



CHINESE INDUSTRIAL CO-OPERATIVES

Northwest Headquarters Report

September, 1938—March, 1939



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NORTHWEST HEADQUARTERS REPORT

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CHINESE INDUSTRIAL CO-OPERATIVES

FOREWORD

The Chinese Industrial Co-operatives were organized in August 1938. The plan was first developed in Shanghai by a group of patriotic Chinese and European friends of China. Seeing the wholesale destruction of 90% of China's industrial plants they knew that some way must be found to provide the country with manufactured goods and to stop the otherwise inevitable infiltration of Japanese goods on which the invaders count as a strong factor in winning the war. They saw that the morale of the army and of the people would be sapped by the lack of the essential manufactured goods of daily use; they realized that the great hordes of refugees (a recent estimate places them at 60 million) who had descended on the rural population must be kept alive and at the same time prevented from disorganizing the whole economy of the land. They knew that these people had a tremendous potential contribution to make toward the solving of the nation's problems.

The solution they decided, therefore, was industrial co-operatives,—30,000 industrial groups organized according to the co-operative rules, manufacturing goods in small scattered units, reasonably safe from bombing, and mobile enough to evacuate and start up elsewhere if the necessities of war should force them to do so.

The plan was adopted by Dr. H. H. Kung, President of the Executive Yuan, and was backed by the Generalissimo's Headquarters. With the encouragement and help of Madam Chiang Kai-shek work was started in September, 1938.

Now after seven months of work there are over 455 co-operatives registered in the central headquarters. Due to the difficulties of communication, where a letter from

a regional headquarters to the central office may take a month and a telegram ten days, news does not come in very fast. That there are more co-operatives than are registered is certain. On an inspection trip to a remote depot three co-operatives were seen. There were thirteen one month later, when the return trip was made, and twenty-three were in the process of formation.

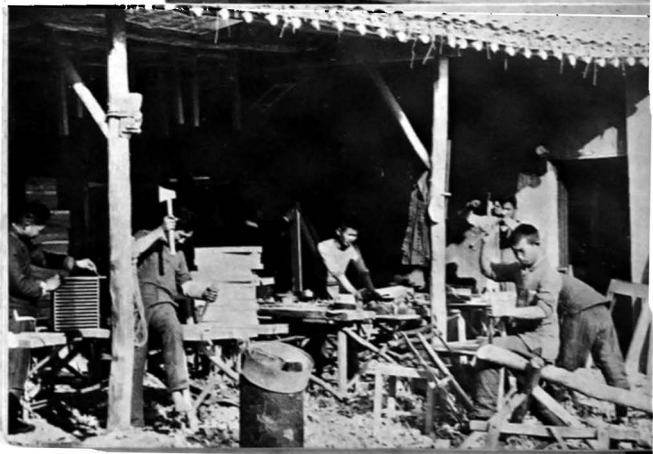
These co-operatives are operating from five bases placed at strategic points in the country, for the Northwest in Shensi, for the West in Szechuan and in connection with the Central Headquarters, for the Southwest in Hunan, for the Southeast in Kiangsi, and a fifth one for the far West in Yunnan. In these centers the organization is now far enough advanced to care for, not only the societies already formed, but to set up any number in the surrounding districts and provinces.

In the Central Headquarters in Chungking, K. P. Liu the Secretary General, an administrator of much experience, co-ordinates the work of the organization and its general policies. Rewi Alley, technical expert and adviser, a New Zealander who has spent many years in China, is constantly in the field, inspecting, planning and encouraging. F. Y. Lem, the Engineer in Chief of the Chinese Industrial Co-operatives has spent most of his time in the Southwest battling with the problems presented by that refugee over-run section. K. M. Lu, Co-operator in Chief has been in the Northwest and with him has been C. F. Wu, the second of the engineers.

Since the first co-operatives organized in September 1938 were in the Northwest the work there is further developed than in any of the other sections. The first half of the following report was given in January by K. M. Lu during a short business trip to Hongkong and the second half was given by Rewi Alley in March on his return from a trip of inspection to this same area.

—Left to right: C. F. Wu, 2nd Engineer of the Chinese Industrial Co-operatives; Rewi Alley, Technical Expert and Adviser; K. M. Lu, Chief Co-operative Organizer.





NORTHWEST HEADQUARTERS REPORT*

I

LU KUANG-MIEN

January, 1939

Lu Kuang-mien arrived in the Northwest on the 23rd of August and Rewi Alley on the 27th. Lu took a thousand refugees who had come originally for the most part from Honan, Hankow, Shantung and Hopei. The transportation and food of the refugees was financed by Madame Chiang Kai-shek through the Women's Department of the New Life Movement.

