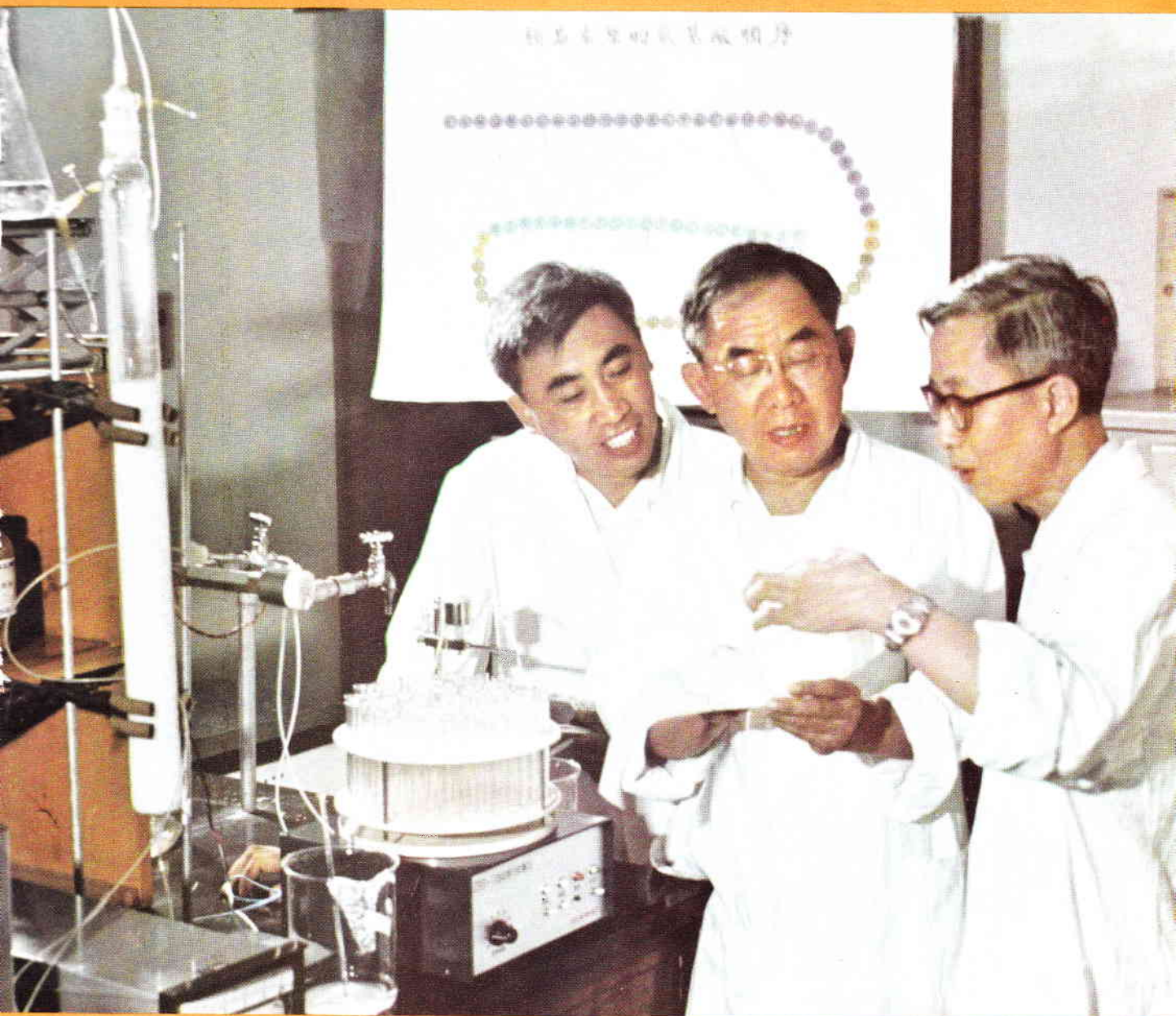


China Reconstructs

VOL. XXVIII
NO. 11
NOVEMBER
1979



**• More Insulin Successes • Problems of
Modernization • Norman Bethune • The Manchus**



Patient mother in a Shanghai park.

Zhang Shuicheng

China Reconstructs

中國建設

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Back: Wei Wei, the first giant panda ever trained to perform, does his stuff with the Shanghai Acrobatic Troupe.	Zhang Shuicheng	

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Articles of the Month

PROBLEMS IN CHINA'S MODERNIZATION

Advantages and shortcomings. Developing the Chinese model. Self-reliance and imports. Current tasks and priorities. Noted economist Xue Baoding gives down-to-earth opinions. Page 2

MEMORIES OF DR. BETHUNE

Battle-front stories of the great Canadian internationalist, the 40th anniversary of whose death comes this month, movingly recalled by well-known novelist Zhou Erfu, author of a widely popular book about him in Chinese, and by Bethune's former bodyguard Yang Yaofa. Page 16



SHANGHAI — WINDOW ON CHINA'S CITY LIFE

The past and present of China's largest metropolis, and the multitude of things the visitor can see there. Page 5



APPROACH TO THE SECRET OF LIFE



China's first-in-the-world synthesis of the protein insulin (protein is the basic material of life) has been followed by more than a decade's fruitful research in peptides, of which proteins are composed. Niu Jingyi, leading scientist engaged in this work, gives some facts. Page 13 (see also cover picture)

MY PEOPLE, THE MANCHUS

Aisin-Gioro Pu Jie, brother of China's last emperor, tells the history and present situation of China's once-ruling, Manchú nationality of which he is a noted member. Page 28



China's Modernization: Some Current Problems

XUE BAODING

SINCE the decision to shift China's focus to socialist modernization, foreign visitors have noted some economic and technical problems involved and wondered whether we will be able to cope. When I visited the United States with the delegation of the Chinese Academy of Social Sciences earlier this year, American friends asked if we had a practicable plan for modernization. Below I give some personal views.

A Four-Point Evaluation

Most important is a realistic overview of China's basic economic situation today. Broadly, there are four points people should be clear on:

First, there were remarkable achievements in our economic construction in the 17 years from the founding of the People's Republic of China in 1949 to the eve of the cultural revolution in 1966. As early as 1956, Comrade Mao Zedong summed up initial experience in his famous work "On the Ten Major Relationships." He explained the relationships between industry and agriculture, between heavy and light industry, between economic and defense construction, between the state, the production units and the individual producer, and so on. Later these concepts developed into two principles for our national economy. Agriculture was to be viewed as its foundation and industry as its leading factor. The order of its priorities was to be:

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agriculture, light industry, heavy industry.

Second, there were serious setbacks beginning with the cultural revolution in 1966, during ten years of interference and sabotage by Lin Biao and the gang of four which brought China's economy to the brink of collapse.

Third, there has been a decided turn for the better, since the downfall of the gang. Great efforts by both government and people have restored social order from the recent chaos, and saved industry and agriculture from the planlessness they had fallen into. The rapidity of recovery is reflected in the economic statistics for 1977-78 given by Premier Hua Guofeng in his "Report on the Work of the Government" at the Second Session of the Fifth National Congress*.

Fourth, this recovery has not yet wholly eliminated the imbalances of the past. Hence the present policy of readjustment, restructuring, consolidation and improvement. Its aim is to advance in the course of readjustment, to better the people's livelihood and make our economy flourish.

Advantages and Disadvantages

In total output of several major products China, as a result of post-liberation progress, is now among the world's leading countries. Our grain production is second only to that of the United States. We rank third, after the Soviet Union and the United States, in coal production. In steel output we have reached fifth place in the world; in elec-

tricity, seventh place; and in petroleum ninth place. China now has more machine tools than some industrially advanced countries. These are the achievements and advantages.

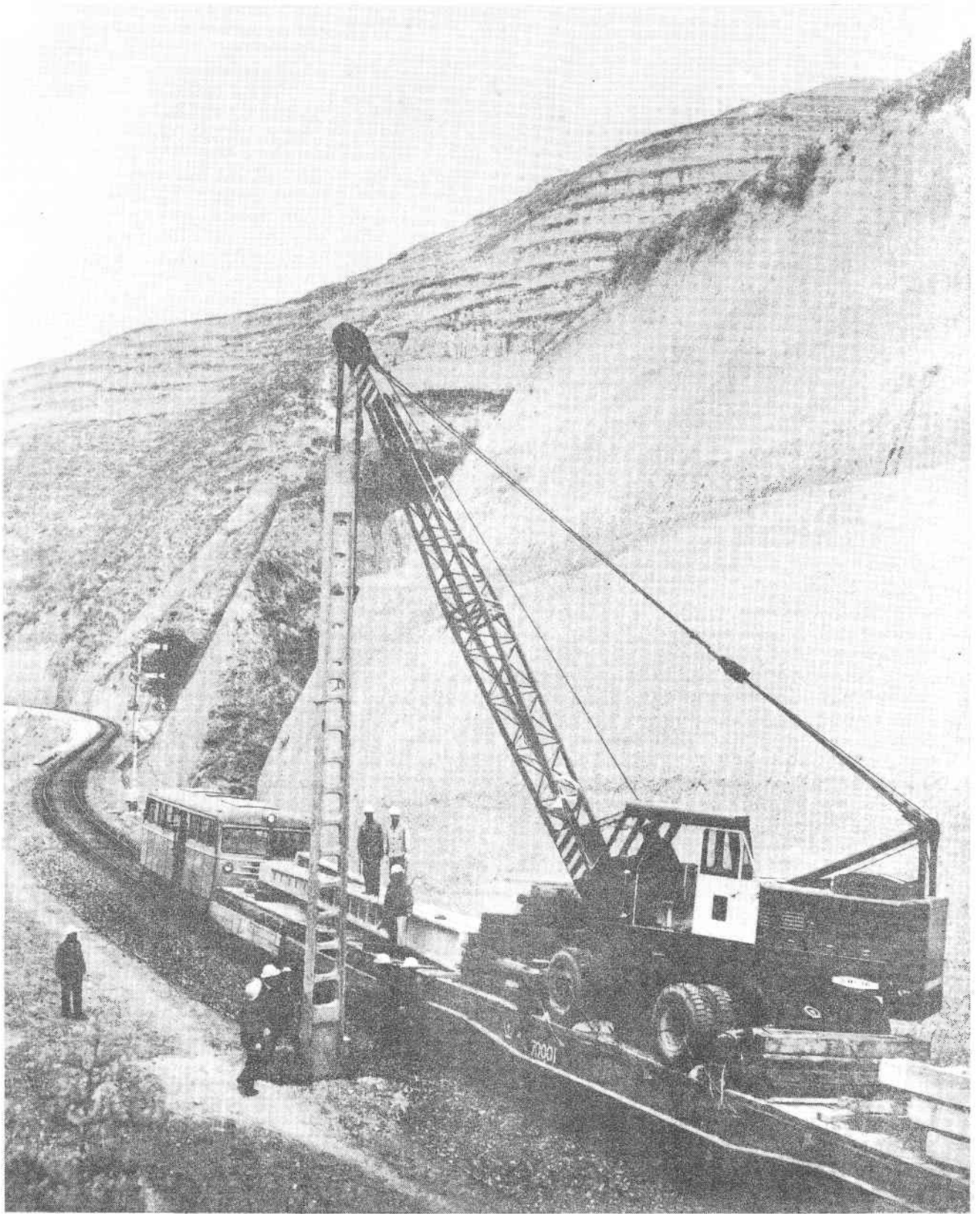
However, since China started from such poverty and because of her large population today, she is still behind the first hundred of the world's 150-odd countries in national income per-capita. Our people's livelihood has improved too slowly. They are still rather poor in food, clothing, daily necessities and housing. These are the lags and lacks.

The four modernizations, proposed by Premier Zhou Enlai at the Fourth National People's Congress in 1975 and reiterated by Premier Hua Guofeng at the Fifth in 1978, are aimed precisely at meeting the increasing everyday needs of the people and making our socialist economy prosperous and strong.

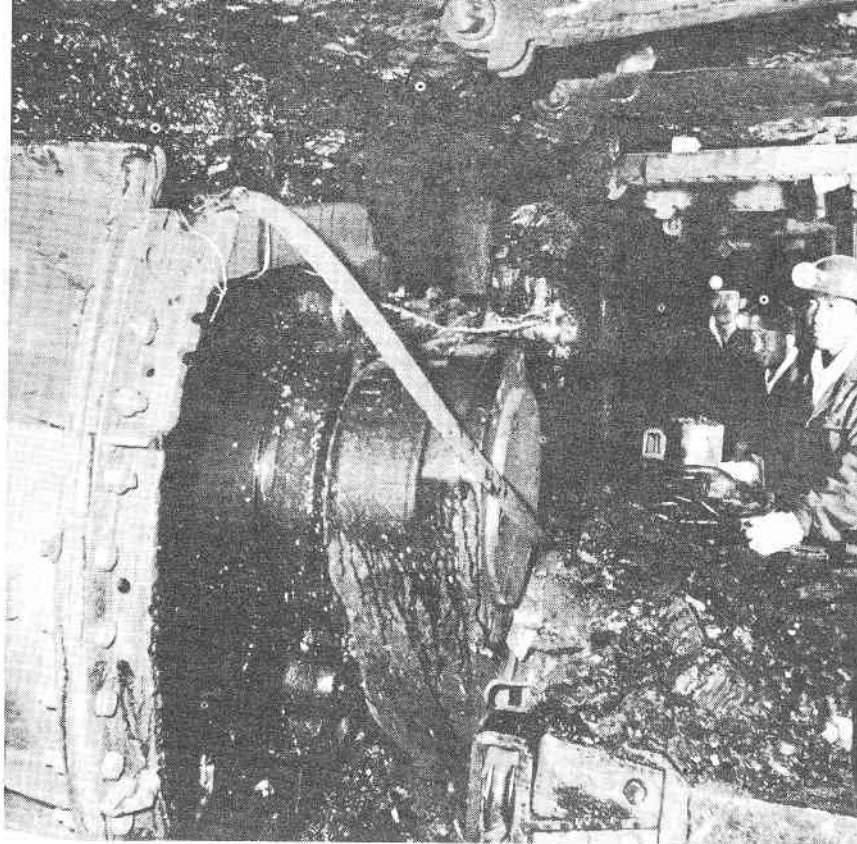
Seeking a Chinese Model

Very important is the choice of a road for China's modernization conforming to her own situation. Foreign friends have asked which model we shall pick. The American? The Japanese? The west European? Or the Yugoslav or Romanian models? We recall Chairman Mao Zedong's advice on the point. He said we should avoid copying mechanically from any foreign example, learn from the good experience of others, "make things foreign serve China," and study, digest, utilize and develop things useful to ourselves.

* See "Crucial Steps in China's Modernization," *China Reconstructs*, October 1979 issue.



Electrification of the Baoji-Tianshui section of the Longhai line, an east-west rail artery across central China.



Coal cutting in the Datong mining area, Shanxi province.

Chairman Mao was the first to put forward the magnificent goal of China's four modernizations on the basis of the universal truths of Marxism-Leninism and our actual situation. After the founding of the people's republic in 1949, and particularly after the basic completion of the socialist transformations in 1956, he repeatedly called on the Party to shift the focus of its work to economic construction and technical revolution. Upon his suggestion, at both the Third National People's Congress in 1964 and the Fourth in 1975, Premier Zhou Enlai put forward the challenging objective of bringing China's economy into the world's front ranks within this century. This is the behest great proletarian revolutionaries of the older generation have left to us to fulfil.

Chairman Mao, again with other leading revolutionaries, formulated the principles of developing China's economy at high speed and in a planned and proportionate way. They include: combining socialist education with material encouragement, relying mainly on China's own efforts

with external assistance as a supplement, enlisting both central and local initiative, developing large, medium-sized and small projects simultaneously and concentrating forces to solve major problems one at a time. They sum up the Chinese people's experiences in long years of struggle and construction. They likewise guide us today in creating and developing our Chinese model.

It is too early still to say what this model will be in its details. They will materialize as we tackle current problems and make the necessary analyses, studies, experiments and plans.

Solutions for Current Problems

Our key economic stresses in the next few years will be the following:

Accelerating Agricultural Development

Agriculture produces about 85 percent of the Chinese people's means of subsistence. It provides 40 percent of raw materials needed by our entire industry, including 70 percent of those for light industry which in turn sells two-thirds of its output to rural areas.

It yields, directly or indirectly, a good part of our national revenue. Such is the shape of things in China's economy.

In its social organization our agriculture has been transformed by the advent of the people's communes. But its production is still chiefly by manual work and subject to nature's whims. Of China's 100 million hectares of cultivated area less than 40 percent is worked by machines. Some present averages: one h. p. of mechanical power for every 2/3 hectares, one tractor per 200 hectares of farmed land, 220 kilograms of chemical fertilizer used per hectare (with the proportion of nitrogenous, phosphate and potash fertilizers often not suited to different soils and crops as science requires). Grain production per agricultural worker averages less than one ton, low productivity indeed, as compared, for instance, to that in the U.S.A. and Canada, generally between 60 and 100 tons.

In the last decade, the chief stress has been on farm crops, which made up about 70 percent of output, by value. Forestry, animal husbandry and fishery were neglected, or damaged as when some woods and pastures were destroyed and lakes drained to make tilled land, disrupting the ecological balance. Within our farming, overemphasis on grain sometimes crowded out industrial crops such as cotton and oil-seeds. And as regional traits and experience were at times disregarded, in spite of increased grain production the peasants' incomes in many places did not rise but occasionally even fell. Our new policies have already done much to correct such shortcomings.

Because China has little cultivated land despite her vast territory, our agriculturists, economists and scientists look to the setting-up of specialized agricultural bases in suitable regions. Not only will farming be promoted on the best land for each crop but wherever possible, mountains will be afforested, prairies planted with grass, and water surfaces used for fish-breeding — for diver-

(Continued on p. 69)

Shanghai—Window on Chinese City Life



Shanghai and the Huangpu River.

Chen Chunxuan

WITH a population of 11 million, Shanghai is one of the world's largest cities. One third of its people are packed into 150 square kilometers of the city proper, but the entire municipality covers 6,100 sq. km., including suburbs and ten rural counties. Its administration is equal in rank to that of the provinces, subordinate only to the central government.

In economic importance it is first among China's cities, accounting for one eighth of the gross output value of the national industry. One sixth of China's state revenue comes from Shanghai. A third of all her export goods are manufactured there. And as a metropolis of millions, Shanghai provides a good look into the people's changing ways of living and their outlook.

"Shanghai is almost all other Chinese cities rolled into one," an old Shanghai resident observes. For those who wish to study China's past and present, there are many exhibition halls and two fine museums. For those who like temples and ancient gardens, Shanghai's are comparable to the best in Suzhou and Hangzhou. One can find almost all varieties of Chinese artworks, antiques and curios in its shops as well as food specialties from all over the country. Six hundred restaurants

serve over 2,000 dishes representing all types of Chinese cuisines. After dark, theaters offer Beijing opera and local-style operas, ballet, concerts and performances by troupes from other provinces. The current hit is the one from Qinghai province, with its colorful Tibetan herdsmen's dances and songs. Weiwei the trained panda "star" who rides a rocking-horse is a constant attraction.

The Two Rivers

Shanghai owes its origin and rise to two rivers. One is the Wusong, also known as Suzhou Creek, which links the city with the Grand Canal north-south water route at Suzhou. The other is the Huangpu (Whangpoo). Entering the mighty Changjiang (Yangtze) River 28 kilometers downstream from the metropolis, the Huangpu is the city's outlet to the Pacific Ocean. In the Tang dynasty (618-907) Qinglong Town which is now in the western part of the city, was already a flourishing port, and was the landing point for Japanese envoys enroute to Tang court (today's Xi'an in Shaanxi province) via the Grand Canal.

The delta on which the great city stands, protruding out into the sea, was formed since the middle of the tenth century. As the delta grew, Suzhou Creek no longer flowed directly into the Pacific but into the Huangpu,

making the latter the more important of the two rivers. The town of Shanghai (meaning "going to sea") grew up on the Huangpu's western bank.

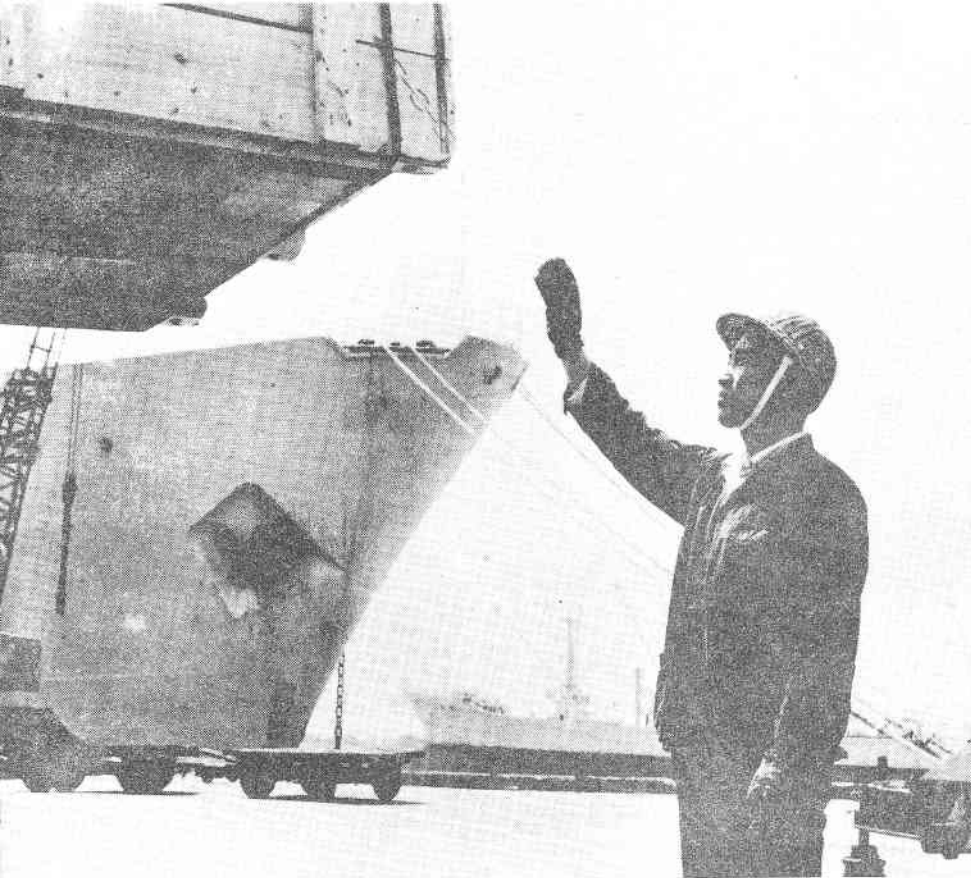
In the Yuan dynasty (1271-1368) Wang Daopo, an elderly Shanghai woman, made substantial innovations in cotton spinning and weaving techniques, and Shanghai became a center for handicraft textile production. A 1533 scroll depicts Shanghai as a town of moderate size. A later one shows it as a thriving foreign trade port in the late 18th century.

Unequal treaties imposed on China after the Opium War of 1840 threw Shanghai open to rapacious foreign traffickers, mainly in opium. Between 1845 and 1914 western imperialists seized 4,000 hectares of cultivated land around Shanghai and placed it under their own administration as the "international settlement" and the French concession. By 1930, jointly or severally, a number of foreign powers ruled enclaves within the city. While Chinese peasants were driven from their homes, the imperialists enjoyed extraterritorial status, meaning that they and their enterprises were not bound by Chinese laws.

River Trip

The Huangpu River has witnessed both the old misery and the new joy of the Shanghai people. One Sunday afternoon in June,

TAN MANNI is a staff reporter for China Reconstructs.



Unloading at the dock.

Zhang Shuicheng

with a hundred foreign and Chinese tourists, I took an excursion boat down the Huangpu to Wusongkou and back. Rows of freighters were in dock in the harbor area. Gantry cranes swung back and forth overhead, now moving with ease the same kind of bales that once nearly broke the backs of Chinese dockworkers. Gone, too, were the foreign gunboats that dominated the river for a century before 1949. Instead, the river was crowded with oceangoing tankers, freighters and passenger ships, many of them flying the Chinese flag. Sampans and junks with their sails up edged their way among the huge vessels like small fish among whales. My fellow passengers were busy with their cameras.

The band in the lower deck salon began playing popular songs and the younger passengers, mostly workers on their day off, answered its call. The rest of us remained in the upper-deck lounge, including some scholarly-looking men chatting over cups of tea and a pair of young lovers in the

corner oblivious to everything around them.

I struck up a conversation with a couple who were retired workers, and their daughter, son-in-law and grandson. I asked the stocky elder woman, Xu Xiaomei, whether she had ever been on a ship before. "I spent half my life on a boat," she replied. She had been born in a rickshaw puller's family in 1920. Her father, like many impoverished peasants, had come to the city to try and earn a living. Too poor to afford other housing, the family lived on the bank of Suzhou Creek in the small boat that had brought them. At the age of eight Xiaomei became a child laborer in a silk-reeling factory. When the Japanese invaded, a shell from one of their gunboats on the Huangpu killed her two brothers and wrecked their boat-home.

She married Xu Zhaoxiang, a truck driver, but still there was poverty, so much so that her two sons died in childhood. Then she lost the job she had in a mill.

After Shanghai was liberated in May 1949, Xu Xiaomei and

many other unemployed workers were called back to their old jobs. Two years later the mill assigned her an apartment in the then newly-built Caoyang Village workers' housing project. It was the first of 150 new housing areas for workers that have been built up to now, with a total floor space of 14 million square meters. Altogether Shanghai has provided new housing for one million people.

