

China Reconstructs

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COVER PICTURES:

Front: Tending an open-hearth furnace at the Ma-anshan Iron and Steel Company's No. 1 Steel Mill (see story on p. 38).

Inside front: Checking the quality of cloth on a loom.

Back: On Mogan Mountain in Chekiang province.

Inside back: A unit of the railway engineering corps builds a new line through the mountains of south China.

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Some of the millions of peasant-builders who have worked on projects to control the Huai River.

THE LONG BATTLE TO

KIANGSU province on the lower reaches of the Huai River is rich country producing lots of rice and cotton. Crabs from Chinhu and ducks from Kaoyu and Paoying lakes are famous throughout China. A local saying has it that "Even if you go 10,000 *li* you won't find a place as good as the banks of the Huai".

In actual fact, however, things were in a tragic state along the Huai up until the liberation. Half-buried in the earth of Hungtse county lie several iron oxen, a reminder of man's impotence against nature in the past.

From its source at Mt. Tungpai in Honan, the Huai flows east for

1,000 kilometers through the provinces of Honan, Anhwei and Kiangsu. In ancient times it flowed directly into the sea. In 1194 the Yellow River, which lies to the north, breached its banks and rushed south to make its exit to the sea along the course of the lower Huai. The waters of the Huai were forced to flow further southward through Hungtse, Paoying and Kaoyu lakes into the Yangtze River. The heavy load of silt deposited by the Yellow River in the bed of the Huai caused the latter to lose its ability to drain off floodwater. On top of this, the winding course the Huai took to get to the Yangtze also impeded the

flow. As a result, whenever the water rose, dozens of counties in north Kiangsu were flooded.

The feudal dynasties were powerless to change things. Nine images of oxen, two of tigers and one of a cock were cast in iron and placed along the dykes to make the people think the emperors were doing something to propitiate the river spirit and control the waters, but these did little good.

During more recent times the Kuomintang government, with much fanfare, set up a "Committee to Redirect the Huai", but it only provided another opportunity for fleecing the people through increased taxes and special assess-



ments. When the river flooded they let the overflow into the low-lying Lihsiaho region. In 1931 the Huai rose to unprecedented heights, completely destroying the harvest on a million hectares of land. This disaster affected over 3,000,000 people, some 70,000 of whom drowned or died in the resulting famine.

After liberation Chairman Mao, greatly concerned about the people along the Huai, in 1951 issued the call, "**The Huai River must be harnessed**", which became the rallying cry for the people of Kiangsu. They removed the oxen and tigers and started making canals and more dykes. First they dug the North Kiangsu Main Irrigation Canal with a drainage capacity of 800 cubic meters a second. It enables floodwater to run directly into the sea and in normal times brings water from Hungtse Lake to irrigate farm fields.

Then they built the Three Rivers Gate, 63 sluice gates at the outlet of Hungtse Lake to regulate the flow from it. Every year work was done to reinforce the dykes along the river and the lakes to increase

their ability to withstand flood. At the place where the Huai enters the Yangtze, however, the channel was still rather small. Heavy flow coming down from the upper and middle reaches still posed a great threat to Kiangsu which lies on the river's lower reaches.

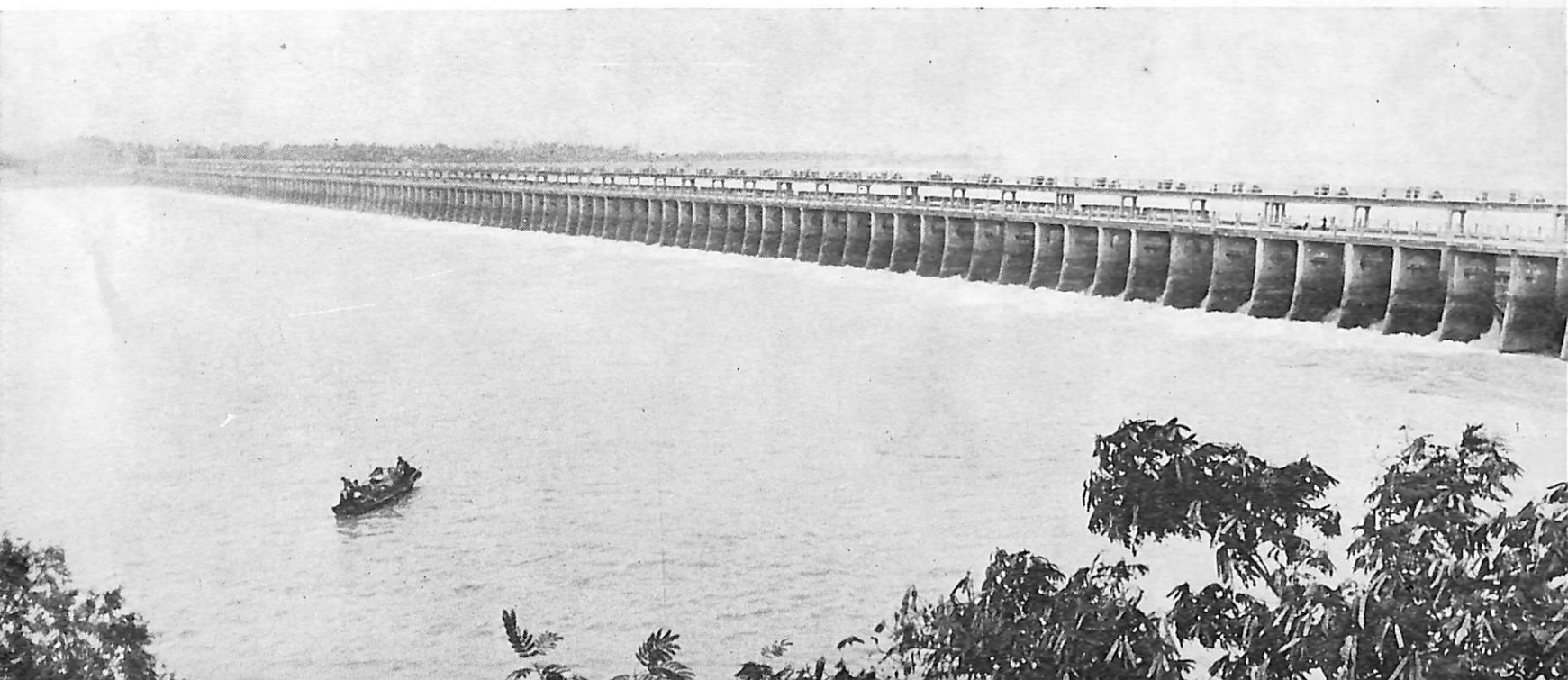
New Course

During the Great Proletarian Cultural Revolution, the Kiangsu revolutionary committee led the people of the province in a new project which included the Three Rivers Dam, Tashantzu Dyke and an 18-km. canal, enabling the waters of the Huai to take a more direct course to Kaoyu Lake instead of flowing through Paoying Lake as before. At the same time the course of the inlet to the Yangtze was straightened and sandbars were removed to enlarge the Huai's outlet. In the past when the flow of the Huai reached 8,000 cubic meters per second the channel could not take the water and most of the villages along the banks would be flooded. The completion of these projects makes it possible

CONTROL THE HUAI

Staff Reporter

Three Rivers Gate.





The Shihehiao boat lock as the Grand Canal enters the Yangtze also serves to regulate the level of the canal.

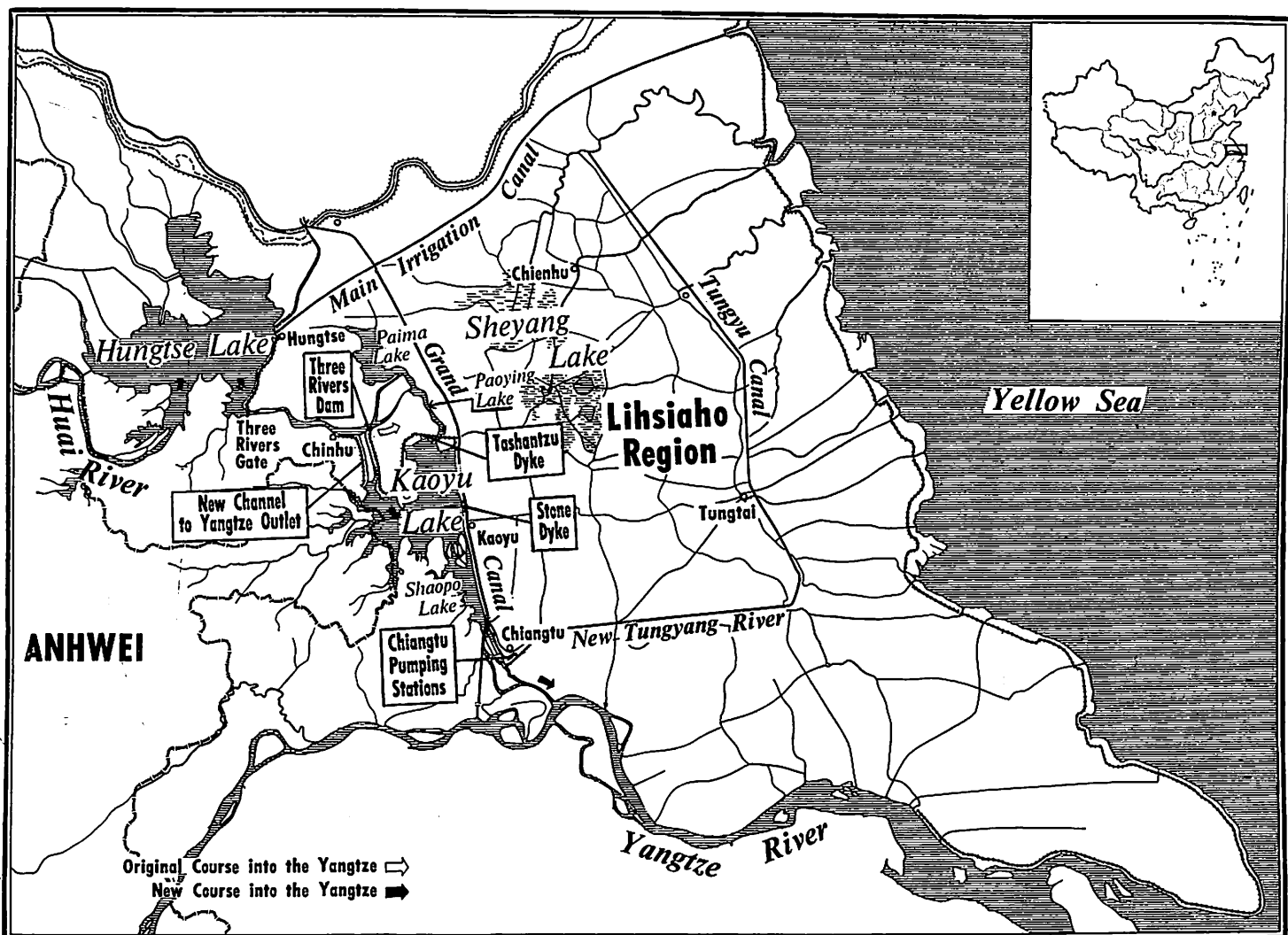




The pumping stations in Chiangtu.

The stone dyke on the east bank of Kaoyu Lake.





PROJECTS ON THE HUI'S COURSE TO THE YANGTZE

for 12,000 cubic meters a second to flow smoothly into the Yangtze.

Commune members and technical personnel who worked on these projects have many moving stories to tell.

Chinhu county, located right where the Huai formerly entered Paoying Lake, was nearly surrounded by the two. Every year during the high-water season the county faced a critical situation. The peasants, who urgently desired to change things, started working on water conservation when the co-ops were formed. After the people's communes were set up in 1958, their members, feeling much stronger than before in terms of manpower and material resources, decided on a big project. As part of an overall plan for the county, they built the three-km.-long Three Rivers Dam to block the course by

which the floodwaters of the Huai had flowed into Paoying Lake, and a new channel southeast of the county town. In this way the Huai, which used to wind its way eastward, would head straight south. This would reduce obstacles to the flow and protect 93,000 hectares of fields in the Paima and Paoying lakes region from the threat of flood. In August and September 20,000 out of a population of some 100,000 went to work. They moved almost two million cubic meters of earth and built two embankments 18 km. long to form the new channel.

In 1969 the Kiangsu province revolutionary committee sent 270,000 people and 60 large tractors from 18 counties to help out. The several-hundred-kilometer-long worksite seethed with activity. Revolutionary songs, work

chants and the sound of machines broke a thousand years of silence over the marshes.

Between Kaoyu and Paoying lakes lies an expanse of sand overgrown with reeds. This is the site of the Tashantzu Dyke. When the 60,000 peasant builders arrived, there wasn't a house for dozens of kilometers around; what with the reeds and water, not even a place to camp. They made houses on stilts over the lake. It was too far to bring earth overland, so they organized several thousand wooden boats to dredge up lakebottom silt. They finished this task in only 80 days.

Just as work on the Three Rivers Dam was going full steam ahead, the dam, which was already nine meters above the water, started to sink. The leaders of the construc-

tion department called an on-the-spot meeting to discuss the situation and the peasant builders expressed their determination to solve the problem. After three days of observation, they found out why the dam was sinking and took measures to stop it.

Stone Wall on the Water

On the east bank of Kaoyu Lake is a protective embankment 9.5 meters high and 26 km. long made of stone blocks and topped by a stone dyke 2 meters high. From a distance it looks like a magnificent stone wall. The day I visited it, a strong breeze whipped the lake into high waves which broke against the stone embankment in a shower of snow-white spray, as if to demonstrate how solid it was.

This project was also built by the local commune members. The county was given the task in 1970 by the provincial headquarters directing work on the Huai. It was a big job and time was short. Even if all the stonemasons in the county were assigned to it they would not be enough, and this would also add to the cost for the state. Some proposed mobilizing ordinary commune members for the job. Others thought that since this was skilled

work they had never done before, it would be better to ask for outside help. "If you don't handle a stone tiger right," someone said, "you'll get bitten!" But after it was discussed everyone came around to the first opinion. "We rely on ourselves for everything else," one speaker said, "why not for building this dyke? It seems to me that a stone tiger is just another paper tiger."

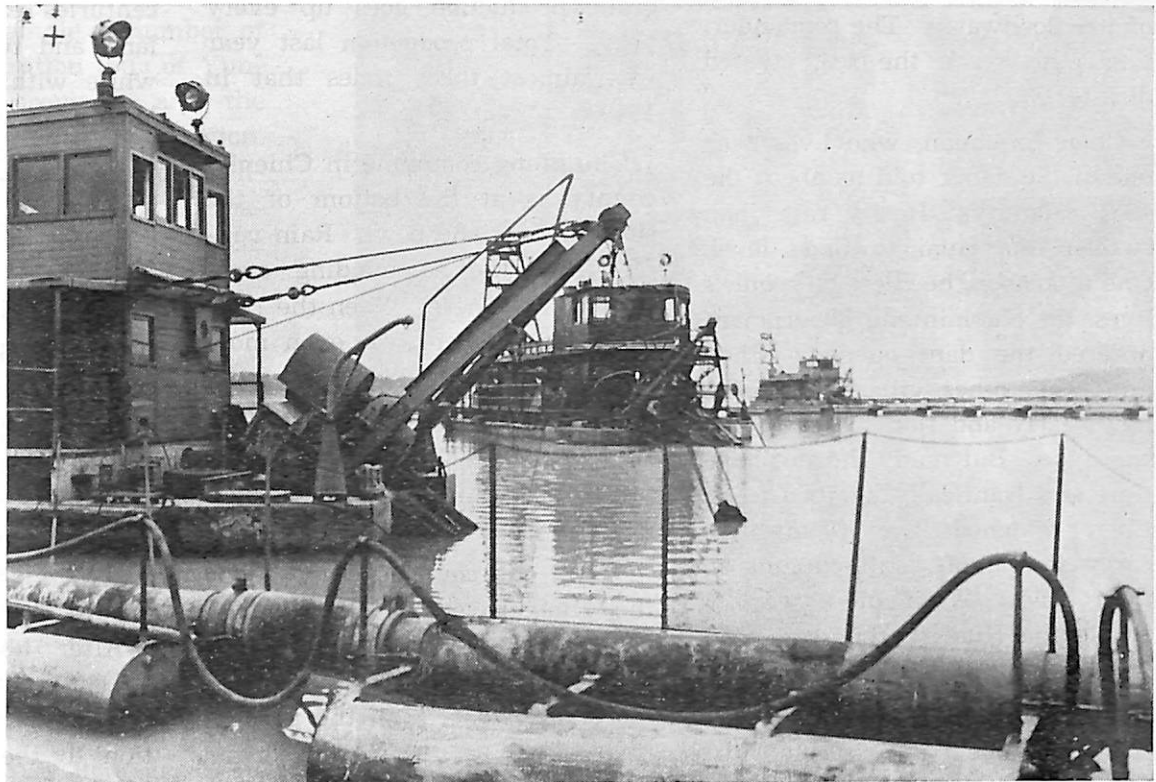
The plan decided upon, the action began. Since they had no experience, even though they worked like demons the first few days, they just couldn't lay the stones flat. To strengthen their sense of purpose, Hsu Hou-yi, an old peasant, recalled tales of the devastation caused by past floods. In the 1931 flood his house had been washed away and the water carried his brother and himself off. Luckily they were picked up by a boat and saved. Bringing things down to the present, he said, "Ever since liberation, the Kaoyu Lake dykes haven't breached once. Now the state is spending a lot of money and providing stone and cement to reinforce them. This is all part of Chairman Mao's concern for us poor and lower-middle peasants." The leaders of the project also organized visits to other stone dykes and asked the people who had

built them and possessed some experience with stone masonry to come to their own worksites to give training. The commune members learned. At first it took 25 workdays to do one meter of the dyke, by the end only 10. The stone wall was finished before the high-water season.

Collapsing Sand

Huaiyin county met another problem when it dug a new canal. Most of the land through which the canal would pass, flooded by the Yellow River over a long period, was topped with a thick layer of sand. Rain produced rivers, and wind, sandstorms. Canals had been dug here several times before, but they silted up in the second year and were completely filled in by the third. Under the circumstances, it was proposed that this time the banks be completely faced with stone. But they figured this would need 4,500,000 tons of stone and the quarrying alone would take several years. Others advocated making a gentle slope to increase the surface area and decrease damage from collapse, but this would take up another 190 hectares of land. After several proposals were rejected, the only way left was to

(Continued on p. 17)



Dredgers at work on the Huai's course into the Yangtze.

Lihsiaho—No Longer a Disaster Area

Staff Reporter

LAST AUTUMN we went to the Lihsiaho district in the Huai River basin. In the old China it was a disaster area. But as we drove through today's fertile countryside, golden fields of rice and white cotton fields belied the past. Commune members getting in the rice and cotton waved to us.