Preparing the Ground

As soon as Lu arrived in the town selected for the Northwest Headquarters, he called on his old friends and on the officials and heads of all the organizations. Large posters were put up on the city gates and on the walls in the city. These posters stated that industry in China must be co-operative and that since the coast cities had been destroyed the back provinces must now become the industrial bases of the country. On such and such a street an office was ready to lend money to suitable people who had some skill in making goods. Refugees and skilled workers were invited to register.

On August 27th a meeting was held of the representatives of all the 20 or 30 local organizations—the Hsien Magistrate, the Chief of the Kung An Chu (Peace Preservation), the Kuomintang, the Army and many others.

* Note: Names of towns cannot be given for obvious strategic reasons.

—This wheelwrights' co-operative has already filled several orders of carts for Transport Co-operatives and the Army. Below—A carpenters' co-operative in the Northwest.

Organization of Co-operatives

The first co-operative was organized the same day the notices were posted. This was a group of blacksmiths who formed a foundry. The second co-operative was a group of 30 stocking knitters from Honan with knitting machines brought from Sian. At the end of the first week the third, a soap and candle-making co-operative was organized with twelve members. The fourth—a printing co-operative—was organized with a membership of fourteen. At the end of the first two months there were 40 co-operatives; and when Lu left in December 80 co-operatives had been set up. By now there are many more.

A Story

One day a printer from Chengchow, in Honan, came into the Chinese Industrial Co-operatives Office and reported that he had men and knew where plenty of machines could be bought in Sian. After some investigation and discussion Lu told him to go ahead with the plan. In three days he returned empty-handed.

“Why did you not go to Sian and get the machines?”

“How could I? I have no money to travel.”

Lu Kuang-mien gave him \$10.00. In a few days he sent a letter reporting that he was bringing machines which would cost two or three thousand dollars. In addition, he had secured paper, stones for lithographing and small machines.

There was one narrow escape. When the printer had got the equipment to the station platform an air-raided alarm was sounded. He sent his two men to the dug-out but he stayed on by the machines himself. He was wounded in the foot but the presses had been saved!

The Iron Worker

On one trip Lu Kuang-mien and J. B. Taylor, of Yenching University, stayed over one night in an old Chinese temple. There they found a thin dejected-looking

man. He seemed to be intelligent, however, and to know what they were talking about. They made an appointment to talk in more detail with him on their return journey.

The man turned out to be a Mr. Cho, a highly trained iron worker who had been educated abroad and who had worked in the Tai Yuan arsenal (Shansi). He is one of the two or three men in all of China who can make malleable iron as a substitute for steel. Now he is working in the Chinese Industrial Co-operatives machine-shop in the Northwest.

Machine-shops are very much needed everywhere in China. Before the Chinese Industrial Co-operatives work began in the Northwest there was only one commercial machine-shop in Lanchow and but two or three small shops in Sian. This does not of course count the shops of the private industries. Later on the Shensi Provincial Bank made a splendid contribution of their machine-shop to the Co-operatives.

Mr. Cho had been working with the Chinese Industrial Co-operatives for a month when one of the co-ordinators from the regional office reported to Lu Kuang-mien that Cho seemed to be self-centered and to be thinking of no one but himself. He thought more of getting shares and how to make money than of the movement. Lu replied that he was a highly specialized man, who, because he had neither social contacts nor political sense, had always held inferior positions. It was therefore understandable that he should be trying to make something for himself. He lived in great poverty. Lu had had lunch with him and his wife and child and there were not even enough bowls or chopsticks in the house.

At the next opportunity Lu Kuang-mien spoke to Cho and said that while 'we live you live', and that he must give of himself and not think of himself alone. Cho was deeply grateful and said,

"Even if you give me no money and only food to eat, I will give myself to the movement."

Second Phase of Development

In October, K. M. Lu, C. F. Wu and J. B. Taylor made a three weeks trip through the surrounding districts in order to formulate more complete plans. Dr. Yang, Dean of the Engineering College of Northeastern University, during the last few years had set up an alcohol plant in one district town in order to supply a substitute for gasoline. Part of their journey was made using this alcohol in the cars.

On the trip they found sites of coal, iron, sand for glass-making and many other minerals. Plans were made and executed for the establishment of an alcohol distillery in one town, for an iron smelter in another—where malleable iron would be made as a substitute for steel, for a machine shop, for a 30 kilowatt power plant to light a town (the town is now lighted), for gold washing, paper making, oil pressing, shoe making, uniform making and ceramics.

There is considerable gold sand in the rivers in this area. A man from Chinghai (Kokonor) who has been washing gold for years was secured as an expert and the Chinese Industrial Co-operatives are now organizing gold washing co-operatives. At present three units have been formed; but any number could be used. A minimum of ten people can be organized at the cost of one gold washing machine—\$20.00 (Chinese).

Marketing of Goods

At the outset each co-operative marketed its own goods. The candle and soap makers were very enterprising for they walked through the streets, beating drums to advertise the products of their co-operative.