Now Xu Xiaomei and her husband, drawing pensions which total 120 yuan a month, can afford occasional visits to famous holiday spots nearby like Suzhou, Wuxi and Hangzhou. Xu Xiaomei's story is that of many Shanghai workers.

Behind the Skyline

The skyline of Shanghai's high-rise and now park-like waterfront, once known as the Bund, stood magnificent against the glow of the evening sky as the excursion reached its end. A century ago this waterfront was just a shoal along the river. In the 1840s foreign imperialists began building mansions along it with the money they had squeezed out of the Chinese people. Then it became Shanghai's Wall Street with banks, foreign firms and a consulate. They seized control of China's customs in which British, U.S. and other nationals held the top posts.

In 1934 the Hongkong and Shanghai Banking Corporation, which represented British capital, sent out by gunboats 57.5 million yuan of silver they had raked in in China. Now the former headquarters of that same bank is the seat of socialist power in Shanghai. It accommodates the office of the city government and its Communist Party committee. Other major buildings along the bund now house the city's trade union, women's association offices, state-owned banks and trading corporations.

Nearby, just opposite the Friendship Store serving foreign travelers and residents, is greenlandscaped Huangpu Park, built in 1868. This park was notorious

in history for the sign posted at its entrance until 1928: "Chinese and Dogs Not Admitted." (This did not include Chinese employed for manual jobs such as turning the carousel.) Now the park is a favorite spot for Shanghai's working people. Some come to view and photograph the changing river scene, the elderly to do their morning *taijiquan* (Chinese shadowboxing) exercises and pass the time of day, and young courting couples to take an evening walk.

On Nanjing Road

Nanjing (Nanking) Road, the city's main thoroughfare for the past century, was so named by the imperialists not just after another Chinese city but in "honor" of the humiliating Treaty of Nanking in 1842, forced down China's throat at the end of the Opium War. The name has been retained so that the Chinese people will not forget how that treaty brought them losses of territory and sovereignty. It is the chief commercial area, with 400 stores lining its five-kilometer length. There I met shoppers, long lists in their hands, speaking the dialects of many parts of the country. The Shanghai people, unlike those from outside the city, window-shop and compare many times before they buy. Department Store No. 1, the city's biggest at the corner of Xizang (Tibet) Road, has 100,000 customers a day and sells 30,000 items.

The large area of green opposite the store used to be the imperialists' racecourse. Now laid out with trees, pools and decorative rocks, it forms the 12-hectare People's Park, a pleasant oasis in the heart of the metropolis, and People's Square. A portion of the old racetrack grandstand serves as a rostrum for big meetings held there. The old Race Club now houses the 6.2-million-volume Shanghai Library, and a section of the grandstand building has been converted to a reading room. Now at the place where gamblers sought to make their fortunes on the horses, young men and women

pore over volumes of books looking for information to help them tackle problems in production, study for exams or broaden their knowledge in other ways.

I turned south onto Xizang Road and walked two blocks to Fuzhou Road and the first lane branching off from it. In the smaller lanes between the old-fashioned two-story houses, grandmas and grandpas of working-class families chat while keeping an eye on their small charges nearby. Who would think that before liberation this was the notorious Huile Li, "Meet-for-Happiness Lane," for Shanghai's rich, the red-light district—literally, for red lights above the doors of 34 of the houses proclaimed the name of the "Madam." Records for the year 1945 show that there were 1,000 "high-class" prostitutes there from which the owners and the gangsters linked with them made their ill-gotten gains.

Now the street is renamed Liberation Lane. After 1949, drug abuse, gambling and prostitution were outlawed. The government helped drug addicts rid themselves of the habit, and for former prostitutes provided medical treatment, training in productive skills and help in finding a job. Twenty-four former prostitutes still live in the lane. They are all employed in state or neighborhood-run enterprises, except for five who have already retired.

I talked with one of them. Now aged about 50 she was dressed like any other housewife who had gone into production. Daughter of a coolie, at the age of 15 she had been sold into a brothel on this street for 150 kilograms of rice, and then been trained to sing and "entertain" rich businessmen, politicians and top gangsters. Soon after liberation she married a clerk. "My past has been kept secret by the authorities, even from my children and the neighbors," she told me with a smile, but with tears in her eyes. "I have almost forgotten it, though sometimes it haunts me in my dreams. I am a respected worker with 20 years' seniority."

At noon I dropped in at the famous Wangjiasha snack shop on Nanjing Road for a dish of crisp-fried noodles and a bowl of "*tangtuan*," both Shanghai specialties. The latter—a heart of nuts and sweetened sesame seeds filled in rice flour dough and then boiled—are available in many places, but none are so good as those in Shanghai. Afterward, continuing west on Nanjing Road for a few blocks brought me to the famous Kaige (formerly Kiesel's) cake shop and café, where I had an icecream soda—one of the foreign-style dainties once available only to the few and now enjoyed by the many.

At Shaanxi Road I turned off north into bustling Shaanxi Beilu Market. One of the largest in the city, it serves 1,300 households nearby. Here you can get a glimpse of the local people's shopping and eating habits. The counters are well-stocked with meat, fish, poultry, eggs, vegetables, soybean products and pickles in neat array. For families where both husband and wife work, the market operates a ready-to-cook section with combinations of meat or fish with vegetables, or vegetables alone, washed and cut up ready to be dropped into the skillet. A salesman told me an interesting fact: in the busiest shopping hours, five to seven in the morning, more than half of the customers are young men. Their wives are busy getting the children ready for kindergarten or school so the fathers do the marketing. Such sharing of household chores is now quite common among city couples.

A Producer City

Despite what I have said about shopping, Shanghai is really a big producer city supplying the country with not only industrial goods, but know-how and technical personnel. Some of its newest achievements are on display in the magnificent Shanghai Exhibition Hall. In the elaborately-decorated main hall one finds many numerically-controlled machine tools with automatic cutter change. In another hall, I passed many visi-

tors looking attentively at a laser scalpel that doctors say compares favorably with the latest foreign-made ones for cutting bones. Shanghai has 9,000 factories with 1.6 million industrial workers. It also has 190 scientific research institutes with a total staff of 28,000. The laser scalpel is one of the many results of the joint efforts of Shanghai scientists, engineers and workers.

Revolutionary History

Perhaps it lies in the dialectics of things that Shanghai, once the prey of imperialism, should also have its own revolutionary history. It is the city of the birth of the Chinese Communist Party in 1921, of the May 30 (1925) anti-imperialist movement which roused the nation to the revolutionary upsurge of the late 20s, of the general strikes and uprising led by Zhou Enlai which in 1927 drove out the old warlords and placed workers in temporary control of the city, of decades of heroic underground work by the Communist Party.

A two-story brick house, known as No. 106 Wangzhi Road then on the southern edge of the city, was the place where the Chinese Communist Party was officially born in 1921. In those days of warlord suppression this house in the French concession, rented by an official in the warlord government, had been chosen as a meeting place to avoid suspicion. Twelve delegates sent by communist groups in various cities and provinces, including Mao Zedong from Hunan province, slipped in through the back door one by one on July 1, 1921. They left quickly on the night of the fourth day when a stranger burst in claiming he was looking for someone. The house was raided by the police 15 minutes later, but the delegates resumed the meeting the next day on a rented tourist boat on Nanhu Lake in Jiading, 98 km. away. The Wangzhi Road house is preserved as it was then. Other historical sites in Shanghai include the residence of the great

writer Lu Xun, his grave and a nearby memorial hall, and the last home in Shanghai of Dr. Sun Yat-sen, leader of China's democratic revolution of 1911.

Picturesque Garden

Shanghai is not famed for its beauty, but Yu Yuan is an exception. It is the garden of an official in the Ming dynasty (1368-1644) preserved in all its ancient charm. Hidden behind high walls right in the center of a bustling bazaar in the old part of the city, it has striking dragon-decorated carved-brick walls, and a small lake spanned by a marvelous zigzag bridge and flanked by pavilions and ornamental rocks. Its scenery is the basis of the famous "willow pattern" chinaware design.

Another point of interest in the garden is the hall that once served as headquarters of the Small Sword Society of peasants and handicraftsmen who in 1853 staged an uprising against the imperialists in Shanghai and the Qing dynasty officials who worked hand in glove with them.

The bazaar outside the garden is famous for its traditional local products. While foreign tourists are attracted to shops selling lanterns and exquisitely-carved walking sticks, visitors from other parts of China are more interested in Shanghai spiced beans, a nationally-famous snack. And the local bazaar visitors like to spend their time in the century-old teahouse overlooking a pond.

Also famous is the Jade Buddha Temple in the western part of the city, with its two rare statues of Sakyamuni, each nearly life size and carved out of a single piece of white jade. One, a seated figure, represents Sakyamuni achieving his enlightenment, and the other figure, in a reclining position, his passing into Nirvana. They were brought to Shanghai from Burma by a Chinese monk in 1882.

Twenty-four monks living in the temple carry on Buddhist services as they have since the temple was built, except for the years of the

gang of four, during which they worked at making paper boxes. Master Gan Quan, a senior monk says that 400 people came to sprinkle water on the statue of the Buddha on the occasion of his birthday this year and there are regular services, although now very few young people are among the worshippers. As Buddhism is an important part of China's ancient arts and philosophy, university professors often come to discuss its teachings with the monks, and 15 young men have come to learn Buddhist literature and history. They work in the Jade Buddha Temple, but will not become monks.

Last year 10,000 people went to the temple and the vegetarian restaurant and religious goods shop next door. There are several other well-preserved ancient temples and pagodas in the outlying counties of Greater Shanghai.

Anyone interested in the study of China's ancient civilization should not miss the Shanghai Museum. It has some of the country's rarest bronzes, most famous paintings from the Tang and Song dynasties and most precious Ming dynasty porcelains. How some of these things happen to be in Shanghai is an interesting story in itself: during periods of war, especially after the Japanese invasion in 1937, many individual collectors from all over the country brought their antiques to the "international settlement" in Shanghai, hoping that they would be safe there, since those countries were not then at war with Japan. After liberation the museum acquired them as gifts or through purchase.

Artifacts are arranged by type, so that one can systematically follow from beginning to end the development of a single kind of art, such as bronzeware or pottery. The latter includes pieces dating back to neolithic times unearthed in Shanghai's outskirts in recent years, proof that in this area, which is now taking a lead in the country's modernization, culture developed from very early times. □



Bus driver.

Zhang Zulin



Snack counter, one of thousands in Shanghai.

Youth Palace audience hears Brown University (U.S.A.) student chorus.▶

New Tianlun Village, a recently-built workers' housing area.

Yin Fukang







Model plane and ship builders at the Children's Palace.

Dusk in the park. . . .



Chess in a park.

Excursion boat on the Huangpu River, a popular summer-evening cooler.

Photos by Zhang Shuicheng



Steps Toward Solving Life's Riddle

After Insulin Synthesis: Progress in Peptide Research

NIU JINGYI

AN achievement that drew international attention to science in the People's Republic of China was the chemical synthesis of the smallest of the proteins, crystalline insulin, in 1965. In the years since it has stood many laboratory tests, and stimulated new research, both at home and abroad. Domestically, it has led to further success in the study of peptides* and proteins by many Chinese laboratories, significant both theoretically and practically.

The deep theoretical significance lies in the fact that protein is part of the material basis of life, and its synthesizing helps us toward an answer to life's riddle. Practically, such research has already yielded some medical and other applications.

Efforts have been made in the synthesis of peptide hormones and the study of the crystal structure, relation of structure to function and mechanism of action of insulin. Particularly active in these efforts have been the laboratories of the Shanghai Institute of Biochemistry, where I myself work, the chemistry department of Beijing (Peking) University, the Shanghai Institute of Organic Chemistry, Institute of Biophysics and Institute of Zoology. Additionally, our institute has made progress in the discovery of biologically active peptides,** the separation and sequential analysis

of snake venom toxin, the structure-function relationships and mechanism of action of insulin, the synthesis and application of peptide hormones, and methodology for the synthesis of larger peptides.

Structure and Function of Insulin

Our purpose in synthesizing protein is not how to replace natural with synthetic protein in industry, but to show that a complicated molecule like protein can be made synthetically through a chemical process. An important research subject in molecular biology today is the study of the relation of the structure of protein to its function by changing its structure synthetically and observing the result. In the past 10 years a group in our institute has created a series of insulin analogues by joining a portion of natural fragments with a synthetic section.

In an insulin molecule there are two peptide chains, A chain with 21 amino acids and a longer B chain with 30 amino acids. Our experiments show that the amino acids glycine and phenylalanine occupying positions No. 23 and No. 24 in the B-chain are of critical importance. Their presence determines whether the synthesized product will have activity.

The many synthetic analogues have also shown that the positions of B-23-24-25 cannot be occupied by other amino acid residues, or the product will lose effect.

Further, we have recently obtained insulin crystals from

chickens, snakes and silver-white carp. Although all of them have insulin function and can be crystallized, the sequences of their amino acids are different. These are portions of the sequences that clearly do not constitute the vital part. This has given us another clue. The reasons for insulin function, like the secret of life, are very complicated and we need to understand them one by one.

In recent years new breakthroughs were made on how insulin is formed in the body. We have recognized the nature of the precursors of insulin (i.e., proinsulin and preproinsulin), how insulin is secreted from β -cell of islets of Langerhans and how it regulates other hormones through the target (receptor). But we are still a long way from our main aim — which is to explain the function of insulin fully. To find the secret we have also synthesized glucagon, a peptide hormone closely related to insulin action.

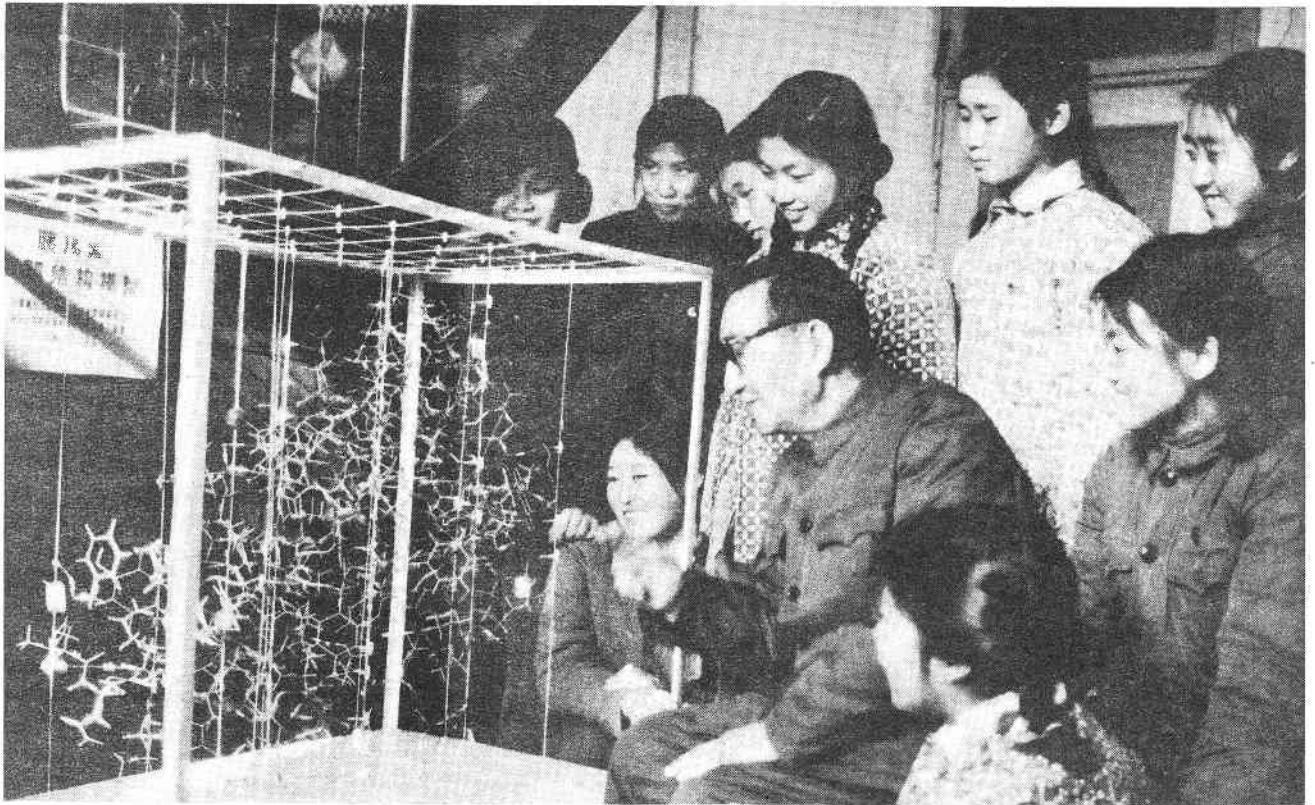
Synthesis and Application of Peptide Hormones

Since completion of the chemical synthesis of insulin, we have used either the liquid phase tech-

* Proteins are constituted from polypeptides, that is, chains formed by many amino-acids.

** Each protein performs a certain physiological function in the living body. This is called biological activity. Though necessary to life, this is not yet life.

NIU JINGYI (Ching-I Niu) is Director of the Division of Protein Research at the Shanghai Institute of Biochemistry of the Chinese Academy of Sciences.



Bei Shizhang, famous biologist, explains the spatial structure of an insulin molecule to Beijing students.

Xinhua

nique or the new and improved solid phase technique to synthesize several peptide hormones (oxytocin, vasopressin, hypertensin and pentagastrin as well as the two releasing factors (TRH and LRH) of thyroid and luteinizing stimulating hormones). Most of them are now produced industrially for medicinal and related purposes. Particularly noteworthy among our results is the synthesis of a vasopressin analogue which is a highly effective anti-diuretic ([1-deamino 4-Val] 8-D'Arg vasopressin). Its use has relieved many urinary incontinence sufferers. The luteinizing stimulating releasing hormone analogue (LRH-A, [DAIa⁶]=[Des GlyNH₂¹⁰] LRH ethylamide) showed about 100 times the activity of natural releasing hormone (LRH), and is now used on a mass scale in fish farms to stimulate four major freshwater species (black, grass, silver-white and big-head carp) to ovulate in fish ponds. LRH analogues also hold promise in family

planning and clinical experiments have been made.

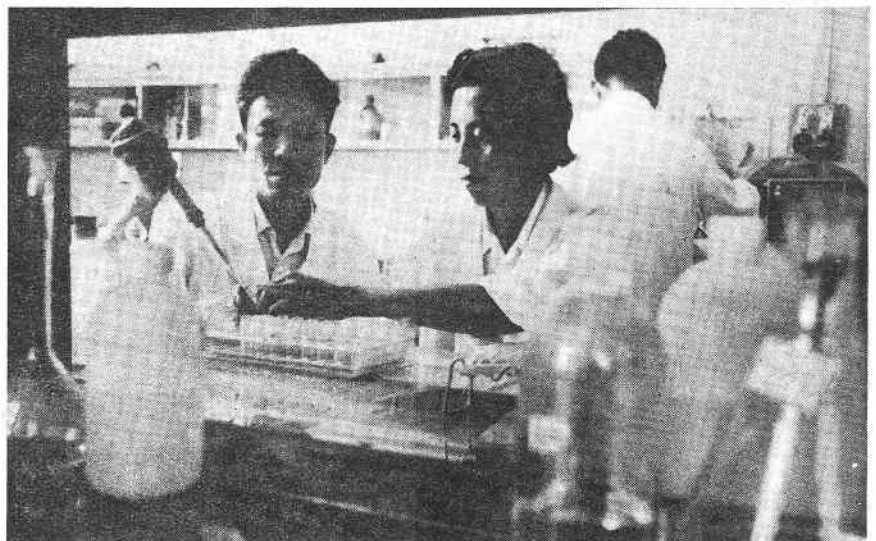
Improved Methods of Synthesis

The methods for synthesizing peptides are being improved con-

stantly. Those we use today have the advantages of reliable monitoring of the chemical reactions, yield and degree of purity of the product. They are far better than the way in which we first synthesized insulin many years

Determining the activity of insulin receptors.

Zhang Shuicheng



ago. The methods include liquid-phase and solid-phase techniques.

A few years ago, in collaboration with our colleagues of the Shanghai Institute of Organic Chemistry we synthesized the carboxyl-terminal 23-amino acid peptide derivative of the sub-unit of tobacco mosaic virus (TMV for short) coat protein by the conventional liquid-phase method using fully protected fragments. The solid-phase method was designed for the synthesis of larger peptides. Through stepwise fragment condensation of protected peptides section by section to a solid support, the distinctions between the desired product and the undesired impurities are much greater, rendering separation much easier. Thus we were able to obtain the synthetic 29-amino acid peptide glucagon in crystals readily. By further improving this method, we have synthesized two carboxyl-terminal fragments, a 23-amino acid peptide and a 48-amino acid peptide, of the tobacco-mosaic virus coat protein. The former was the same as that synthesized by the liquid-phase method, and they were both found indistinguishable from that part of the native TMV protein in giving the same product of tryptic digestion. However, as the properties of the intermediate product are hard to determine, we can find the biological function of such a large protein fragment only after the whole sub-unit (158 amino acid residues) is synthesized. Our recent attempts at the synthesis of shorter fragments of protein whose function can be easily determined have likewise been quite successful.

We believe that such attempts will not only pave the way for structure-function studies but also enable us to improve the methods of peptide synthesis. □

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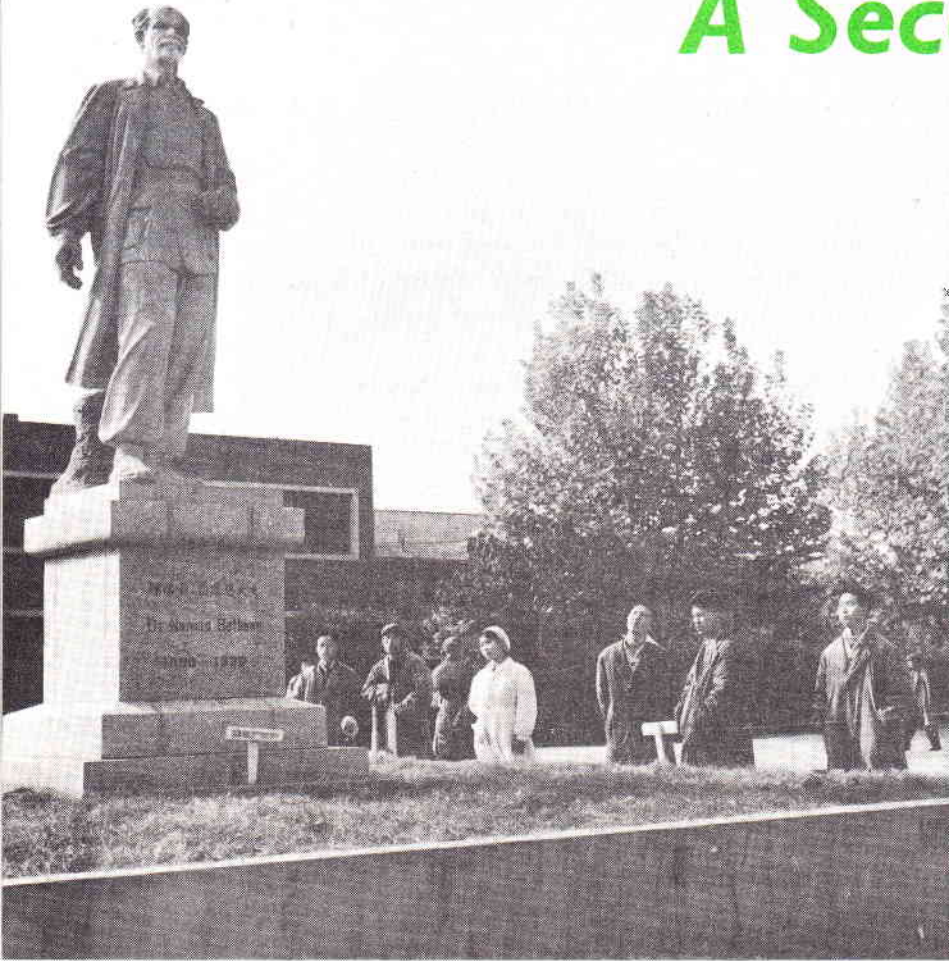
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A Second Life

—In Memory of
Dr. Norman Bethune
on the 40th
Anniversary
of His Death

ZHOU ERFU



The statue of Norman Bethune in Shijiazhuang, the city where he lies buried.

ONE late summer day during the war with Japan, probably in 1940, we were on our way on horseback to Pingshan from the military headquarters of the resistance base behind the enemy lines on the joint border of Shanxi, Chahar and Hebei provinces, where I worked. My companion and I passed by Wangkuai, a town in Fuping county in Hebei province where we came across a young woman named Sun who was also headed for Pingshan. We decided to go on together and set out the next morning. As she was on foot, we loaded her bedroll on one of the horses and took turns riding.

ZHOU ERFU, a well-known writer and author of the biography, Dr. Norman Bethune and the novel *Morning in Shanghai*, is a Vice-Minister of Culture.

Sun was not very tall. Her long braids were tied at the ends with red wool yarn. A pair of expressive shining eyes was set in a round face.

It was a pleasant journey; we chatted as we walked, not feeling the least tired. Sun began to tell us about herself.