Now Two-Crop Land

Kaoyu county in the western part of the Lihsiaho district edges the Grand Canal and the Huai River. During the Ching dynasty four dams were built here to "guide the Huai to the sea". When the river rose, water poured into the Grand Canal. When this was full, the reactionaries opened the sluice gates and ran the water through Kaoyu county into Lihsiaho—a low basin surrounded by higher land. Its rivers and streams could hold less than five percent of the floodwater. The remainder, unable to reach the sea, created disaster.

Chen En-chuan, who lives near one of the dams, told us about the 1931 calamity. Heavy rains had swollen the Huai to flood level. One afternoon, heedless of people's lives, the Kuomintang government ordered the dam opened. Chen and some other villagers got the news early and fled to the top of the dyke. But many did not have time and frantically climbed trees. Chen watched the floodwaters carry people off, still clinging to their trees. "Hell of a way to 'guide the Huai to the sea'!" one villager said furiously. "It's a field-flooding dam, a killer dam!"

Because the Huai rises in July, the peasants had always planted

only one crop of rice, a quick-ripening variety which could be harvested before the floods, but with a low yield.

After the new China was established, an enormous amount of control work was done on the Huai River. Kaoyu county has not seen flood since. After 1956, and especially after the communes were set up in 1958, the people took advantage of the county's west-east slope to build gates and dig channels to bring in water from the Grand Canal to irrigate late rice. So far, the county has built nine gates along the canal and dug an astonishing 4,000 kilometers of channels of various sizes. "Now when we want water we just holler," a commune member told us, "and when we don't, we shut the gates." The entire county has gone over to two crops a year and grain production goes up every year. Total production last year was almost three times that in 1949.

Chingfeng commune in Chienhu county is at the bottom of the shallow Lihsiaho bowl. Rain runoff from the surrounding areas used to flow here. When the Huai rose, the problem was even more serious. Many fields were under water all year. Deep mud and cold water held the single crop of rice down to 1.5 tons or less per hectare. Cotton was inconceivable.

While the commune worked on the Huai River in 1960, it also began transforming these soggy fields. Chou Hsueh-pin, Party secretary, went to all the production teams to survey the terrain and the direction of flow of the

rivers. After many discussions, he made a water-control plan and organized the commune members to dig ditches and build dykes. By 1966 the commune had transformed 1,530 hectares of fields and the next year they planted cotton.

After the county set up its revolutionary committee in the cultural revolution, it gave Chingfeng commune help in transforming their wet fields. By 1971 the commune was planting 550 hectares of cotton. Last July several rainstorms left the fields under a foot of water. But water control was now a reality, the fields were drained in a day and the growing cotton saved. They harvested 320 tons, 28 percent more than in 1971.

Snail-extinguisher Village

Tungtai county near the coast had a different problem. For many centuries seawater had invaded the land and turned two-thirds of it white with salt. Many peasants had given up trying to farm and turned to refining salt with small furnaces. Villages went by names such as Shen Family Furnace, First Furnace, Ten Furnaces.

In the old days, life was hardest in Yen Family Hollow. It had a lot of ruined land and a high concentration of salt. Snails had infected all but five of the 167 villagers with snail fever. Starvation and illness took whole families, forcing them to beg for a living.

After liberation in 1949, the Party and the new people's government promptly turned its attention to the people in the entire Lihsiaho disaster area.



Drying improved seed.

An irrigation canal in Chelo commune, one of many in Kaoyu county.





One of Chienhu county's pumping stations.



Chou Hsueh-pin (right), Chingfeng commune's Party secretary, working on an irrigation channel.





Good cotton harvest on formerly alkaline soil in Tungtai county.

Tungtai county received doctors to treat their illnesses and tackle the snail-fever problem. Engineers helped build a dyke along the coast to prevent seawater flooding. They organized the peasants to dig drainage ditches and channels, plant green manure and start eliminating the salt. After the Chiangtu pumping stations were built (see *previous article*), they not only brought fresh water for irrigation but plenty for washing out the salt too. This completely changed the face of Yen Family Hollow.

Almost all the sandy wastes where only weeds grew have been turned into fine fields growing over five tons of rice per hectare. Even a two-hectare piece which had been considered too salty ever to grow anything on brought in nine tons last year.

Yen Family Hollow, formerly only straw huts, now consists of several lanes of neat red brick and tile houses. The village has a



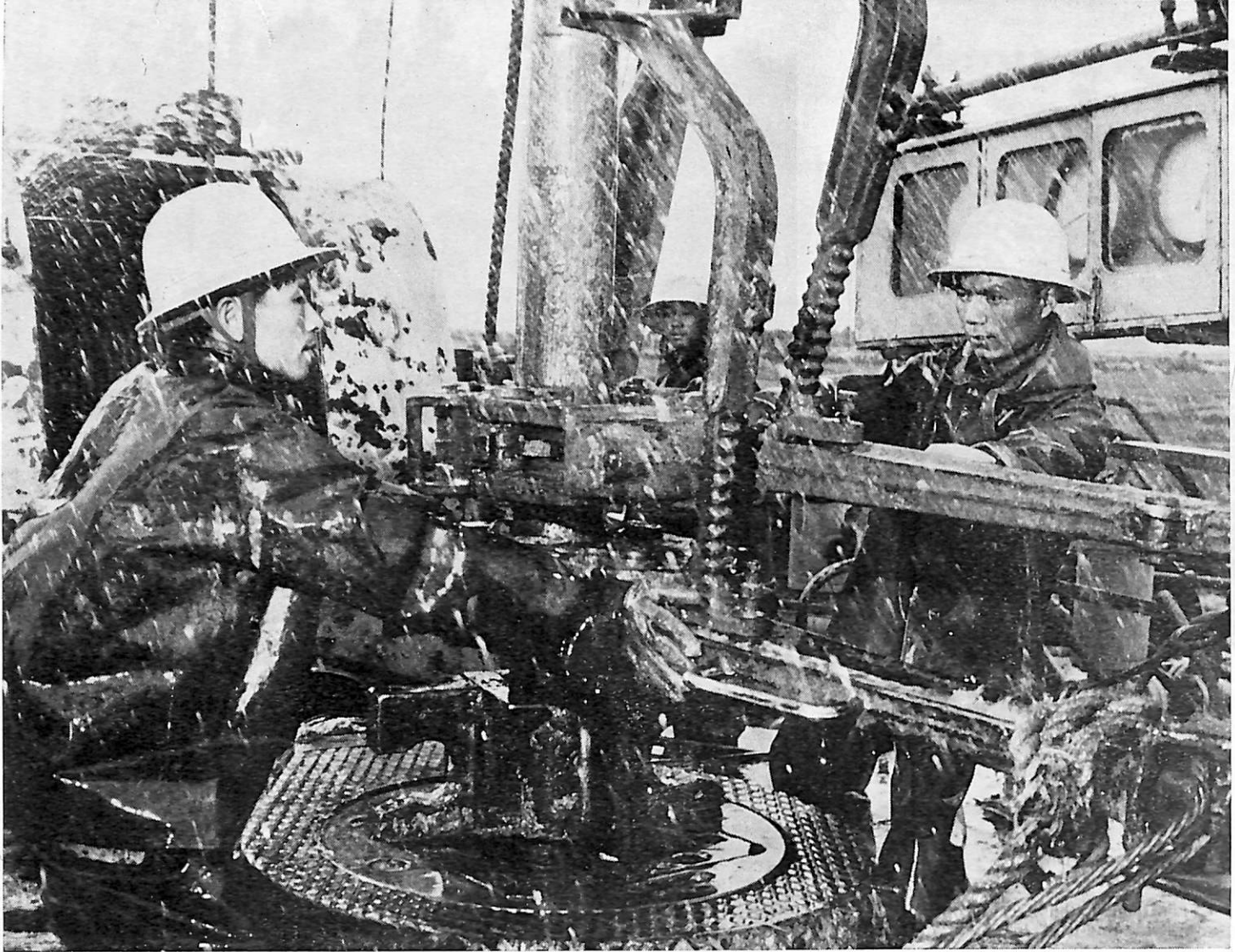
Orchards like this have been planted on the old course of the Huai.

supply and marketing co-op, a dining room, school and clinic. We visited a commune member with a family of four in a tile-roofed house with three bright, spacious rooms. The furnishings were simple but the cabinets, chests, tables and sewing machine were all brand new, as if it were a newlyweds' home.

The brigade Party secretary told us that crops had been good for the past few years and the members' livelihood had improved greatly. Their income in 1972 was double that in 1970. Many families

in the village have bought radios, sewing machines, bicycles and watches.

Wu Lung-ying, orphaned in the old days when illness and starvation took her parents, now lives in a new house with her husband and children. With three of them working, they get 450 yuan a year from the brigade. This plus income from the family's side-occupations leaves them with a surplus each year. To express these changes the brigade members renamed Yen Family Hollow "Snail-extinguisher Village".



Drilling in the rain at the Taching oilfield.

Question: Your articles often mention the General Line for Socialist Construction. What does this mean?

The General Line for Socialist Construction is expressed in the words, "go all out, aim high and achieve greater, faster, better and more economical results in building socialism".

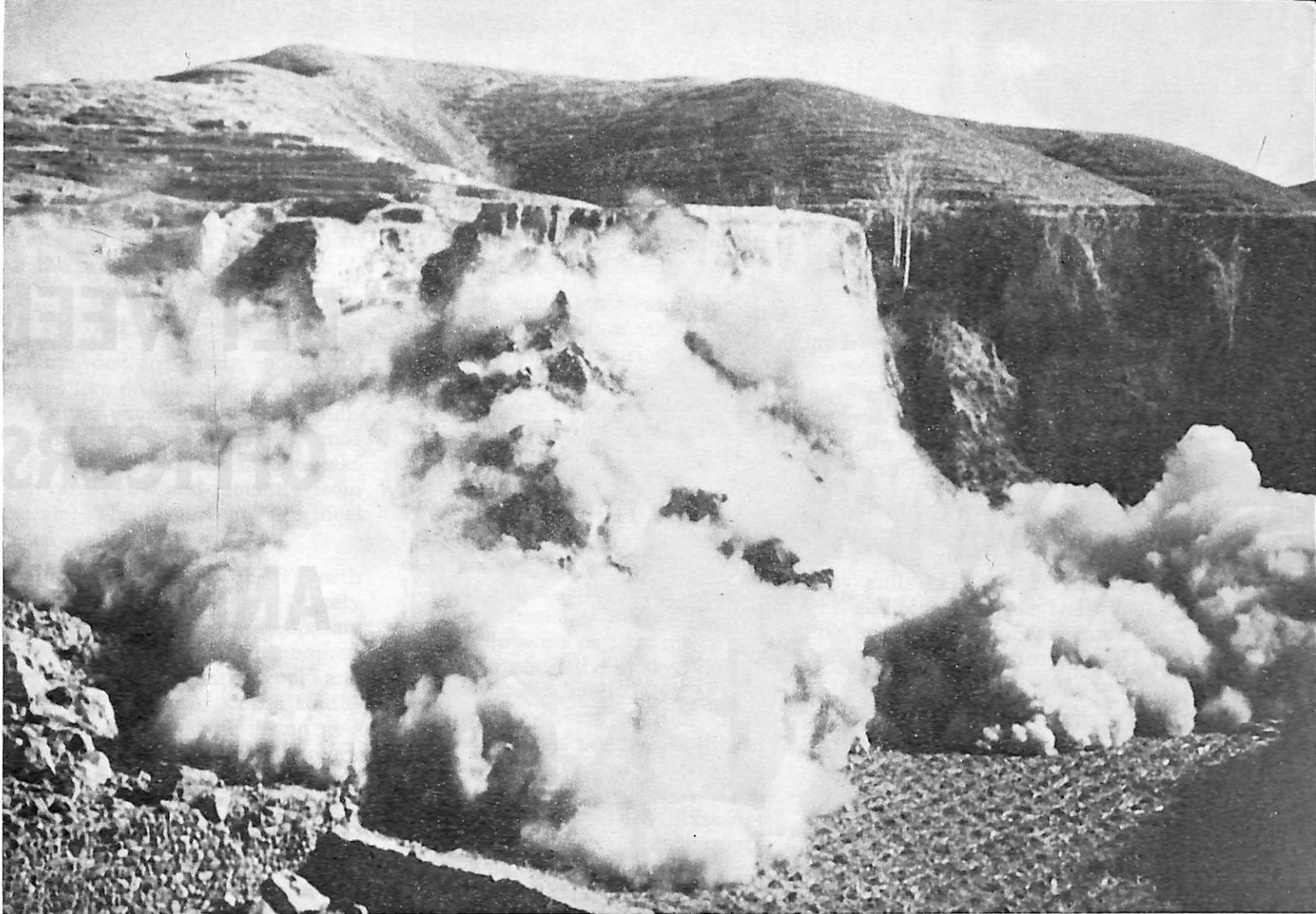
The call "Go all out and aim high" is to arouse the revolutionary spirit of China's hundreds of millions of people and bring their enthusiasm and resourcefulness into full play. These are the well-springs of the power by which any greater, faster, better and more economical results in building socialism will be achieved, because it is the masses who are the real heroes. The Party's fundamental starting point in any undertaking is its firm faith in the majority of the people — primarily in the majority of the workers and peasants, who constitute the basic masses. At the same time its policy is to give cadres and revolutionary intellectuals full opportunity to play an important role. It is through truly relying on the masses, maintaining independence and the initiative, persisting in self-reliance and hard struggle and doing everything diligently and thriftily that China's socialist construction will be moved forward at a faster pace.

Questions and Answers

THE GENERAL LINE FOR

The words "greater, faster, better and more economical results" expressed in the General Line define a many-sided requirement for socialist economic construction. In any endeavor in this field, all of these must be considered. Stress only on quality and lower cost would make inroads on quantity and speed. And in the long run better quality and lower cost could not really be achieved. On the other hand, if emphasis were laid only on quantity and speed, quality and cost would be affected and even the aims of achieving quantity and speed could not be met.

The four aspects are interrelated, they promote and supplement one another, they are inseparable parts of a whole. This reflects the objective laws governing the building of socialism.



Blowing the top off a hill to fill in a gully at the Tachai production brigade in Shansi province.

SOCIALIST CONSTRUCTION

Question: How was the General Line for Socialist Construction drawn up?

The new China came into existence in 1949 with a backward economy and a poor material base for development. The enemies of the working people were not reconciled to their defeat: the imperialists enforced a blockade on China; inside the country the landlords, rich peasants, counter-revolutionaries and other bad elements hoped for a comeback. In such circumstances, it was imperative to end China's poverty and backwardness by developing a socialist economy at a high speed.

In the first few years after liberation the Communist Party led the entire people to carry out land reform and the task of rehabilitating the national

economy. From the year 1953 on, under the guidance of the Party, the socialist transformation of all sectors of the economy took place step by step. (Peasants and handicraft producers organized themselves into farm and handicraft cooperatives. Industrial and commercial concerns owned by national capitalists became jointly owned by both the state and private capital.) It was fundamentally completed in 1956 and socialist public ownership became the economic basis of our country.

The socialist consciousness of the people all over the land rose to a new high. They were eager for the rapid development of the national economy so as to build the country as quickly as possible into a strong socialist one with modern industry, modern agriculture and modern science and culture. It was in these circumstances that in 1958 Chairman Mao summed up China's experience in building socialism and formulated the General Line for Socialist Construction. It expressed the desires of the whole Party and people and was drawn up to benefit them in the broadest possible way.

The promulgation of the General Line for Socialist Construction has stimulated a vigorous development in all fields of construction.



A company vice-commander helps a soldier fasten his safety belt.

THE Eleventh Company's second test for marksmanship on the target range was coming up. Company Commander Hsueh Ming-te was worried because the demands of the test were very high. In military skills the Eleventh Company led the regiment. If they didn't do well on this test their reputation would suffer. Hsueh kept urging his men to practice assiduously and himself personally undertook the job of coaching those who needed more work on sighting and firing.

The day of the test it was rainy and blowing. They could hardly see the target clearly, to say nothing of hitting it. What should they do? Company Commander Hsueh suggested they wait till it

cleared. Completely contrary to his expectations, the men disagreed. How did this fit with the principle of making high demands on oneself, they wanted to know, and implied that he was only out to make a good showing.

"We're not practicing for show but to raise our fighting ability to defend our country," one soldier, Hsieh Chen-kuo, said bluntly. "This weather is a good chance to practice under conditions we'd face in actual battle."

The men's words gave the company commander food for thought. It began to dawn on him that it was indeed concern for his own reputation that was motivating him. Weren't his worries about

BETWEEN OFFICERS AND MEN

SHIH HUA

losing face in case of bad results in the test just that? The men's comments had really hit home!

Company Commander Hsueh made a sincere self-criticism before the group and the whole company had a good session in which they really knocked to pieces the kind of thinking that pursues only awards.

They went ahead with the test despite the wind and rain and the company scored "excellent" with all weapons.

Good Relations Build Unity

I heard this story at the Eleventh Company during a visit to a division of the Chinese People's Liberation Army Railway Engineering Corps. The men say that one of this division's outstanding characteristics is the good relations between officers and men, from the lowest-ranking officer up to divisional commander. The latter, a veteran of the famous Long March, seeks out the rank-and-file



Officers and men get together in a friendly tug-of-war.

from the men. Now, as in the early days of the Workers' and Peasants' Red Army, all wear the same khaki uniform with the red star on the cap and red tabs on the collar. Though different responsibility exists, it is no divider. Officers and men can be seen chatting and laughing together in daily life, often playing together in a friendly game on the basketball court.

Every unit regularly holds "democratic life meetings" called under the auspices of the unit Communist Party branch, at which in a free give-and-take officers and men bring up problems in their working relations. They offer criticisms of each other's conduct and criticize their own mistakes. At one of these I attended with the Eleventh Company I was impressed by the way the officers respected the democratic rights of the soldiers and the soldiers felt

soldiers for a friendly chat whenever he comes to a company, just as he did in the war years. The young men like to hear him recount episodes from past revolutionary battles. "In those days life was very hard. Battles were many and supplies were few. The Kuomintang encircled us, pursued us, blockaded us. We had to face all kinds of dangers and overcome all kinds of obstacles. But, closely united, our officers and men defeated the enemy."

With such a commander, the men feel free to tell him what's on their minds. Such relations between officers and men, a tradition begun over 40 years ago by Chairman Mao when he created China's first people's army, are being further developed today.

The officers are not an elite class; between them and the men there is only a division of tasks, not a division according to status. In fact, it is hard to tell the officers

Company vice-commander Ching Wu-ying explains a fine point of bayonet drill.



free to express their views without reservations.