There is no difficulty in marketing any of the goods, for they sell as soon as they are made. But on November 30th a Federation of Co-operatives was formed in the Northwest to take care of the distribution but more especially for the buying of raw materials. This saves many trips to Sian and other centers.

The Federation is composed of one representative from each of the member co-operatives. In the beginning 30 joined and the others will send their representatives as they are organized and begin to produce. In time similar federations will be organized in two other centers.

Transportation

As the Industrial Co-operatives Movement grows there is more and more need for transportation. To solve the many difficult problems two transport co-operatives have been organized so that now industrial co-operatives can be put into carts and carried out of danger. There are 100 mule carts and these are not nearly sufficient.

Education

1. There are regular meetings of the members of each co-operative led by the chief co-operators. National Salvation songs are taught by the co-operators and then sung. There is a lecture and then the problems of the members are discussed.

2. Inter-society meetings are held every Wednesday evening in the head office. Here leaders of the co-operatives come, sing songs and discuss their problems. One time a travelling troupe of student actors put on a special show for the co-operatives.

3. Plans were made for a society which would include the local newspapermen, the bankers, the officials, the students and many others. It is called the He Tao Yun Tung T'ung Sheng She (Social and Promotion Committee) and meets every fortnight for a special lecture.

Later similar educational and social organizations to raise the morale of the community will be formed in the other centers as a means of educating the town leaders. Other educational programs will be formulated as the work progresses.

Training

In order to provide each co-operative society with a leading co-operator, classes are being organized of the

brighter and better-educated local youth. This will enable the Chinese Industrial Co-operatives organizers to care for greater numbers of co-operatives and it will make the societies more independent and more self-reliant.

The first course was held for one month. The 30 students were given practical experience both in the workshops and also in the offices. Several more such courses are planned for the future.

Since there are no funds available for this work, Lu Kuang-mien financed the first out of his own salary. He feels that these schools are so fundamental that every effort must be made to raise the necessary funds.

Other Activities

There is also a Christian Fellowship with 40 members in the Headquarters town. They meet every week and it is hoped that the Y.M.C.A. will send a secretary to guide and extend this work.

Difficulties Due to the Fall of Hankow

The Northwest Co-operatives were started with \$40,000 (Chinese) and when more was needed communications with Rewi Alley were cut off for six weeks. Therefore Lu Kuang-mien borrowed \$20,000 from the local bankers who loaned the money without interest. These men were all new friends of the Industrial Co-operatives. Later he received \$220,000 for the Northwest, making a total of \$440,000 to date.

Industrial Laboratory

In Sian there is the only provincial industrial laboratory in the Northwest. The Shansi Bureau of Reconstruction outfitted it at a cost of \$100,000. In the past analyses had been made of,

1. farm products of over 80 districts,
2. soils and fertilizers,

3. all the minerals in the province—coal, iron ore, salt, soda, limestone, porcelain clay, etc., and
4. testings and analyses of commercial goods, drinking water, foodstuffs, opium and other poisonous drugs, liquid fuels, vegetable oils, volatile liquids, materials for native paper-making, woods, cotton, stalks, hemp, etc.

In addition to the equipment the laboratory has a technical library valued at \$10,000. The Bureau of Reconstruction has loaned the laboratory to the Chinese Industrial Co-operatives for a period of three years, during which time they will retain three or four of the chief technicians from the former staff of fifteen. The laboratory will be moved from Sian because of the danger of bombing and attack. Now the Chinese Industrial Co-operatives will be able to get analyses of caustic soda, alcohol, and minerals of all kinds—phosphorous, lead, magnesium. More complicated analyses will have to be carried out in Chungking as before. Dr. Kung has approved the moving of the plant and a special fund to cover the annual budget of \$10,000 running expenses will have to be raised outside.

Cotton and Wool Spinning and Weaving

There are 1,500,000 piculs (equals about 88,000 tons) of raw cotton grown in Shensi annually. This year raw cotton sold at \$18 to \$20 a picul in Shensi and at \$120 a picul in Szechuan, where formerly it was \$40 and \$45 a picul. A bale of cotton of 15 or 20 counts of yarn formerly sold for \$150 and now it brings \$850 and often cannot even be had at that price.

There is only one spinning mill in Sian of 25,000 spindles and this ceased work when Sian was bombed. Wool is plentiful in the Northwest but there is no yarn. Chinese troops constantly need new uniforms.

Plans for Cotton Manufacture

We want to get as many hand spinning machines made as possible. We find the best types are the July 7 type made in Chungking, the improved Sian type and the University of Nanking type.

The peasant women are to be brought to the Headquarters and four other centers for a month of training in classes of twenty or thirty at a time. They will then go back to their homes and organize co-operatives and begin spinning and weaving.

In this way we can soon have several hundred such co-operatives. At present our plans are being held up because of lack of capital, money for running the training centers and machinery.