SHE was a member of the battlefield service corps doing cultural and propaganda work in the Central Hebei Military Command. Originally a pampered young lady from a comfortable family and in delicate health, she had been drawn into the struggle against the Japanese invaders and had since been always on the move behind the enemy lines. Life was rough then. The strain during the fre-



quent Japanese mopping-up operations combined with hard conditions had worn her out. Her health deteriorated and she contracted tuberculosis.

Her companions in the corps sent for doctors, but none were able to do anything for her given the austerity of those war days. With medical supplies and equipment incredibly scarce, they felt her case of TB was hopeless. None could bring themselves to tell her the truth; they just assured her it would take time before she could

fully recover. But inwardly they all feared one day she would suddenly collapse and die.

Soon, however, news of Dr. Norman Bethune's arrival at the embattled central Hebei base area reached the battlefield service corps. They invited the Canadian doctor to come over one day to look at Sun. After carefully observing her symptoms, Bethune frowned. Sun's comrades were worried. Was there no hope for her? They asked.

"She can be saved," Bethune said, tapping his temple with the forefinger of his right hand, "but not here in central Hebei."

"Where does she have to go?"

"Beiping." (Beijing was then called by this name.)

This was like saying there was no hope. Beiping was then under Japanese occupation. The corps was hard up for money. Even if the money could be scraped together, how could Sun break through the enemy blockades and get into the city?

When Bethune returned to his unit, he wrote a letter to his superior, Zhou Shidi, Chief of Staff of the 120th Division stationed in central Hebei. He asked that the girl be sent to Beiping for treatment.

The letter was a tersely written memorandum. Zhou Shidi's opinion was that the battlefield service corps was not under his command, so he returned the note with these comments: "The comrade does not belong to our unit. It's not our responsibility to act on this."

Dr. Bethune was so shocked and angered his hands trembled. "I have no choice but to have it out with Division Commander He Long," he said to his interpreter, stammering a little.

"Why?"

"Since the Chief of Staff doesn't agree to send the patient to Beiping for treatment, there's no other way out but to talk directly to the General!"

The interpreter tried to explain why things had to be solved through the proper organizational channels. He described the immense difficulties the army was



Dr. Bethune (left) talking with Commander Nie Rongzhen (center) in June 1938, after arriving in the Shanxi-Chahar-Hebei resistance base.

then facing and suggested that Bethune not be so insistent. But the doctor thought that since he was working in the army, the army should help solve problems encountered in his work. He ordered his horse saddled and set out with his interpreter for the headquarters of the 120th Division.

ON arrival, he jumped off his horse and headed for the division commander's private quarters. He walked with precise, military steps unlike the casual intimate attitude he adopted in the past. He strode up to He Long and gave a formal salute. "General, I hope you will promise me one thing," he said in a respectful tone.

He Long, a hero of several revolutionary wars and one of the senior leaders of the entire people's forces of China, was standing in the center of the room. A stalwart figure with a jet-black moustache, he took his pipe from his mouth and exhaled a cloud of white smoke.

"What can I do for you, Dr. Bethune? Sit down, please!" He motioned to a seat, trying to relax the tension.

"I want to send a girl to Beiping for treatment . . ."

"It can't be done," He Long cut in without waiting for Bethune to finish. He had already heard about the case from Zhou Shidi.

"Why?"

"What if anything should happen to her in the enemy-occupied area . . ."

"I request that she be sent to Beiping for treatment," Bethune repeated.

"That's impossible . . ."

"May I know the reason?"

With his pipe in his hand, He Long said, "Conditions are difficult here behind the enemy lines. We have many wounded soldiers and patients. We can't send every one of them to Beiping. If we set a precedent this time, this kind of problem will be hard for the army to deal with in future. Why not send her into the mountains, to Yanan, or to the rear—that's possible."

Scrutinizing General He Long, Bethune could guess what he was saying. As soon as the interpreter finished translating he said, "She needs immediate treatment. I'm a doctor. I can't just stand by and do nothing."

"On this point we agree," He Long smiled. "Both you and I are much concerned about our troops. Of course we should give them medical treatment. But not necessarily in the enemy-occupied areas. We can send them somewhere else."

"I think, as a doctor, I know better than you where our patients should go for treating different illnesses," Bethune said stubbornly. "The girl's condition is critical. Any delay will cause her death. She might die before she can get to Yanan or the rear area. But she might be saved if we take immediate steps to send her to Beiping. It's closer."

He Long drew long and deep on his pipe. He pondered over the time factor in saving a patient. Then he said mildly, "If you insist. But better not do it in the name of the army . . ."

"Because of financial problems?"

"No, not that, we can subsidize the expenses."

"Then leave everything to me," Bethune said, satisfied.

THAT afternoon He Long came to see Bethune in his room.

"There seems to have been some misunderstanding during our talk this morning," he said, patting Bethune on the shoulder.

"Misunderstanding?" Bethune fixed puzzled eyes on the General.

"Yes," He Long nodded. "We are very moved by your warmth for the patients. We, too, love and are concerned for them. But you don't know some things we do: First, how dangerous it is for our people to go into the enemy-occupied areas for treatment. If they are discovered, the consequences can be terrible. Second, the Kuomintang has been spreading rumors in the rear area that people are disappearing in our central Hebei base area. If a girl suddenly leaves and we can't say where she's gone, it will arouse more suspicions. The expense isn't the problem. We can afford it."

"General," Bethune said, grasping He Long's hands, "do you understand how we doctors feel about the sick and wounded? We must do everything in our power to see to it that any patient gets timely treatment. This is the doctor's creed. Of course, what you've just said is quite true. But I've thought of a way: Miss Hall, a New Zealand missionary, is leaving soon for Beiping. I'm going to ask her to take Sun with her."

"Will she agree?"

"I've talked with Kathleen Hall many times. She's changed some of her old views and wants to join in the anti-fascist struggle."

"That's wonderful," General He Long said with a glad laugh. They shook hands warmly.

Disguised as a country girl, Sun left for Beiping the next day with Kathleen Hall.

Six months later she had regained her health, returned and plunged back into the struggle against the enemy. She worked in central Hebei for some time before being transferred to a drama troupe in the mountains under the third subcommand where she did her bit in the army's cultural work. When we met her she was going to Pingshan to attend the United University in North China.

AS she told us her story, her bright eyes ranged over the green mountain slopes and the ripening crops, as if she had not seen them for a long time.

Yes, if it weren't for Dr. Bethune's help, she might have died before he did, I mused. He rescued her from the brink of death and she gained a second chance at life.

But Dr. Bethune has left us for one, two . . . and now 40 years.

Though he died four decades ago, Dr. Bethune lives on in our hearts and minds. Many doctors of new China, serving the people both at home and abroad, are inspired by his revolutionary spirit of proletarian internationalism. □

Memories

I WAS one of Dr. Norman Bethune's three bodyguards in the spring of 1939 when he worked in the Shanxi-Chahar-Hebei border area, an anti-Japanese base led by the Communist Party. Memories of him are still fresh in my mind today.

'I've Come to Work'

One day my commanding officer told me that a Canadian doctor named Bai Qiu En (Bethune) was coming to work at Nanbeilou village in Yixian county, Hebei province where we were stationed. I and two other young soldiers were to be his bodyguards. We were excited, and curious. We gulped down our breakfast and started to tidy a room for him in a simple peasant home near regimental headquarters.

At the sound of hearty laughter we rushed out and saw our commander accompanying a tall man. "So that's Bethune," I thought. He had a broad forehead, a high nose and deep-set eyes. He was wearing a new gray army uniform and an armband inscribed "Eighth Route Army."

"Conditions are pretty hard here," our commander said apologetically.

YANG YAOFA is now a leader of Siping Construction Company in northeast China.

of Bethune

YANG YAOFA

At the battle front, 1939.



Dr. Bethune consults with a blacksmith while making simple medical instruments to serve guerrilla warfare behind the enemy lines.



"This is just fine." Bethune looked around with satisfaction. "That's the way it is in wartime. We have to be hard on ourselves today so that we can have happy tomorrows."

He unpacked his few belongings: a folding cot less than a meter wide, a small hurricane lamp, a leather medicine kit, packs of surgical instruments and a mess kit. His interpreter explained that Bethune not only slept on the cot but, when necessary, operated on it.

No sooner had we put away his things than he asked, "Where are the wounded? I want to see them at once."

"You must be tired after a whole day's journey," said the commander. "You'd better see them tomorrow."

"Dear comrade, I've come to work, not to rest." Grabbing a box of instruments, Dr. Bethune dragged the officer out.

Rounds Late at Night

The medical team worked under very poor conditions. Serious cases were put up in the peasants' homes. Lighter ones were scat-



Dr. Norman Bethune with an intern of the Model Hospital of the Shanxi-Chahar-Hebei Command, renamed the Bethune International Peace Hospital after his death in 1939.

tered among the mountain caves. Dr. Bethune soon learned everything about the casualties: how their wounds were healing and where they were staying. After a gruelling day of work, his precious hurricane lamp in hand, he would make the rounds of the village and the mountain caves.

On the third evening after Bethune's arrival, a wounded regimental commander named Chen took a sudden turn for the worse. With a dozen suppurating bullet wounds, he began to run a dangerously high fever. Such serious cases would normally be sent to a hospital in the rear. But Chen insisted on staying at the front. Dr. Bethune was moved by his bravery. "You are a real hero! I'll do my best to help you recover quickly."

That night Bethune went four times to give him injections and medicine. The third time, he returned to his room at two o'clock in the morning. I thought that now he would go to bed. But after a while he took up his medical kit

and was about to go out again. "You haven't touched the bed since morning. . . ." I said anxiously, hoping to stop him.

"It's time to give the regimental commander another injection." Pointing to his watch he smiled and said, "This gives me my orders."

The next day Chen's fever went down. "You must rest more and take care of yourself," he said to Bethune gratefully. "You're more important," the doctor laughed. "You have to win the war."

Three Sesame Pancakes

It was supper time. Throughout the whole day Bethune hadn't come back even once from the wards. I was waiting anxiously for him.

"Hurry," the cook called out to me, "come and help me get Dr. Bethune's supper."

"Millet and yams again?" I yelled back. The thought depressed me.

"You'll know soon."

Walking into the kitchen I saw three sesame pancakes and a little pot of chicken soup.

For several days the cooks had wanted to produce a good meal for Bethune. When they learned that he liked things made of wheat flour they baked three pancakes

with sesame seeds on top. They bought a chicken from a villager and made it into soup.

Happily, the cook and I carried the feast to Bethune's room. He was just back. He stood up to greet us and sniffed the fragrant cakes and steaming soup. He kept saying, "Good! Very good!" he said several times.

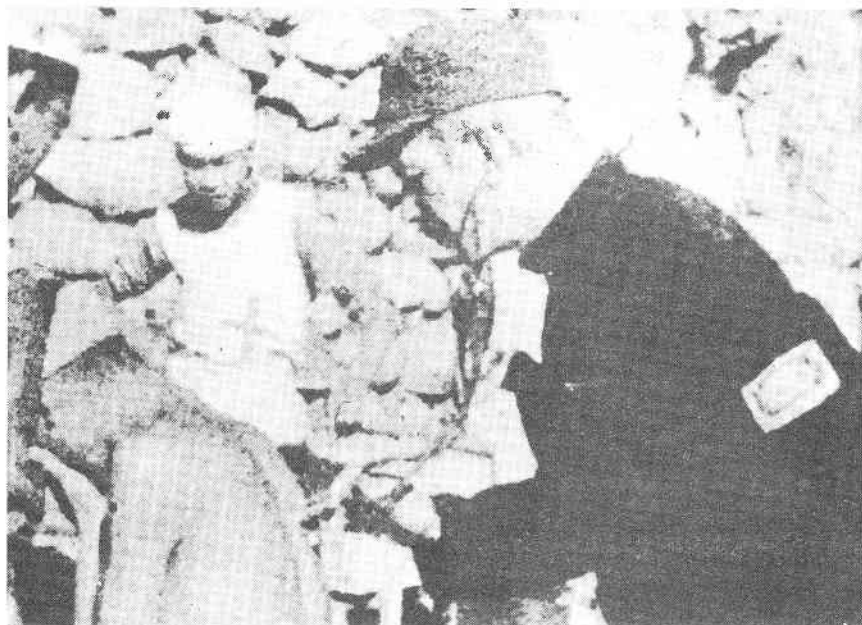
We were about to walk out when he stopped us, gesturing that he wanted two more bowls. Puzzled, the cook went and got them. Dr. Bethune divided the soup into three bowls and dropped the pancakes which he had sliced with a pocket knife into the soup. "Let's take these to the wounded," he said.

Realizing what he was up to, I objected, "The comrades in the kitchen made this especially for you. You must eat it."

"I'm quite strong. I don't need special care. But those wounded soldiers do." Before we could say any thing more he led the way, out.

Dr. Bethune fed one of the severely wounded men. I and the cook fed two others. On our way back Bethune fetched a bowl of steamed millet from the kitchen which he downed along with plain boiled yam slices, the only supplement. □

Checkup for patients.



City Co-ops: More Jobs for Youth

LU ZHENHUA and LIU CHUANG

FROM March through June this year, 67,000 young people in Beijing who had been waiting work assignment were placed in jobs mostly in newly-formed cooperative production and service enterprises. The problem of jobs for young people had been developing for several years. Since 1968, during the cultural revolution, many young people went to the countryside to settle down in rural communes after graduation from middle school. Some did not go because of their health or because one child from each family could remain at home with the parents. Others have come back for these or other reasons, or had been in the countryside long enough (in the recent period usually two years).

Jobs in the city would be found for them through the labor offices, but sometimes there would be a long, demoralizing wait. There were not enough jobs in Beijing's industry and commerce because there had been insufficient economic expansion in the years before the fall of the gang of four in 1976.

Yet there were things that needed doing. For instance, furniture stores have never been able to keep up with the demand. But even when people had their own wood and wanted to get furniture made, there was no place that did it. There was a 40-day wait to have a wool suit made in an overburdened state-run tailor shop. A survey among the 773 households

in a neighborhood in the south-eastern part of the city uncovered the following needs: 22 families where both husband and wife worked wanted a place where school children could have lunch; 27 families couldn't send their children to kindergartens because local ones were full; and seven families needed someone to look after elderly or ill members. Many asked for better laundry service.

Does Collective Equal Capitalist?

Idle hands but much needing to be done. Why hadn't anybody brought them together? For a long time there had been hesitancy to develop such services because of the ultra-Left thinking spread by the gang of four. Then only state-owned enterprises were stressed and it was implied that cooperatives, which are collectively-owned or individual craftsmen giving repair and other services, would lead to capitalism and should be gradually abolished. Since the downfall of the gang of four, it has been recognized that this idea was wrong, that such units have a place in the socialist economy and can make a contribution, and that neither a collective nor a person working by himself involves exploitation. Early in 1979 the Beijing city authorities began to tackle the problem, urging the neighborhood committees, which are the lowest level of city government, to undertake the task in their localities.

They approach it in several ways.

One is to expand existing neighborhood production groups. There are some in nearly every area, mostly started during the big leap forward year of 1958. These are collectively owned and manage their own affairs with guidance from the neighborhood committee. An example is Garment Factory No. 3 outside Qianmen Gate. It could have been making a lot more children's clothing for export. But in recent years, influenced by the gang-of-four stress on nothing but state-ownership, the city labor bureau had refused to allot it any more manpower. Now it has taken on 92 young people, operates a second shift, and has increased its output from 7,000 to 16,000 pieces per month.

A second way is to organize cooperatives which process work for larger factories. Sometimes this is done in a makeshift workroom, sometimes at home. A state woolen mill near Chaoyang Gate suddenly got an extra-large order of sweaters and caps for export. The machines could handle the work all right but there was a bottleneck on sewing the pieces together and finishing. A labor cooperative of 100 young people was organized to do the job, and 58 more are being trained as knitting machine operators.

Service Units

A third way is organizing more production and service co-ops. These often begin on some item which needs little capital investment or utilizes waste materials.

LU ZHENHUA and LIU CHUANG are staff reporters for China Reconstructs.



In a cooperative art store set up by young people.

Xinhua

One was started on the initiative of a worker in the Beijing Stage Costumes Factory who had a daughter waiting to be assigned work. His factory has a lot of scraps of gorgeous silk and satin left from making Beijing opera costumes, which it used to sell as waste material. Now the co-op, using them with scraps from other factories, makes hanging figures of silk-padded cardboard for home decoration. Another cooperative consists of glass blowers. A hundred years ago there was a Mongolian artist named Chang Zai whose glass grapes were reputed to have been taken for real ones by Dowager Empress Cixi. His five daughters carried on his art until their workshop was closed down during the cultural revolution. In June the Beijing city government asked the only surviving daughter, Chang Yuling, 68, to teach the

craft to a group of young people in order to preserve it. The products are sold through foreign trade channels.

Cooperatively-run services include binding volumes of magazines and repairing books, repairing furniture and electrical appliances and mimeographing, and also tea stands on the streets in the hot weather. In a busy neighborhood that has never had sufficient facilities for shopping and after-theater crowds one group opened a co-op wine and snack shop. To make shopping more convenient, others have opened up cooperative outlet shops on consignment for goods also sold by state stores. Services also include barber shops, a unit that whitewashes walls and a moving service, staffing neighborhood kindergartens and canteens where none existed for school lunches.

Having your photo taken at some well-known site is a favorite pastime of the many visitors to the capital, and now service co-ops have members posted in strategic places with cameras.

A fourth method is placing young people in temporary jobs in state-run enterprises and other temporary work. The labor offices make necessary arrangements for this purpose.

Where some small initial investment is needed for equipment or materials, the neighborhood committee advances the sum, which is paid back out of the proceeds. Co-op members who lend tools as equipment, for instance, a camera or darkroom fittings, receive extra payment for their use.

Happy with Earnings

Wages are decided by the amount of business. Most enterprises are the type which bring in quick

returns, so very soon the young people can be earning as much as a beginner in a state enterprise — an average of 30 yuan per month, which is sufficient for a single person. Many of the jobs are on a piece-work basis, at which a fast worker can earn considerably more. One of the best for wages is the furniture co-op near Chongwen Gate, also one of the first in the city. It has 24 members organized in 10 teams who go to people's homes to repair or build furniture, or do it in their workroom. In its first three months it took in 4,032 yuan.

Here wages accord with skill — about two yuan per day — and with the principle of “more work more pay.” This co-op, like others is managed by an elected administration of chairman, vice-chairman and three board members. Problems of production and finances are discussed at weekly membership meetings.

The young people are happy to be in the co-ops and to be earning. As of now most of them view these jobs as a temporary measure until, as government-owned undertakings expand, jobs become available in them. They are free to join or to leave the co-ops whenever they wish. However, the co-ops themselves are expected to be long-lasting. Thus 20 percent of each co-op's net profit is retained for expanding production and emergency needs.

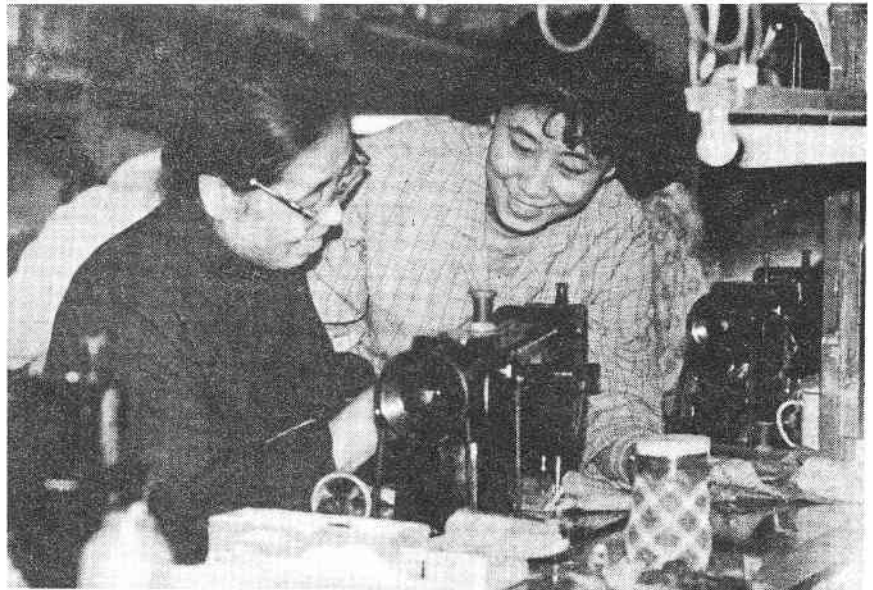
From March through June, 1,200 such cooperatives were set up in Beijing. The same thing is being done in other large cities. Their work fills in gaps in China's socialist economy that state enterprises so far fail to cover. □

CORRECTIONS

In our October 1979 issue: Page 19 — The second line of the uppermost caption should read: “east of the gorges, under construction.” Page 41 — The second line of the caption for the top photo should read: “destroyed by Anglo-French troops in 1860.”

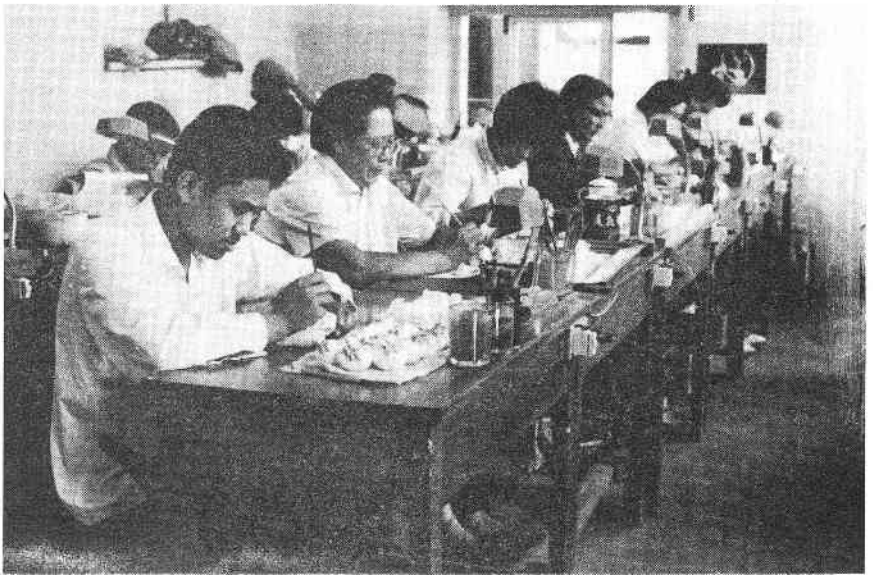


Chang Yuling passes on the art of blowing glass grapes, practiced in her family for 100 years.



A new apprentice at a Beijing garment factory learns from a veteran seamstress.

Chen Jizhong (first left), who is handicapped got a job in a cooperative making painted eggshells, a traditional art craft. Photos by Tian Feng

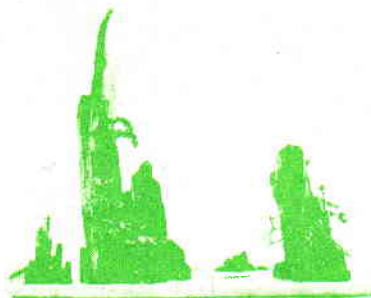


Miniature Trees and Landscapes

Try It Yourself

Methods for growing miniature trees and plants:

1. Soil is kept moist all the time. Plants are watered twice daily in summer, less during spring and autumn, and in winter only every few days. Too much water rots the roots.
 2. The miniature trees are kept in sunny rooms with good ventilation, especially during their growth period. In summer, trees like maples and Japanese white pines are kept out of direct sunlight which would burn their tender leaves.
 3. The plants are pruned and thinned in winter and occasionally in other seasons to keep them graceful and let in light and air.
 4. Fertilizer is applied frequently in small amounts. An exception are pines and cypresses which only need to be fertilized three or four times a year. In China, phosphate and potash fertilizers, beancake and partly fermented rapeseed cake (made from rapeseed husks after the oil has been pressed out) are used to enrich the soil.
 5. The soil is changed every two or three years; for the larger landscapes, every four or five. In spring new soil is added and dead roots are cut away to let new ones grow.
- The plants are weeded and checked for pests or disease. Plants from southern regions or those in shallow trays should be protected against the winter cold.



Miniature rock. Gao Mingyi

SINCE ancient times Chinese craftsmen have been growing miniature trees and gardens in pots. It is one of this country's traditional arts. Nature and scenes from classical paintings are reproduced on a much smaller scale. A shallow tray can contain an exquisite dwarfed tree or a delicate landscape complete with streams, hills, winding paths, some trees here and a pavilion there, and even a fisherman in his boat. These miniatures are from 20 cm. to one meter high.

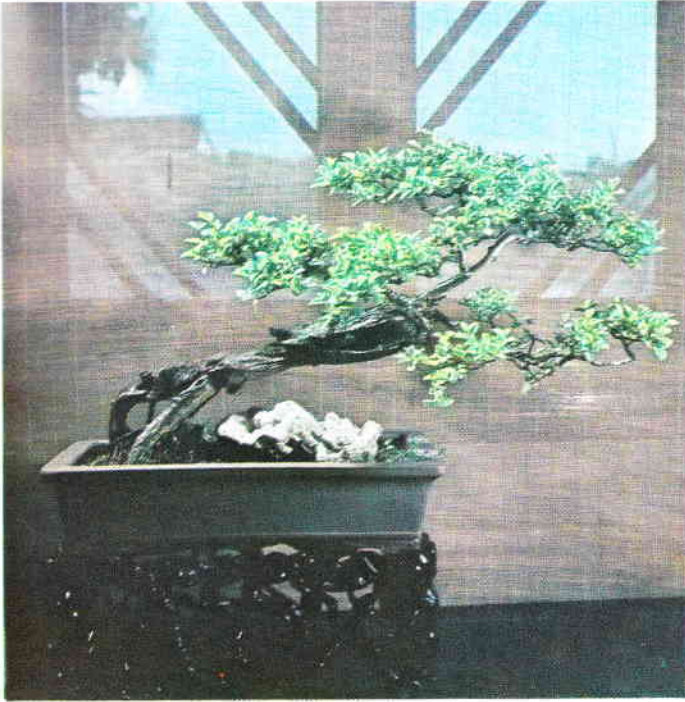
A few pots of these miniature gardens placed around a room can relax the viewer after the day's pressures and seemingly transport him to a serene mountain top. Parks often display them, as do some restaurants and hotels. Usually ranging in price from ten to several hundred yuan (some several centuries old are priceless), they make lovely and unique gifts.