Chuko Liang Meeting

At the Sixteenth Company I ran into an example of another aspect of democracy in today's army — democracy in military affairs. The revolutionary wars of the past were won by concentrating the wisdom of the masses in battle. Today socialist construction is one of the big tasks of the army, and the old tradition of democracy in military affairs is being carried on in this aspect of the army's work too.

The Sixteenth Company had to dig the foundations for the piers for a railway bridge in a riverbed filled with sand and stones swept down by floodwaters. But before they had dug to a depth of three meters, they would always have a cave-in. The 1.2-meter-diameter hole would turn into an 8-meter-wide pit full of sand and mud. How would they ever finish 60 of them?

Company Commander Sun Yichang decided to call a "Chuko Liang meeting" at the work site and get the opinions of the men on ways to deal with the problem. The name for this type of meeting springs from the proverb, "When three cobblers put their heads together they can be as wise as Chuko Liang." The latter was a statesman of the Three Kingdoms period (A.D. 220-280) renowned for his wisdom. During the War of Liberation, Chairman Mao taught the army, **"The fighters have a lot of practical combat experience. The officers should learn from the fighters, and when they have made other people's experiences their own, they will become more capable."** Thus during the war years, before every campaign it had been the custom to hold such a meeting in the trenches and pool the wisdom of the ordinary soldiers.

Now, facing up to the problem of the bridge foundations, the members of the Sixteenth Company, many of whom had considerable experience, came up with a solution. Their method was to

tamp the rim of the holes hard with clay and stones. They also dug a deep ditch around each hole and filled this with sacks of straw to reduce the pressure of the wet sand against the sides of the holes. In this way the holes were dug, the huge piers finally set in one after another, the beams lowered into place and the shining rails connected to stretch across the river.

The Economic Committee

Dropping in on the First Company on a Sunday, I found some of the officers and men wrapping chopped meat filling in a thin skin of dough to make *chiaotzu*. "The company economic committee decided that we would eat *chiaotzu* today," political instructor Yao Wehsin observed as he asked me to join them. What was the economic committee, I wanted to know. The men explained that through this committee the men participate in managing the company mess. It was a continuation of an old tradition in the army. During the war years the First Company's economic committee had been particularly active, and since then has kept improving its work according to Chairman Mao's principle that **"With regard to economic democracy, the representatives elected by the soldiers must be ensured the right to assist (but not to bypass) the company leadership in managing the company's supplies and mess."** The committee, composed of four soldiers and a company vice-commander, does just that. They check and post the monthly accounts, and at a monthly meeting discuss ways to improve the food. They help the cooks draw up the weekly menu according to the weather, the kind of work the men are doing and their requests. The committee regularly solicits the soldiers' suggestions and criticisms and continually tries to add variety by making dishes that are popular in different parts of the country. It also arranges the work for the various vegetable-growing and pig-raising projects, in which officers and men take part. In 1972 the company harvested almost 15 tons of vegetables and raised 50 pigs, which supplied them with 1,500

kilograms of pork. The committee does all it can to reduce waste and make every cent count, so that the mess fund now actually has a surplus in grain and money.

A Revolutionary Community

Then there is the story of Platoon Leader Chu.

One day when he and his men were on a tunnelling job, loose stones suddenly began dropping from the top of the tunnel and the props started to creak as though they were about to give way. Chu immediately ordered his men out of the danger zone. Then he saw that Chang Ping, a new soldier, was still drilling away at the workface — he had not heard the order. Just as the platoon leader dashed in again to warn him, the props collapsed and dozens of cubic meters of earth and stone fell, trapping them in the tunnel. It was pitch dark and as the oxygen inside grew less and less they felt as if a big rock were pressing down on their chests, smothering them. They found it difficult even to move. Chang Ping passed out. Feeling the young man's body grow colder and colder, with great effort the platoon leader took him in his arms, trying to warm him. After several hours they heard a sound, and later saw something pierce the wall of earth and stone. The men outside who had been racing against time had broken through. The platoon leader helped Chang Ping out and then climbed out himself.

The story recalled a number of other instances I heard while at the camp of the officers' thoughtfulness of their men: the officer on duty for the night as he makes his rounds from squad to squad, gently pulling the covers up around those young men who had become uncovered in their sleep; and the way that, when the men's families come for a visit, the officers see that the rooms for them are given a special cleaning, extra-nice meals are provided and they get a warm welcome.

This adds deeper meaning to the phrase "the people's army". It is a warm revolutionary community.

(Continued from p. 7)

try to control the sand. At first when they dug the channels, the embankments collapsed behind them.

They made seven tours visiting old peasants along the canal and came up with a solution: make the canal a little deeper and use the clay dug from the bottom to plaster the banks. Then they planted trees on the banks to prevent washouts. After repeated trials, they finally finished the canal.

Yangtze Water Goes North

After the main projects to control the Huai were completed, large areas of the Lihsiaho region were no longer subject to flood. But its low-lying terrain was still waterlogged after heavy rains. Yet, a few months without rain meant drought. If these problems were not solved, agricultural production still couldn't go up. As part of a comprehensive water conservation project, Chiangtu county built three large pumping stations. The plan also includes five medium-sized regulating gates and around 30 smaller projects which link up the Yangtze, the Huai, the Grand Canal and the Lihsiaho region. When there is too much water

around Lihsiaho, 20 pumps pour it into the Yangtze at the rate of 21,600,000 cubic meters a day. During a drought, they pump water from the Yangtze to irrigate 167,000 hectares of land in five counties north of it.

This project, built with state investment, began in 1961. The first station was completed in a little over a year; a second station, of the same size, was built in just ten months.

When it was time to build the third station, some people came up with the bold proposal to make the pumps and motors so that when they were not pumping they could serve as turbogenerator sets to produce electricity. Examining large quantities of hydrological data, they concluded that from the point of view of the flow this was perfectly feasible. The crux of the matter lay in producing motors and pumps which could be run backwards to serve the additional purpose.

They got some factories and research units in Shanghai and other places interested in their idea. With the first model, the Shanghai Pump Plant had trouble with cavitation, or pitting of the blades. Veteran worker Lou Wei-

chiao spent his days in the laboratory observing and analyzing to find the reason. Sometimes after going to bed he would have a new idea and get up at once to continue experimenting. Disassembling and reassembling the pump, he performed a hundred experiments in three months, ameliorating the problem of cavitation. In a short time, another plant produced the large motor needed to meet the requirements of the advanced design. On completion, the third station's pumping capacity was greater than that of the first two combined and it had generating capacity sufficient for the homes of a city of one or two hundred thousand people.

Chiangtu's three pumping stations were hardly finished when they had a chance to demonstrate their worth. In 1970 it rained for over 40 days straight in the Lihsiaho area, but because of prompt drainage, there was no waterlogging. In fact, grain production in some counties increased by more than 14 percent over the previous year. In the summer of 1971 no rain fell for over 50 days, a situation which would have affected rice transplanting throughout a wide area. The stations pumped in 623,000,000 cubic meters of water from the Yangtze, thus ensuring water for the fields.

Answers to LANGUAGE CORNER Exercises

I.

- A. 1. 那是餐厅吗?
那是不是餐厅?
那不是餐厅。
2. 今天热吗?
今天热不热?
今天不热。
3. 昨天你们去游泳了吗?
昨天你们去没去游泳?
昨天我们没去游泳。
4. 她有中文杂志吗?
她有没有中文杂志?
她没有中文杂志。
- B. 1. 那个同志在哪儿工作?
2. 谁是医生?

3. 那种汽车能坐多少人?
4. 这个城市的风景怎么样?

II.

1. 您等一会儿再走吧。就要下雨了。
2. 北京美术馆里挂着很多画。
3. 他们没有参观过人民公社。
4. 这种大衣既好又便宜，哥哥买了一件，我也买了一件。
5. 我去找他的时候，他正在看报纸。

III.

星期天晚上，玛丽吃完饭，就出去了。她在约翰家坐了两个小时，

九点才回来。她说，他们用中文讲话了，两个人都说得很好，都听得懂，他们非常高兴。

IV.

1. 她一九七二年开始学习中文。
2. 我们常常一起练习乒乓球。
3. 北京的秋天比春天、夏天、冬天都好。
4. 上星期日，他们去爬山了，在山上照了不少相。
5. 他被他的朋友请去了。
6. 我把信写完了，就跟你去溜冰场。
7. 老师请同学们去看电影。

Lost-and-Found Office Finds the Losers

CHEN HSIEN-YAO, who had come from overseas with his daughter on a visit to his homeland, arrived in Peking for a sight-seeing tour on December 23, 1971. While shopping, his daughter lost her gold watch. Judging by his past experience, the old man felt there was no hope of regaining it. However, he happened to mention the matter to an attendant in the hotel where he was staying. At the scheduled time they left Peking for Shanghai, from where they were to go abroad.

As their train pulled into the Shanghai station the next day, a member of the Shanghai Municipal Public Security Bureau was waiting for them. "I received a phone call from Peking saying that your watch was found on the street and turned over to the public security bureau there. It is being sent to you," he explained.

Father and daughter were astonished. The following day a man from the Peking Public Security Bureau called on them and brought the watch. With deep emotion, the travellers expressed their thanks for his kindness and to the little schoolgirl Sun Hui-chin who had picked up the watch. The old man insisted that he should pay the Peking man's travel expenses, but the latter refused.

The lost-and-found office of the Peking Municipal Public Security Bureau was set up as a public service in 1957. In addition to receiving lost articles, one of the tasks of its staff is to try to trace down the owners. Some of the lost articles are brought directly to the lost-and-found office on North Hsitan Street. Most of the money and other things found in the city, however, are first taken to lost-and-found centers which exist in most neighborhoods and in some

places of work. If nobody claims them, after some time they are then transferred to the main office. In the latter case, it is more difficult to find their owners.

Each article that is sent there is classified, given a number, registered and then put on display. The glass showcases are full of watches, purses, fountain pens, radios, and even such things as newly-purchased shoes, clothing and knitting wool. The office is always busy, with people searching through the display to identify their lost things, or reporting and describing something they have lost to the staff member on duty.

ONCE a man brought in a wallet containing ¥6, some meal tickets from the staff dining room at the Chiuhsien Bridge Market and a receipt bearing a signature.

Wang Ho-fang, a member of the staff of the lost-and-found office, addressed a letter to the person by that name at the market and told him to come and claim his wallet. A few days later the letter was returned with the note that there was nobody there by that name.

But the meal tickets indicated that the owner had been eating in this dining room, Wang Ho-fang reasoned. So he wrote another letter to the head of the market, asking him and others there to help find the owner. Wang went himself to the market and learned that the people who worked at the Hsin-hua bookstore, a barbershop and vegetable stands nearby also ate at the market's dining hall. He made inquiries at all these places, but had no luck.

Not discouraged, he went once again to the market and talked with two old workers. They finally remembered that a young man from the vegetable market inside Chao-yang Gate while working for a time at a vegetable stand in this vicinity had taken his meals at the market dining room, and in that way the owner of the wallet was found.

Once the lost-and-found office received a letter from a woman

A man describes an article he has lost to a staff member of the Peking Municipal Public Security Bureau's lost-and-found office.



worker asking about a watch she had lost two years previously. Not expecting to learn what had become of it, she had not written earlier. Later her friends had persuaded her to write anyway. From the description in the letter Chang Min-hsing in charge of the lost watch section located the timepiece in his card file. The record showed that it had been brought in two years before, and when time limit for keeping an article was up, had been sold through a second-hand store. Chang found out what it was sold for and sent the money to the owner with an explanation. The woman was delighted.

One of the jobs of the lost-and-found office staff is to maintain the lost articles in good condition, even repairing, airing and sunning them if necessary. In 1972 they returned 2,550 yuan, 82 watches and altogether 900 pieces of clothing, luggage and handbags.

THE PEKING railway station and every bus and trolleybus terminal have their own lost-and-found department. On display in the showcases in the railway station's office is lost property of every description, ranging from large-size luggage to babies' shoes

The storeroom of the Peking Railway Station's lost-and-found office for things left by passengers on the trains.



and socks. It is open round the clock. The staff goes to great pains to send the lost articles back to their owners. If the travellers have left Peking, the office often returns the lost things with the help of train conductors.

An oilworker on his way back to Karamai from a job in the northeast, while hurriedly changing trains in Peking, lost a bundle of clothing. Dejectedly he returned to Karamai without it. Later, just as he had about given up hope of ever hearing anything of it, he got it back. When it was turned in to the lost-and-found office at the Peking station, the staff member on duty opened it and found a wool suit, sweaters and a quilt of silk padding, but no obvious identification. She carefully examined every piece of clothing and finally in the pocket of the jacket came across an envelope addressed to the oilworker.

From this she was able to locate him.

Once the staff member on duty at the Peking station received a phone call from the Fengchow station in Shensi province saying that an old worker had left a fur-lined overcoat on train No. 34 and asking her to meet the train to look for it. As soon as the train pulled into the station, she searched and found the coat in a sleeping coach. When the old man received his overcoat, he wrote with great feeling, "Before liberation I once went on a trip. With my bedroll on my back it was very hard for me to get through the crowd to the train. The policeman struck and kicked me, trying to keep me off. After I got on, my bedroll was stolen, but nobody helped me get it back. Now when I left my fur-lined coat on the train, it was sent back from Peking, a thousand *li* away."

SCIENTIA SINICA

A Quarterly of Chinese Science
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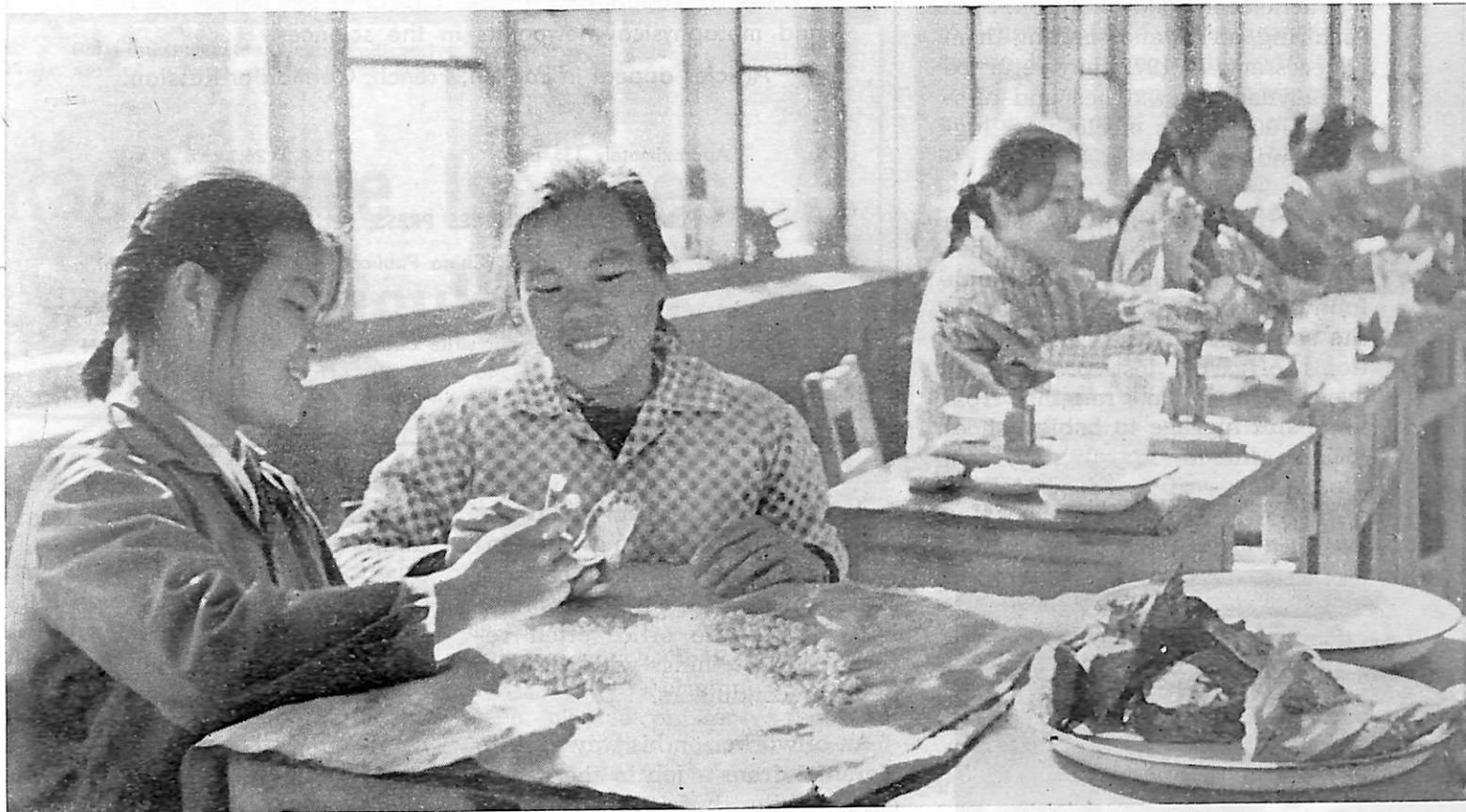
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The culture area at the pearl farm.

Cultivating Pearls at Pearl Cove



Extracting the pearls from oysters and grading them.

PEARL COVE, created by a small peninsula which juts out from the coast of the Kwangsi Chuang Autonomous Region in China's far south, is a famous producer of what are known as "southern pearls". These are noted for their iridescence, translucence and great number of layers of nacre, the pearly substance secreted by the

oyster. The warm climate at Pearl Cove and its waters with a salt content which remains constant at an optimum level for pearl-growing are what make the pearls this way.

In addition to their use for ornamental purposes, pearls have been valued through the ages as a medicinal ingredient. They served as

articles of tribute for the feudal emperors. The pearl fishermen, however, were always cruelly exploited and lived in abject poverty. They fished for the natural pearl oysters, but never had the funds to develop a pearl culture industry.

After imperialist intrusion into China, foreign boats came night and day to pirate the pearls, even

carrying away the rocks to which the oysters were attached. The number of oysters dropped drastically, so that Pearl Cove became virtually a pearl-less cove. Sand and rock piled up on the peninsula and it became overgrown with chest-high grass.

Today Pearl Cove is the site of a pearl farm belonging to the Tunghsing Multi-national Autonomous County. The culture area, which stretches for several kilometers along the coast, is filled with rows upon rows of bags of oysters suspended in the sea. In the workrooms piled high with oysters, young women deftly open the shells and extract the pearls.

The farm was set up after liberation, with experienced pearl fishermen from the area as its skilled workers. Helped by technicians from the South China Research Institute of the Chinese Academy of Sciences, they and a group of young workers built scientifically-equipped workrooms where the tiny round nacreous cores for the pearls are ground, where they are inoculated into the oysters and where the food for the oysters is grown. They planted shelter belts to reduce damage from sandstorms. The state has constructed a highway connecting the peninsula with the inland areas, and the once-desolate place has come to life again.