Plans for Wool Manufacture

We plan to concentrate on making wool military blankets.

With wool spinning and carding machines it is planned to set up wool carding and spinning co-operatives in a center in Kansu and from there to spread them all around the country. The spinning, carding, dyeing and finishing must be done in the center with modern machinery but the weaving can be done in the villages.

Mr. Yang, a wool textile man from Tai Yuan (Shansi), is going with Rewi Alley and K. M. Lu to the center for the organization of the first co-operative. A goal of 1,000,000 blankets before next winter has been set. This project has been placed before Dr. H. H. Kung by Mr. Alley and has been approved.

Attitude of the Two Leaders in the Northwest

Lu Kuang-mien says of himself that when he first went to the Headquarters in the Northwest he did not think they would be able to work so quickly and get so much done but now he is fully convinced of the soundness and efficiency and success of the plan.

C. F. Wu, the Chief Engineer in the Northwest Headquarters, said that he had never felt so really useful as he now does. There are many refugees. There are great quantities of raw materials lying idle. There is no com-

—These former refugees are now manufacturing cotton bandages in the Northwest, thanks to the assistance of Madame Chiang and the Chinese Industrial Co-operatives.





petition in the market and goods are consumed as soon as they are made. The soap and candle-makers co-operative was started with a capital of \$20,000 and in two and one half months they had paid back \$500. In industries on a co-operative basis \$1.00 is equal to \$100.

Size and Organization of Co-operatives

There must be no less than seven persons to one society. The average co-operative has 20 to 30 people in it and the largest consists of 80 members.

1. The Chairman and the Committee of Directors are elected by the society.
2. No one member is allowed to buy more than 20% of the total number of shares.
3. The chairman is the official representative of the society.
4. Proceeds go to pay:
 - Interest on shares
 - Interest on borrowed and other capital
 - Reserve fund for emergencies
 - Extension fund
 - Wages
 - Salaries for officials

If there is anything left over it goes into a sinking fund.

Special Funds

When a group of people band together to form a co-operative a special arrangement must often be made to support them until their co-operative begins to pay. If there is no relief agency available, the Chinese Industrial Co-operatives lends them money which must be paid back immediately their earning starts.

January, 1939.

—This transport co-operative, consisting of 150 mule carts, carries cotton and wool to spinning and weaving co-operatives. Below—Refugee wool workers have brought their skill from the factories of Hankow to form a co-operative in a loess cave in the Northwest.

NORTHWEST HEADQUARTERS REPORT

II

January Through March 1939

REWI ALLEY

March, 1939

Depot 1. This Depot is situated in a very fertile valley in the high ranges of the Tsinling Shan. The roads, although passing through mountains, are well surfaced and available for mule and cart transport. Consequently the future of this town from a wartime industrial point of view is especially bright.

In January when I arrived here the work had just started and but three industrial units had been set up. They make suitcases from local bark; they manufacture soap, candles, medicinal cotton and gauze. The Chinese Industrial Co-operatives Office here reports that many groups of refugees and local people have requested assistance in setting up co-operative industrial units. These requests include units for manufacturing paper, glass and alcohol. They will be organized as more and more capital is available.

The Depot Office is very well maintained and plans are rapidly going forward for the establishment of branch depots and offices in much of the surrounding area. A museum of local products and raw materials has been set up here. The same practice has been instituted in all our depots and headquarters in the Northwest District.

The local people are showing great interest in our work. The Secretary of the Y.M.C.A. has given a great deal of assistance to us and the Mission Bishop has especially interested himself in the whole project.

On March 10, 1939 I again visited Depot 1. Since my last visit ten new co-operative societies had been

started and plans for over twenty more were being drawn up. The thirteen units now functioning are all working well.

Co-operative Enterprises

There is a very good supply of silica sand in the neighborhood and glass works are being organized. With a vacuum machine and some tungsten wire, thermos bottles and torchlight bulbs can be turned out here. A porcelain co-operative is projected and will shortly begin production. In one unit printing ink is being made. A co-operative brick kiln can be organized to produce 300,000 bricks a month. Silk and cotton weaving co-operatives are being started; and leather goods and tanning units are in the process of being organized. A co-operative marketing store is being planned. The local brush-makers are forming a co-operative and there is new demand for printing and publishing co-operatives.

Gold Panning Co-operatives

Refugee workers have already been organized in gold panning units. They follow a prospecting party consisting of an engineer and twelve workers sent out by the Chinese Industrial Co-operatives. Fifty men can produce from eight to ten tael ounces of gold a month—worth about \$2,000 (Chinese) at present. It is estimated that 2,000 refugees could be organized into gold-washing co-operatives. At present there are three such co-operatives, each consisting of fifty members, all busily extracting gold. All members are former refugees.