These picturesque microcosms fall into two main categories: one dominated by trees, the other by rockery.

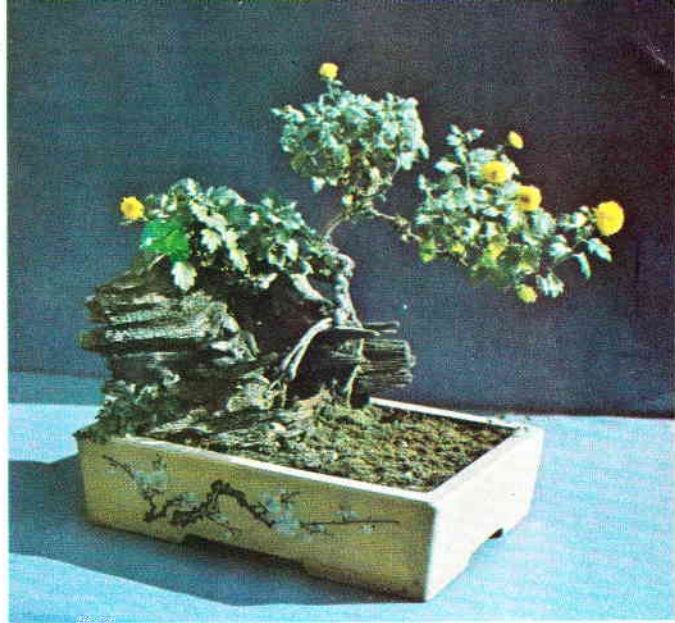
Landscapes with Trees

About 150 species or varieties of slender-branched trees which sprout easily are suited to miniaturization. Those commonly employed today are Buddhist pine, elm, box, broom and Japanese quince. Heavenly bamboo is also used. Styles vary with the different regions of China because of local plants and methods of cultivation. Stones, clay figurines and tiny pagodas are often arranged around the diminutive trees.

Along the Changjiang River valley, craftsmen usually tie the young branches with palm fiber to train them into the desired shape. The elm, yellow flax, pomegranate and Mei flower trees grown in Suzhou are known for their graceful, antique appearance. Craftsmen in Yangzhou coax the trunks of pines and cypresses into the shape of writhing dragons; the leaves look like floating clouds. Artisans in Shexian county, Anhui province, train the trunks of cypresses and plums to curl upward like a dragon playing.



Yellow flax, 70 years old.



Rock chrysanthemums.

Lava in stalactite shapes.



Axinite.

Elephant-like elm, grown for over 60 years.





Miniature rockeries and trees, arranged in window.

Photos by Zhang Shuicheng.

In Sichuan province miniature Japanese persimmon, Japanese quince and Serissa are twisted to resemble earthworms or dragons holding a pearl in their mouths. Horticulturists in Guangdong province in the south pinch the trunks and train the branches of orange-jessamine elms, yellow flax and Fujian tea bushes to keep the trees the size they want. The result is a look of elegance, strength and natural beauty. Shanghai craftsmen have studied the techniques of other places and created a distinctive style of their own.

Great skill is needed to grow these tiny trees which have to be constantly clipped and pruned, watered, fertilized, transplanted and sprayed with insecticides. The oldest trees are extremely valuable. Some pine and Chinese juniper miniatures in Yangzhou and Nantong have been preserved for 400 years. A dwarf pomegranate in Shanghai, planted 240 years ago, still blossoms and bears fruit each year.

Tiny Rock Gardens

In miniature rock gardens the stones are arranged with bits of grass, moss, elfin bridges and dainty pavilions to look like an entire mountain. Connoisseurs appraise a miniature landscape by its layout.

A Song dynasty book, A manual of *Yunlin Rock*, records 116 kinds of stone that can be used in making these landscapes. Most common are sandstone, stalactites, pumice and other loose-textured rocks which lend themselves to carving. Being porous, they also absorb water so that in time the rock surface acquires a growth of moss. Hard rocks like silicite, axinite and stalagmite are also used. The *Songhua Rock* is particularly precious.

The vessels containing these miniatures are themselves works of art fashioned of marble, porcelain or finely levigated clay. The glazed porcelain pots from Foshan and the earthy-red clay ones from Yixing are the most famous. The short, decorative stands which fit snugly around the base of the pots

are usually of redwood, sandalwood, boxwood or black bamboo.

History of the Art

The art of miniature gardening can be traced back to the Tang dynasty 1,200 years ago. For example, a mural in the passageway of the tomb of Prince Zhang Huai, second son of Tang Empress Wu Zetian, which was unearthed in Shaanxi province in 1971, shows a maiden holding a miniature landscape. Tang and Song dynasty poems in praise of these creations are still appreciated today. During the Ming and Qing dynasties (1368-1911) miniature gardening

became a pastime among the rich and several works were written giving expert advice on how to cultivate and arrange the diminutive trees and rocks.

Today, horticulturists throughout the country are encouraged to keep up this traditional art. Associations have been formed to exchange experience and techniques. Some people have made it their hobby. Special gardens have been set up for displaying these miniatures in the major southern cities. The Miniature Garden of the Shanghai Longhua Nursery, founded in 1954, is one of the largest such centers in China with a collection numbering 10,000. □

CHINA SCENES

An Album of Photographs

THE ancient land of China is possessed of a great variety of scenic beauty.

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Pu Jie and his wife Hiroko Sage at home.

Zhang Jingde

China's Manchu Nationality

AISIN-GIORO PU JIE

Brother of the late Aisin-Gioro Pu Yi, China's last emperor who reigned briefly in 1908-11 and died in 1967, the 72-year-old Aisin-Gioro Pu Jie is the senior member of the Aisin-Gioro clan, formerly rulers of the Manchus, one of China's minority nationalities. From 1644 to 1911, as the Qing dynasty, they were the imperial house of China. Below he tells about his nationality's traditions, their past and their present.

ALL MANCHUS, according to legend, descended from my reputed ancestor Aisin-Gioro Bukuliyongshun who was conceived by a heavenly maiden after eating a red haw dropped into her lap by a magpie while bathing in a pool atop the Changbai Mountains in northeast China. Every Manchu used to hear this tale as a

child. Obviously it was told to deify our lineage. But there is one bit of reality in it: the magpie was the totem of our clan.

The Manchus count themselves as a nationality in the early 17th century, when scattered groups living in northeast China were united by the outstanding statesman and strategist Nurhachi. But our origins can be traced back to

the Sushen nation mentioned in Chinese historical records as early as the 11th century B.C. The Sushens inhabited a vast area around the Heilong and Wusuli river valleys bounded on the east by the sea and the south by the Changbai Mountains. They were hunters known for their skill in making bows and arrows. From very early times they had relations with the people of the Huanghe (Yellow) River valley, who later became known as the Hans, China's ethnic majority.

After a long period of development and evolution a section of the Sushens, known as the Nüzhen, founded the Jin (or Kin meaning gold) dynasty which existed from 1115-1234. It began in northeast China, then spread over much of north China, while the Southern Song dynasty ruled south China. It was later defeated and dispersed. Studies show that the Manchus were among the descendants of these Nüzhen.

A New Nationality

In 1616 Nurhachi united the scattered groups in northeast China into a kingdom with the name of Jin*. Under it were many nationalities including Hans, Mongolians, Daurs and Xibos. In 1635 Nurhachi adopted the name Manchu to replace the name Nüzhen, to cover all the nationalities under his control.

In 1636 Nurhachi proclaimed himself emperor of this kingdom and changed the name from Jin to Qing. In 1644 the Manchus marched south through the Great Wall and established the Qing dynasty over all China.

The Manchus had had a social system of slavery which was gradually changed to one of feudalism at about this time. Under Nurhachi they were organized into political, military and economic units known as "banners," each under its own flag. At first there were

* Meaning "gold", also the meaning of the clan name Aisin-Gioro.

only four: yellow, white, blue and red. Later they were increased to eight with the addition of borders to the original. In times of peace the "bannermen" did farming and other work. But they became soldiers when fighting was demanded. This banner system became the basis of Manchu society.

Living intermingled with the Hans, our people learned from them more advanced culture and ways of production than they themselves had. The Manchu language and customs underwent marked changes despite strenuous efforts by the rulers to preserve old traditions.

Disappearing Language

The Manchu language is a branch of the Tungus sub-group of the Ural-Altai group. Toward the end of the 16th century the Manchus began to use the Mongolian alphabet (known as the "old script"). Later circles and dots were added to indicate Manchu pronunciation more precisely (the "new script"). After 1650 as more and more Manchus settled among the Hans south of the Great

Wall they learned to speak the language of the Hans, and it came to be used in their everyday life both north and south of the wall. However, official documents were written in both the Manchu and Han scripts.

I was told that father and grandfather used to speak Manchu in court, at family ceremonies and when entertaining relatives and friends. As a child my elder brother Pu Yi had a tutor to teach him to speak and write Manchu. But by the time I started going to school neither the opportunity nor environment for learning Manchu existed. I, like most Manchus of today, never learned it. It is now spoken only by some old people in remote villages in the extreme north of Heilongjiang province.

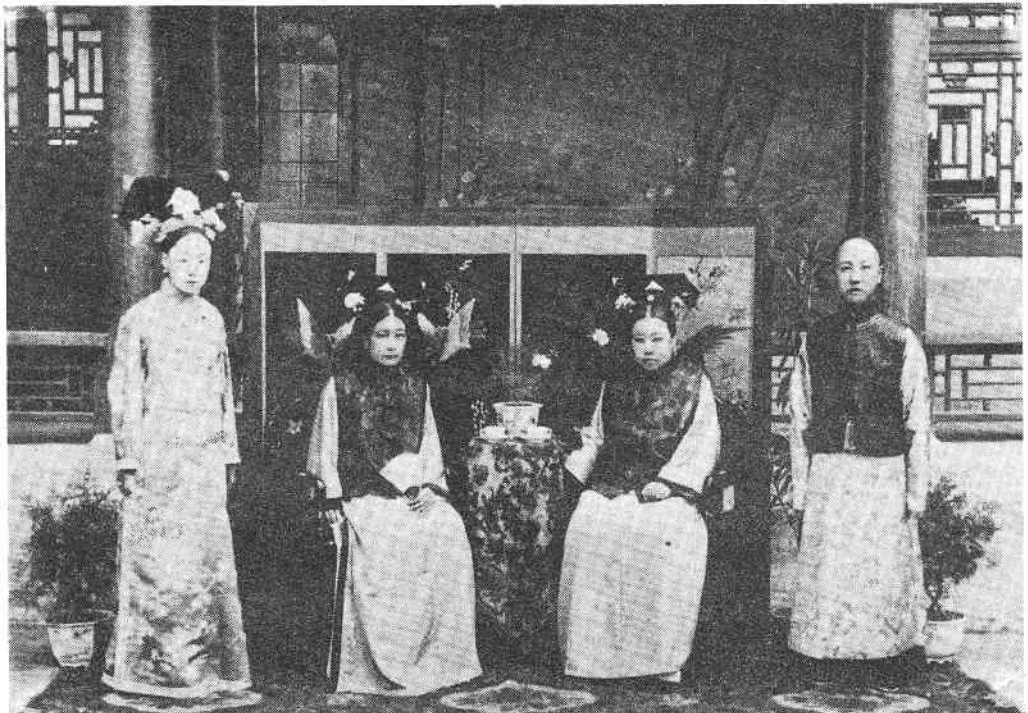
Riding and archery were once favorite Manchu sports. Before the 17th century children started target practice at the age of six or seven. When they were a little older they began their riding training and would go hunting in the mountain forests. The women were as skilled as the men. But after they became China's ruling nationality they gradually neglected these skills.



As a Manchu noble, Pu Jie learned to ride at the age of 10.

It was the custom among Manchu men to shave their heads, leaving a portion of hair in the center which was braided into a long queue. During their rule

The household of Pu Jie's father in Manchu dress. From right to left: the father, the father's mother and secondary mother, and Pu Jie's own mother.





Pu Jie and his wife (first and second right) and Pu Yi (second left) were received by Premier Zhou Enlai in 1961. Also present was the famous novelist Lao She (third left, front row), a Manchu by nationality.

they made this style mandatory throughout China. They wore a long straight gown with slits at the sides and full bell-shaped sleeves, and over this a vest, also with slits on the sides. The women wore high-collared side-slit robes over long trousers and dressed their hair in two high coils on either side of the head. They did not bind their feet as was then the custom among the Han women. Their shoes were of embroidered silk or cotton with a high rounded platform in the middle of the sole.

The Manchu emperors issued decrees forbidding intermarriage between Manchus and Hans. They, and the princely families, never had Han women as empresses or first wives, only as concubines. However, the attempts to prevent ordinary Manchus from marrying Hans proved a failure.

In early times the Manchu religion was a form of shamanism which divided the world into three levels, heaven where the gods lived, the middle for humans and the lower depths for devils. Later Tibetan Buddhism was introduced among the aristocrats, the Manchu rulers attempted to make it a tool to strengthen their ties with, and control over, the Mongolians and Tibetans who shared this religion.

The Manchus observed a strict etiquette. People saluted each other by bending the right knee with the right arm downward. When relatives and close friends met both men and women embraced cheek-to-cheek. They liked to sing and dance. At celebrations or banquets guests and hosts danced in turn in a circle, one arm raised to the forehead and the other behind the back. This was

done to the accompaniment of a singer backed up by the rest marking the rhythm in unison.

Hid Among the People

After the overthrow of the Qing dynasty by the Revolution of 1911, we Manchus were discriminated against. Things got even worse under Kuomintang rule which, out of Han chauvinism, oppressed all minority nationalities. Many Manchus had to pass themselves off as Hans or they could not get work. A survey made before liberation in 1949 showed only 80,000 people throughout the whole country registered as Manchus, the majority residing in big or medium-sized cities. A few of the more highly-placed were able to live off the sale of their property, jewelry or antique scrolls of calli-

graphy or paintings. Most Manchus, however, worked as rickshaw pullers, handicraftsmen, small traders or school teachers.

Since liberation in 1949 under the Chinese Communist Party's policy of equality and unity among all nationalities, we Manchus are still recognized as a separate nationality even though so little remains of our customs and language. In 1952 the people's government decided that minority people who live scattered among the people of other nationalities are entitled to have delegates for their nationality in the people's congresses in addition to the usual locality delegates. Seventeen Manchus were elected deputies to last year's Fifth National People's Congress.

Today there is no discrimination against any of us, whether from families of former aristocrats or workers. My brother Pu Yi and I had been pressed into serving the Japanese imperialists as heads of Manchukuo, their puppet state in the northeast and sentenced as war criminals. We were released in special amnesties for war criminals in 1959 and 1960 respectively.

Shortly after our return to Beijing we were received by Premier Zhou Enlai. He encouraged us to do our best to serve the people for the rest of our lives.*

Today my younger brother and six sisters are all living in Beijing (Pu Yi died of cancer of the kidney in 1967). My nieces and nephews are working in different fields. Last year I myself was elected a deputy to the Fifth National People's Congress and a member of the Nationalities Committee.

Manchu commoners have also experienced a great change in their living conditions. The Tanying production brigade of the Mujiayu commune in Miyun county north of Beijing is a Manchu community. Its members are descendants of a group of bannermen sent there in 1780 by Emperor Qian Long. After the fall of the Qing dynasty the 2,000 Manchu families there led a miserable life. Only 200 of the families were still there by the time of liberation.

During the land reform right after liberation they received land along with the other peasants and

later became members of the commune. The people's government lent the brigade funds to build an irrigation system which has increased grain output year after year. They live in solid, well-built houses. Every family has surplus grain and money in the bank.

A survey in 1977 found 2.8 million Manchus throughout China. They live in Beijing, Chengdu, Xi'an, Guangzhou and other cities, and are scattered throughout the three provinces in northeast China (Heilongjiang, Jilin, Liaoning), in Hebei, Gansu and Shandong provinces, and in Inner Mongolia, Xinjiang and Ningxia autonomous regions. Many outstanding Manchus have made a contribution to China's education, science, medicine and the arts. Among them are the writer Lao She, the Beijing opera singer Cheng Yanqiu, the linguist Lo Changpei and the painter Pu Xinshe. □

* Aisin-Gioro Pu Yi tells about this episode as well as his early life in his autobiography *From Emperor to Citizen* published in 1965 by the Foreign Languages Press, Beijing, and reissued in 1979.

FROM EMPEROR TO CITIZEN

(in English)

The Autobiography of Aisin-Gioro Pu Yi

(in two volumes)



From Emperor to Citizen is the autobiography of the man who was the last emperor of China and later puppet emperor of "Manchukuo," Japanese imperialism's pseudo-state in northeast China.

In Volume One he gives a vivid picture of the last decadent days of the Qing dynasty court. He reveals how after the overthrow of the dynasty he and other representatives of the feudal forces plotted with foreign powers to restore the monarchy, and how he became the Japanese imperialists' puppet.

In Volume Two he describes his life as "Emperor of Manchukuo," and then later in prison as a war criminal. He gives a lively account of how his thinking changed through labor and study. The final chapter tells about his new life as an ordinary citizen of people's China after his release.

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Prof. Bernhard I. Deutch of Aarhus, Denmark lecturing at the Shanghai Institute of Metallurgy.

Cooperation, Friendship and Results

— Joint Research with a Danish Scientist

ZOU SHICHANG

A LETTER from Prof. Bernhard I. Deutch, of the Institute of Physics at the University of Aarhus in Aarhus, Denmark, to our institute recently informed us that an article* we had written about a project we had worked on together in Shanghai had been accepted for publication by the Danish magazine *Radiation Effects*, and that he was ready to look at two other articles we sent him. All are results of our three months of work in late 1978 on laser annealing of ion-implanted semiconductors. As a new tech-

ZOU SHICHANG, an associate researcher at the Shanghai Institute of Metallurgy under the Chinese Academy of Sciences, is one of the people who worked with Prof. Deutch.

nique for integrated circuits, solar batteries and microwave devices; this subject has received much attention in international semiconductor research in recent years.

Just before Prof. Deutch went back to Denmark early this year, he spoke at China's first symposium on laser annealing of ion-implanted semiconductors in Shanghai, at which Chinese researchers from institutes of metallurgy, nuclear research and optics and fine instruments in Shanghai presented the results of their joint work with him. Prof. Deutch said these results showed the importance of international cooperation and free exchange of opinions among scientists from

different countries. Socialist cooperation in China, he went on, had provided conditions favorable for scientific work.

He himself said modestly that most of the work had been done by his Chinese colleagues and he had only been the catalyst. We, however, regarded him as the guiding and leading member of our team, and appreciate greatly both the help and the impetus he gave to our research.

This was not Prof. Deutch's first academic exchange visit to China. He had been here in 1972 and again in 1974. It was at his suggestion that the Shanghai Institute of Metallurgy and the Institute of Nuclear Research set up their first equipment for research on ion backscattering and channeling effects. Then, however, the work was stalled by the situation created by the gang of four. Prof. Deutch himself saw how our scientists were restricted in their efforts.

SHARING the happiness of the Chinese people at the ousting of the gang, he wrote us last year expressing his desire to do something for China's four modernizations and suggesting cooperative research with the two institutes on the laser annealing of semiconductors. He told us that work abroad had just begun on this subject, and hoped our cooperation would help narrow the gap between China and the rest of the world in this field.

Also last year, with some other Chinese scientists involved in ion implantation and ion beam analysis, I attended an international symposium in Britain and visited Prof. Deutch in Denmark on the way. He took us to the Institute of Physics where he works in the University of Aarhus. We also

* "Pulsed, Q-Switched Ruby Laser Annealing of Bismuth Implanted Silicon Crystals Investigated by Channeling."

visited his family and met his parents who were on home leave from their work in the United States. At that time, with Prof. Deutch we drew up a rough plan and prepared samples for our future work.

In October 1978, Prof. Deutch came again to Shanghai with his wife and two daughters. He was eager to get started. He stressed that he had come to work and not as a tourist. We ourselves had everything ready to begin. He took this as a sign of the new atmosphere in Chinese science.

Prof. Deutch brought with him a number of very recent scientific papers and filled us in on world research on our topic. He helped us to revise our plan for work and analyze the experimental data and later to sum up experience at every step and define new goals. He often stayed with us far into the night when problems came up. To speed up progress on our experiment we often worked round the clock.

It was Prof. Deutch who made suggestions on how to raise efficiency and overcome the handicap of our backward equipment. Frequently, he lunched with us right in the lab to get to know his fellow workers better and to have more time to mutually discuss technical problems.

IN SHANGHAI Prof. Deutch and his family lived in a hostel not far from our institute. They enjoyed the Chinese food very much. He even went to the kitchen and got our cooks to teach him to make some dishes.

During their stay, his wife Bente Deutch taught English in Fudan University. Their two daughters attended a nearby primary school where they learned in Chinese. At Christmas the family invited us to their home, and on New Year's Day we had a gay get-together. The professor read some poems and his wife sang some beautiful Danish songs. The two girls danced bits of *Swan Lake* with two Chinese friends. In other free time we would go walking in nearby parks, visit flower gardens or play

table tennis. Our friendly cooperation bore fruit. Using lasers we've succeeded in annealing, or restoring the structure of, gallium arsenide which had broken down when implanted with ions of tin, and of silicon after implantation of bismuth ions. This is China's first breakthrough in the subject.

Three months is a brief time, but it yielded significant results in-

valuable to our country. Though Prof. Deutch has gone home, our cooperation continues. He sends us literature and information on new developments in the field. And descriptions of our work are being made available to other Chinese scientists through publication in two Chinese magazines *Electronica Sinica* and *Foreign Electronic Technology*. □

Conferring with Chinese colleagues.



With the cooks who taught him to make Chinese dishes.



The Photography of Chen Fuli

HUANG XIANG

Chen Fuli at Mt. Huangshan in 1978.



THE work of the well-known Hongkong photographer Chen Fuli (Chan Fook Lai) was frequently shown and acclaimed at China's national photographic exhibitions before 1966. Last July he presented a one-man show in Beijing at the invitation of the Chinese Photography Association. Profes-

HUANG XIANG, a well-known photographer, is a board member of the Chinese Photography Association.

Answering visitors' questions at his exhibition.



sionals and amateur camera enthusiasts considered it an excellent opportunity to learn from him.

Deeply patriotic, Chen Fuli has focused his lens on many subjects. The greater part of the 120 pictures shown were taken since 1959 over the length and breadth of China, from Xinjiang in the northwest to Xishuangbanna in Yunnan province in the southwest, and from Heilongjiang in the northeast to Fujian in the southeast.

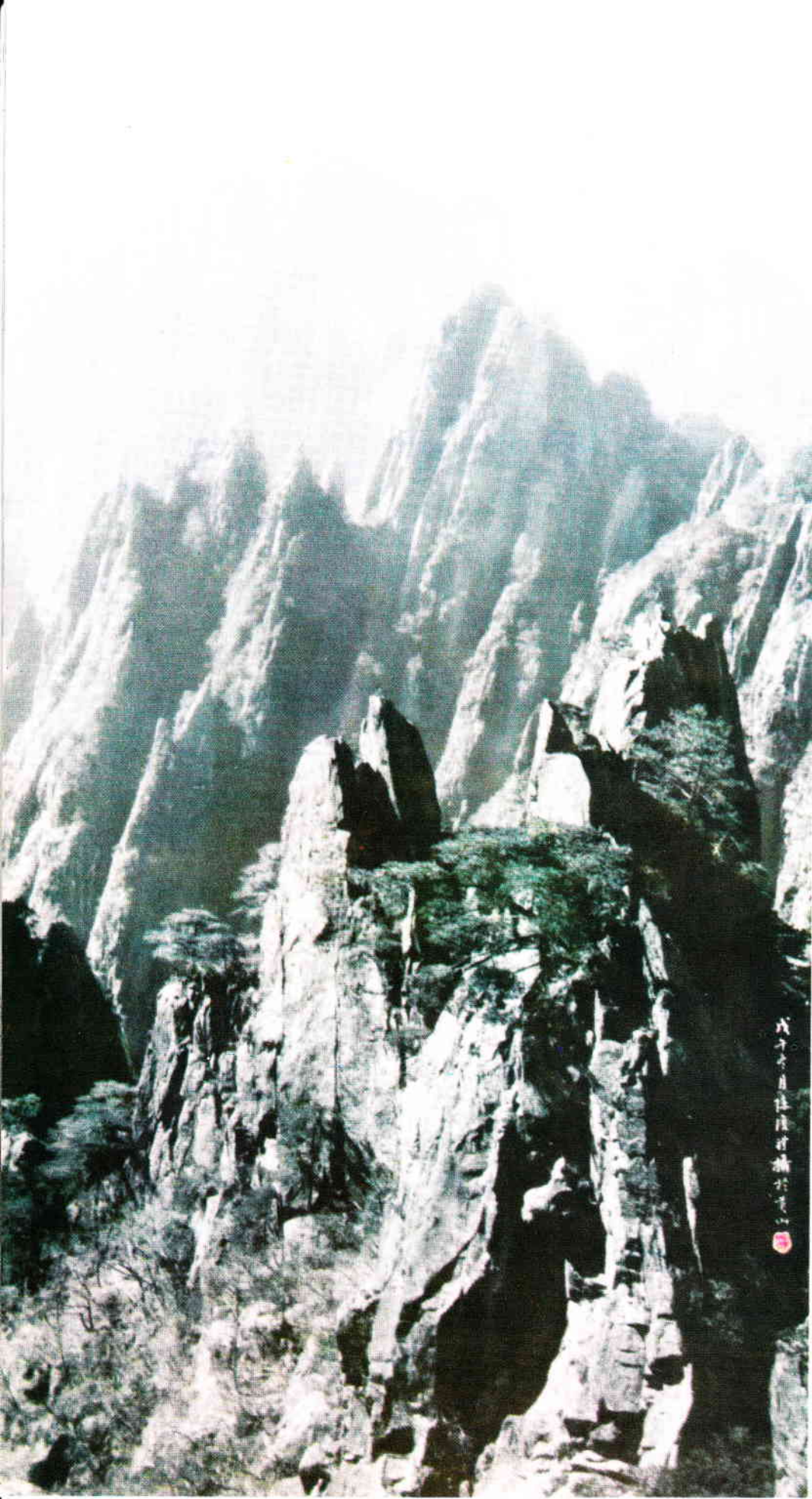
Many of his works extol the new China's achievements. Such is his "Glory of Daqing" (the oil field in the northeast) and "Youth Tunnel," taken at the Red Flag Canal project. "Huangyangjie" and "Sanwan" show scenes in the former revolutionary base areas. The 63-year-old photographer has made many working trips to Mount Huangshan and Guilin — two of his favorite places.