To get their original stock, the workers dived again and again to the bottom of the cove and sought out the pearl oysters. They called it their "attack on the sea", for they had to brave many hazards — jagged rocks, sharp oyster shells and "sea tigers", that is, sharks. A divers' group led by Communist Huang Yung-yu went several scores of nautical miles out to sea, where they dived about a hundred times a day. After six months of hard preparatory work, the farm

began rearing its first batch of inoculated oysters.

Typhoons are a menace to pearl culture in the rolling South China Sea. In one typhoon the waves pounded the culture area so fiercely that overnight the oysters painstakingly gathered and bred by the farm workers were buried in mud and sand. The next day when the gale stopped, organized in shock brigades, the workers dived into the sea and, moving along the bottom, probed the sandy mud for the lost oysters. In ten days of intense work, they salvaged the oysters from beneath a foot of sand.

Raise Own Pearl Oysters

The farm does not depend only on natural pearl oysters, which are available in limited numbers and gathered from the sea with difficulty. To expand production, the farm's scientists and workers, after many experiments, have learned to raise oysters from spawn.

Once the newly-hatched oysters started dying in large numbers. After careful round-the-clock observations, the staff came to the conclusion that the coastal water used in the breeding ponds had been diluted by several days of rain, lowering the salt content. They decided the only way to save the oysters was to bring in salt water from far out at sea. Tsao Chia-lu, a technician, and Chiang Kuo-hui, a worker, volunteered for the task. Taking a huge crock, they embarked in a small boat. Though it pitched like a leaf in the heavy sea, through the two-hour trip Tsao held the crock tightly and kept the salt water from spilling.

The technicians and workers learned how to deal with problems of low temperatures and excessive rain, which can affect the spawning, hatching and growth of the young oysters. They also learned

to raise food for them. By mastering the laws of the growth of pearl oysters, they have succeeded in rearing them in large numbers.

They are constantly improving their methods. At first they put the oysters on the bottom of the sea. This did not work well, as the oysters frequently died or were washed away by big waves. Now they are reared in nylon mesh bags suspended in the sea.

Inoculating with the Core

Many young people with some education from the cities of Kwangchow and Chankiang in Kwangtung province have come to work at the farm and, trained by the veteran workers, become an important force in its production. Most of the young women work at inoculating the nacreous core into the oysters, an important and delicate operation. The process is to open the oyster when it reaches a certain size, slit the mantle — a soft membrane underlying the shell — with a scalpel, and introduce the core into it. The oysters are then returned to the sea for the pearls to grow. The inoculation process requires great precision, otherwise the oyster will die or eject the core, or the pearl formed will not be round. At first a large number of oysters died or ejected the core. The inoculators have improved their skill so that now the survival rate is over 90 percent. The young women practice swimming and diving in the sea daily, so that they are fit for whatever other type of oyster work they may be called on to do.

The oyster fishermen used to talk in fancy about a bay filled with oysters scattered as thickly as the stars, and inside each a shining pearl. Now with technical assistance and young oysters provided by the pearl farm, the nearby communes and brigades have begun to develop pearl culture as one form of sideline production.

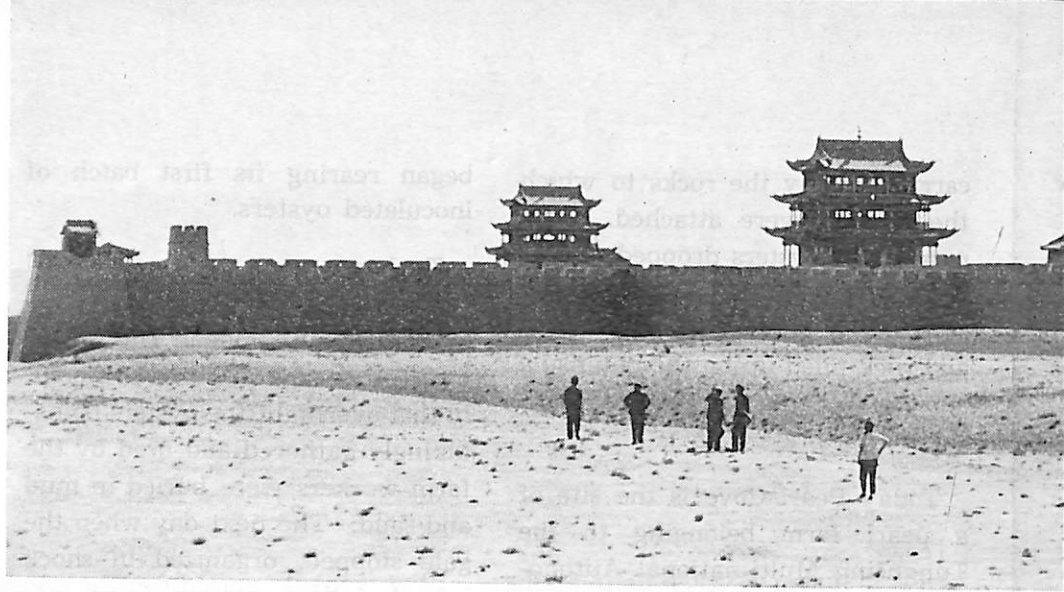
Across the Land

OUT WHERE THE GREAT WALL ENDS

CHAIYUKUAN PASS is located in western Kansu province at the western end of the Great Wall. A desolate desert before liberation, the area around the pass has undergone great changes. Formerly accessible only on horse or camelback, the area is now linked with other parts of the country by rail and a network of highways.

In the past Chiayukuan was only a small village with 30 poor families. Now it has become a new modern city with a rising industry. There has also been marked development in agriculture and animal husbandry.

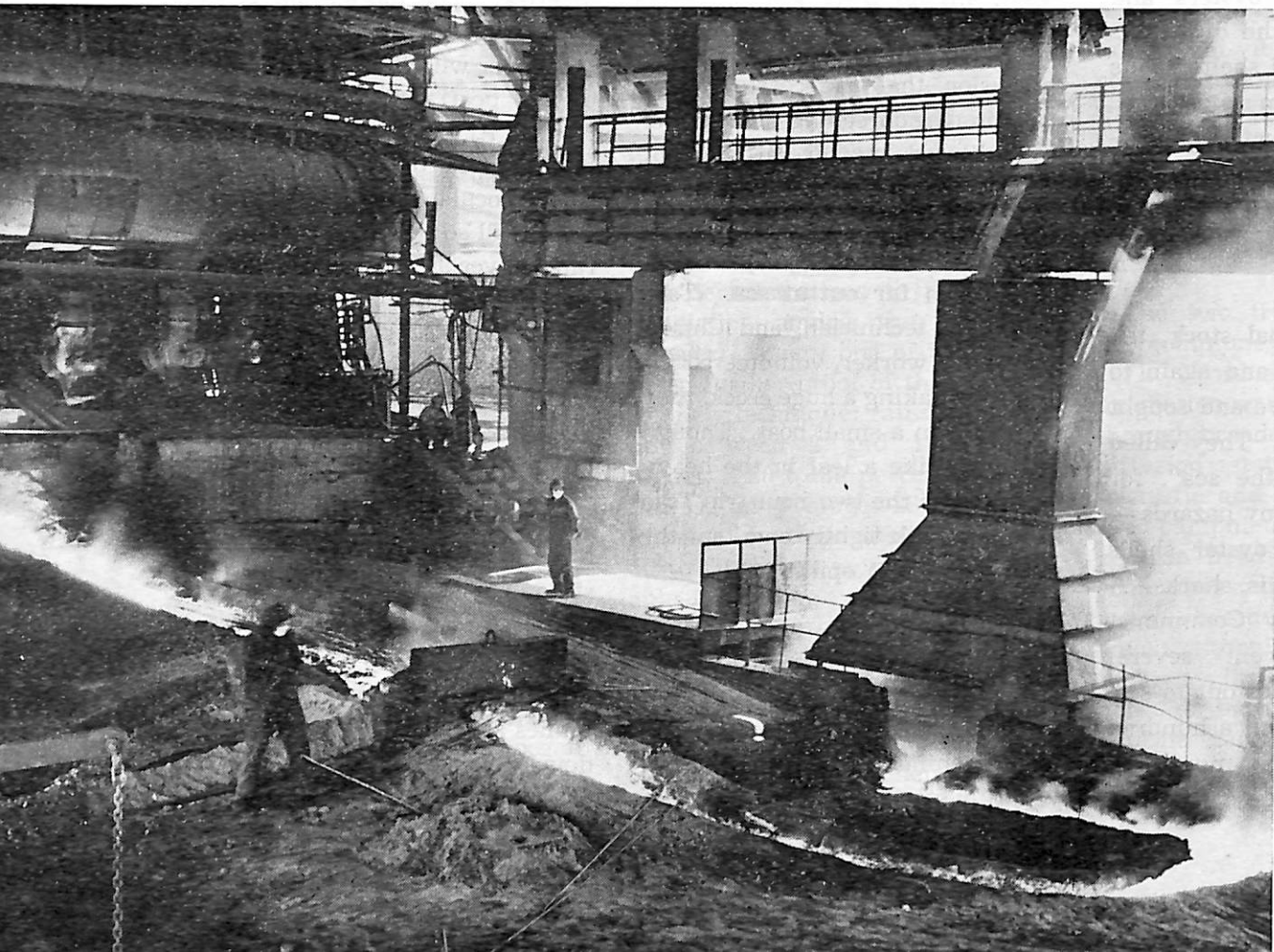
A new iron-smelting plant in the area.

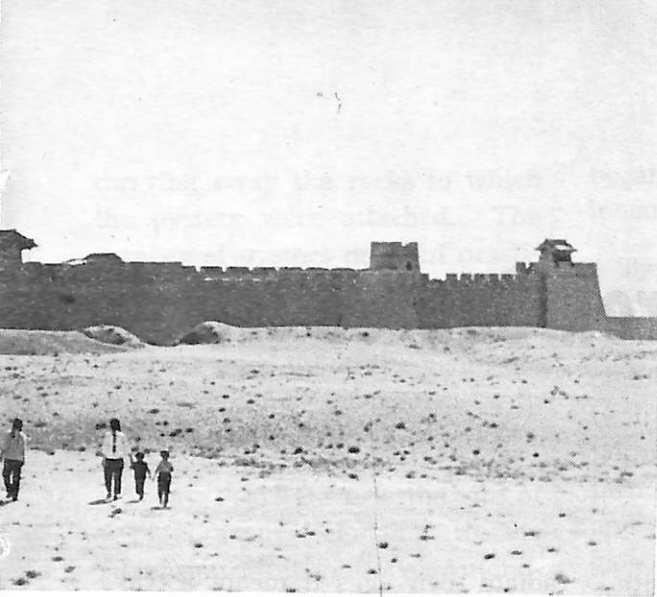


The ancient garrison built in A.D. 1372 at Chiayukuan Pass, at the western end of the Great Wall.

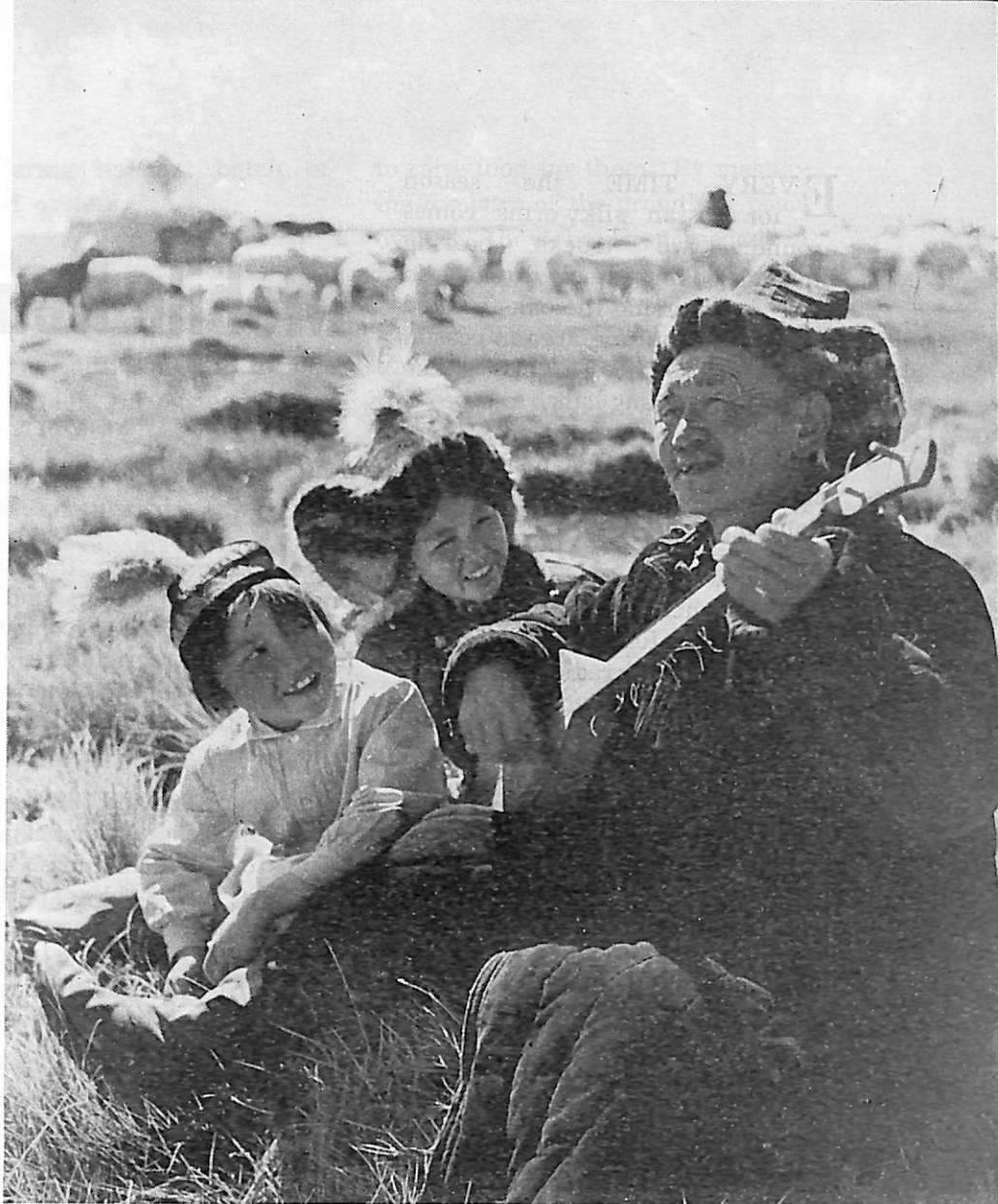


Tree-lined asphalt roads have appeared in the former desolate area.





Horse-raising is part of the economy of the Aksai Kazakh Autonomous County at the foot of the Altyn Mountains to the southwest of Chiayukuan Pass.



Today life is good for Adulhan, an old herdsman, and he celebrates it in his songs.



In the Tyngeri Desert near Chiayukuan Pass, scientists and local peasants are carrying on many kinds of experiments for control of the sand.

Communes around Chiayukuan plow their land with tractors.

EVERY TIME the season for tussah silkworms comes around, two trucks bearing unusual-looking steel drums can be seen traversing the oak-forested hills of the Tantung area in coastal Liaoning province. This is the home of Tantung silk, a type of tussah silk. The peasants there have been raising tussah silkworms on oak trees for more than two thousand years.

The two trucks belong to a mobile service team of the Tantung Sericulture Research Institute. Their job is to irradiate silkworm eggs with fast neutrons from a neutron source. This accelerates metabolism and increases vitality within the eggs. The local commune members say that when eggs are irradiated a higher percentage hatch and the silkworms have a better appetite and greater resistance, make cocoons earlier and spin more and better silk.

The irradiation process is very simple. The neutron source trucks travel a fixed route and visit every people's commune according to schedule. At each stop the silkworm breeders gather with their silkworm eggs. When the truck comes they hand their bags of eggs over to the technicians of the mobile team who pour them into curved containers which fit around the neutron source, and turn on the neutrons. In the time it takes to smoke a cigarette the job is done and the commune members take their eggs home.

Joint Experiments

Shih Chien, one of the young technicians with the mobile neutron source, told me the Tantung Institute began research on irradiating silkworm eggs in collaboration with the Shenyang Agricultural College in 1964. After three years of experiments they had basically learned the right dose of fast neutrons for tussah silkworm eggs.

This method was not widely adopted in sericulture, however, until the cultural revolution began in 1966. "Then we research workers saw more clearly the impor-

Mobile Neutron Source Irradiate

tance of combining theory with practice," Shih Chien said, "and that scientific research must serve industry and agriculture." They moved out of their laboratories and went to the countryside to carry out experiments.

Between 1966 and 1971 researchers from the two institutions went to 25 communes and 34 brigades for field experiments. The commune members welcomed them and helped them carry out comparative tests of ordinary silkworms and worms from irradiated eggs.

Chi Shao-yuan, a 70-year-old veteran silkworm breeder, was assigned to rear the irradiated worms. He got up before dawn every day to make meticulous observations of the changes in the worms as they grew on the trees in the oak forests. Commune members and research workers made detailed notes at every stage of the worms' life from hatching to spinning cocoons.

In the six years between 1966 and 1971 they performed more than a hundred comparative experiments and demonstrations to popularize irradiation among the silkworm breeders. Every one of them provided further proof of the value of the new technique: rates of hatching between 2 and 15 percent higher, a 20 to 30 percent drop in illness, an average 28.4 percent increase in output of silk and from 50 to 80 meters more thread suitable for reeling.

Better Service

Before 1971 the only neutron source available to the area was a stationary one in Shenyang. If commune members wanted to ir-

radiate their eggs it meant a trip of several days to the city. In 1971 the Tantung Institute was allocated two new neutron source units to further the development of sericulture. If the new units were installed at the institute, however, commune members would still have to travel a distance to use them. Some of the research workers suggested mounting them on trucks and taking them around the countryside. The institute had never done anything like this before, but received support for the idea from related organizations.

If the neutron source were to be mounted on a truck, the problems of vibration and radiation had to be solved. Workers at the Tantung mining machinery plant tackled the first one. They learned from another factory which had once found a way to protect electron tubes from vibration during transport by truck and solved the problem. Now vibration and shielding against radiation, as tested by the national bureau of standards and provincial and city health departments, meet their standards for safety.