Sugar Manufacture

There are also big possibilities for sugar manufacture in this area. At the present time nothing but brown sugar is produced. The total production is about 100,000 piculs per annum; and this amount can easily be trebled if better machinery is used. In the past the farmers have been afraid to increase the crops because there is too little time for crushing between the cutting season and the first

frosts. With improved crushers, they could get their capacity crops crushed in time. An improved type of cane mill is being designed and will be installed shortly. Twenty-three sugar growers wish to combine to form the first sugar-crushing co-operative. It is hoped later to have a sugar-refining co-operative.

In this area until recent years there has been a very thriving paper industry. At one time there were over thirty paper mills in the country round about but due to war conditions nearly all have ceased running. It is planned to move some of the plants and to revive the industry.

Vegetable Oils

Oil-pressing is another industry that can be increased in this area. Better methods of pressing are being devised. Sesame seed, rape seed and t'ung nuts are to be found in abundance in the vicinity and at the present time only the crudest methods of extracting these vegetables oils are being used.

In one town nearby there is an asbestos mine producing a very high grade of product—with fibres eight to ten inches in length. Peasants use this asbestos to stuff their pillows!

In another center to the North the peasants smelt iron with wood charcoal. There ore is abundant in the locality and a plan is being prepared to organize and assist them in increasing their production.

Alcohol for Motor Fuel

To supply the increasing demand for alcohol as a motor fuel an engineer is going ahead with the construction of a small plant in the vicinity of Depot One. It should be an immediate success as soon as production begins. By-products from sugar refining as well as grain can be used. Other smaller units in the area dye cloth and make umbrellas.

Then there are possibilities for encouraging the tea industry, for grain milling co-operatives and for making paper from the abundant reeds in the country. Alongside of all the raw materials there are over one thousand Pingshan Railway refugees hoping for work in this area.

The Rural Co-operative Commission of Shensi, which was previously occupied only with credit and consumer co-operatives, has now decided to enter the industrial field also in this region.

Depot 2. A small Chinese Industrial Co-operatives Office is maintained in this town. The industrial possibilities are indeed bright for the Hsien is rich in mineral wealth and in one section a machine-shop co-operative has already got into action. The members are from Honan and Hupeh, Hopei and Kiangsu machine works. They can produce small fire arms and have already applied to the Shensi Provincial Government for a permit to manufacture and repair arms.

Machine-shop Co-operative

At present machine tools are operated by hand; but a charcoal gas prime-mover is being prepared for use. The machine-shop co-operative is fundamental in the development of industry in this region for it can turn out other small machines which are needed in the district. The machine-shop badly needs the following:

- a. A milling machine,
- b. a large size planer,
- c. wood turning lathes,
- d. punch presses.

It is hoped that the Ministry of Communications will find it possible to loan some of the railroad machine-shop equipment, at present not in use, to the co-operative.

Now the machine-shop is engaged in making several hundred hand carts as well as weaving looms. The idea is that men worker refugees will be organised into

transport co-operatives and their women folk organised into weaving co-operatives. There is an immediate and pressing need for both transport workers and weavers.

Foundry Co-operative

In the local temple of the God of War a unit has been established for the manufacture of malleable iron. Other buildings have been added as the co-operative has grown and the river has been diverted into a race which will turn a water wheel and supply the power. A good foundry has been constructed and castings are being turned out. Local sand has been found to be good for this work. The coke for the foundry is produced in the neighborhood and, although it is not of the highest quality, it can be used satisfactorily. At the same time there is a co-operative coal mine where it is estimated that fifty tons a day can be produced. And now a blast furnace has been proposed for the district.

There are good possibilities for developing this district as a center for small heavy industry units of the Chinese Industrial Co-operatives. But it is first important to get the many Shansi refugees with iron smelting knowledge on the spot in order to use native methods for producing iron from the local deposits. It is recommended that \$5,000 from special funds be sent to the Northwest Headquarters to cover the cost of transporting these men and their families to this and other centers in the Northwest area where there is iron work to be done.

A Co-operators Training School is to be set up here with caves in the loess cliffs for living quarters and class rooms for the students. The total cost for such a school will not exceed one thousand dollars.

Testing Laboratory

The Shensi Provincial Testing Laboratory which has been lent to the Chinese Industrial Co-operatives for a period of two years, will be accommodated in this

center. A building in the village has been rented to house it at first, but later it will, it is hoped, form a part of the training school situated a little distance from the village. This testing laboratory will be of great value to the whole work of the Chinese Industrial Co-operatives in West China and in the Northwest in finding what local materials can be used, their properties, etc. Special funds from abroad will be needed to support this institution during the war period and to make its usefulness more effective by assisting with equipment.

A paper mill which is being constructed for the utilisation of local hemp and grasses in paper making should go into production soon. Other new projects include flour milling, oil crushing, pottery making, coal mining and timber cutting co-operatives. New water wheels will be constructed to facilitate this work.