CHEN FULI left his native Chao'an in Guangdong province as a youth and in the ensuing decades traveled throughout southeast Asia in search of a living. Like most Chinese abroad he has known oppression and exploitation by the imperialists. Love for the Chinese people who have thrown off the yoke of oppression and for the beautiful homeland illuminates all his photographs.

Well-versed in Chinese literature and art, this master of the camera incorporates their distinctive features in his work. He embodies the Chinese traditional painter's principle of "a fusion of sentiment and scenery, and an integration of object and viewer." His "Ode to the Morning Light" taken at Mount Huangshan not only depicts the soaring peaks and green pines



Struggle (Hongkong)



Serried Peaks on Guard
(Mt. Huangshan)

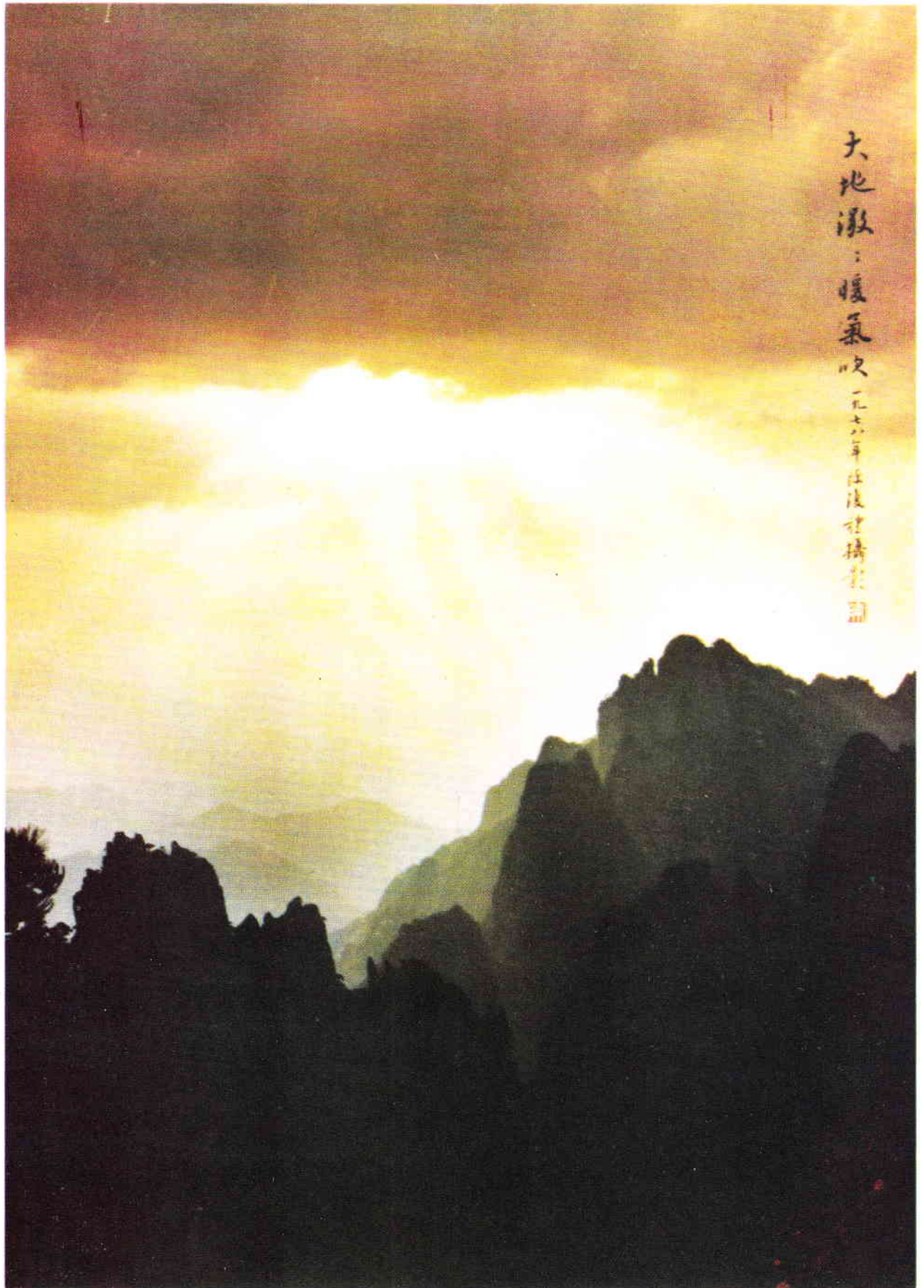
Wind in the Pines (Mt.
Jiuhua)

Coming Home in the
Rain (Nanjing)

戊午年自桂林游黄山







大地
：
暖氣
吹
一九六六年
任復
畫

Warm Winds Caress the Earth (Mt. Huangshan)

of the famous mountain — it captures the swirling morning mists after a rain. It has the lyric beauty of a classical painting or poem, or a traditional landscape done in Chinese ink. This is the result of insight and adeptness in applying certain rules common to Chinese art forms, such as the rendering of perspective and the concealing or revealing of particular details to create special effects. The mounting of the works adds to their Chinese flavor.

“The Road Mounts Skyward,” from a line in Chairman Mao’s poem “Reascending Jinggangshan,” seems to draw the viewer right into the picture. It calls to mind the heroism with which China’s old revolutionaries in those mountain fastnesses fought superior enemy forces.

Some say that photography is easier than painting. That is a very one-sided view, perhaps based on the fact that the photographer

uses a mechanical tool. Ignored is the fact that the camera is greatly hampered by such factors as weather, time, location, subject matter and other objective conditions. To produce a masterpiece, many intellectual and artistic qualities are necessary, as well as great mental and physical effort. Chen Fuli did not come by his artistic achievements easily; they are the crystallization of long, hard work.

DURING the exhibition Chen Fuli was invited to many professional discussions. He spent the rest of his time in the hall itself, meeting amateurs and professionals, replying to their questions and noting their suggestions to him. With great patience, he gave viewers step by step accounts of how he took, and processed them in the darkroom, the vivid and thrilling “Struggle” and the serene “Herdsmen’s Yurts.” This is a

change from China’s former way of holding one-man exhibitions when viewers saw the photographs but not the photographer. It created rapport between artist and audience, which not only benefited the latter but was of interest to the former seeking further to improve his art.

Vast and ancient, China is rich in places of historic interest and scenic beauty. Her political and economic situation is improving and tourism beginning to expand. This will bring better facilities for both Chinese and foreign photographers.

In the years to come, Chen Fuli will certainly create more works showing China’s beauty and achievements. And China will warmly welcome photographers, whether our compatriots in Hongkong, Macao and Taiwan or friends from all over the world, who will find ample scope for their talents here. □



Herdsmen’s Yurts (Tianshan Mountains, Xinjiang)

How A Farm Family Gets Its Income

LIU CHENLIE

AT 60 Feng Maoru is patriarch of a big family. He and his wife and three of their five sons live with them in their village in the Wugui brigade in western Sichuan's Xindu county. Two other sons are working elsewhere

LIU CHENLIE is a staff reporter for China Reconstructs.

and the two daughters are married and live with their husbands' families. The Fengs live in an old-style house of rooms built around a courtyard (four facing south, three north and rooms along both sides).

Before liberation they had no house, and since they didn't have

enough to eat after paying exorbitant rent to the landlord. Feng had to work as a rickshaw coolie in the city during non-farming seasons.

After liberation, the land reform of 1950 brought them a three-room house and one-third of a hectare of land. Life improved still more after farming became collective and Feng joined an agricultural producers' cooperative, and later a people's commune. However, for a very long time the ideas of the gang of four disrupted the rural economy. The principle of "to each according to his work" was replaced by a crude equalitarianism (equal pay to everybody no matter how much or little he worked), while family sideline production was regarded as "capitalist" and virtually prohibited. This naturally affected the peasants' incomes.

After such ultra-Leftist ideas of the gang of four were got rid of,

Part of the Feng family in their bamboo-ringed yard.



Party policies on the rural economy were restored. Now compensation is in accord with the work done and family sideline production is encouraged as long as it does not interfere with the collective economy. The income of the Fengs, as of other commune members, has improved as a result.

As the youngest son spends most of his time at the middle school he attends in the county town, the three full-time workers at home are the two remaining sons and a daughter-in-law. The latter, being a whiz at rice transplanting, is a good workpoint earner. Feng Shifu, 25, works for the bee farm run by the commune brigade. His brother Feng Shigui, 27, works as carpenter in one of the brigade's sideline units. Since these sons are skilled men and contribute a lot to the brigade's collective income, they get extra pay in addition to the workpoints they earn.

I had visited the Fengs to find out about their family income. No sooner had I begun asking Old Feng for more details than he went to get his wife. "Aunt Feng really controls the purse-strings," joked Xiao Zhang, a cadre in the production brigade, who had come with me. "No," observed Aunt Feng with a smile, "my old man's memory just isn't as good as it used to be."

Itemized Account

Feng Maoru suffers from arthritis so is semi-retired. The old couple's chief contribution to collective production is taking care of a sow at home for the team. They get workpoints for this and extra ones when the sow gives birth to piglets. They also get workpoints for the manure collected at home and given to the team.

Last year the family earned 13,020 workpoints, the equivalent of 1,240 yuan. With the two sons' extra pay of 108 yuan and bonuses of 40 yuan their total income from collective work came to 1,388. On

top of this is their income from family sideline production. The main item is pigs. The old couple raised seven of their own last year, and sold five to the state for 70 yuan each. They took in another 60 yuan from selling for use as building material 400 kilograms of bamboo which they grow around the house. This brought the family's income from sidelines to 410 yuan, or nearly 23 percent of their total 1978 income of 1,798.

Some farm families augment their income with sales of produce from their private plots. The Feng family has a 0.02 hectare plot in front and behind their house. On it they can grow grain and vegetables for their own use and fodder for pigs, and if they have surplus they can sell it to the state or at rural fairs. Last year they got 120 kilograms of grain and a large amount of vegetables and fodder from this land, but used it all at home. They also raised seven chickens and ducks for eggs for their own use.

Spending

Expenditures included the following: 521 yuan for 2,605 kg. of food grain, 169 yuan for 121 kilograms of meat, 24 yuan for 17.5 kg. of cooking oil and 250 yuan for fodder for their pigs. All these were deducted from their yearly income by the production team. Other outlays were 70 yuan for special food for the son's wife after childbirth, clothes for the baby and a celebration when it was one month old; 15 yuan for electricity, seven yuan to the co-operative medical care fund (one yuan a year per person, after which all treatment at the brigade clinic is without charge); 25 yuan for grain processing; 20 yuan tuition for the youngest son's schooling; and 180 yuan as a gift to a married daughter who was building a new house.

All these added up to 1,281 yuan, leaving a surplus of 517 yuan, part of which was put into the bank, for there were few other necessary expenses. The family



Photos by Wang Hongxun
Feng Maoru's wife.

owns its house, so there is no rent. They make their own small farm tools and bamboo baskets. They cook with marsh gas manufactured in their own family-size tank in the back yard. Haircuts are free at the brigade barbershop and film showings by the commune's mobile projection team are also free. Many families use their surplus to buy consumers' goods, but the Feng family already has five wrist watches, three bicycles, a radio and a sewing machine so last year they bought little except for a few articles of clothing.

In addition to the family savings, the old couple have a savings account of their own. The two sons working outside send them 300 to 400 yuan a year for their own expenses but the couple prefers to bank it with the aim of using it for the weddings of the younger sons.

When I asked whether this family's income was the best in the brigade, I was told no, but that it was better than average. □

One of the 716 bridges along the line between Xiangfan and Chongqing.



New Rail Artery Serves New Industries

LIU HONGFA

ON October 1 a new rail line officially opened which links two of China's large industrial cities, Chongqing and Wuhan, and serves a major new industrial area to the north. Previously the only freight route between the two cities, used for thousands of years, was the Changjiang (Yangtze) River. The line passes through 19 cities and counties in northwestern Hubei, southern Shaanxi and eastern Sichuan provinces, where a new industrial area is being created.

The first section of the rail route, up the valley of the Hanshui River to Xiangfan in northern Hubei, was completed around 1960. The remaining section, 901 kilometers from Xiangfan to Chongqing over very difficult terrain, was completed in May 1978. Recently I

spent 40 days traveling along the line to see the changes it has brought in these mountain areas where difficult communications long held back economic development.

Xiangfan, meeting point for the two sections, is really two cities, Xiangyang and Fancheng, surrounded by mountains on three sides and bisected by the Hanshui River, a big tributary of the Changjiang. It is the junction of an ancient land route with river transport network, so there has been a city here for 2,800 years. History records that it had a population of 150,000 in A.D. 206. But in the semi-colonial, semi-feudal century prior to 1949, it steadily declined. It was severely damaged in the big flood of the Changjiang in 1935 and by bombing by the Japanese invaders in 1945 just before their surrender. By the time of libera-

tion it had only 30,000 people and covered about seven square kilometers.

Xiangfan made some recovery after liberation but turned into an industrial city only after 1970 when it became the intersection of two rail lines, the one from Wuhan to Xiangfan and on to Danjiangkou a bit to the northwest, and a north-south section running from Jiaozuo in Henan province to Zhicheng in Hubei province. The latter is part of a much longer north-south line with connections to the southern coast and to the north and east through the rail center of Taiyuan in Shanxi province.

Since 1970 the state has set up quite a few factories in Xiangfan. They include a cotton printing and dyeing mill and plants making bearings, pharmaceuticals, tractors, chemical fertilizer and cement. Total industrial output has quadrupled since September 1976 when

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the northern section of the Xiangfan-Chongqing railway was completed. The city now has a population of 200,000 and an area 16 times that at liberation. Three-fourths of the streets — many of them lined with buildings of five or six stories — were built since 1971.

A scenic spot in the suburbs is Longzhong, home of Zhuge Liang, the famous statesman-strategist of the third century, whose name is known to practically every Chinese, and to some foreigners, from the classical novel *The Three Kingdoms* in which he is a main hero. Recently the state allotted funds to improve its grounds and provide facilities for tourists.

The Wudang Mountains

Westward from Xiangfan on the way to Chongqing the train crosses the Hanshui River and enters the Wudang Mountains with a perimeter of 400 kilometers, riddled with deep valleys, steep precipices and 72 peaks that poke up into the sky like swords. The train snakes along the northern edge of the range. In the mountains are a number of big Taoist temples dating from the Yuan (1271-1368) and Ming (1368-1644) dynasties. In one of these is the Golden Pavilion, a structure of gilded bronze standing atop Tianzhu peak, 1,600 meters above sea level. It is the largest of several ancient bronze structures still extant in China.

In these mountains the famous Ming dynasty pharmacologist Li Shizhen (1518-1593) collected over 400 of the total of 1,800 medicinal herbs which he described in his monumental *Compendium of Materia Medica*, a landmark in Chinese medicine and pharmacology. The mountains remain a natural storehouse of medicinal plants today.

They have their place in revolutionary history as well. Here Li Zicheng (1606-1645), leader of the peasant army which overthrew the Ming dynasty, trained his initial troops. And in May 1931 units of the Red Army led by Marshal He Long established a revolutionary

base here. Some buildings and other relics of that stirring time can still be seen today.

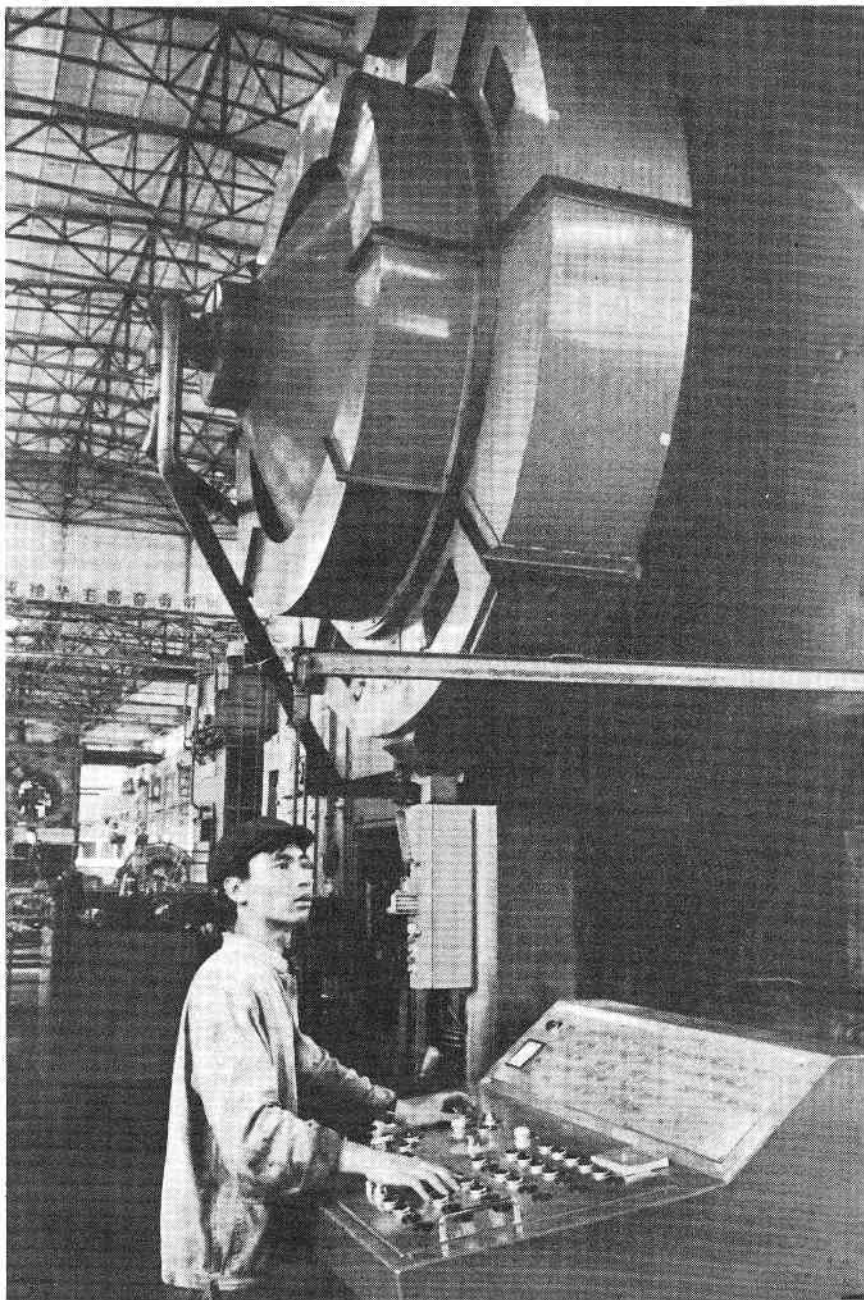
A tunnel 5,200 meters long brings the rail line out of the mountains. From Xiangfan to Chongqing there are a total of 716 bridges and 405 tunnels, two of 5,000 meter length and 10 of 3,000 m. or more. Bridges and tunnels make up 45 percent of the line.

Next the train reaches Shiyan in northwestern Hubei, site of China's

second automobile plant, which went into production in 1976. Its designed output capacity is four times that of auto plant No. 1 built in Changchun in northeastern China in the 1950s.

Eight years ago when work began, Shiyan was a small village in a barren gully. Today factory buildings, five or six-storied workers' apartments, shops, schools and hospitals stretch for 30 km. along the valley. Some people

A shop in the forging mill of automobile plant No. 2 at Shiyan in Hubei.



joke that when the lights are on at night it looks like the Milky Way had fallen down.

Built under a policy of dispersing some industries inland from the coast, the auto plant depends on the railroad. Chen Zutao, chief engineer, says 17 tons of materials—including steel, coal, lumber and oil—are needed to manufacture a single auto, which means 120 freight cars of materials per day. With transport of finished autos from the plant and of supplies for the workers added in, Shiyan keeps a dozen freight trains working daily.

Ankang in Shaanxi

Traveling westward the train passes through many tunnels, so that even though it is daytime, the passengers have the feeling they are traveling by night. Here, along the border, between Hubei and Shaanxi provinces, the terrain is geologically complicated. While this part of the line was being constructed, no less than 240 landslides brought down a total of three million cubic meters of earth and stone. The danger of landslides had to be overcome gradually through building walls, digging drainage channels and

planting trees on the mountain slopes. The line has to pass through a 40-km.-long zone of montmorillonite, a claylike substance containing aluminum silicate. The local people describe it as "hard as steel in the sun, sticky as glue in the rain."

Still further west, the train reaches Ankang prefecture in southern Shaanxi province. This area used to be very poor, though actually it abounds in natural resources. There are thick forests and the climate is mild with abundant rainfall. Lacquer, tea, silkworm cocoons, tung oil, edible fungi, medicinal herbs and musk from deer are some of its products. In the past it was difficult to ship them out. Waiting for transport, natural tung oil was often kept in storage till it went bad and had to be used as fertilizer, and tea would go moldy in the warehouse. For lack of transport, the *eucommia ulmoides*, a valuable medicinal herb, growing in the forest was not protected or harvested but simply cut and burned as firewood.

Even transportation of essentials was a problem. In 1975 when the state allocated some relief grain and other supplies to Ziyang county, half of its 80,000 labor force had to spend two weeks

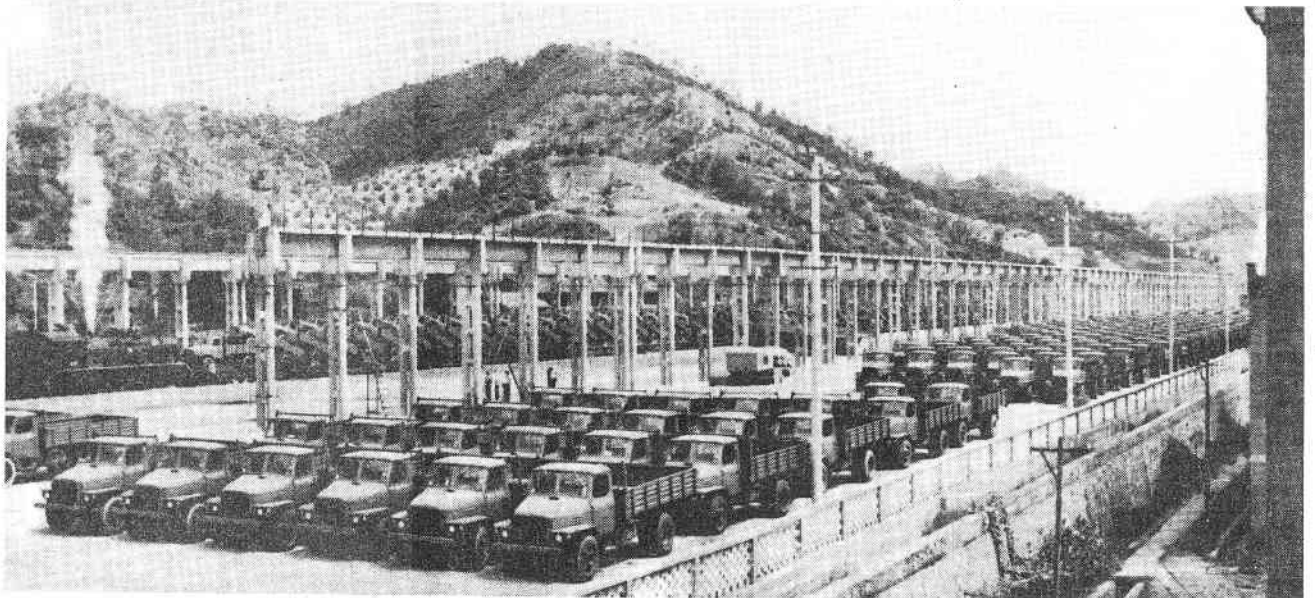
carrying them into the mountains on their backs. Salt was carried in from Sichuan in the same way. A round trip for a salt porter would take about a month. Goiter was prevalent among people deprived of this source of iodine.