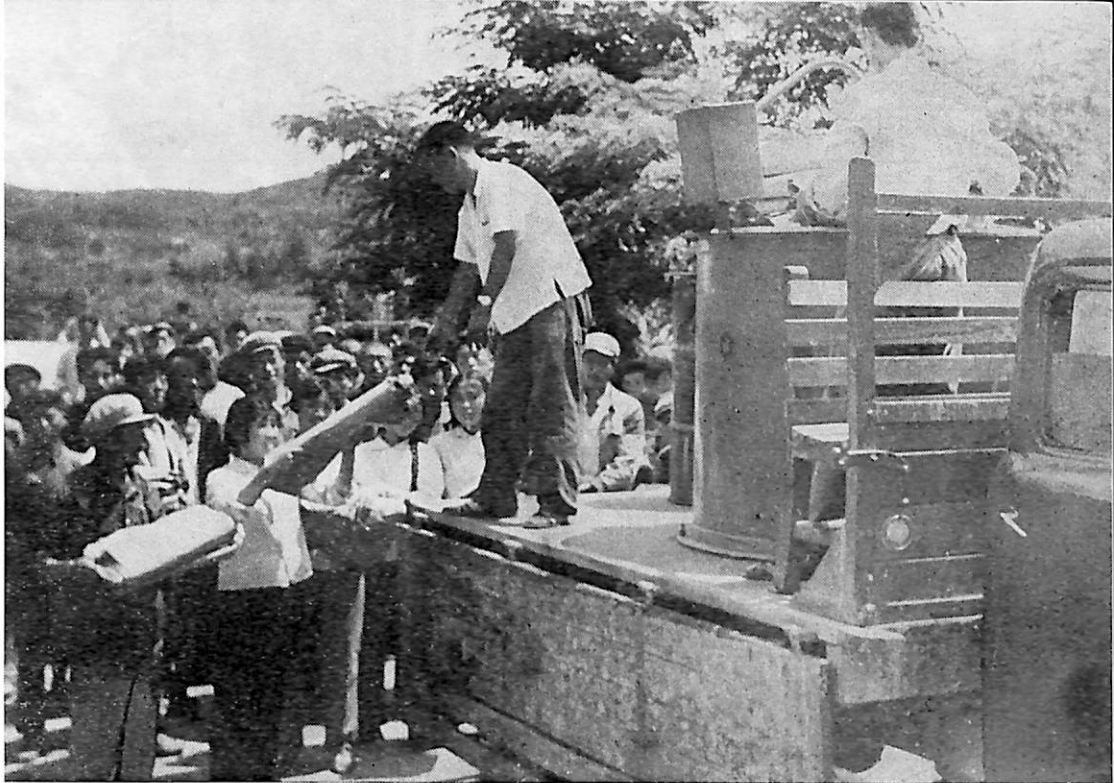
The two trucks began touring the communes in the autumn of 1971. Word of the advantages of irradiation was spread far and wide through broadcasts over county re-diffusion stations. The county scientific and technical station issued pamphlets explaining the fast neutron irradiation process to all communes and brigades. Now silkworm breeders stream to the trucks' stopping points, bringing their eggs in pushcarts, on shoulder poles, on bicycles. They and their delicate cargo can wait for the truck in the shade of improvised mat shelters. Commune dining

s Silkworm Eggs

CHIEN CHANG-WEN

rooms exert special efforts to serve the crowd.

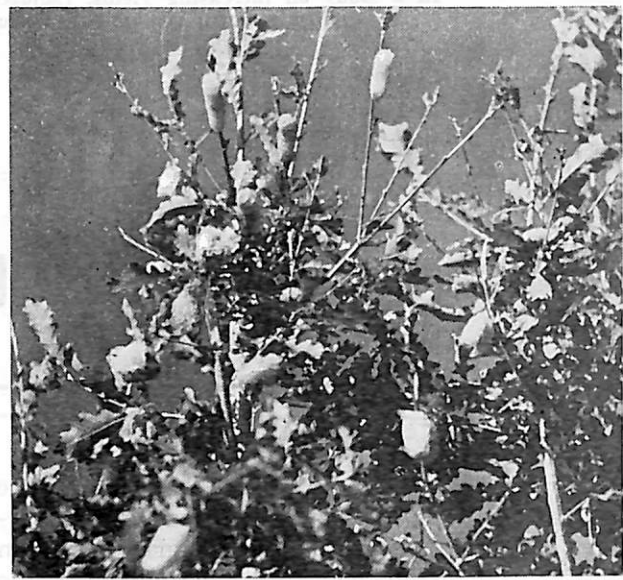
Silkworm eggs are usually irradiated three to five days before they are ready to hatch. Thus the mobile team is very busy within this concentrated period. Once an



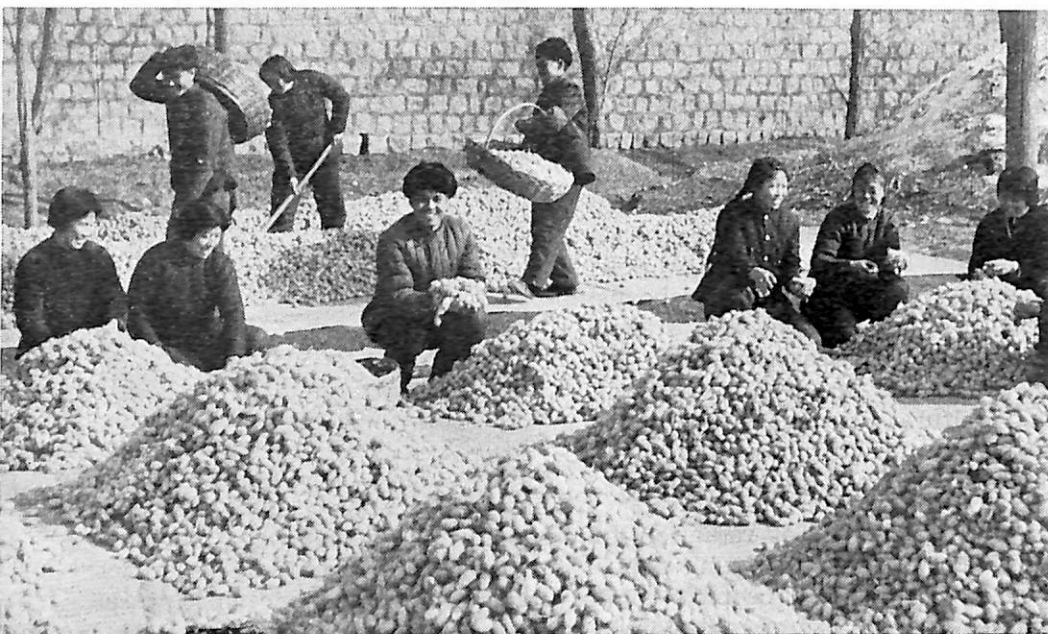
Silkworm breeders turn their silkworm eggs over to the mobile team.



The irradiated eggs begin to hatch.



Feeding on oak leaves, silkworms from the irradiated eggs grow rapidly.



old silkworm breeder failed to turn up for the regular irradiation. The team went to look for him at home and found that he was away. Late that night when he got home he rushed over to the mobile team with the eggs. They got up and treated them at once.

Last year in the spring and autumn silkworm seasons the mobile team irradiated 8,170 kilograms of silkworm eggs for commune brigades. Last autumn alone the two trucks covered a total of 5,000 kilometers to serve the silkworm breeders.

The harvest brings more and better tussah silkworm cocoons.



In a study on increasing yields, radioactive phosphorus 32 is applied around the roots of rice in the field.

Radioactive Isotopes in Agriculture

ONE APPLICATION of atomic energy is the use of radioactive isotopes in agriculture. In China work on this started in the 1950s. The Great Proletarian Cultural Revolution which began in 1966 inspired further research in this field as Chinese scientists became more conscious of the principle that scientific research should serve production and construction.

Higher Yields

Radioactive isotopes emit high energy radiation. Subjecting seeds to suitable doses of radiation, far from damaging their organic functions, speeds up the breeding of good strains that mature early, yield more and have high resistance to disease.

Over a hundred new strains have been bred in China through combining isotope radiation with chemical treatment and other methods.

Some of these are now being grown on a large scale. For instance, a new strain of paddy rice bred by the Liaoning Research Institute of Agricultural Sciences which yields 24.4 percent more than the original strain has been planted on forty thousand hectares in the province. Several new strains of wheat created by the Shansi Research Institute of Agricultural Sciences which increase yields 10 to 20 percent have been planted over more than thirty thousand hectares there. A new high-yielding strain of soyabeans with rich oil content and strong resistance to disease bred by the Heilungkiang Research Institute of Agricultural Sciences is now being grown on tens of thousands of hectares throughout the province.

The application of radiation to plant-breeding is now being popularized in the rural people's communes and the use of radiation in

other aspects of agriculture is also making progress. Radiation is now a common measure for increasing production in tussah silkworms (see article on p. 24). New types of saccharomycetes, a form of yeast, obtained through irradiation are being added to pig feed. Radiation is now also being used in breeding new types of bacteria for producing antibiotic manure.

Tracer Atoms

Since the chemical properties of a radioactive isotope are the same as those of a stable isotope, the former can be used in place of the latter to serve as a "tracer atom". For example, when P32 (radioactive phosphorus) is used in fertilizer and applied to crops, measurements of its radioactivity are an indication of the extent to which the crop is absorbing phosphorus, and how it spreads to the various parts of the plant. The use of tracer atoms to study these problems for nitrogen, phosphorus and potassium fertilizers has facilitated the summing up of the peasants' practical experience in application of fertilizer for high yields of rice and other crops. Tests of phosphorus fertilizer on more than 70 types of soil, carried out jointly by research units all over the country, have provided scientific data for its rational application, and for its production and distribution by the state.

With the aid of tracer atoms the Chekiang Agricultural University and other research units have made a study of the problem of poisoning of the ecosphere by pesticides. The study has provided information for the application of pesticides in a safe and rational way which will not pollute the environment or poison man and animals. In recent years Chinese agricultural scientists have used dozens of different radioactive isotopes in research on crop cultivation, soil, fertilizers, plant protection, cultivation of fruits and vegetables, animal husbandry and veterinary science. They have written more than 600 reports on their researches which are of value to agricultural production and theoretical study.

The following is a composition by Hu Chien, a girl in the second year of the junior middle school attached to Peking University.

A GRADE OF 100

TODAY we got back the papers from our mathematics test. When I saw a big red "100" up in the corner I was overjoyed. Then, as I read through the problems, I noticed that one of them seemed wrong. I checked it and found that I had really done it incorrectly but the teacher hadn't noticed it. I felt like going to the teacher and telling him about it, but when I looked at that bright red 100 I hesitated.

Just then someone tapped me on the shoulder. I looked around and saw it was one of my best friends. "Hu Chien," she said, "let me see your paper." Uneasily I passed it to her. I could feel my heart beating very fast because I was afraid she might discover the error. But she had wanted to see how I had done another problem and didn't notice it. "100! How wonderful!" she said as she handed it back to me.

I really didn't know what to do. "Nobody knows anyway," I said to myself. "Let it pass." I didn't go to the teacher that morning but ran into him at noon after classes were over. Ordinarily I would chatter away with him, but now I kept my mouth shut guiltily.

When I got back home I went through the newspapers looking for material for our political study and current events class. I came across a story about a worker who

made high demands on himself. He was a young lathe operator in a factory. One day as he was going to bed he suddenly remembered that one reject part he had processed had got mixed in with the good ones and he had forgotten to tell the worker on the next shift. If that part were used in a machine it might result in a breakdown. He got out of bed at once and hurried to the shop to look for the reject.

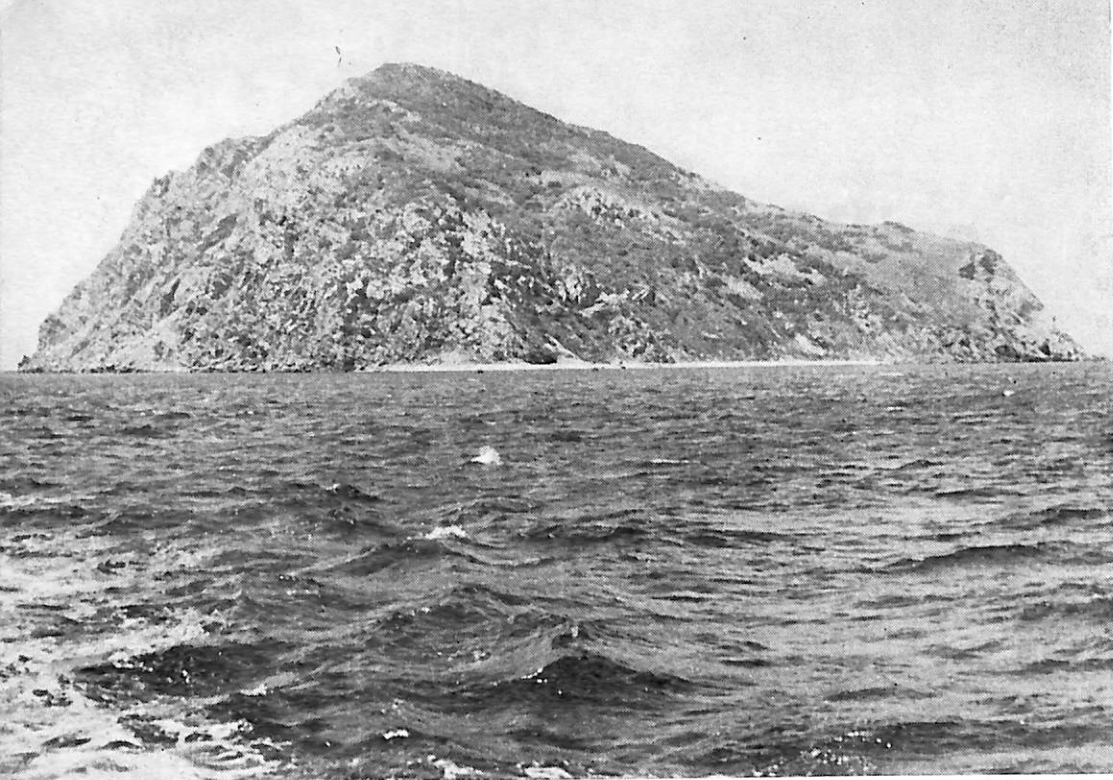
I was very moved by this example of the working class feeling of responsibility towards the revolu-



tion. Why did this worker take the matter of this small part so seriously? Because he knew that a bad part could put a whole big machine out of commission. If you cover up even a little mistake it can bring harm to the revolution.

I thought of my mathematics test. Wasn't this also true of our study? We should be honest and modest in our studies. Wrong is wrong, and it should not be hidden. Today we are studying not for marks, but to improve our ability to analyze and solve problems. The fact that I got that problem wrong shows that my ability is not as good as it should be. This helps me learn so that I will not make the same mistake next time. If I let myself keep this 100 I haven't earned and do not have the courage to correct my mistake, some day I might cause a loss to the revolution. I determined to try to have this working class attitude of making strict demands on one's self.

The first period in the afternoon I asked the teacher to change my test paper. My mark dropped to 95, but what I learned from that math test is worth much more than 100!



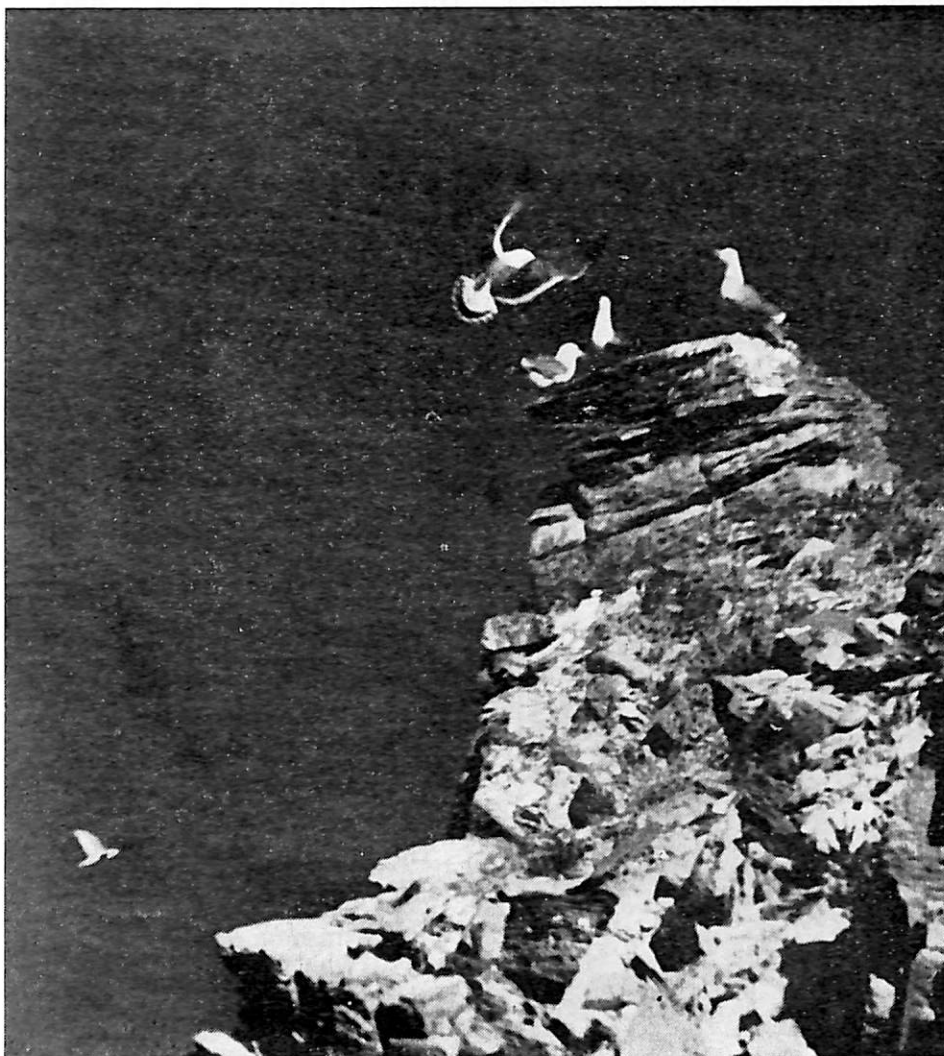
Snake Island

A SMALL uninhabited island lies in the Pohai Sea near Talien in China's northeast. Though only a square kilometer in area, it is the home of thousands upon thousands of one of the most poisonous snakes in China, the *Agkistrodon halys* (Pallas). Known as Snake Island, it is virtually a kingdom of snakes.

How did the snakes get to this isolated island? Why are there so many of them? Snakes are cold-blooded creatures. Because their body temperature changes with their environment, they are usually found in tropical and subtropical regions. But winter snows cover the area around the Pohai Sea, how do the snakes manage to live

EXPLORING AN ISLAND OF SNAKES

Black-tailed gulls on a high cliff of the island.