The Chinese Industrial Co-operatives here has constructed a series of caves in the side of the loess hill as lodging for the soldiers who pass through the center. The soldiers are provided with books and magazines and invited to use the caves as their quarters.

Another great need here is some form of medical services to the families of the co-operatives workers. A small and inexpensive local hospital could be maintained in villages such as this one, where there is an influx of workers from other parts. Co-operative members would help to support it as they were able; but it would have to be set up and run in the first place by the Chinese Industrial Co-operatives with special funds. Contributions from friends earmarked for this project would be greatly appreciated.

Northwest Headquarters

I arrived at the headquarters on February 1st and I visited all the Co-operatives in the district:—Co-operatives for leather goods, spinning, weaving, knitting, confectionery, printing, soap and candle-making, medical

gauze, cotton, button and badge-making, furniture, dry cells, transport, etc.

With the exception of one knitting co-operative all were running very well. The knitting co-operative has now been reorganized into a new society without loss of capital and the management improved. I consider that the work here has started well and that existing co-operatives may now be enlarged, given better technical help and connected up with co-operative sales organisations. In the future in the Northwest all co-operatives will be established outside city areas and in this way the economic life of the community can be carried on even if the old cities are laid waste.

Co-operative Marketing Store

One co-operative marketing store has been established in the headquarters town and another in a village nearby. Both are doing very good trade; and arrangements are being made to set up others in both the center and at nearby points. The members of these Market Co-operatives attended to their very brisk trade in a prompt and efficient manner.

The new Northwest Headquarters building has been well and simply constructed and provides suitable accommodation for the staff engaged in the work here.

The Northwest Headquarters training school was started for co-operators. It has thirty students and after their period of study they will become co-operative officials or co-operative organisers. Co-operative and industrial experts are invited to give lectures. Two of the students have already gone from this class to work with an organiser in South Shansi in the 93rd Army District. A co-operative song has been composed and is sung by the students daily and their morale is high.

—The race into which the river has been diverted to supply power for the foundry co-operative. Northwest Headquarters. Below—Members of the confectionery co-operative with some of their produce ready for transportation.





In addition to instruction in organization, accounting and industrial processes, they have courses on industrial health and safety. As noted above the school will shortly be removed to Depot 2 where it will be housed in caves.

Northwest Headquarters Vicinity

a. In one town to the Northeast of the Headquarters there have been organized ten co-operatives for spinning, weaving, paper-making, etc. The paper industry in this locality has a very ancient history, for it is stated that work has gone on here in this trade since Tsai Lun first invented it (first century A.D.). It is hoped that the Chinese Industrial Co-operatives can bring newer methods to the paper-makers, which will enable them to produce more of what is needed than they are able to do at present.

b. In another town to the South the Chinese Industrial Co-operatives has established a starch-making co-operative as well as one for wood charcoal. It is planned to set up some small industries in the nearby refugee center and thus put it on a sounder economic basis.

c. To the East lies another town where four co-operatives have been set up. Good dry cells are made here and there is also a flour mill, a knitting mill and a weaving unit in the village. The dry cells are made mostly from old discarded dry cells that have been collected. The cells produced here can be sold for about 20 cents, whereas those brought in from the coast cost 70 cents each in the same locality.

In this same village there is a uniform and army equipment co-operative making material for a Central Hopei Army. Wives of officers are co-operative members here. There are a number of children belonging to members of the co-operatives who need a school and medical facilities.

—A soapboilers' co-operative, Northwest Headquarters; and below—a shoemakers' co-operative exhibits its stock in Spain. This unit was bombed March 14th but workers, machinery and stock were all saved.

d. In a village very near the headquarters several co-operatives have been organised. There is good water power available here for driving water mill-wheels. A flour mill co-operative is already making use of this power. Then there is a very interesting vegetable oil pressing co-operative in the village. The members are mostly Shantung men and they have erected an improved oil pressing machine which was unknown previously in this locality.

Northwest Headquarters Projected Offices

Forces operating in Central Hopei have requested that an office be established there to provide material for military use and to assist the local population.

Honan. The authorities in this province have requested that an office be established here. Several students in the Co-operatives Training School at Headquarters are from this district. It is expected that work will be started here when further capital funds are available.

Kansu. K. M. Lu has gone to set up an office in this area. J. B. Taylor and Y. P. Mei of Yenching University with their Kansu Science Institute have been serving as correspondence depot before. A good deal of the woolen blanket work can be carried out here. Due to lack of any kind of available transport I was unable to visit and assist with arrangements for setting up the work.

In North Hupeh plans are being worked out to set up offices to help provide an economic base for the armies operating from that region. A local general promises help in transporting workers from other areas to this region. Work here depends on the amount of capital available for the organisers are ready to go.

An office has been proposed for South Shensi, where the raw materials are rich and there are many refugees at the present time.

Depots in Chinghai and Ninghsia will be established for wool working when funds are available.

