goods. With the improvement of means of transport, of course, the local market will decline. There is, however, a definite and increasing market among the white population for useful household goods of high quality, and in the expansion of this market is the best opportunity for the sound development of Indian crafts. There is need for a greatly improved sales technique, for more knowledge on the part of those organizing sales, and for expert advice to the Indian producer to enable him to produce work which will respond to modern needs and tastes.

Chinese Industrial Co-operatives

THE first plans for the Chinese Industrial Co-operative movement were drawn up in 1937 by a group of Chinese and Americans in Shanghai, the leading spirit being the New Zealander, Rewi Alley. In 1938, Sir Archibald Clark-Kerr, British Ambassador to China, put the scheme before the Generalissimo and Madame Chiang Kai-Shek, through whom the support of Dr. H. H. Kung, Minister of Finance, was secured. With a small loan from the Ministry of Finance the work was started.

The purpose of the Chinese Industrial Co-operative movement was twofold: to replace the industries which had been destroyed or occupied by the Japanese, and without which neither the war effort nor the ordinary subsistence of the population could be maintained; and to provide work, hope, and a livelihood for the fifty million refugees from the war area.

Teams consisting of an engineer and an expert trained in co-operative methods were sent into every district of unoccupied China. The first Industrial Co-operative was formed among a group of blacksmiths in Paochi, a refugee centre in Shensi Province. From there the idea rapidly spread to other refugee centres. Within three months there were co-operatives making shoes, producing foodstuffs, blankets, towels, surgical cotton and gauze. Applicants soon outnumbered the capacity of organizing staffs.

One of the most spectacular achievements of the C.I.C. has been the production of blankets for the army. This effort was directly due to the leadership of Madame Chiang Kai-Shek. Thousands of spinners were trained, 7,500 spinning-wheels and hand-looms were manufactured—the aluminium for the wheels came from Japanese planes which were shot down—and by the end of 1942 nearly 3,000,000 blankets had been manufactured.

Co-operatives working in or near the war areas have to be prepared to move their plant and material at short notice; for this reason heavy industries have been located as far as possible from the battle front, and lighter industries have been so organized as to achieve the maximum mobility.

Women take an equal share with men in the co-operative movement, both as workers and organizers, and in the educational work which has developed as an integral part of it. Disabled soldiers, also, have found a place within the movement; they are making cigarettes and other consumers' goods in great demand, and so are enabled to become self-supporting instead of being a charge on the community.

The following account of the development of textile co-operatives shows how an ancient peasant craft has been developed to meet the needs of a modern nation at war:

'Since China depended on the coastal cities for textile supplies, the first large-scale efforts of the C.I.C. were to set up textile co-operatives. In some areas thread was still spun by the thumb and finger twisting method. It was not an unusual sight to see a grandmother sit in her doorway with a basket of raw wool, teaching a child how to draw the thread through her fingers. This, and the old spinning-wheel, were too leisurely processes to supply a nation at war, so Professor Lewis S. C. Smythe of the University of Nanking sought to develop an improved spinning-wheel, based on the type used in America 150 years ago. An improved model was finally obtained from Mr. Sih Mingchien in Chungking, and after

experimentation by skilled wool spinners the C.I.C. engineer, Mr. Chang Hung-chi, streamlined the wheel to fit into a mass spinning program. The new wheel used a foot treadle, mounted the spindle directly over the treadle wheel, and could turn out four times more yarn than the original American model. Later, a four-reel winder and double width loom added to the growing roster of improved C.I.C. machines.

'But even these advances were not sufficient to keep up with the demands for uniforms, clothing, household and medical textiles. As early as 1940 Professor Smythe began negotiations with British manufacturers to obtain model sets of small-scale carding and spinning equipment. Both the H.F. and Ghosh sets, used in England and India, were easily adaptable to C.I.C. needs and would tremendously increase output. Access to the outside world was difficult and transport from India prohibited the shipment of even one model machine, but finally, early in 1943, blueprints of the machines were obtained and model sets installed in the Shengtu and Lanchow machine shops. Eighteen boys from the Lanchow and Shuangshihpu Bailie schools came to Shengtu; there they learned the construction, operation and maintenance of the machines as these were assembled by Professor Charles Riggs and engineer Lang Wong. When these machines are duplicated the Bailie School boys will travel to new regions to teach co-operators the operation and care of the Ghosh and H.F. sets.

'In the United States a Technical Department was established for Indusco by David Leacock, who obtained the help of many prominent American engineers and technicians on C.I.C. technical problems. The Indusco Committee has lately obtained blueprints and instructions for C.I.C. sponge iron plants. Microfilm reports on tanning, paper-making, chemical manufacture, &c., have been sent to China through the Office of War Information.' (*A Nation Rebuilds*, Indusco Inc., New York.)

The C.I.C. has also started consumers' co-operative stores, where goods manufactured by the co-operatives are sold at fair prices; in this way the C.I.C. is making its contribution to the solution of the problem of scarcity of consumers' goods and consequent price inflation.

The industrial co-operatives quickly became centres not only of industry but of education. Each year 10 per cent. of the profits of each co-operative is set aside for what is known as a 'Common Good Fund', for the provision of reading rooms, classes in adult education, training for unskilled workers, kindergartens, clinics, and hospitals. As the co-operatives come together in Federations, this work is developed. Conferences are held on health problems, training is provided for leaders and organizers. Besides these directly educational projects, the organization and day to day management of a co-operative is itself an education in democratic methods.

The Federations are financially independent; groups of 10 to 30 co-operatives come together to market their goods, purchase raw materials, and set up joint treasuries. 'The Federations are the basis for the future autonomy of the industrial co-operative movement and a medium for the Chinese people to learn the techniques of self-government.' (*A Nation Rebuilds*.)

Owing to difficulties of communication and the disruption of war, it is not easy to get accurate statistics about the C.I.C. The most recent statistics published relate to the period ending June 1942, at which date the number of co-operatives was 1,590; the number of individual members, 22,680; the monthly production, valued in Chinese currency, was worth 24,022,944 dollars; the chief industries worked by the C.I.C. included machine and metal works, textile, mining, chemical, foodstuffs, stationery and paper-making, carpentry and masonry, transport, and a number of miscellaneous light industries, such as the manufacture of woollen clothing, shoes, soap, cigarettes, and so forth.