KO PO

Lying in the sun.



in such great numbers? How do they relate to other animals? How can this formidable snake population be used to benefit the people of socialist China?

China's scientific workers made a preliminary study of the island in 1957. But to clarify many problems, some scientific workers of our Zoological Research Institute of the Chinese Academy of Sciences and a few people from the Museum of Natural History in Talien went to explore the island last summer. Our party consisted of two zoologists, three botanists, one oceanographer, three geologists, a photographer, cartographer, physician, eleven seamen (including two divers) and an old peasant who had been to the island. The Lushun-Talien Municipal Party and government organizations supplied us with fishing and diving boats, protective wear and tools.

Valuable Biological Resources

Our boat sailed west along the Pohai Strait for about five hours before we saw the island, a small hill above the horizon. To survey the terrain and choose a landing spot, we circled it. Off a narrow beach, we looked at cliffs as high as a hundred meters along the

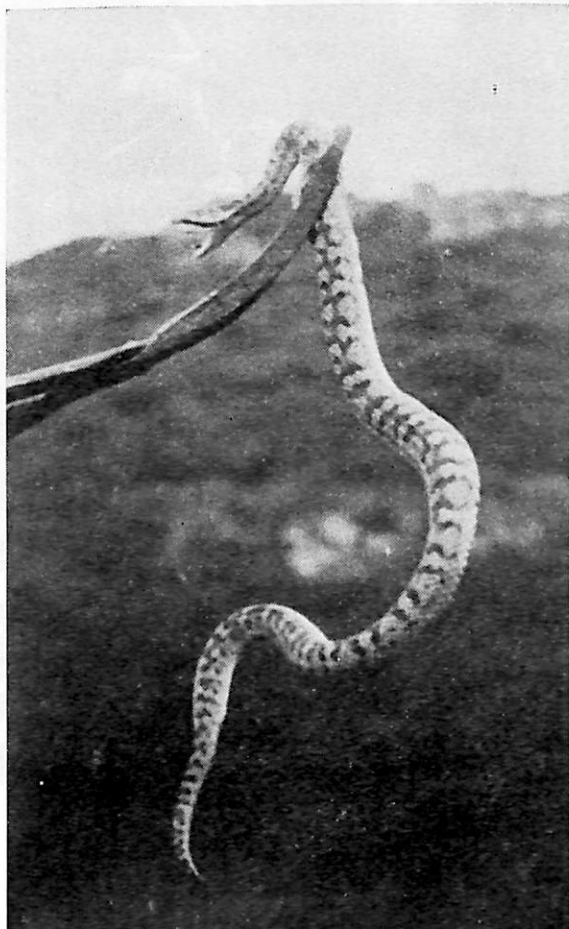


The party lands.

entire coast. Vegetation covered the valleys. Black-tailed gulls (*Larus crassirostris*) made their home in caves in the sides of the cliffs. Now and then flocks of them would rise high in the air, wheeling with loud cries over the shore.

To protect ourselves from snakebite, we wore bamboo-frame hoods with plastic windows, thick canvas clothes, long leather gloves and high leather boots. Carrying long, two-pronged snake catchers and scientific instruments, we stepped

First snake caught.



Climbing a tree to wait for an unwary bird.





An old peasant tells about the island in the past.

on shore like medieval knights marching to the battlefield.

Unexpectedly, we did not see a single snake for the first half hour or so. We were beginning to relax when we suddenly discovered one on a slope as we crossed the top of

a hill. Grey-brown, it was lying motionless on a rock, its coiled body so resembling a crevice that we almost did not see it. The comrade in the lead quickly pinned its head down with the snake-catcher. The snake opened its big jaws, flicked its horrible long tongue in and out rapidly—and struggled. It was almost one meter long with a triangular head, a wide dark-brown band from its eyes to the corner of its mouth, and a short pointed tail—characteristic features of poisonous snakes. One-tenth of a gram of its venom in the bloodstream kills.

The snake is good at camouflage. Lying quietly in a coil, it looks like a pile of cow dung in the grass from a distance and can only be discovered at close range. Sometimes it winds itself around a bough. Looking like a withered twig, it raises its head high while waiting for its prey. In the 30s someone estimated that there were around 500,000 on the island. We

arrived during the biggest drought in 40 years and the snakes were either in damp caves or barely showing their heads outside. Thus we had no way of estimating their total. But we discovered that at daybreak or in the evening when the air was cool, they crawled out in great numbers and we had to watch every step.

Strange as it seems, we were delighted to see so many snakes. Though poisonous, according to Chinese traditional medicine their body is full of treasures. In experience handed down from ancient times and studies made by medical and health departments today, wine in which a poisonous snake is steeped can help get rid of rheumatism and ailments caused by the exposure to drafts. It stimulates the nervous system and blood circulation, and promotes the proper functioning of the organs. The snake's gallbladder, venom, snake powder and shed skin are all useful in medicine. Serum

Explorers prepare a specimen.



made with the venom of such snakes easily found in China is used to build up resistance and to treat snakebite. The island's great number of snakes is a rich source for the production of medicines.

Snake Paradise

Why do so many poisonous snakes live on this desolate island? We found excellent natural conditions for their breeding. Thousands of crevices and cracks in the rocks trap rain, snow and moisture from the air. The larger ones are ideal nests.

Though located in cold north China, the island is kept relatively warm by the sea in the temperate zone. We arrived in midsummer, but it was pleasantly cool and moist. The terrain slopes southeastward and thus the island gets the moisture-laden southeast monsoons in summer and is shielded from the cold north wind in winter. It is therefore neither bitter cold in the winter nor intensely hot in the summer.

The snakes generally come out of their caves in March when the weather begins to warm up. In July and August when the temperature rises above 24° C., they are active only in the early morning and late evening. In late autumn they crawl about during the day. In November they begin to dig into the earth and go into hibernation. Though the earth freezes as much as 40 centimeters deep, the soil is thick and loose, and the snakes dig below the freezing level. Large and deep caves also enable many snakes to hibernate together. This helps them maintain body warmth, reduce the loss of moisture, survive the winter and mate easily in the spring.

Wind on the island comes mostly from the southwest in the spring, southeast in the summer, northwest in the autumn and north in the winter. It helps bring food to the snakes. The direction of the wind around the island changes in the spring and autumn during the bird migrations, causing birds to halt there. In May, wind from the southeast is followed by a northwest wind, and birds flying from the south stop, becoming meals for

snakes lying in wait coiled around tree branches. In September, the northwest wind changes to one from the southwest, and birds flying south become easy prey as they settle on the island.

Brown soil, loose and moist, covers two-thirds of the island, providing for a luxurious growth of plants and good conditions for snake life. Aside from a few bare rocks, 160 kinds of plants make up the trees, brush and grass which grow everywhere.

We found that the strata, geological formation, flora and fauna of the island the same as the Lushun-Talien area on the Liaotung Peninsula. Obviously the island was once part of the mainland. Since all the snakes belong to the same family as on the mainland, it means that the island was separated from the continent after such reptiles had appeared on land. After separating, the island grew in area. The luxuriant growth of plants, the great variety of animals, the abundant food supply and the absence of natural enemies, all helped the rapid multiplication of the snakes. The island became a true snakes' paradise.

Strange Animal Relationships

While the island's natural environment is good for the snakes, it is also good for other animals which in turn are an abundant food supply for the snakes. The trees, flowers and grass are excellent surroundings for insects and small herbivorous animals—some eighty species. The damp, soft soil and the innumerable crevices, cracks and caves provide good homes. The island lies on the great migration routes and many kinds of birds not only stop to rest but to feed on the island's insects. Black-tailed gulls (called "sea-cats" by the local people) build their nests on the cliffs in the western part of the island. Sea life is abundant in the surrounding waters. The island is a lively world of animals. Depending on one another and fighting one another, they have established strange relationships.

The Asiatic sparrow hawk (*Accipiter nisus nisosimilis*) is car-

nivorous, circling low in the air looking for its food. The moment its sharp eyes discover a snake, it swoops down like a jet fighter, seizes the snake in its claws and swiftly climbs again. The snake, however, does not give in readily. The two wage a desperate struggle in midair. Fatally wounded by the snake's fangs, the hawk gives a shrill cry, and suddenly both combatants fall down from the sky. We found many carcasses of sparrow hawks killed this way.

Aside from making a meal of the migratory birds when they can, the snakes stealthily devour the baby gulls and swallow the eggs. The gull, on the other hand, picks up a snake with its beak, carries it far out to sea and drops it. If it is not too far away, the snake is able to swim back to the island again.

Great numbers of brown rats (*Rattus norvegicus*) also live on the island and their young are also food for the snakes. The rats live on sea urchins, which they carry from the shore and devour in their caves, leaving many shells. The willow warblers (*Phylloscopus sp.*), once caught in a spiderweb, seem to be stuck with glue. Unable to get away even with terrified struggle, it is eaten by the spider in the end.

Although our exploration of Snake Island did not last long, we gave our results to the government departments and scientific research organizations concerned and made concrete suggestions on how to protect and utilize the island's resources. During our exploration we returned daily after work to the living quarters provided us by a people's commune on a nearby island. Old peasants who had cut firewood and caught snakes on the island for generations compared their past life with today and gave us a lot of valuable knowledge. One old peasant went with us and was a good adviser on conditions on the island in the past. Our party collected material in many fields and discussed the formation and development of the island and how the country could use the poisonous snakes. This helped raise our theoretical level and solve practical production problems.

Lesson 16

Review of Basic Grammar

In Lessons 1-15 we introduced the basic grammar of modern Chinese. Below, by way of review, is a summary of grammar already studied.

I. Sentences

A. According to structure, Chinese sentences can be divided into two classes:

1. Complete sentence with both subject and predicate.

a. Predicate with verb

Xiè Wén yǒu mǔqīn, gēge, mèimei.

谢文有母亲、哥哥、妹妹。

Xie Wen has his mother, elder brother and younger sister. (2)*

Wǒ qù Zhōngguó le.

我去中国了。

I went to China. (1)

b. Adjective as predicate

Jīntiān tiānqì hěn hǎo.

今天天气很好。

Today the weather is quite fine. (1)

c. Noun as predicate, generally the copula shì 是 is used with it.

Tā shì Shànghǎi rén.

他是上海人。

He is from Shanghai. (2)

d. Subject-predicate construction as predicate

Wǒ tóu téng.

我头疼。

My head aches. (10)

2. Incomplete sentences, lacking either a subject or a predicate.

a. Without subject

Guā fēng le.

刮风了。

The wind is blowing. (9)

b. Single-element sentences (subject or predicate is understood)

Wǒ èryuèchū lái de. Nǐ ne?

我二月初来的。你呢?

I came in early February. And you? (15)

Qiántiān gāng dào.

前天刚到。

(I) just arrived the day before yesterday. (15)

B. Sentences can be divided into four types according to use:

1. Declarative, which states a fact.

Yuèlǎnshì libiān de bàozhǐ, zázhì hěn duō.

阅览室里边的报纸、杂志很多。

There are many newspapers and magazines in the reading room. (6)

2. Interrogative.

a. Using interrogative words

Nǐ jiā hái yǒu shénme rén?

你家还有什么人?

Who else is in your family? (2)

b. With ma 吗

Tā shì Běijīng rén ma?

他是北京人吗?

Is he from Peking? (1)

c. The alternative question form

Wǒ biāntáoxiàn zhǒng bu zhǒng?

我扁桃腺肿不肿?

Are my tonsils swollen? (10)

d. Using háishi 还是

Nǐ xǐhuān chī yú, háishi xǐhuān chī ròu?

您喜欢吃鱼, 还是喜欢吃肉?

Do you prefer to eat fish or meat? (4)

3. Imperative, which indicates a request or a command.

Qǐng zuò ba.

请坐吧。

Please sit down. (4)

Nín xiān xiūxiūxiū ba.

您先休息休息吧。

Have a rest first. (6)

4. Exclamatory.

Nà shì duōme xióngwěi de jiànzhù a!

那是多么雄伟的建筑啊!

How magnificent those structures are! (15)

II. Sentence elements other than the subject, predicate and object:

A. Adjectives

1. Noun used as adjective

Qiūtiān, Xiāngshān de shù yè hóng le.

秋天, 香山的树叶红了。

In the autumn Xiangshan's leaves are red. (5)

2. Pronoun used as adjective

Nǐmen zhèr de zhá dàxiā hěn hǎo.

你们这儿的炸大虾很好。

Your fried prawns are quite good. (4)

3. Verb used as adjective

Yóulǎn de rén hěn duō.

游览的人很多。

There are many sightseers. (5)

B. Adverbs

1. Ordinary adverb

Wǒmen yìqǐ xuéxí.

我们一起学习。

We study together. (1)

2. Time word as adverb

Wǒmen xiàwǔ wūdian huídào jiāli.

我们下午五点回到家里。

We got home at 5 o'clock in the afternoon. (5)

3. Prepositional construction used as adverb

Tā zài Zhōngguó xuéxí.

她在中国学习。

She studies in China. (1)

Běijīng de xiàtiān bǐ chūntiān yǔ duō.

北京的夏天比春天雨多。

Peking has more rain in summer than spring. (9)

C. Complements

1. Complement of result

Wǒ chīwán fàn le.

我吃完饭了。

I have finished eating. (4)

2. Time complement

Wǒmen zài shān shàng wánle liǎng, sān ge xiǎoshí.

我们在山上玩了两、三个小时。

We spent two or three hours on the hill. (5)

*The number in parentheses indicates the number of the lesson in which this point was explained.

3. Complement of degree
Tā shuō zhōngwén shuō de hěn liúli.
他说中文说得很流利。
He speaks Chinese quite fluently. (7)
4. Potential complement
Wǒ jiǎng de zhōngwén nǐ tīng de dǒng tīng bu dǒng?
我讲的中文你听得懂听不懂?
Do you understand my spoken Chinese? (10)
5. Simple and compound directional complements
Tā chūqu le.
他出去了。
He has gone out. (12)
Dàshǐguǎn de tóngzhì zǒuchū mén lái yíngjiē wǒmen.
大使馆的同志走出门来迎接我们。
A comrade from the embassy came out to welcome us. (14)

III. Aspects of the verb

- A. Le 了 after a verb indicates completion of the action.
Wǒ mǎile yījiàn dàyī.
我买了一件大衣。
I bought an overcoat. (4)
- B. Zhe 着 after a verb indicates continuing action.
Yùndòngyuánmen jǔzhe huāshù.
运动员们举着花束。
The athletes held up bouquets. (8)
- C. Zhèngzài 正在 before a verb means the action is going on at the time.
Gōngrénmen zhèngzài láodòng.
工人们正在劳动。
The workers are working. (15)
- D. Yào 要 or jiù yào 就要 before a verb means the action will take place soon.
Wǒ hòutiān jiù yào qù Shànghǎi le.
我后天就要去上海了。
I will go to Shanghai the day after tomorrow. (15)
- E. Guo 过 after a verb indicates past experience
Guǎngzhōu, Shànghǎi, Hángzhōu wǒ dōu qùguo.
广州、上海、杭州我都去过。
I have been to Kwangchow, Shanghai and Hangchow. (15)

IV. Special types of sentences with verbs in the predicate

- A. The pivotal sentence
Wǒ qǐng tā lái.
我请他来。
I invite him to come. (11)
- B. Successive verb sentence
Wǒ hé wǒ àirén, hái zi qù gōngyuán wánle yītiān.
我和我爱人、孩子去公园玩了一天。
My wife and child and I went to the park and enjoyed ourselves for the day. (5)
- C. The ba 把 sentence
Tā bǎ xìn xiěwán le.
他把信写完了。
He has finished writing the letter. (13)
- D. The bèi 被 sentence
Wǒ bèi Hángzhōu de fēngjǐng xīyīnzhù le.
我被杭州的风景吸引住了。
I was fascinated by the scenery of Hangchow. (15)

V. Negative forms

- A. Bù 不
Tā bú shì Běijīng rén.
他不是北京人。
He is not from Peking. (2)
Zhōngwén bú tài nán.
中文不太难。
Chinese is not too hard. (1)

- Nǐ bú rènshi tā ma?
你不认识他吗?
Don't you know him? (2)
Tā shuō Zhōngwén shuō de bú tài liúli.
他说中文说得不流利。
He doesn't speak Chinese too fluently. (7)
Wǒ péngyou bìng le, chī bu xià, shuì bu hǎo.
我朋友病了,吃不下,睡不好。
My friend is sick; he cannot eat or sleep well. (10)

B. Méi (yǒu) 没(有)

1. Negative of the verb yǒu 有.
Tā méi yǒu nǚhái. (or, Tā méi nǚhái.)
他没有女孩。(他没女孩。)
He has no daughters. (2)
2. Stating that something didn't happen or action wasn't completed.
Yīnwéi wǒ zuìjìn hěn máng, suǒyǐ méiyǒu gěi nǐ xiě xìn.
因为我最近很忙,所以没有给你写信。
(or, ... méi gěi nǐ xiě xìn.)
(... 没给你写信。)
I have been quite busy lately, so I haven't written you. (7)
Wǒ méiyǒu chīwán fàn. (or, Wǒ méi chīwán fàn.)
我没有吃完饭。(我没吃完饭。)
I have not finished eating. (4)

Exercises

I. Change the following into questions:

- A. Use ma 吗 or the alternative question form, and answer in the negative:
- 那是餐厅。
 - 今天很热。
 - 昨天我们去游泳了。
 - 她有中文杂志。
- B. Use the appropriate interrogative word (shuí 谁, nǎr 哪儿, zěnmoyàng 怎么样, or duōshao 多少) for the underlined parts
- 那个同志在工厂工作。
 - 我的朋友是医生。
 - 那种汽车能坐三十人。
 - 这个城市的风景很美。

II. Complete the sentences with le 了, zhe 着, guo 过, zhèngzài 正在, jiù yào 就要 (yào) (要)

- 您等一会再走吧。____ 下雨了。
- 北京美术馆里挂____ 很多画。
- 他们没有参观____ 人民公社。
- 这种大衣既好又便宜,哥哥买____ 一件,我也买____ 一件。
- 我去找他的时候,他____ 看报纸。

III. Fill in with the five different types of complements already studied:

- 星期天晚上,玛丽吃____ 饭,就出____ 了。她在约翰家坐了____,九点才回____。她说,他们用中文讲话了,两个人都说____,都听____,他们非常高兴。

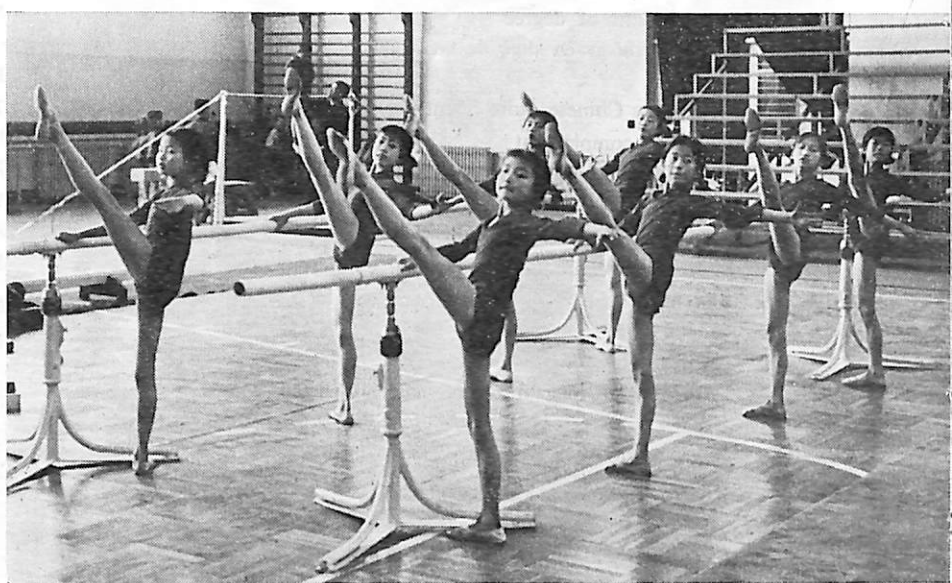
IV. Translate the following into Chinese:

- She began to study Chinese in 1972.
- We often practice ping-pong together.
- Autumn in Peking is better than spring, summer or winter.
- Last Sunday they went to climb the hills and took quite a few pictures on the hills.
- He was invited by his friend.
- When I finish writing the letter I will go to the ice-skating rink with you.
- The teacher invited the students to see a film.