In Sinkiang a representative of the Chinese Industrial Co-operatives is investigating the possibilities for industrial development of the province.

Northwest Headquarters New Offices

In a town in Kansu Province a co-operative has been established for wool weaving and others for alcohol, paper making, machine working, printing, mining, leather working, grain grinding and wooden furniture are being organised. The local population has increased from a pre-war figure of 40,000 to double that number. Students are being used to assist here, since there is an Industrial Department in the local Middle School. There is much timber available and wool can be sent down from the Headquarters in rafts. Sub-offices will be established in the four surrounding Hsien. Copper, iron, coal and gold can be mined locally. There are six co-operatives running here at the present time and from an industrial point of view this center should have a bright future.

In the Southwest of Shensi, a thousand Pinghan railway refugees are located in one town. It is hoped that work can be organised for them. The Chinese Industrial Co-operatives has already several gold washing co-operatives here and co-operatives for other industries are being formed at this present.

An Industrial Co-operatives Union has been organised in the Northwest Headquarters area to enable co-operatives to help each other in financial and other ways.

Industrial Co-operatives Clubs

The first co-operative club for members of the co-operatives will soon be established at the Northwest Headquarters. It will serve as a co-operative lodging house also, where co-operatives members can stay when in the city. There is great need for this at the moment. It will be self-supporting; and it will also serve as a center for medical work.

Women workers in co-operatives need special attention and Madame Chiang Kai-shek has promised to help with this aspect of our work. Miss Yen will shortly arrive from Chungking to take charge of the women's welfare part of our co-operatives work.

Accountants

The refugee school for boys in one town here is training a number of students to act as accountants in small societies. Our accounting personnel will help with their training; and in the future it will not be necessary to send junior accountants in from Central Headquarters.

Border Government Depot

I arrived in North Shensi on February 12th with the Indian Medical Unit. I saw the Chairman of the Border Government and it was agreed that a Chinese Industrial Co-operatives depot be established in order to help provide an economic base for forces operating from this region.

A sum was left with the Chinese Industrial Co-operatives Branch Secretary here to be used in setting up the office. Five caves are being dug and faced with lime. The necessary furniture and office supplies will be obtained and transport animals procured.

A representative engineer from the Border Government area will visit the Northwest Headquarters of the Chinese Industrial Co-operatives to see the existing co-operatives and bring back regulations. The sum of \$10,000 can be used in this area at once and a plan for the expenditure of \$30,000 in industry within the next three months has been drawn up. Some of the machines can be made in our South Shensi Co-operatives and others bought in Sian, Loyang or Chengchow.

The woolen industry could be further developed in this region and a quota of our projected 1,000,000 blankets before next winter will be allotted to this office to be

manufactured. Transport co-operatives are very necessary as the difficulty of obtaining gasoline becomes greater. The soda industry and the salt industry can be developed. There is abundant coal of good quality easily obtained and it will make fair coke. There is wood charcoal available for charcoal gas engines, though in view of the treeless countryside it would appear important that the use of charcoal for fuel be discouraged.

In this region there is iron available and a small blast furnace might be set up. The oil industry could be developed; and vaseline and alcohol could be made for medical use. Leather manufacture and flour milling could be carried out in small units. The possibility of making caustic soda and bleaching powder could be explored. These two commodities are essential in industry but almost unobtainable in South Shensi at the moment.

I am satisfied that any scheme undertaken in this area will be carried out with energy and determination.

Inquiries made show that salt can be produced and sold in the Border Region for 13 cents a catty. The same salt is sold privately in South Shensi for 60 cents though the set price is 32 cents—a price which makes it not easily obtainable for the ordinary man. Salt could be sent to South Shensi from this region and sold at 20 cents a catty.

With reference to the oil industry, it would seem that there is room for some experimental boring here. I visited a spot where crude oil could be seen coming from the base of a cliff. Wells would cost about \$3,000 (Chinese) each to sink.

The shortage of grain here will make it impossible to manufacture alcohol for anything but medical purposes.

I was held up in one of the depots first by snow and then by lack of transport South for about 10 days in all. In this time I had opportunities to converse with many young people.

North Shensi Depot

Communications to this center in North Shensi are not good. It takes three days to do the trip by car for the road is bad and crosses several ranges of hills.

Our Border Region Depot arranged for the purchase of sixty-five gallons of gasoline and the Indian Medical Unit of the Chinese Red Cross lent their light ambulance to me for the journey.

In the North Shensi Depot General Kao, Commander of the 22nd Army, made arrangements for me to see the Industrial School and to meet officials.

