefly in the rural districts, in peasants' homes and workshops instead of in factories. Despite the absence of concrete statistics, the facts at our disposal tend to show that, on the basis of the value of industrial output, as much as seven tenths of the manufacturing industries in Chekiang are to be found in rural districts. The proportion for rural industries would have been still higher if we take the number of persons employed as the criterion. Rural industries, being more often than not a part-time employment, have rather a low per capita value of output as compared with urban industries, especially of the factory type.

Main Branches

The principal rural manufacturing industries in Chekiang include, in order of relative importance, silk reeling and weaving, paper making, tinfoil beating, wine brewing and distilling, oil pressing, tea preparing, etc. Of these, silk reeling, the most important branch, is usually carried on by the female members of the peasants' families as a by-employment, and is found in every one of the 29 cocoon producing hsien in Chekiang. Despite the rise of modern filatures, silk reeling by native method still