(Answers on p. 17)



A gymnast gives a demonstration in the countryside.



Gymnastic training at the Peking Youth Amateur Athletic School.

SPORTS

Gymnastics — A Popular Sport

ALL EYES in the stands were fixed on a member of the National Gymnastic Team. After a fast straight body circle on the horizontal bar, like a seagull soaring in the wind, he flew into the air with a backward stretched somersault with double body twist. In a twinkling he landed firmly on the floor amidst enthusiastic applause from the spectators.

He was followed by a woman gymnast performing free exercises to piano accompaniment. She demonstrated a series of technically difficult movements with the grace of a dancer. Sometimes a handspring followed by a flip-flop and backward stretched somersault with full twist, sometimes several handsprings and flip-flops followed by a backward stretched somersault to come down poised on one foot. She had incorporated into her free exercises some of the movements characteristic of the dances of Sinkiang. The music, a national minority tune from Sinkiang, with its dancing rhythm was perfectly suited to the gymnastic movement. Among the gymnasts were also a number of very young girls whose difficult routines on the balance beam showed they had good training.

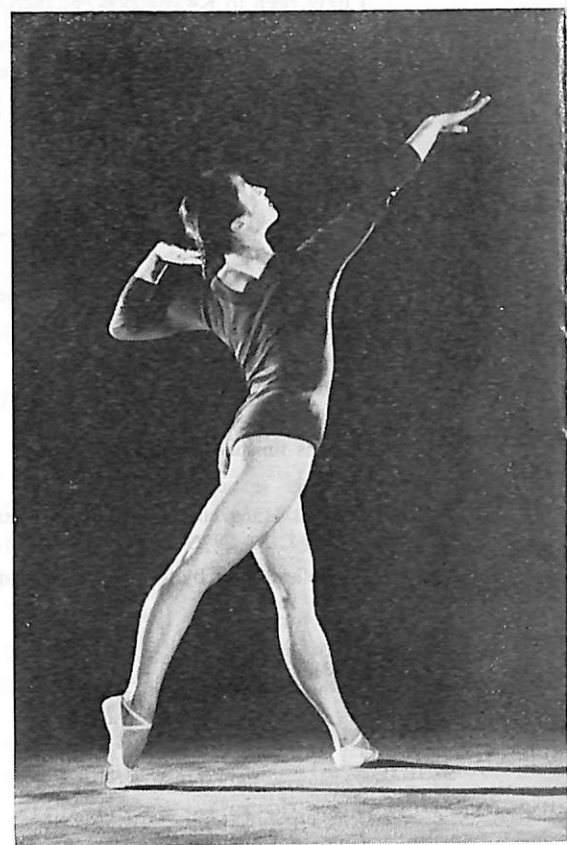
China's National Gymnastic Team is composed of outstanding amateurs, chosen from people in every field of work, including workers, students and soldiers. Among them are veteran gymnasts like Liao Jun-tien, Wang Wei-chien and Chiang Shao-yi, who have taken part in many international contests, and newcomers like Tsai Huan-tsung and Ning Hsiao-lin, who began training during the cultural revolution. Quite a number of both adults and juniors are from the Uighur, Chuang and other minority nationalities.

In the short-term training courses they have taken, they have used their time well to help each other, so that the whole group progresses together. Through this collective knowledge and strength the gymnasts have made some bold innovations in their sport and are training seriously in order to raise the standard of gymnastics in China and win honor for their socialist motherland.

Before liberation Ting Chao-fang from Anhwei province, an orphan, wandered the streets with her uncle, a folk singer. After liberation the people's government cured her of the schistosomiasis from

which she had suffered since she was two, and sent her to school. There she took a liking to sports. During training she practiced hard and made strict demands on her-

Ning Hsiao-lin at free exercises.



self. Though she was not very good on the high-low bars, she worked on them daily so that she could become proficient in all items of the four-event competition. With the help of coaches and other gymnasts she finally overcame this lack. Later she was chosen a member of the National Gymnastic Team. In the national meet last year she was second in the women's four-event total.

Because Tsai Huan-tsung is especially agile, his coaches designed a new routine on the parallel bars for him. It called for a somersault with half-twist in the 50-centimeter space between the bars and a shoulder stand on the bars. While doing it himself on the bars, coach Su Shih-yao studied ways in which accidents could be prevented. As Tsai practiced, there were always other members of the team standing by in case he needed assistance, and to help him master the movements. His good basic technique and bold creative spirit, coupled with the help of his comrades, enabled him to finally perfect it.

BEFORE liberation gymnastics as a sport was practically non-existent in China. In the decades

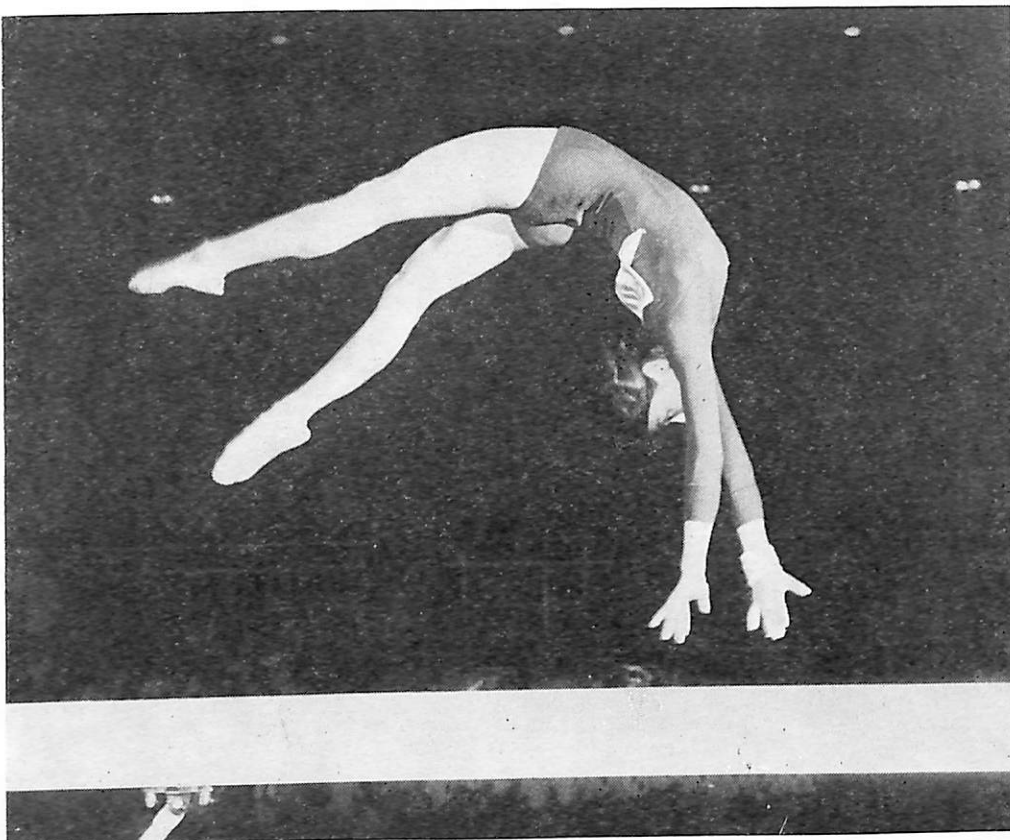


Yu Lieh-feng performing a full twist on the pommel horse.

of Kuomintang rule only one "national meet" was held, with just eight participants. Since liberation the people's government has promoted gymnastics. It is one of the items in physical training classes in middle schools and colleges. Quite a few of them have gymnastic teams with their own special teach-

er. Horizontal bars, parallel bars, boxes, vaulting horses, flying rings and mats are part of the sports equipment in many schools. Simple gymnastics equipment is also becoming more widely available in factories and communes. Some worker or commune member sports enthusiasts make the equipment themselves.

Tsai Chieh-ming does a flip-flop on the balance beam.



Gymnastics is now taught in most of the sparetime sports schools for children and young people which now exist throughout the country. They receive training for a few months, or up to two or three years. The school at Shihchahai in Peking trains 150 gymnasts a year from middle schools in its vicinity. Such schools have become the cradle of the new gymnastic sport in China. Most of China's outstanding gymnasts were trained in them. They include Yu Lieh-feng, former national title-holder in the men's six-event total and winner of some of the individual events; Wang Wei-chien, who holds the same titles in the women's events; the outstanding gymnast Yin Hsi-nan, and Yang Ming-ming, men's all-round champion in 1972.

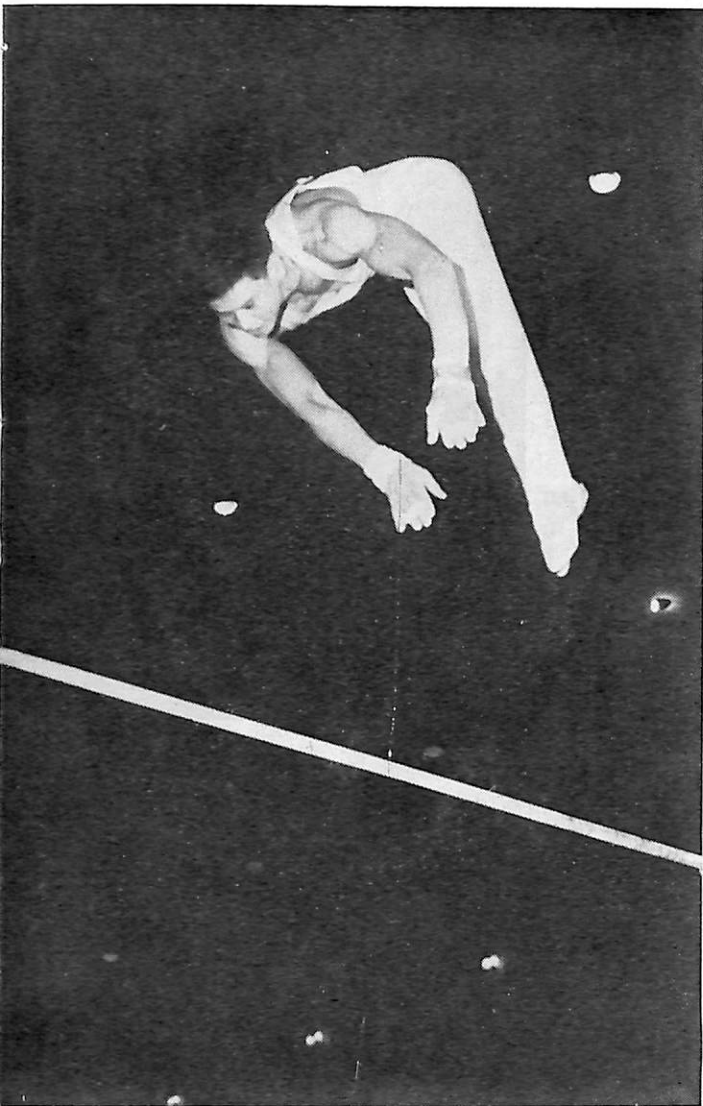
The gymnasts often go to factories, communes and army units throughout the country, including those in outlying regions, to give demonstrations and popularize the



Liao Jun-tien in a horizontal support on the rings.



Tsai Huan-tsung does a scissors on the pommel horse.

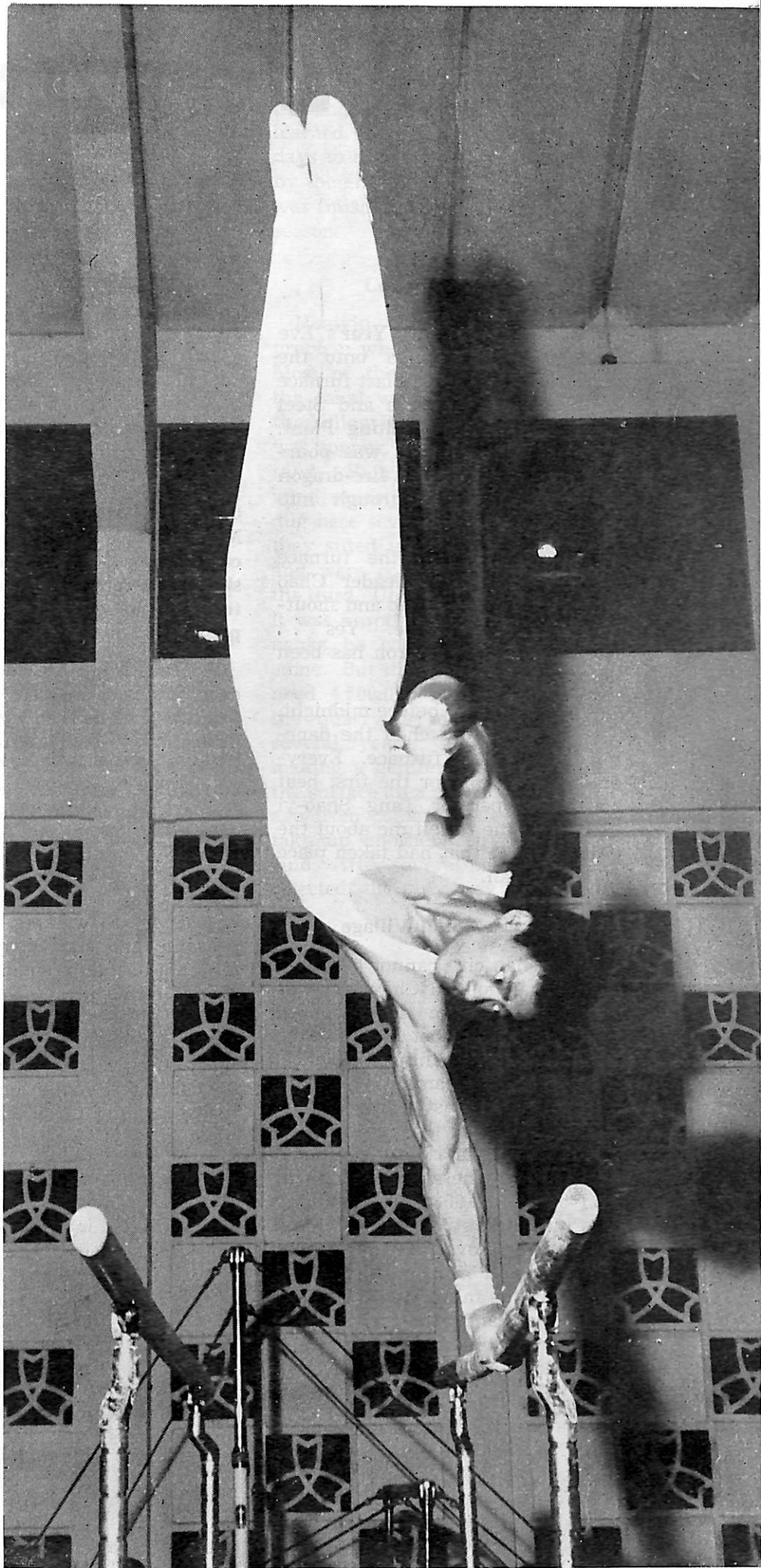


Tsai Huan-tsung leaps high off the horizontal bar in a jack-knife dive with a half twist.

sport. In 1971 for example, a number of them made a demonstration tour of Yunnan and Kweichow provinces and the Kwangsi Chuang Autonomous Region. Others put considerable effort into coaching the young contestants at the junior national gymnastics competition held in Shanghai in 1972.

As a way of promoting the sport, national competitions have generally been held every year and sometimes twice a year. Between 1953 and 1972 there were over 20 such competitions. The 1972 meet had 28 teams and a total of over 500 gymnasts participating. Through reviewing the level of achievement, exchange of experience and selection of new blood, such contests contribute to raising the level of gymnastics in China.

Yang Ming-ming does a full twist on the parallel bars.



Small Village Becomes an Iron and

IT WAS LATE New Year's Eve when we stepped onto the platform of the No. 9 blast furnace of the Ma-anshan Iron and Steel Company's No. 1 Smelting Plant. The last heat of 1972 was pouring out of the taphole, a fire-dragon racing through the trough into waiting ladle cars.

The telephone in the furnace office rang. Group leader Chao Chin-cheng picked it up and shouted in a hoarse voice, "Yes . . . No. 9. . . . Yes, our iron has been tapped."

It was one hour before midnight. The new shift watched the dancing flames in the furnace. Everyone was waiting for the first heat of 1973. Operator Tang Shao-yi used this time to tell me about the great changes that had taken place at Ma-anshan.

Once a Small Village

Ma-anshan city cannot be found on the maps of old China. It was only a small village of a few dozen families on the east bank of the Yangtze River in Anhwei province. When liberation came, the ruins of a few small blast furnaces left from the days of the Japanese invasion stood in solitude outside the village. The area was rich in iron ore. In 1953, the beginning of China's First Five-Year Plan, the people's government began to build a small iron and steel base here. By the fall of 1958, the first small mines and blast furnaces had been built, including the one which later became the big No. 9 furnace.