The Industrial School produces excellent woolen and leather goods. It has equipment for a small woolen factory which has not yet been erected. It would take about \$10,000 to set this plant up and put it into operation. I would suggest that it be lent to a co-operative to operate and that the School control the co-operative. The School and the co-operative could between them produce 10,000 army blankets—all wool—before September 1st, 1939, if helped by the Chinese Industrial Co-operatives. The cost would be about \$9.00 each for a four pound blanket. Heavy woolen socks are made here for 80 cents a pair. Soldiers' fur-lined boots can also be manufactured. Outside of the Industrial School, however, there is no industry in the place. Graduates from the school, therefore, have nowhere to practice what they have learnt.

A secretary for the North Shensi Depot is being selected and given some training in the Northwest Headquarters. A sum was deposited to my credit at the North Shensi Bank to be handed over to the secretary for the setting up of the office after his appointment.

Besides woolen goods,—soda, leather, fur curing, coal mining and transport work could be carried out here. Mules are best for transport and camels are not so suitable for the road south.

There are several centers favourable for woolen work in nearby towns which could be controlled by the central

depot. I would recommend that several graduates from the Technical School be employed as junior apprentice engineers and that they first attend a course of training at the Northwest Headquarters.

Recommendations

(The Co-operatives are financed through three funds: the Capital Fund, the Promotion Fund and the Special Funds.

The Capital Fund is exclusively reserved for lending out as capital to the individual co-operative societies. This comes from a fund set aside by Dr. H. H. Kung, President of the Executive Yuan and from funds lent by Banks.

The Promotion Fund is also supplied officially and is used for the necessary offices in the five headquarters and 22 depots and to pay the staff of co-operators, engineers and accountants and their necessary expenses.

Special Funds: There are a tremendous number of activities in which the Chinese Industrial Co-operatives necessarily engages, since it is working in a war torn country full of refugees, which cannot be paid for out of either of the other two funds. Skilled workmen, refugee workmen and their families, and idle machinery must be moved longer or shorter distances to where the raw material lies and where in mountain valleys or isolated villages there is some measure of safety. These refugees must be fed until the industries they set up with capital loans begin to produce and can feed them. There is also need of schools for the families of the members, medical care, etc., which cannot come out of Capital Funds.

Some donors may wish their funds to go as a whole toward the development of a given district. These special funds would be used to develop the district in every possible way. Therefore some of the funds would be loaned out as capital to individual co-operatives).

1. **Capital Fund.** There is now an organisation existing which is quite competent to spend \$1,500,000 (Chinese) in the Northwest in small industry this year. The organisation can also well take care of any further funds which might be available for loans. K. M. Lu, Head of our Organisation Section and C. F. Wu, Assistant Head of our Technical Section, who act as Secretary and Engineer respectively of the Northwest Headquarters, are very energetic and competent officers who can be trusted to make sound decisions on any issue that might arise.

2. **Promotion Fund.** I would suggest that a new budget be submitted to Headquarters from these regional headquarters and that funds be issued in accordance with it.

3. **Special Funds.** If any special funds become available for these Headquarters I would suggest that they be spent as follows:

a. To bring blast furnace workers from Shansi native furnaces to Shensi and Kansu where they are needed.

b. To bring essential refugees from Honan—building workers, gold washers, transport workers for horse and manual transportation, etc.

c. To buy scrap metal from Chengchow, Loyang and Sian for the machine-shop co-operatives.

d. To support the school for co-operatives workers and organizers.

e. To support the Industrial Laboratory.

f. Transport of essential equipment from Szechuan to Kansu for wool spinning.

—A foundry co-operative for the manufacture of malleable iron established in the local temple of the God of War. Below—Some of the castings from the foundry.





g. Social services—medical clinics and schools—for the women and children of the co-operatives workers and for women co-operatives members.

h. Moving the families of the staff of the Northwest Headquarters from occupied districts to Free China as it is difficult to support them from here.

i. Purchase of transport animals for the removal of co-operatives when necessary.

4. Accountants. That local refugee youth be trained as accountants for the co-operatives.

5. Removal of Co-operatives. Plans are being made for the removal of all co-operatives when the war situation demands so that each unit knows where to make for.

6. June Meeting. Representatives from other centers are invited to attend a meeting to be held at the end of June at Depot 2 to discuss plans and to see the work already done.

7. Trade Mark. The trade mark of the Chinese Industrial Co-operatives should be registered. Chinese Industrial Co-operatives goods are so popular that an outside firm in the Northwest has used our trade mark for sales purposes!

March, 1939.

—Women from Hankow mills now at work in a Northwest co-operative. Below—Formerly the Northwest's great supply of wool was exported, but now through co-operative effort it is spun and woven into blankets for the armies.

This report shows the great possibilities in the Industrial Co-operatives Movement and the ways in which they are being realized in one of the five sections. It also shows the great need for more immediate capital and special funds to develop the raw materials and set the people to work for the welfare and defence of the nation.

Donations of any size are welcome. Funds may be earmarked for special projects or for the development of special sections of the country—or sent in to the Special Funds and used for whichever one of the projects seems to the leaders most pressing.

4-1939.



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