After the railway came, Ankang constructed a 5,000-kilometer local highway network reaching into 80 percent of the people's communes. This spurred economic development. Today state commercial and foreign trade agencies purchase dozens of times the bulk of local products they did before. The average income has increased by 50 percent. The area of tea groves has increased by 3.5 times, of lacquer-tree forests 1.5 times, and the output of tung oil by 1.8 times.

A musk deer farm has recently been set up in the mountains. The traditional way of getting musk was to kill the deer and remove the musk sac. For each kilogram of musk 140 deer were destroyed. Now the farm has succeeded in obtaining musk from live deer, so one deer produces musk for a dozen years.

Grain production has also risen since farm machinery, chemical fertilizer and insecticides have been brought in by train.

Five-ton trucks for civilian use produced at the plant.





Sichuan's abundant bamboo is turned into products which, with the rail connection, can now be sold all over China.

Photos by Xinhua

From Ankang the line turns south into the Daba Mountains. Because of an ancient rock slippage deep in the earth, these mountains are slowly, invisibly shifting, causing tunnels to crack and the tracks to twist. To stabilize certain points, in 20 places the railroad builders dug 288 pits a dozen meters wide and 40 meters deep, each filled with reinforced concrete.

Construction on this part of the line was extremely difficult. One 70-km. section where the line crosses from Shaanxi into Sichuan contains 78 tunnels with a total length of 11 km. and 87 bridges totaling 14 km. One big station, in which four trains can stand side by side, is entirely underground. The workers dubbed it "the subway depot."

This area used to be the Sichuan-Shaanxi revolutionary

base established by Marshal Xu Xiangqian. Other veteran revolutionaries like Li Xiannian, Liao Chengzhi and Yu Qiuli also fought there.

Outlet for Products

Beyond the Daba Mountains the train passes through Daxian prefecture in northeastern Sichuan. With a mild subtropical climate and plenty of rainfall, it is one of the province's main producing areas for both rice and industrial crops, especially ramie, of which it produces 3,000 tons a year. Also grown here is a white fungus used as a tonic. Quxian county in the prefecture produces oranges and tangerines, day lilies for use in cooking and white wax used in Chinese herbal medicine. Other products are beef cattle, kidskin and bamboo and rattan furniture.

The railway will help ship all of these to market. With an outlet

for the products, canning and winemaking industries have developed.

South of Daxian the train skirts the western edge of the Huaying Mountains, rich in coal, iron and phosphorous ore, natural gas, limestone and other minerals. From the train one can see many new factories and gas wells.

Finally, crossing a 1,600-meter-long bridge over the Jialing River the train arrives at its last stop — Chongqing in Sichuan province at the joining of the Jialing and Changjiang rivers, a land and water communications hub and the major industrial city of the southwestern China.

The famous eighth century poet Li Bai (Li Po) once wrote, "It is easier to climb to heaven than to walk the road to Sichuan." If the poet were alive today, he would marvel at a world so changed. □

The Clay-Figure World of Zheng Yuhe

ZHANG FENGGAO



Zheng Yuhe at work.
Zhang Shuicheng

OLD-TIMERS will recall the clay toys that used to be sold in Chinese marketplaces and bazaars at the lunar New Year and other holidays. Bearing such fanciful names as Fat Afu, Greedy Cat, Rabbit in the Moon and Red Carp, these toys would be spread out in such an eye-catching array that passers-by would stop to smile, and children clapped their hands in delight. These inexpensive toys were one of China's finest folk arts.

The clay sculptor Zheng Yuhe has taken this traditional art, improved on its techniques and adapted it to show the immeasurably richer and wider-ranging life of the people today and China's successes in socialist construction. The new style he has created has given the art a significance far greater than that of mere toy-making.

A recent work celebrates the Chengdu-Kunming rail line completed in 1970. It shows two children on a stone wall beside

the tracks leaning forward to peer into the distance. From the look of eager anticipation on their faces one can almost hear a train puffing and rumbling into view. Another shows a Shanghai street cleaner pleased to be driving the new machine that will replace his hard and tedious manual labor.

AS a poor boy on the banks of the Huanghe River, Zheng Yuhe used to watch craftsmen who tried to make their living by modeling and selling clay toys. When he grew up, luckily he got a job as a handyman in a fine arts' supplies concern in Beijing. He used to ask for bits of leftover clay from professional artists. One of these was the famous "Clay Sculptor Zhang," whose old Tianjin family had followed the craft for generations. Seeing that the younger man showed talent, the old master took him on as a private student. In 1952 Zheng Yuhe was formally accepted at the Central Academy of Industrial

Arts where he continued his study under Zhang and others.

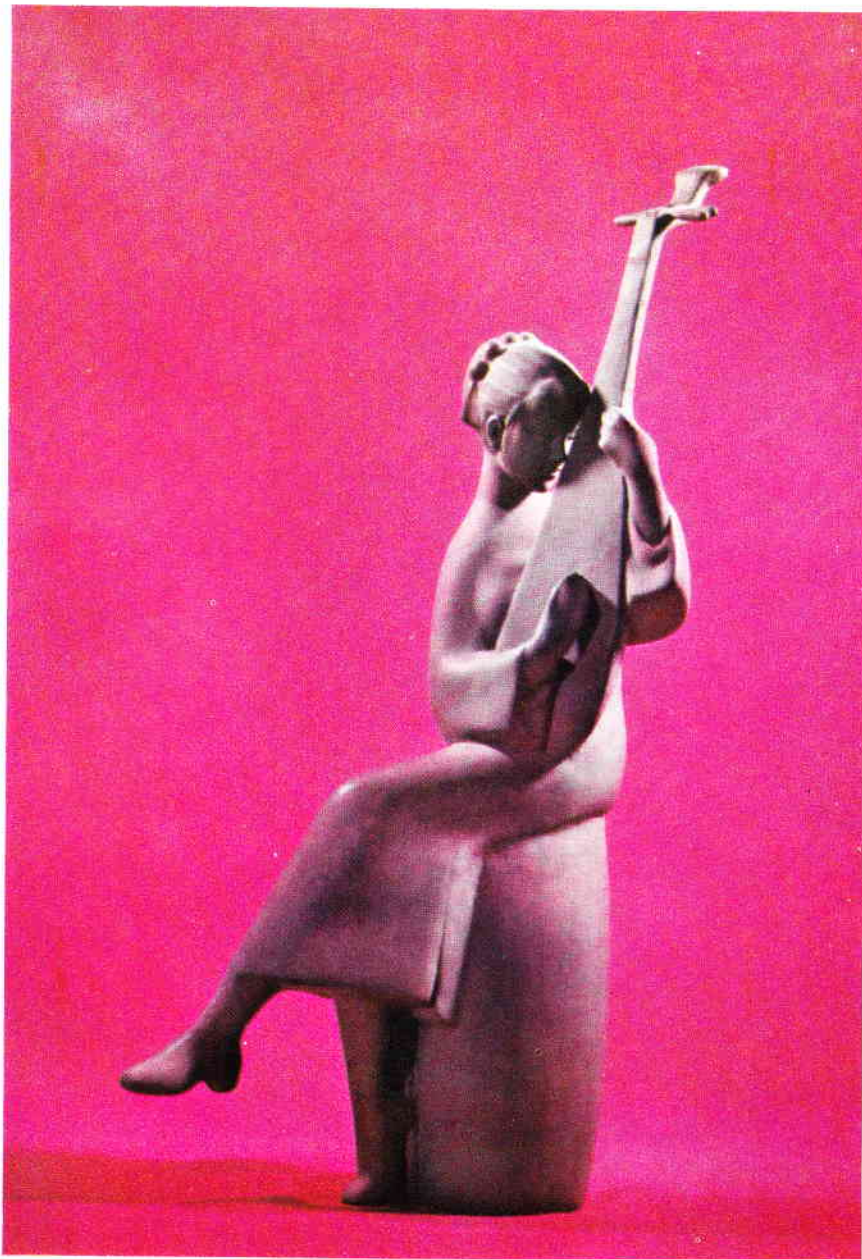
Zheng Yuhe's style, which combines simplicity with elegance, humor with reserve, is distinctly Chinese. That is perhaps why his works appeal to both ordinary people and professional artists and have won acclaim at home and abroad.

Zheng worked in a number of styles before developing his own highly succinct and compact style, with simple lines and as little detail as possible. Toymaking in his native region was characterized by simplicity, exaggeration and rather crude, highly-stylized coloring. His teacher, Zhang, worked in a style that was realistic and very detailed so that it often took a month to complete one piece.

Adapting these small, toy-like figures to real-life subjects was no easy matter. First there were the limitations of their tiny size for expressing larger themes. Then there were age-old craft customs to be overcome. Chinese folk toy modeling used to be regional in character, handed down from master to student. Each region was noted for a set range of subjects which it produced in quantity, without change through the years. Zheng had to explore and experiment a long time until he achieved what he wanted.

HIS WORK often captures touching little sidelights of life and brings out their significance. An ensemble shows a girl giving a bunch of unruly piglets a bath, holding one down in the tub while the others run away or hide like naughty children, or gambol about blithely. The girl goes about her work, commonplace as it is, with devotion. The humorous group is realistic despite the use of exaggeration, as in the roly-poly bodies and stumpy legs of the piglets.

The artist draws widely on life under socialism for his subject matter such as working people at their jobs, children at play and encounters of Chinese people with those from other countries. He also illustrates scenes from folk tales, legends and stories of the



Ballad Singer



Figures from the Beijing Opera Driven to Join the Liangshan Mountain Rebels: Lin Chong, the hero, and (below) Lin Chong bids his wife farewell.



Uygur Sister and Brother on Donkey



Acrobat



Mu Guiying, Woman General, Sets Out for Battle (group scene from an opera)

Catching Sea Turtles (group)



minority nationalities, and does figures of stage personages and animals.

Perhaps most vivid are his children. A child floating in the water on a rubber ring, one toe hooked in the string of a toy sailboat, has captured the carefree dreamy mood of childhood summer. A group he has entitled "Childhood" shows two children on a big rock, intent on blowing up a balloon. The boy has knotted a handkerchief into a makeshift protection against the sun, the girl has a scarf thrown carelessly over her hair. Their look of utter absorption in what they are doing is warmly comical.

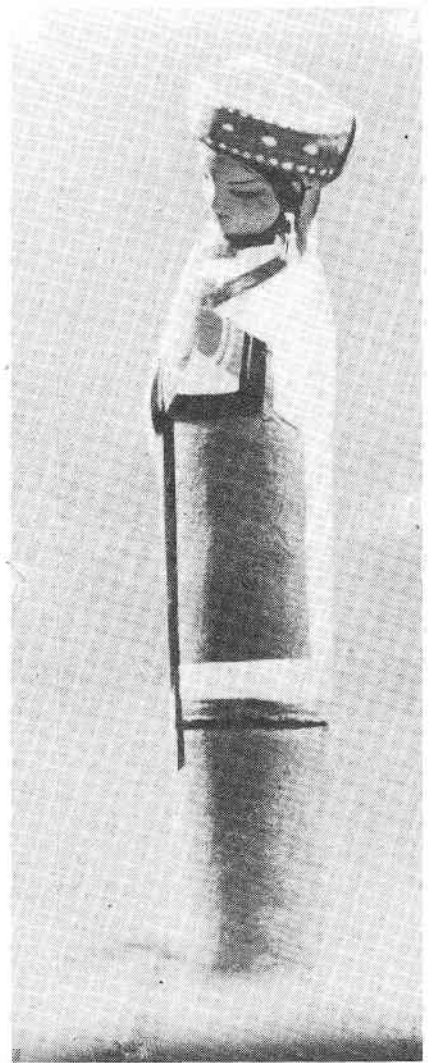
CLAY modeling of this type does not usually lend itself to the depiction of background or surroundings. But Zheng Yuhe conjures up such settings with a minimum of means. In "Childhood", for example, a pile of veined stones evokes sunlit sand and rocks on a south China shore. In other works he has employed pebbles, fine sand and sorghum stalks—the latter to depict bamboo rafts in a scene of fishing on the Lijiang River. His use of almost every kind of material—wire, strips of wood, knitting wool, cotton, twigs, paper, bits of cloth, glass, porcelain, plastic foam—to create textural effects has considerably widened the scope of expression of clay modeling and broadened its possibilities.

The traditional Chinese clay figurine is said to involve 30 percent modeling and 70 percent coloring. This does not imply that shape is less important than decoration but rather that the modeling outlines the theme while coloring brings it to life. Zheng Yuhe applies this old rule very flexibly. His bold and imaginative sculpting, never a superficial likeness, is nearly always in simple lines, and in coloring he inclines to use a minimum of brush strokes. The posture of two wrestlers, suggesting rather than stressing detail, imparts a sense of

motion, but leaves the life-giving touch to a few seemingly casual strokes of the brush.

His works are more elegant, vivid and compact than most folk figurines. Ashma, for instance, a girl in a legend of the Sani nationality who dies and turns into a rock but still yearns for her lover Ahei, is modeled in vague outlines on a cylindrical clay roughcast, and her arms and hands are merely painted on. The quiet, restrained colors blend well with the natural tones of the clay. The work is remarkable for its originality and simplicity of means.

Zheng, a reticent, mild-mannered man in his mid-40s, makes careful notes of his observations and impressions for future use. The broad range of forms and methods in his work show that he is also constantly searching for new ways of expression, but simplicity has remained a basic element in all. He wants to refine his art to even greater simplicity of line, he says. In his youth, he added, he had little chance to see new things; now simplicity of line is important to him so that he can create more works expressing more of the new things in his world today. □

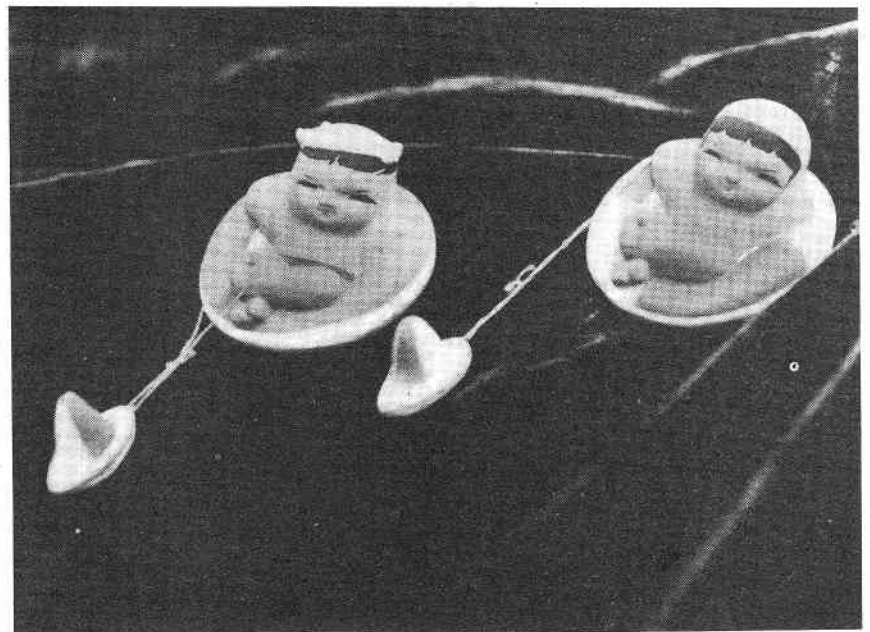


Ashma

Zhang Shuicheng

Floating

Sima Xiaoming



The Way Every Teacher Should Be

ZENG XIANGPING

goes to Dong's homeroom teacher, 34-year-old Liu Chunpu. For things like this he was named a model for teachers trying to straighten out mixed-up young people and problems of discipline left over from years of gang-of-four disruption.

Already in grade school Dong Baiwan's class had had a reputation for poor discipline. They came late, left early, had a high truancy rate and very often got into fights in the classroom. And the worst were Dong and four of his cronies. They disturbed the lessons with whistles and catcalls so that sometimes it was impossible to carry on. That was the time of the gang of four. The gang had turned everything upside down. They had inflated shortcomings in education before the cultural revolution into a theory that the entire school system had been bad, that it had discriminated against the working people, and should be overthrown. Thus, rebelling against even normal classroom order became "revolutionary."

Even in those days, when students were at their most unruly, Liu Chunpu had done all he could to try to help them. He remembered the old saying, "With

even a single bowl of water you might be able to save a few rice seedlings from drought." Once he stopped Dong Baiwan after school and said he'd like to talk to him. "I have to do something at home," Dong said and ran away.

A boy in a higher grade, taller and stronger than him, viewed the cocky Dong as his rival as school "tough guy." One day a fight broke out between them in the classroom. Just as the bigger boy swung a stool at Dong's head, Liu Chunpu, who the racket had brought in from the hallway, stepped in front of Dong to protect him. The stool struck Liu on the shoulder. Though the blow had hurt, Liu ignored it. "How could you strike a boy so much younger than you?" he said. His directness hit home. The older boy admitted that he had been wrong.

Dong Baiwan was speechless. The teacher seized the opportunity to have a talk with him about fighting, and urged him to work harder at his studies. For the first time Dong confessed that he, too, had been wrong.

After that, Liu Chunpu visited Dong's home several times to talk with his parents about how to help the boy. He also asked the class officers to be friends with Dong

THE BELL rang for class to begin and the teacher had just quieted down her first-year class in Middle School No. 1 in Tongxian, a suburb east of Beijing. The door opened and in swaggered Dong Baiwan with a big snake twisted around his neck. The room broke into an uproar. Girls in the back of the room unable to get out began to scream. Even the teacher backed away.

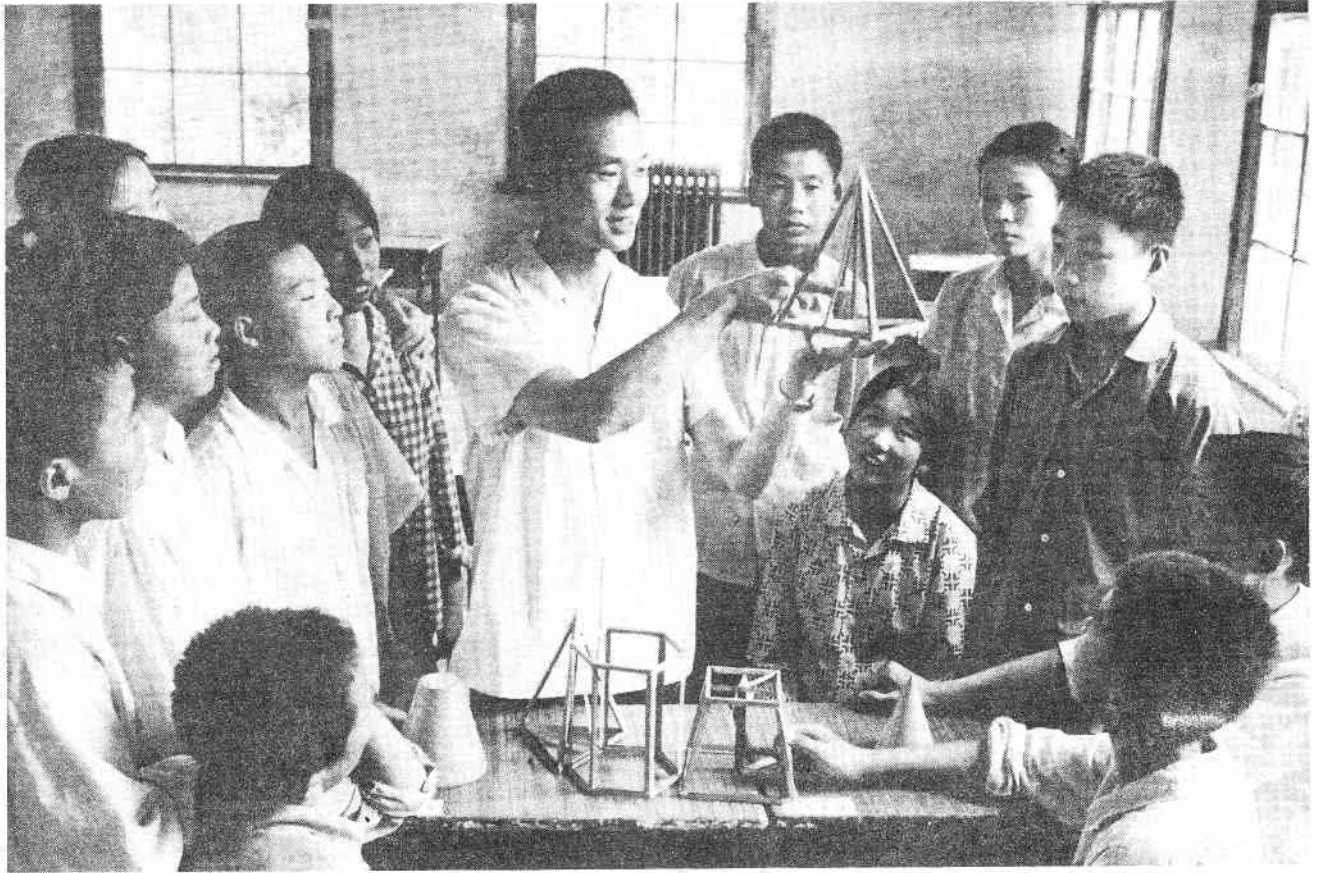
"Cowards," sneered Dong.

That was typical Dong Baiwan behavior only four years ago. Now Dong has given up his smart-alecking and settled down to become a good student. The credit

ZENG XIANGPING is a staff reporter for China Reconstructs.

Wang Luyan and his parents thank the teacher for his help.





Liu Chunpu in mathematics class.

Photos by Xinhua

and pay special attention to him. Gradually Dong began to change his behavior and did not cause trouble in class any more.

Liu Chunpu was also helped in his work with Dong by the fall of the gang of four. After it, people began criticizing the wrong ideas they had fostered. Gradually the normal attitudes of China's socialist society returned again.

ONE DAY, after a long time of regular attendance, Dong was absent. Nobody knew where he was. Fearing something had happened to the boy, Liu Chunpu searched the neighborhood and finally found him beside a lake a long way from the school, soaking wet, standing in the sun to dry his soaking wet clothes. He had cut class with some other boys to go there. When they dared him to jump in, Dong's old inclination to show off reasserted itself and he

had gone right in without even undressing.

Instead of scolding him, the teacher took him to his own residence and gave him a set of dry clothing. Then he urged Dong to go back to school. At the end of the day when Dong went to the teacher's home to get his own things, he found them all clean and dry. Liu Chunpu had washed them in his lunch hour.

"You want to be a hero, but don't know what a hero is," Liu observed as he handed Dong his clothes. Then he proceeded to tell him a few things real heroes had done, and asked what did cutting class have to do with that. Dong Baiwan's "tough guy" facade fell away and he began to cry like the boy he still was.

The next day Dong came to Liu Chunpu again and gave him a knife he had kept in case he got into a fight.

Liu Chunpu continued to encourage and praise Dong's slightest progress. When he learned the boy was a good football player he organized a class team of which Dong became captain. Liu would practice with them himself sometimes. He used those occasions to heighten their sense of discipline and whet their scientific interest as to why the ball behaved as it did under a certain impetus. The troublemakers gradually became good students and at the end of the year the class was praised for being an outstanding one.

* * *

ANOTHER of Liu Chunpu's successes was with Wang Luyan. The year he started middle school, the gang-of-four's followers in education cooked up a campaign against the so-called "absolute authority of the teacher." This,

in effect, made the teacher "the enemy" and heckling teachers a "revolutionary action."

Wang Luyan was deeply influenced by such ideas. He swaggered around in front of the teachers with a cigarette in his mouth, though he knew smoking was forbidden. He used to stand outside different teachers' rooms and call their names, but when they came out he would be nowhere to be seen. People referred to him "the mustang."

Teacher Liu tried to get close to him, hoping to find positive elements which he could encourage. He tried to talk with Wang many times but the boy would always run off.

The clue turned up in a math examination. Wang Luyan finished the problems in half the allotted time. As he sat there and waited he saw the others sweating over their test papers and thought, "How can I not help my friends when they're having a hard time?" He took a piece of carbon paper out of his bag, wrote the answers down and stealthily passed them to several people.

When the rest of the class found out, they were furious. Even Wang Luyan himself felt the seriousness of the matter. But then he thought maybe it wasn't so bad after all. According to ideas spread by the gang of four, anybody who studied hard and behaved himself was despised as a "goody-goody." At least nobody had called him *that*.

Liu Chunpu decided that mathematics was the way to reach Wang Luyan. Looking back over the boy's performance in this subject, he concluded that one reason Wang was a troublemaker was that his intelligence was far beyond the demands made on it in class. He called the boy in. Contrary to what Wang expected, the teacher did not scold, but simply discussed the purpose of tests and asked what Wang had really accomplished by "helping" his friends the way he did.

Wang began to feel that maybe this teacher was different. Then

Liu offered to give him special tutoring in mathematics.

Working ahead of the class, Wang Luyan finished junior middle school math in a short time and with the teacher's aid started on the senior middle school course. Liu Chunpu showed him different ways of solving the same problem. The boy seemed to go crazy over mathematics. In the evenings and even on Sundays he would seek out Liu Chunpu to discuss difficult problems. Sometimes he would do 100 problems in one night.