"On the afternoon of September 20 that year," Tang said, "Chairman Mao came to visit us!" He pointed to the furnace ladder. "Chairman Mao climbed that ladder to the platform, shook hands with all of us, walked to the front, bent down and looked into the

furnace through blue goggles. He asked us how much pig iron we could produce per day and with a smile calculated with us how much we could put out in a year."

To the leading staff members who were taking him around, Chairman Mao said, "**Conditions in Ma-anshan are very favorable. It can be developed as a medium-sized integrated iron and steel enterprise, because such an enterprise takes less time to develop.**"

A great leap forward in China's economy came in 1958. The situation was excellent and on this basis Chairman Mao formulated the Party's general line: "Go all out, aim high, and achieve greater, faster, better and more economical results in building socialism."

As part of the unified national plan of the people's government, thousands of workers, engineers, peasants and staff people poured into Ma-anshan from all parts of China. In a little over a year, mines, mills and shops had mushroomed along the Yangtze River. When Chairman Mao came again a year later, Ma-anshan was already shaping up as an iron and steel base.

In the fourteen years since then, Ma-anshan has steadily rebuilt and expanded into a medium-sized iron and steel complex. The once almost-deserted village has become a steel city of over 200,000 people.

At the stroke of midnight, the No. 9 furnace began to spout the first heat of iron of 1973. As sparks leaped in all directions, the sweating workers warmly exchanged New Year's greetings with us.

On New Year's Day, the workers of Ma-anshan proudly announced that in 1972 they had surpassed all their iron ore, pig



iron, steel and rolled steel targets. Steel was 14.47 percent higher, rolled steel was up 21 percent. Quality had improved and cost gone down.

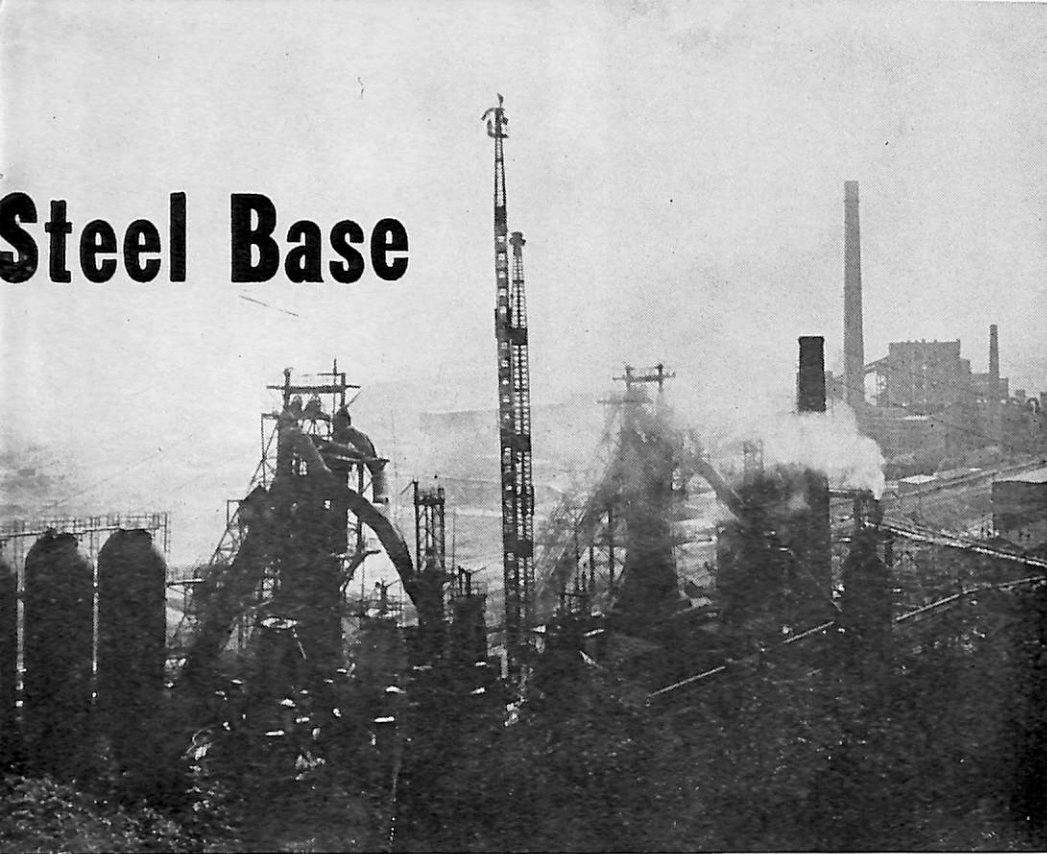
What lies behind Ma-anshan's rapid development? During our visit, our eyes and ears told us that everyone — and their wives — had fought to apply the General Line for Socialist Construction. Initiative and creativity flourished. Taking Taching, the nation's oil center, as their model for building a socialist industry, they relied on themselves and their own hard work to solve all problems and overcome all obstacles.

Party leaders and revolutionary committees were often seen in the mines and shops studying concrete problems, working side-by-side with the men and listening attentively to their suggestions for faster, more efficient methods. When a new plant or mine was to be built or equipment improved, they set up "command headquarters" on the spot, mobilized and organized everyone and, as if going into battle, concentrated all energies to win.

The Battle to Open Mines

Beginning in 1969, mines were expanded and larger ones opened in the hills around Ma-anshan. Each one was conducted as a mass

Steel Base



A section of the Ma-anshan Iron and Steel Works in Anhwei province.

movement. Leaders, staff members, engineers and miners reviewed the difficulties and mistakes they had encountered in opening past mines.

A dozen small mines had been built by 1959. Then came three difficult years for China caused by bad weather and poor crops. Revisionist Liu Shao-chi and his followers took advantage of this to sabotage China's developing iron and steel industry and cut down the number of mines. In Ma-anshan this brought on a shortage of ore and sharply reduced iron and steel output. The bitter lesson was: open mines, push steel production upward, then open new mines, produce more steel, and so on. The men went ahead with new enthusiasm and energy.

The Nanshan mine was to be Ma-anshan's biggest. But the ore was deep at Tungshan, one of its three open cuts, and great quantities of earth had to be excavated to reach it. If the excavation was to be done fast so that mining could start, a long railroad had to be built quickly to haul out the earth.

Mine leaders assigned the job to a construction department and gave them three months to do it.

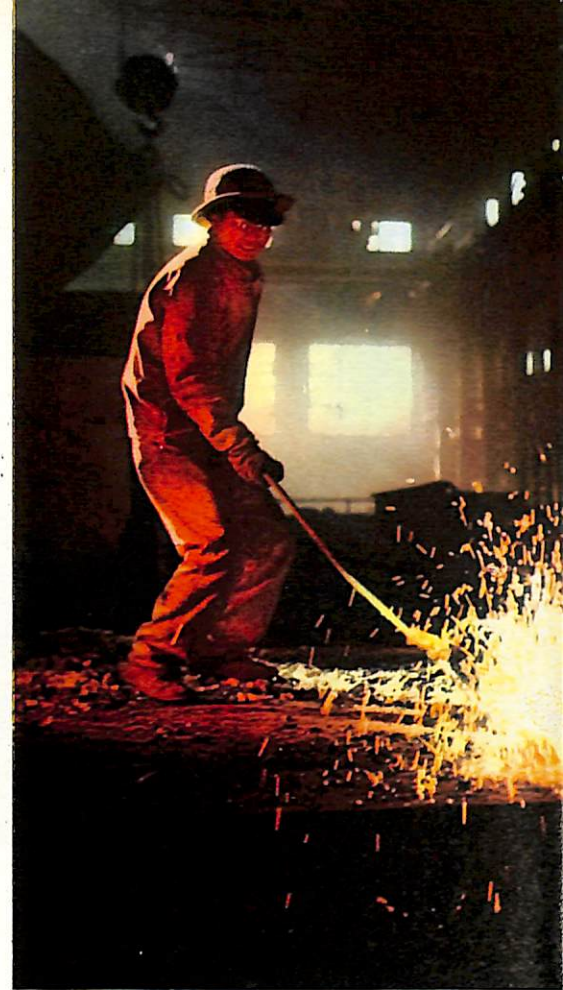
"Three months is too long!" the workers said. "To get at the ore quicker, we'll do it in half a

Inside the No. 2 Steel Rolling Mill.





Molten iron flows from the No. 9 blast furnace.



At an open-cut mine at the Nanshan Iron Ore Mine.



Before tapping at the converter shop of No. 2 Steel Mill.



In the furnace office a crew celebrates completion of the last heat of 1972.





A signal is given directing an action in the enlargement of a furnace.

month." Miners, staff members, engineers — and hundreds of wives and students — came to help cut the hills open, build roads, prepare the roadbed and lay ballast. The railroad was completed in twelve days, three days ahead of their promised half-month.

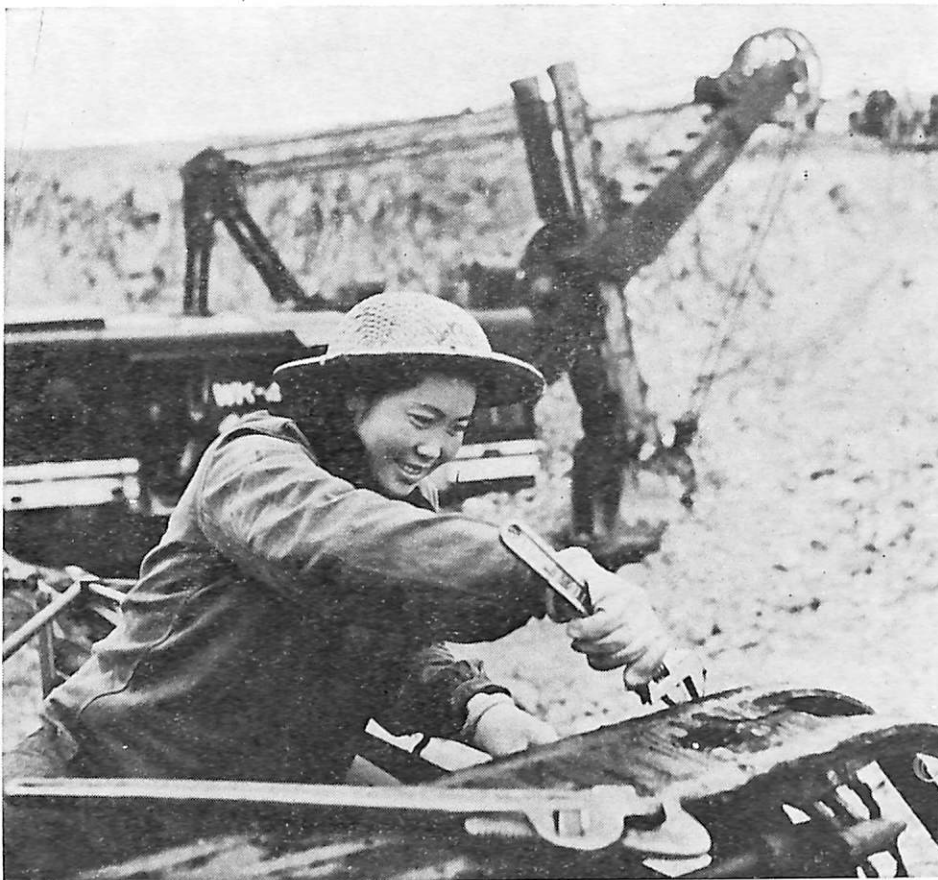
The Kushan mine, another Ma-anshan ore base, was covered with

shifting sand dozens of meters deep. Ore could be removed only if the sand could be controlled — a tough problem which had prevented mining at Kushan for years. But the battle to open new iron mines had to be won. Using high head pumps, the workers lowered the water table in two years. This stabilized the sand and allowed large-scale exploitation to begin.

While the mass movement was opening mines rapidly, mechanization increased greatly. When we climbed to the largest Aoshan open-cut mine at Nanshan, we saw automatic drilling machines boring holes for explosives. Nearby, giant excavators were biting into the ore and dropping it into the cars of a waiting electric train. Women engineers hauled it straight to the dressing plant where the cars automatically dumped it into a pit. Mechanical devices then processed the rough ore into fine-quality powder.

The battle to open mines increased iron-ore production to five times that of 1966, made Ma-anshan self-sufficient in ore and doubled its output of iron and greatly increased that for steel.

An engineer atop the electric locomotive she drives at the Nanshan iron mine.



Innovator Shih Ke-chi and his co-workers.

Working for Technical Change

The rapid increase in production made new demands on Ma-anshan's equipment and technology. Always working on the basis of existing equipment and skills, the workers, staff members and engineers continually searched out latent potentialities. Unless absolutely necessary, they never asked the government for new equipment but found ways to improve old equipment and adopt new techniques. In this process, many technical innovators appeared.

One of the best known is Shih Ke-chi, a 40-year-old Communist, formerly a blast furnace inclined hoist operator, now the vice-superintendent of the mechanical power department of the No. 1 Steel Mill.

Before the cultural revolution, Shih and his co-workers had automated the hoist, one of the two major operations for charging the blast furnace. In 1968 he and other workers formed a technical innovation group to improve the other operation for charging — the loading and weighing of the scale car.

At night in the ice and cold of early 1969, light often came from the windows of a small room next



A technical innovation group made up of workers, cadres and technicians.

to one of the blast furnaces. Shih Ke-chi and his group were reviewing their experience, analyzing their repeated failures and patiently carrying on new experiments and piling up data. Plant leaders often came to encourage them, and got other workers to look for materials and put up equipment for them.

In April they finally succeeded in making the operation of the scale car automatic. Then they worked out a unified electronic control system for the whole series of operations, making the charging of a medium-sized blast furnace fully automatic.

There are two open-hearth furnaces at the No. 1 Steel Mill. Ordinarily the molten steel flows through two spouts into two ladles. But here we saw three ladles. Why? Workers told us that two years ago a group of workers, leaders and engineers had been formed to handle problems of expansion. They increased the furnace's capacity by one-third but created a new problem — now the two ladles would not hold all the steel tapped. It was too difficult to make bigger ladles.

Finally the group hit on the idea of designing a special movable

spout, easily connected with the old spouts, which would carry the surplus steel into a third ladle. The leaders approved the idea, and

workers and the group built one in five days. No. 2 furnace followed suit.

These innovations were not exceptions at Ma-anshan. The company's converters, blooming and rolling mills, coking and sintering equipment, have constantly been improved and enlarged. In only three months, for example, No. 2 Steel Mill workers rebuilt their two Bessemer into top-blown oxygen converters, cutting down steel-making time and improving quality.

In the mass movement for technical innovations, younger workers did their part too, learning from veteran workers and mastering their skills through practice. Nearly all the young men and women workers in the machine repair department have gone to the department's night school to raise their political and technical levels. They invited old master workmen to teach them production skills and engineers to teach them technological theories. They took part in demonstrations of forging, riveting, welding and other skills. Under the guidance of veteran workers,

Plant head Sun Chih-lan (right front) leads a group in loading powdered mica at the mica and iron-oxide dressing plant run by housewives.



they often exchange experience. In the past year, these young workers have put forward a hundred suggestions for technical transformation and carried out eighty smaller innovations.

Housewives Step Out

Ma-anshan's constant development of the mass movement method is reflected in a steady growth in the number of workers. Wives, too — by the thousands — have stepped out of their homes to add to the ranks. Nurseries, kindergartens and other institutions ran by the city, mills and mines have helped create conditions for freeing them from household chores.

We visited the Lunghushan mica and iron-oxide dressing plant of the Nanshan mine run by the miners' wives. Sun Chih-lan, head of the plant, told us that they had gone into production only last year. Mine leaders had sent two veteran workers to teach them how to separate micaschist from magnetite. In spite of the dilapidated buildings and machines converted from antiquated equipment, last year they sorted out 100 tons of mica, essential for making a corrosion-preventing lacquer, and 4,000 tons of magnetite.

Sun Chih-lan is also a leader in the wives' committee at the Nanshan mine. She told us that there are 1,200 wives living around the mine. Six years ago only 70 had taken on production jobs. Today the number has jumped to almost 800. Following their committee's overall plan, the wives have built ten small shops and make welding rods, parts for electric locomotives and cement railroad sleepers for the mines. They have supplied 310 types of spare parts in the last few years.

Wives have organized groups to grow vegetables and grain for the mines. They have set up nine nurseries. They have started service trades such as barbershops, tailorshops and shoe-repair shops.

Asked why the women took up work with such zest, Sun Chih-lan answered promptly, "We have two hands like anyone else. Why shouldn't we build socialism, too?"

STAMPS OF NEW CHINA

In Honor of 'Iron Man' Wang

Wang Chin-hsi, "Iron Man" Wang (1923-1970), a vanguard member of the Chinese working class, is honored in an 8 fen stamp issued by the General Post and Telecommunications Office of China on December 25, 1972.



The late Wang Chin-hsi became known as "Iron Man" for his fearless spirit and inspiring example in leading the workers of Taching, starting from scratch, to build a large modern oilfield in the wilderness. A well-known model worker, at the time of his death he was a member of the Central Committee of the Communist Party of China, a deputy to the National People's Congress and a vice-chairman of the revolutionary committee of the oilfield. (The story of the Taching oilfield is told in *China Reconstructs* No. 6, 1971.) The stamp pictures Wang Chin-hsi on the drilling platform.

Deep blue, cobalt and red-orange. It measures 30 × 40 mm. Perf. 11. Engraved and photogravured. Serial No. 44.

Red Flag Canal

The Red Flag Canal in Linhsien county, northern Honan province, is featured in four 8 fen stamps issued by the General Post and Telecommunications Office of China on December 30, 1972.

The canal, built in a hard ten-year battle, winds through the Taihang Mountains to bring water from the Changho River in neighboring Shansi. It has enlarged the area of irrigated fields in Linhsien county and enabled it to change from a grain-short place into one with a surplus. (See *China Reconstructs* No. 6, 1971.)

Stamp 1, Working in the spirit of the foolish old man in the ancient legend who

removed the two mountains in front of his house, the people of Linhsien county are pictured cutting through a cliff to build a section of the canal.

Olive-green, red-orange and brown.

Stamp 2, The Youth Tunnel, a key section, 616 meters long, more than 6 meters wide and 5 meters high cut through the hard rock, by the labor of more than three hundred young people.

Bronze-green, greenish yellow and light blue.

Stamp 3, The Taoyuan Bridge-Aqueduct, one of several in the canal project. The bridge is capable of bearing the weight of truck traffic.

Blue, light blue and red-orange.

Stamp 4, The "Man-made River", an 8-meter-wide section of the trunk canal which, enclosed by a stone wall, runs for 70 kilometers along a ledge carved out of a sheer cliff. It has a volume of flow of 25 cubic meters per second.

Olive-green, light blue and greenish yellow.

The above four stamps measure 27 × 40 mm. Perf. 11. Engraved and photogravured. Serial Nos. 49-52.