The two became close friends. In another half-year Wang Luyan had finished senior middle school math. In the 1978 round of senior middle school math contests he placed in third class in the Beijing test and second class in a competition involving eight provinces and municipalities. He was only 14 and in his second year in junior middle school, the youngest winner within the lowest grade. In his own school he was also commended as a "three good student," good morally, mentally and physically.

Dispensing with the usual entrance examination, Beijing University accepted him straight from junior middle school and enrolled him as a student in its math department.

* * *

In the spring of 1977 Liu Chunpu took over a new second-year home room. He began by giving them a math test. It revealed that 60 percent of the students were unable to do math that they should have studied in previous years. Some could hardly manage the four basic arithmetical processes, so badly had the quality of education fallen during the gang of four years.

Liu reorganized the class into six groups according to their level and gave help to each in what it needed most. He was always trying to find ways to make his teaching more interesting. In the beginning he found considerable hostility to examinations and quizzes, which had not been given for several

years. The gang of four's followers in education, pushing to the extreme Chairman Mao's observation that tests should not be an attack on the pupil as on an enemy, had stopped almost all testing, even for checkups. Gradually Liu got the students to view tests as a chance to find out what they could do independently. Sometimes he asked every student to work out a test to check on the others. It was a good stimulus to review.

In this class there was a boy named Chen who was considered mentally slow, the result of an electric shock in childhood. He learned with great difficulty and never got more than 40 or 50 on math tests. His parents said they would be satisfied if he could just read and do simple arithmetic, but Liu Chunpu felt that perhaps the boy could do better. Perhaps he had not developed what potential he had because everyone had written him off as handicapped and put no more effort into teaching him.

Liu paid special attention to Chen, trying to give him confidence. In a class story-telling session he assigned the boy a story about how the late Premier Zhou Enlai had studied hard even in the saddle on the Long March, and how during his last illness he had persisted in reading documents even with a temperature of 40°C. The story went to Chen's heart. He worked very hard in preparation, even rehearsing before a mirror late into the night. Being able to tell the story well before the class gave him a big boost. He determined to try harder, coming to school early and leaving late and often going to the teacher for help in the evening. With Liu Chunpu's aid he gradually made up previous work and caught up with the class. In the midterm exam he scored over 80 in all six courses.

At the end of the year the class was first among 14 of the same grade in the school, with average marks of 88, 80 and 82 in Chinese, mathematics and physics. With Liu Chunpu's help, one third of the students proved able to do senior middle school math. □

Sri Lanka Dances Come to China's Stage

JIANG SHIMEI



Hewisi Drum Dialogue

Luo Wenfa

THE national music and dances of Sri Lanka are vigorous and beautiful. In an August performance in Beijing by the Hewisi Music and Dance Troupe, the chief place was occupied by the dances of the Kandy area, central Sri Lanka. Originating there as a simple form in the 16th century, they later spread widely and developed in a variety of styles and performing methods, suited to a broad range of portrayal of personalities and life situations.

"Harvesting," "Winnowing," "Picking Tea" and "Fetching Water" reflected the work of the people through group dances accompanied by lyrical song.

The "Training Dance" was strong and swift, done to stirring, quick-timed and constantly changing percussion rhythms. Its movements are based on the hurling of weapons as done by Sri Lanka's ancient warriors.

The "Somersault Dance," for centuries popular in the island country's highland areas, is intricate and vibrant, imbued with the mountaineers' indomitable spirit.

Items performed from southern Sri Lanka included the fantastic "Mask Dance," reverent "Prayer Dance" and pungently satirical "Driving Out Ghosts and Disasters." They expressed themes common to all lands — the peo-

ple's relentless struggle against the false and the evil, and their aspirations for the good, the true and the beautiful.

Drums play an important role in the Sri Lanka dance. Much acclaimed by the audience were the "Drum Dialogue," "Drums of Fortune" and "Ensemble of Drums." Five different kinds of drums were used, accompanied by cymbals, horns and other instruments. The effect was electrifying.

Though held down by colonial rule for hundreds of years, the music and dance of Sri Lanka have emerged in more than their ancient splendor to express the spirit of a resurgent independent nation. □

Cymbal Dance

Luo Wenfa





Noted Japanese Orchestra in Beijing

ZHAO JINGLUN

BEIJING had a rare treat of modern Japanese music when the Japan Broadcasting Corporation (NHK) Symphony Orchestra toured the Chinese capital in August 1979.

The programs for the three concerts included European works with shorter Chinese pieces as encores. But it was the modern Japanese compositions that aroused the greatest interest. Two concerts opened with the ballet music *Bugaku* by Mayuzumi. Though distinctly modern in orchestration, it is based on a 1,200-year-old Japanese court melody. There was a murmur of surprise from the audience at the beginning over the weird harmonics and glissandos — imitating the tonal ef-

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fects of ancient Japanese instruments. But surprise gave way to rapt attention as the music soared to a resounding climax.

The NHK Symphony, the oldest in Japan, has become a first-rate ensemble under the baton of Hiroyuki Iwaki, who is also principal conductor of the Melbourne Symphony Orchestra. This was amply demonstrated in the performance of Brahms' magnificent *Symphony in C Minor*. Although the tempo was somewhat rushed, the articulation was precise and the treatment was fairly straightforward. Iwaki handled the double simultaneous syncopation toward the end of the first movement particularly effectively. The strings were outstanding; the symphony was played as if in one breath, giving it striking textural unity.

The NHK Symphony, a nearly all-male ensemble, featured two young women soloists. Mitsuko Uchida played Beethoven's *Piano Concerto No. 4 in G Major* with conviction and technical polish. With a consistent sense of line and proportion, the notes sparkled under her sensitive touch. Her performance of the Scarlatti *Sonata in D Minor*, given as an encore, was delightful.

Teiko Maebashi gave an impressive reading of Yuzu Toyama's violin concerto with the composer himself leading the orchestra. This is a well-constructed modern work based on Japanese folk melodies. The other work Maebashi played in Beijing was the familiar Tchaikovsky *Concerto in D Major*. His measured pace enabled her to etch the phrases with firm, decisive strokes. It was an enjoyable performance, though marred somewhat by occasional lapses in pitch in the higher registers.

Toyama's *Rhapsody for Symphony Orchestra* with its exuberant percussion was particularly well received. A familiar work to the Beijing audience, it was recently played by the Central



Conductor Hiroyuki Iwaki.



Pianist Mitsuko Uchida.
Photos by Zhang Shuicheng

Philharmonic Symphony Orchestra of China. The composer's conducting was both precise and versatile.

Appropriately, on the eve of the first anniversary of the signing of the Sino-Japanese Treaty of Peace and Friendship, 47 Chinese members of the Central Radio Orchestra joined their Japanese counterparts in rendering Beethoven's *Fifth Symphony* conducted by Iwaki. Unlike the joint performance by the Central Philharmonic and the Boston Symphony earlier this year when the two combined forces to form a huge band of 217 strong, this time the orchestra was kept to its normal size with half of the players Japanese and the other half Chinese. They gave a commendable rendition, considering they had rehearsed together only once earlier that afternoon.

For encores, the joint orchestra played Li Huanzhi's *Prelude to Spring Festival* and a popular Japanese tune *Sakura* (*Cherry Blossom*). Friendship and festivity climaxed during *Sakura* when Iwaki turned to face the audience, which was humming the tunes as the orchestra played. □



Violinist Teiko Maebashi.

Luo Wenfa





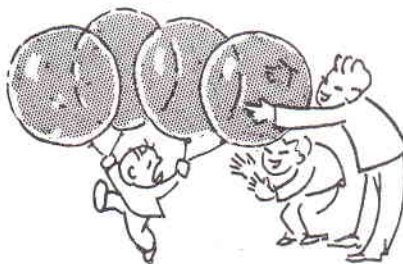
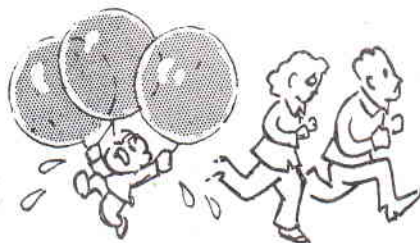
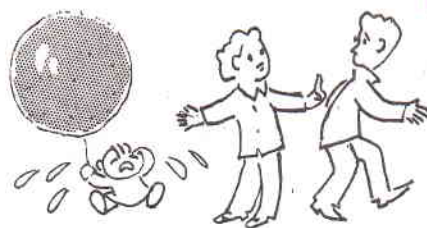
In Speech



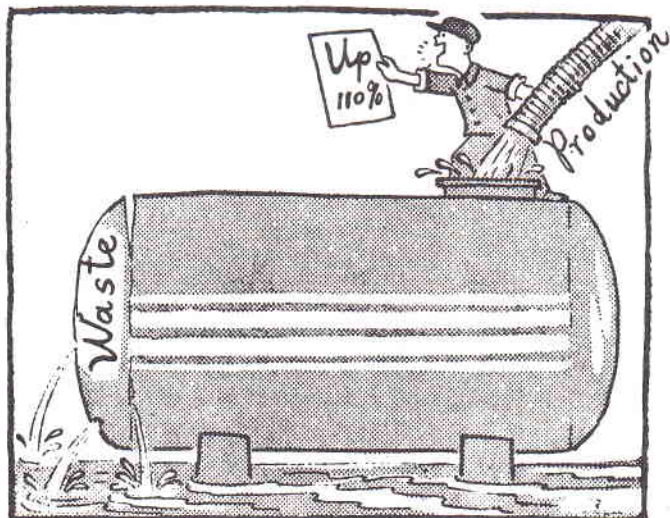
In Action

Adaptable Form
Wang Yisheng

79 道



Giving the Son
All He Wants
Li Binsheng



Paying Attention to One End Only

Zhao Liang

The Glory That Was Tang

3—High Point in Culture

JIAO JIAN

PROSPERITY under a strong central government and lively interrelations with foreign lands during the Tang dynasty (618-907) provided conditions for reaching unprecedented heights in culture.

One breakthrough was the use of printing. Paper, first made toward the end of the Western Han dynasty (206 B.C.-A.D. 24), had long replaced silk and strips of wood or bamboo as material to write on. But books had continued to be copied by hand, a laborious process which lent itself to error in copying. But at some time during the intervening centuries the method of printing an entire page from one carved wood block had been discovered, and during Tang times it came into wide use. A skilled worker could run off 2,000 pages in a day. Buddhist scriptures, calendars and poems were among the works reproduced this way. The world's earliest extant printed book is an illustrated scroll of the *Diamond Sutra* in Chinese from 868. Its fine quality shows that the craft was already well-developed by that time.

In astronomy, great contributions were made by Yi Xing (673-727), a Buddhist monk who was an adviser to the Tang court. In cooperation with Liang Lingzan, an ingenious maker of astronomical instru-

ments, he created an armillary sphere with an ecliptically mounted sighting tube for observing the positions of the stars. With its help, many positions were found to be different from those previously assumed, stimulating astronomers to further study.

In the years 724-25, at the proposal of Yi Xing the Tang court had people measure the height of the Polar Star and summer and winter solstice shadows at 13 places in the country. Using data obtained in Henan, Yi Xing for the first time calculated a length for the earth's meridian, from which the size of the earth could be estimated.

Medical science also made marked advances. In the reign of Emperor Tai Zong (626-649) medical schools with several departments were set up. The subsequent emperor, Gao Zong, sponsored the compilation of the *Tang Materia Medica*, the world's first pharmacopeia edited and published by the state.

Most famous among the Tang physicians was Sun Simiao (Sun Szu-miao 581-682). He made a collection of the abundant medicinal herbs in his native place, Huayuan (today's Yaoxian county in Shaanxi province), and in 652 finished the compilation of *Valuable Prescriptions*. It listed 800 medicinal ingredients and 5,300 prescriptions by earlier doctors. In further



Illustration from the *Diamond Sutra*, earliest extant printed book.

studies Sun found several new cures: the root of Chinese pulsatilla and the rhizome of the coptis (Chinese goldthread) for dysentery, betel nuts for tapeworm, and cinnabar and realgar as antiseptics. He was revered by later generations as the "king of medicine."

Age of Poetry

The Tang dynasty is considered the golden age of Chinese poetry. Nearly 50,000 of its poems have been preserved down to today. Many of them mirrored the social life of the time. Best known among the Tang poets are Li Bai (Li Po), Du Fu (Tu Fu) and Bai Juyi (Pai Chu-yi).

Li Bai (701-762) lived during the dynasty's most prosperous period. Born at Suiye south of Lake Balkhash, and later taken by his father to Sichuan province, he traveled widely in both north and south China in later life. His poems describe the beauties of his motherland in vivid language, illumined by brilliant flashes of imagination. Often quoted are his lines on the Changjiang (Yangtze) River:

*The lonely sail
Vanishes beyond the horizon.
And I see only the river
Flowing at the edge of Heaven.*

Equally famous is his description of the Huanghe (Yellow) River:

*Don't you see that the Huanghe waters
Flow from heaven and
Roll to the sea never to return.*

Expressing his admiration for a waterfall in the Lushan Mountains in Jiangxi, he wrote:

*Straight down three thousand feet the
torrent leaps.*

It seems as if the Silver River
Has fallen from the Ninth Heaven.*

Li Bai's works were also widely known in Japan, Korea and other lands.

During the last years of Du Fu (712-770), friend and contemporary of Li Bai, the Tang dynasty began to decline. A native of what is today Gongxian county in Henan province, Du Fu lived for ten years in the capital Changan, and knew well the corruption of the court, which was one of the themes of his poems. He wrote many reflecting real life and the social contradictions, which he felt keenly through his own sufferings. He sought an official position but was successful for only a short time, and spent most of his days in deprivation. One winter day he came home from a trip to find that his youngest son had died of hunger. The tragedy produced some of his most memorable lines. On his way he had passed Lishan Hill where Emperor Xuan Zong was lavishly entertaining aristocrats and high officials. He wrote:

*Behind the red-lacquered gates, wine is
left to sour, meat to rot.*

*Outside lie the bones of those who have
frozen or died of starvation.*

After Changan was seized in the An-Shi rebellion (see the next article in this series), Du Fu left it to lead a wandering life. On the event he wrote:

* The Milky Way.



Bai Juyi

Li Bai by Qing dynasty painter Shang-guan Zhou (left). Du Fu in the rural surroundings he chose, painting by Fu Baoshi, present-day artist.



Yi Xing, the Buddhist monk and astronomer.



Sun Simiao, the famous physician.

*The land is in ruins
Yet the mountains and rivers endure.
The grass grows tall among unpruned
trees*

Within the walls of Changan.

Disasters for the nation and the sufferings of the people moved him to write a great number of poems, many of which have become immortal. They include several about conscription officials at Xinan, Shihao and Tongguan, "Lament of a New Wife," "The Parting of an Old Couple" and "The Homeless" about families broken up when the men were taken to war. All protest the oppression of the people by the feudal ruling class. Written in a vigorous style yet in polished language, they so accurately reflect the conditions of a complex, turbulent period that they have been called "history in poem."

Du Fu spent a long time in Sichuan. Outside the city of Chengdu he built himself a thatched cottage and lived the life of a farmer. Its site has been maintained as a memorial to him.

Bai Juyi (772-846) lived a generation later during the decline of Tang. He was magistrate of Hangzhou where he earned the acclaim of the people for having a dike built across West Lake and promoting irrigation. His poems, like those of Du Fu whom he admired, criticized the abuses of the court, exposed and satirized the ruling class and breathed sympathy with the suffering of the people. One describes well-fed nobles after a banquet:

Sated with delicacies their hearts are at ease.

Rapturously drunk, they put on even grander airs.

These lines are immediately followed by sharply contrasting ones about the plight of the working folk:

This year south of the long river they have had drought.

In Quzhou hungry people are eating human flesh.

In the poem "Red Silk Carpets," he denounced the magistrate of Xuancheng who every year forced

the people to furnish large quantities of silk to weave huge carpets as tribute to the emperor. He wrote:

*Doesn't the Xuancheng magistrate know
That ten feet of carpet takes a thousand
ounces of silk?*

*The earth does not need such warmth as
much as the freezing people, . . .*

His poems were written in a popular style. It is said that when he finished a poem he would find an illiterate old woman and read it aloud to her, changing the wording until she fully understood it.

Painting and Grotto Art

The Tang dynasty produced many outstanding painters and fine works. Among the masters Yan Liben (Yen Li-pen) and Wu Daozi (Wu Tao-tzu) had far-reaching influence on the development of Chinese painting. In early Tang times Yan brought figure painting to new heights with vivid individual characterization. One picture that has come down to us depicts Emperor Tang Tai Zong in a sedan chair receiving the envoy sent by Tibetan King Songtsan Gambo to ask for the hand of a Han princess in marriage. This painting is kept in the Palace Museum in Beijing.

Wu Daozi (c. 700-?) employed perspective in figure drawing and applied vermilion pigment in different thicknesses so that the high points of the body stood out from the surface. This was an advance in creating natural-looking figures. He painted 300 murals for the monasteries of Changan and Luoyang. They contain lifelike scenes, some characters with ribbons flying in the wind.

Buddhists continued to create grotto art, and the Tang dynasty accounts for some of the most brilliant achievements in this respect. At Dunhuang in Gansu province the Mogao Grottoes*, more than a thousand caves, were dug into the cliffs southeast of the county town from the 4th to 14th centuries. Sixty to seventy percent of the 480 extant grottoes were done during the Sui and Tang times.

Known as the Thousand Buddha Grottoes, the Mogao Grottoes contain Buddhist statues realistic in appearance and graceful in posture. The highest, 33 meters tall, is housed in a huge building. The walls and ceilings of the caves are covered with murals in glowing colors. They show scenes of tilling the land, harvesting, rearing livestock, music-making and dancing. They also picture leading figures of some of the other nationalities in China. Through portrayals of both the luxurious life of the ruling class and the labor of the working people, the murals reflect the active economic life of Tang.

If linked together, it is estimated that the Mogao cave paintings could cover a wall five meters high stretching over 25 kilometers. Today they are preserved as one of the great art treasures of the world. □

* *China Reconstructs* carried articles on Dunhuang and the grottoes in the February, March and October 1978 issues.

Palace guards, detail of large mural depicting a 196-man corps, Yi De tomb.

painted by very famous artists. Wu Daozi, one of the masters of the 8th century is said to have done them for 400 rooms in the Buddhist monasteries and Taoist temples in Changan, the capital, and Luoyang, the eastern capital. In time the buildings were destroyed and their art lost forever. Such murals as have survived are chiefly on the walls of tombs.

In recent years a number of tombs of royalty and aristocrats have been excavated, disclosing murals which are of inestimable value for studying the development of painting in Tang times, and revealing much about Tang life. Two are the tomb of Prince Zhang Huai and one nearby of Crown Prince Yi De, both excavated in 1972. Prince Zhang Huai was the son of Tang Emperor Gao Zong and Empress Wu Ze Tian, and Prince Yi De was their grandson. The two tombs are part of the mausoleum complex of the emperor and empress in Qianxian county northwest of Xi'an.

THE four walls of the antechamber of the Prince Zhang Huai's tomb are covered with eight paintings, each featuring two or three attendants, some

Court ladies with a dwarf, Zhang Huai tomb.



Scenes of Tang Court Life

YANG HONG

A YOUNG court lady in a light green skirt with a vermilion silk shawl over her shoulders stands looking up at a bird in flight. Bored with the dull life at court she seems to be yearning for freedom, as though her heart would fly over the palace walls to her home. Beside her a younger woman in boy's clothing, apparently a newcomer to the palace, is trying to catch a cicada

perched on a tree. Contrasting with them is an older court lady in a yellow skirt standing expressionless with folded arms, as though years of palace life had dulled her feelings.

These are some of the figures depicted in a large colored mural painted in 711 in the tomb of Crown Prince Zhang Huai, in Shaanxi province.

Historical records tell us that murals flourished as never before in the Tang dynasty (618-907). Some, on the walls of palaces, mansions and monasteries, were

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Court ladies — detail from the mural "Watching a Bird and Catching a Cicada," tomb of Crown Prince Zhang Huai.



Polo, introduced from Persia,
popular at the Changan court,
Zhang Huai tomb.





Imperial retainer, Zhang Huai tomb.



Palace watchtower, tomb of Crown Prince Yi De.

Starting for the hunt, section of 12-meter-long hunting scene, Zhang Huai tomb.





Palace guards, Zhang Huai tomb.

of them with musical instruments. All are gracefully drawn in lifelike detail. The paintings are characterized by compact, harmonious use of space, bright colors and vigorous lines. The meter-long lines for the garments are in most cases made with a single stroke from the brush of the unknown artist.

The walls of the rear chamber, housing the huge stone sarcophagus of the prince also have pictures of court ladies. The entire wall-space of the 71-meter-long tomb and its passageways are given over to paintings—more than 50 in all covering a space of 400 square meters.

In the tomb of Prince Yi De, which is over 100 meters long, about the same amount of space is devoted to murals. They were painted in 705. On the walls of the sloping entrance passage we first see a blue dragon and a white tiger flying among drifting clouds, then pictures of high city walls, and magnificent palace watchtowers with mountain range in the background. Beyond these is a picture of the 196-man guards corps in three groups, marchers, mounted men and charioteers.

The procession stretches to the end of the passage.

The passageway consists of a series of small chambers, connected by low doorways in the walls between. Over the first doorway is the painting of a gateway representing the gate to the prince's palace city. Inside are paintings of attendants with falcons, cheetahs, hounds and slingshots, waiting for orders from the prince.

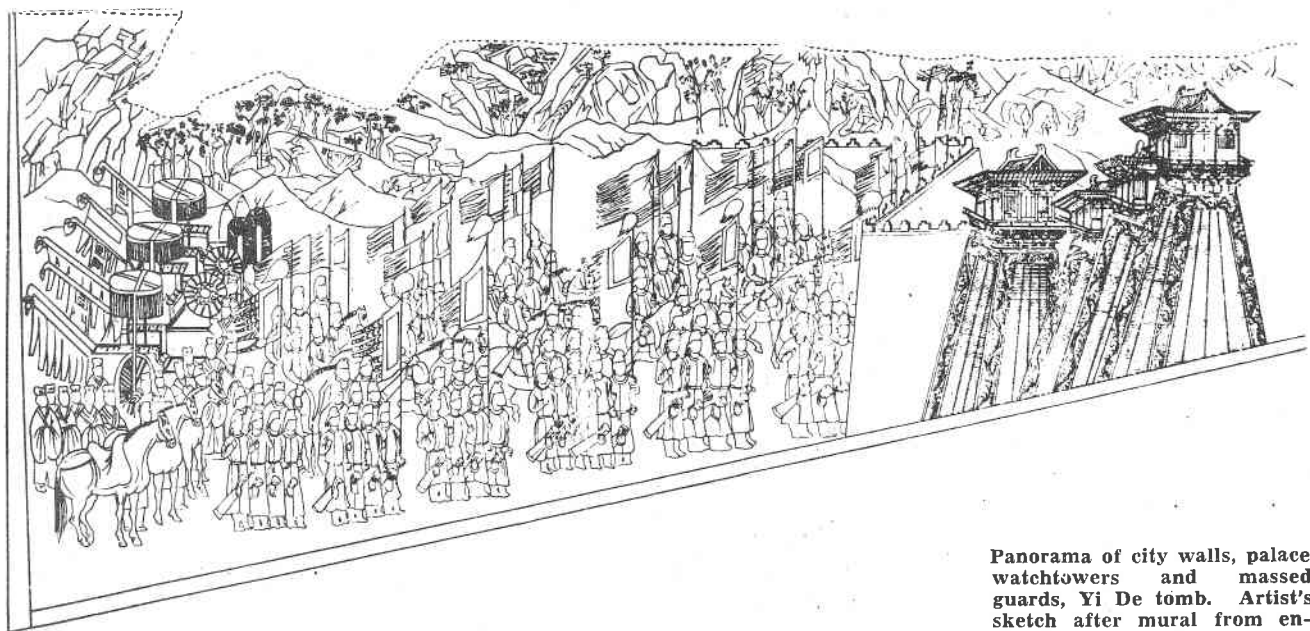
On the east and west walls of the first and second passageway chambers are two squads of palace guards with swords and quivers of arrows hanging from their waists. Behind are four large weapon stands, each holding 12 halberds with colored ribbons and a decoration known as a tigerhead hanging below each blade. Such halberds were displayed as a symbol of power. The prince had two sets for the highest rank.

Passageway chambers further on have bowing court eunuchs and a procession of court ladies—carrying bottles, fans, cups, plates, candlesticks and musical instruments—extending all the way to the rear chamber where the coffin was placed. A star-atlas is painted

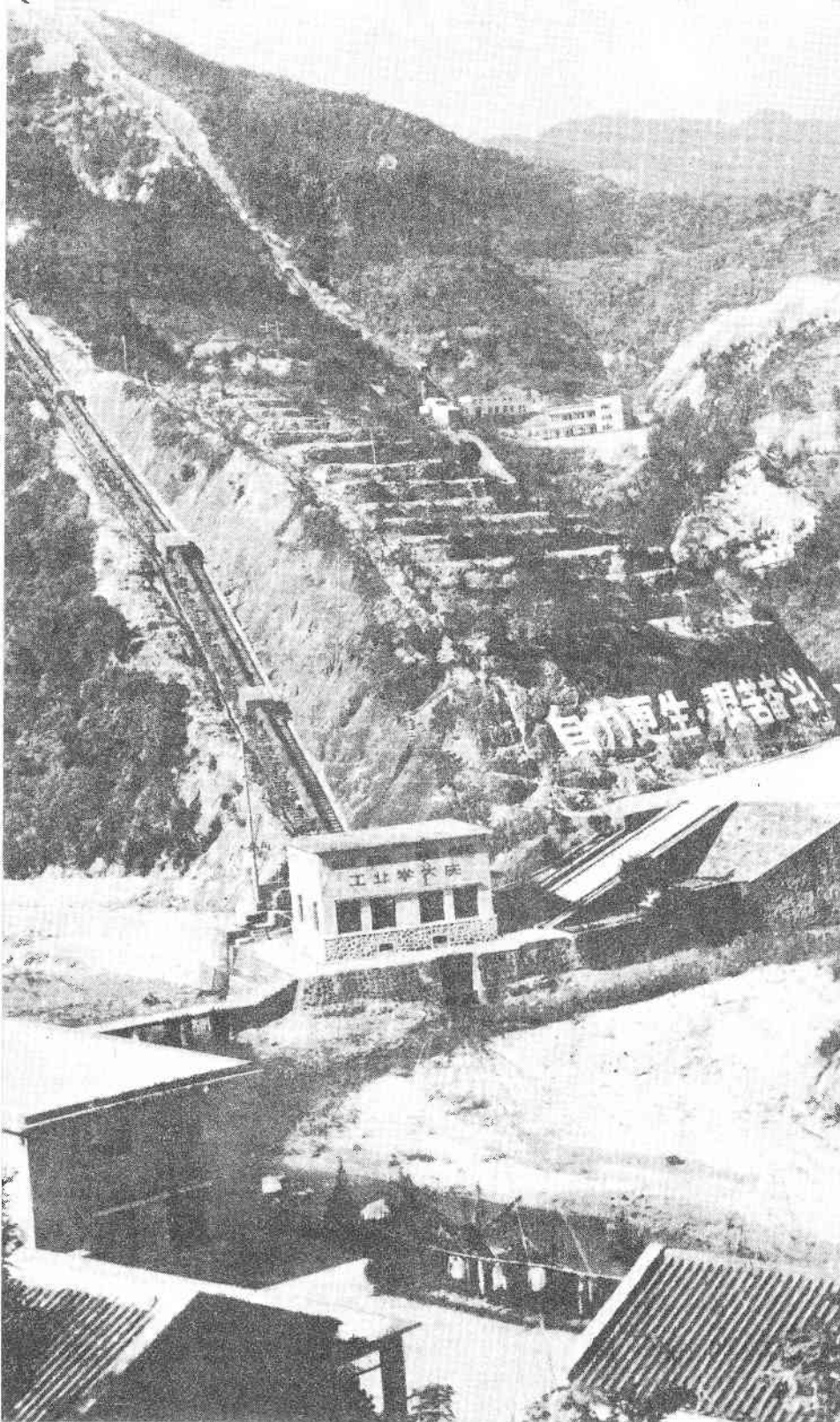
on the ceiling of the coffin chamber.

THE PAINTINGS on the walls of the entrance passage of Zhang Huai's tomb give an even better picture of the luxurious life of the Tang feudal ruling class. In a 12-meter-long mural, of length rarely seen in those times, the painter has brought to life the scene of the court starting out on a hunt. Fifty sturdy horses of various colors with riders, and several loaded camels are shown galloping through the trees. The painter's horses are outstanding, capturing their living essence.

Even more fascinating is the scene of a polo match on the opposite wall. Introduced from Persia polo became popular in Chang'an under royal patronage. It was Prince Zhang Huai's favorite game. The painter has captured an exciting moment with five riders galloping after the ball. One, riding a claret-colored horse, is vividly depicted poised for a backhand stroke. The other murals in Zhang Huai's tomb feature guards with curling whiskers, dwarves, envoys, officials and eunuchs, all very lifelike. □



Panorama of city walls, palace watchtowers and massed guards, Yi De tomb. Artist's sketch after mural from entrance passage.



One of the small power stations in Xinhui's Gudou mountains.
Reportage Group in Xinhui county

Lighting Up in

STANDING atop the main peak of the Gudou Mountains in Xinhui county, south across the Pearl River estuary from Guangzhou in Guangdong province, one can see the mountains dotted with reservoirs and small power stations. They are the fruit of a seven-year project which has provided an inexpensive source of electric power for the county, the original home of many Chinese who migrated to north America and southeast Asia in the last century in search of a living, and facilitated flood control, irrigation and fish breeding.

This area has good conditions for hydropower — ample rainfall the year round and mountain streams with many sharp drops. But before liberation these were not a boon. Mountain torrents frequently destroyed houses and crops. In the name of building projects for flood control, the Kuomintang government sought contributions from overseas Chinese and slapped extra taxes on the local people. But actually nothing was done.

After liberation the people gradually began to attack the problem. First they built storage ponds. Then, in response to Chairman Mao's call for afforestation of the whole country, they planted 14,700 hectares to trees. This checked soil erosion. In 1970 they embarked on a large-scale project to build earth dams which would create ten reservoirs in the moun-

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Xinhui County

QIU JIAN

tains, to be equipped with hydro-power stations.

Before they could even begin, they had to overcome obstacles — everything from cutting through brambles to blasting away cliffs — to make roads for transporting building material and equipment. For this purpose they built 25 kilometers of winding mountain highways, 19 kilometers of foot-paths and six stone bridges.

Labor was supplied by the communes. Over 30,000 members worked on the reservoirs. The largest was the dam across a gully creating the Dongfanghong reservoir. It stood 40 meters high and 300 meters long. One of the problems was getting sufficient fine sand for the spillways and culverts. It had to be dug from a pond a long distance away and carried it over the mountain paths.

Next came the power stations. The first was built and generating in 18 months. But it took another five and one-half years to complete the entire system of 20 power stations (total capacity some 9,000 kw.), three substations and 93 kilometers of electric lines. Now the county's chief source for rural electric power, it can be linked with a larger grid if necessary.

Completion has enabled the county to protect 53,000 hectares of farmland from drought and waterlogging. Over a million fish are being raised in the reservoirs. Six hundred and fifty more hectares of mountain slopes have been planted with firs. □

Small Hydropower:

A Big Source of Energy

NO less than 88,000 small rural hydro-power stations have been built in China in the last 30 years. They are now found today in 1,500 of China's 2,100 counties, that is, in virtually every area where there are swift mountain waters. Today, their total generating capacity is 5.38 million kilowatts. In 1978, they provided 10 billion kilowatt hours of electricity, one third of the national total, most of it to places which had none before.

Inexpensive, non-polluting, and with good sites for many times their present number, such small hydropower units present a most useful supplement to the big power stations that serve China's cities and major industries. They will certainly multiply.

Counties, communes, mines, army units, factories and schools in the rural areas are encouraged to supply all or most of their own energy needs in this way. County governments make low-interest loans for the purchase of equipment, wire and other needed material.

Even in the fields and pastures of far Tibet, where wheeled transport was unknown before the 1950s, to say nothing of electric power, there are now several hundred such small stations apart from larger ones in the towns.



Medium-sized reservoir in northeast Inner Mongolia Autonomous Region.
Lu Jinfa

DO YOU KNOW?

**China's
Currency:
Renminbi**



(Left) One, two, five and ten yuan bills, (above) five, two and one jiao, front and back of five fen, and two and one fen coins.

China” are written in large characters at the top, and at the left side in Mongolian, Uygur, Tibetan and Zhuang, the five major languages of China. Designs on the bills feature agriculture, industry and the theme of unity among the various nationalities. All bills bear the national emblem of the People’s Republic of China.

IN the years before liberation in 1949, as inflation reduced the value of China’s currency, the Kuomintang government printed paper money more and more recklessly. An item which originally cost 1 yuan in 1937 cost 8,500 million yuan on the eve of liberation.

On December 1, 1948 the People’s Bank of China, which had not yet entered Beijing, began to issue its own central currency to replace different currencies issued in liberated areas in previous years. These currencies were all more stable than that of the Kuomintang.

On the day of the founding of the People’s Republic of China, October 1, 1949, the central government called in all Kuomintang banknotes and exchanged them for RMB. It banned the circulation of gold, silver and foreign currencies in China. This, with other economic and financial measures and widespread educational work among the people, put an end to the runaway inflation which had lasted for years and facilitated the recovery and development of the national economy.

On March 1, 1955 the People’s Bank of China issued a second set of banknotes to replace the old ones at the exchange rate of one yuan to 10,000 old yuan. It was simply a cutting off of zeroes, entailing no loss to anyone.

The three denominations of coins came into use on December 1, 1957, replacing former small paper bills.

RENMINBI (people’s currency), issued by the People’s Bank of China, is the legal tender used everywhere in China. The unit is the yuan. It is divided decimally — 1 yuan equaling 10 *jiao* or 100 *fen*.

Bills are issued in 1, 2, 5 and 10 yuan denominations. There is smaller paper currency of 1, 2 and 5 *jiao*, and coins of 1, 2 and 5 *fen*.

RMB and the sign ¥ are the abbreviations for Renminbi. On all notes the words “People’s Bank of

During the 30 years since liberation the value of the RMB has remained practically stable. The price of wheat flour in Beijing, for instance, was ¥ 0.368 a kilogram in 1953 and is ¥ 0.37 now. Today in Beijing's markets one yuan buys 2.7 kg. of wheat flour; or 0.6 kg. of edible oil; 0.7 meter of cotton print; or over 40 kg. of briquettes (the main cooking fuel).

THE Chinese government forbids the export of the Renminbi and its circulation abroad. But travelers may bring in any amount of foreign currency they wish, as long as they declare it to customs at the time of entry and exchange it for RMB for spending while in China. RMB traveler's checks, now issued by the Bank of China in 50 and 100 yuan denominations, may be bought in its branches abroad, but are cashable in China alone. Departing travelers may take out what they have left of their foreign currency, that is, the amount they have declared on entry minus whatever they have converted into Renminbi.

Over the past year the Bank of China has opened more foreign currency exchange offices and counters in business centers, tourist hotels and other convenient places and extended the use of traveler's checks. Tourists, foreigners working in foreign embassies and organizations, and foreign residents may use RMB traveler's checks to pay hotel bills, for purchases at Friendship Stores and antique, arts, crafts and similar shops; and for passenger tickets at international airports and railroad stations.

Since September 18, 1974 the Xinhua (New China) News Agency has been issuing daily exchange rates between RMB (¥) and foreign currencies.

On September 15, 1979, the rate of exchange was:

British £ 100 = ¥ 344.13

U.S. \$ 100 = ¥ 153.99

French Franc 100 = ¥ 36.41

Japanese Yen 100,000 = ¥ 712.14

West Germany Deutsche Mark
100 = ¥ 84.68

Swiss Franc 100 = ¥ 92.94 □

(Continued from p. 4)

sified growth and the best use of potentials. Available manpower, money and materials will be allotted in the order of importance and urgency to gradually arm all types of agriculture with modern science and equipment.

Speeding Light Industry

Textile and other light industries are due for fairly rapid development. They serve the people's daily needs, require relatively less funds and time for building, accumulate capital for construction and thus stimulate the growth of heavy industries as well. In Shanghai, for instance, total profits and taxes paid to the state by the cotton, wool, silk and linen mills between 1949 and 1978 were 77.3 times the total state investment in them.

Since the 60s, China has tried to develop products for which the petrochemical industry provides the raw materials—such as synthetic fibers, synthetic rubber, plastics and some construction materials. Requiring low investment and bringing quick results and higher profits, such processing industries earn foreign exchange and create new employment.

To observe the priority for the light industries is particularly important in the current readjustments. Their stress is on adapting output to market needs, direct links between production and marketing, and faster commodity circulation. This accords with the interests of the socialist economy.

Proportions and Purposes in Heavy Industry

In heavy industry suitable proportions will be maintained. This sector serves both agriculture and light industry. In particular, the output of coal, oil, electricity, transportation equipment and construction materials needs jacking up.

Present production of these essentials, which should march ahead of other industries, lags behind the needs of the desired

rate of growth of the national economy. Local power shortages have hampered processing plants. Energy policies have not been scientifically and deeply studied. Though energy is inadequate, it is still often wasted. Rail, highway and water transport remain insufficiently coordinated in some areas and primitive in others. These problems must be tackled first.

In iron and steel, the quality, variety and specifications of products are out of keeping with the present output of over 30 million tons annually. In these three years, we must make approximately the same yearly tonnage meet more needs of the national economy.

Trade, Technology, Foreign Funds and Capital Construction

Among our important tasks are the expansion of exports, foreign trade and imports of advanced technology and equipment, attracting investments from abroad and setting up joint Chinese-foreign ventures, and the modernization of existing enterprises.

The more than 300,000 factories and mines already built in China are the basis for industrial modernization. Certainly, we shall import needed technology and equipment, with more emphasis on the first rather than on the second, in accordance with our needs and ability to pay. But our primary concern must be to renovate and technologically transform existing plants.

A good way to increase our foreign trade, and our ability to pay, is to study from all aspects the commodity requirements of the world market, increase traditional exports of primary goods, and gradually accelerate the production and export of new and high-grade manufactures.

Capital construction is to be scaled down. In the last ten years many construction projects were not completed in time owing to lack of overall careful planning. Among those completed some could not start producing, due to lack of

power, raw material or transport. Such projects will either have to be dropped or completed by a fixed date. New projects are to be built only where conditions permit, scientifically and in a planned way with a set date for completion.

Improving People's Livelihood

On condition that we can keep consumer prices stable, we will pay more to peasants for their farm produce in order to elevate their living standards. We have already begun, and will continue step by step, to raise the wages of industrial and office workers in line with the principle of "to each according to his work." Bonuses will be scaled according to the profits of each enterprise, to stimulate enthusiasm for production among their workers and other personnel. Job opportunities, housing and other public welfare institutions are to be expanded. Such is work already being done. It will be continued and be improved.

All these things are important steps. They lay the basis for fast and well-coordinated growth at the next stage.

Some Urgencies

Some things are very urgent.

One is to prepare for the overall restructuring of China's economic system. Basically, its set-up was copied from the Soviet Union's in the 1950s; and in some aspects it evolved from the supply system* of the revolutionary war years from 1927 to 1949. A core

problem is to give each enterprise the powers of decision necessary to administer an independent economic unit. This requires gradual reforms in the overall administration of planning, finances, supplies and salaries, wherever it is unduly rigid.

Socialism demands that adjustment by plan dominate the entire chain of production, exchange, circulation and distribution, but a market operating according to the law of value can, to a certain extent, supplement and help the adjustment by plan. It can help bring planning and action into harmony with objective economic laws, gear production to real needs and promote healthy growth of the productive forces. Such measures have been tried out in the past years in selected units in Beijing, Shanghai, Tianjin and in Sichuan province with quite satisfactory results.

Shanghai's light industry sector, for instance, has altered its overly-rigid methods of production planning. In the new way, the constituent factories first propose, from the basic level upwards, the targets for variety, quantity, quality and value of output. Then the suggested targets are comprehensively balanced by the plan. This has led to more initiative and enthusiasm.

Secondly, we need analytic and comparative studies, phase by phase, of our 30-year-old economic system. Attention will be given to the proportions between and within agriculture and industry, and between accumulation and

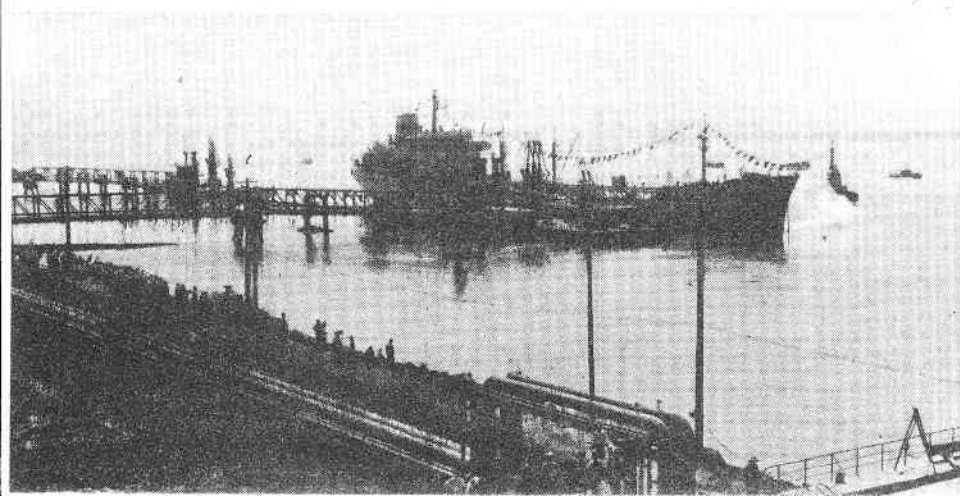
consumption, and to policies concerning energy and technology. Actual examples of what is rational and beneficial and what is not will be dissected, historical causes uncovered and necessary lessons drawn. Various foreign economic forms, both socialist and capitalist, will be analyzed and compared for reference. Based on all these studies we will devise large-scale scientific programs for our economic bases and long-term plans to guarantee the sound socialist modernization of our national economy.

Thirdly, it is urgent that we train, in rotation, the cadres working in every economic field, in hundreds of thousands and by the millions. They have to be helped to understand the laws of socialist economics, and in accordance with these, to learn modern methods of managing the whole economy and improve the running of our factories and mines. Most of our industrial enterprises are now setting up or consolidating basic systems such as the manager's responsibility under the leadership of the Party committee, the responsibilities of the chief engineer and chief accountant, and the holding of worker's congresses.

Thirty years of socialist economic construction have taught us that political stability and unity and a peaceful international environment are indispensable for our country's speedy industrialization and modernization. Our four modernizations are a historic goal of a quarter of the human race. We have the determined leadership of the Chinese Communist Party, and enjoy encouragement and support from the world's people which we are sure will continue because our cause is just. This gives us every confidence that we can and will solve the problems of China's socialist modernization, immediate and long range, one after the other on our road forward. □

A tanker takes on oil at the Nanjing end of the Shandong-Nanjing pipeline.

Photos by Xinhua



* The supply system — a system of payment in kind practiced during the revolutionary wars and in the early days of the people's republic, providing working personnel and their dependents with the primary necessities of life.

Lesson 11

Visiting West Lake

(加拿大访华旅游团由桂林
(Jiānádà fǎng huá lǚyóutuan yóu Guilín
(Canada visit China tourist group from Guilin

到达杭州。)

dàodá Hángzhōu.)
arrive Hangzhou.)

史密斯：杭州的确是个花园城市，
Shímìsī: Hángzhōu díquè shì ge huāyuán chéngshì,
Smith: Hangzhou indeed is a garden city,

难怪人们用“天堂”来
nánguài rénmen yòng “tiāntáng” lái
no wonder people use “paradise” (to

形容它。

xíngróng tā.
describe it.

萨克斯：是啊。到中国不来杭州
Sākèsi: Shì a. Dào Zhōngguó bù lái Hángzhōu
Sachs: Is (so). Go to China (if) not come Hangzhou

太遗憾了。

tài yíhàn le.
(is) great pity.

勃朗：西湖有多大？

Bólang: Xīhú yǒu duō dà?
Brown: West Lake have how big?

王：面积是五点六平方公里。

Wáng: Miànjī shì wǔ diǎn liù píngfāng gōnglǐ.
Wang: Area is five point six square kilometers.

它三面是山，湖中的

Tā sān miàn shì shān, húzhōng de
Its three sides are mountains, lake center

苏堤、白堤把湖分为三部分。

Sūdī, Báidī bǎ hú fēnwéi sān bùfēn.
Su dyke, Bai dyke (the) lake divide three parts.

史密斯：咱们到苏堤去看看吧。

Shímìsī: Zánmen dào Sūdī qù kànkàn ba.
Smith: (Let) us to Su dyke go take a look.

(大家走上苏堤)

(Dàjiā zǒushàng Sūdī)
(Everybody walk on Su dyke)

史密斯：苏堤有什么来历吗？

Shímìsī: Sūdī yǒu shénme láilì ma?
Smith: Su dyke have what origin?

王：据说九百多年前，宋朝诗人

Wáng: Jùshuō jiǔbǎi duō nián qián, Sòngcháo shīrén
Wang: It's said 900 more years ago, Song dynasty poet

苏东坡在杭州做官。是他

Sū Dōngpō zài Hángzhōu zuò guān. Shì tā
Su Dongpo at Hangzhou acted as official. Is he

发动民工疏浚西湖，

fā dòng míngōng shūjùn Xīhú,
(who) mobilize civilian labor dredge West Lake,

用挖出的泥筑成这条堤。

yòng wāchū de ní zhùchéng zhè tiáo dī.
use dug out mud construct this dyke.

后来人们就称它苏堤。

Hòulái rénmen jiù chēng tā Sūdī.
Afterward people called it Su dyke.

萨克斯：这里柳树夹道，真

Sākèsi: Zhèlǐ liǔ shù jiā dào, zhēn
Sachs: Here willow trees line both sides road, really

是散步的好地方。

shì sàn bù de hǎo dìfang.
is (for) walks (a) good place.

王：沿堤向南走，有一座

Wáng: Yán dī xiàng nán zǒu, yǒu yí zuò
Wang: Along dyke toward south walk, have a

公园叫花港观鱼。

gōngyuán jiào Huā Gǎng Guān Yú.
park called Flower Harbor Watch Fish.

园内的池塘里养着很多

Yúannèi de chí táng lǐ yǎngzhe hěn duō
Park inside pond in being raised many

金鱼供人观赏。

jīnyú gòng rén guānshǎng.
goldfish serve people look (at) and enjoy.

玛利：是吗？我最喜欢金鱼。

Mǎlì: Shì ma? Wǒ zui xǐhuan jīnyú.
Marie: Is (so)? I very much like goldfish.

咱们快去看看。

Zánmen kuài qù kànkàn.
We quickly go take a look.

(大家到花港观鱼)

(Dàjiā dào Huā Gǎng Guān Yú)
(Everybody go to Hua Gang Guan Yu).

王: 玛利, 你不是有饼干吗?

Wáng: Mǎlì, nǐ bú shì yǒu bǐnggān ma?

Wang: Marie, you not is have cracker?

往水里扔一点, 立刻会

Wàng shuǐlǐ rēng yídiǎnr, lìkè huì

Toward water in throw a little, immediately can

引来一大群。

yǐnlái yí dà qún.

attract a big school (of them).

玛利: (扔饼干) 哎呀! 这么多

Mǎlì: (Rēng bǐnggān) Āi yā! Zhème duō

Marie: (Throw cracker) Oh, so many

金鱼, 真好玩儿。

jīnyú, zhēn hǎowánr.

goldfish, really good fun.

史密斯: 玛利喜欢金鱼, 而我的

Shímìsī: Mǎlì xǐhuan jīnyú, ér wǒ de

Smith: Marie like goldfish, but my

更大兴趣是参观古迹。

gèng dà xìngqù shì cānguān gùjì.

greater interest is visit ancient sites.

王: 杭州是个古老的城市,

Wáng: Hángzhōu shì ge gǔlǎo de chéngshì,

Wang: Hangzhou is an ancient city,

古迹很多, 象灵隐寺和

gùjì hěn duō, xiàng língyīnsì hé

ancient sites very many, like Lingyin Temple and

六和塔都有上千

liùhé-tǎ dōu yǒu shàng qiān

Liuhe Pagoda both already have up to a thousand

年的历史了。这些我们

nián de lìshǐ le. Zhèxiē wǒmen

years history. These we

都可以去参观。

dōu kěyǐ qù cānguān.

all can go visit.

Translation

(Canadian China tour group arrives in Hangzhou from Guilin.)

Smith: Hangzhou is indeed a garden city. No wonder people use the word "paradise" to describe it.

Sachs: Right. It would be a pity to come to China and not visit Hangzhou.

Brown: How big is West Lake?

Wang: Its area is 5.6 square kilometers. It is surrounded on three sides by mountains. Su and Bai dykes divide the lake into three parts.

Smith: Let's go to visit Su dyke.
(Everybody walks up Su dyke)

Smith: What's the origin of Su dyke?

Wang: It's said that when Su Dongpo, the Song dynasty poet was an official here more than 900 years ago, he mobilized peasant workers to dredge West Lake and used the mud dug out to build this dyke. Afterward people called it Su dyke.

Sachs: Here willow trees line both sides of the road. It is really a good place for taking a walk.

Wang: Walking southward along the dyke we'll come to a park called Hua Gang Guan Yu (Flower Harbor Fish-Watching Park). In the pond in the park many goldfish are raised for people to watch and enjoy.

Marie: Really? I'm very fond of goldfish. Let's go and see them right away.
(Everybody goes to Hua Gang Guan Yu)

Wang: Marie, haven't you got some crackers with you? Throw some crumbs into the water and they will immediately attract a lot of fish.

Marie: (Throwing crackers) Oh, so many goldfish. Really good fun.

Smith: Marie likes goldfish, but I'm more interested in visiting ancient sites.

Wang: Hangzhou is an ancient city with many ancient sites, such as the Lingyin Temple and Liuhe Pagoda (Pagoda of Six Harmonies). Both have a history of almost a thousand years. We can go to all these places.

Notes

1. Zhe 着 shows continuing action. Adding the particle 着 to a verb indicates continuous action as in Chítánglǐ yǎngzhe hěn duō jīnyú 池塘里养着很多金鱼 (In the pond many goldfish are being raised), Tā nǎzhe yí ge zhàoxiàng jī 他拿着一个照相机 (He is holding a camera).

The negative form is to place méiyǒu 没有 before the verb of the sentence. Tā méiyǒu nǎzhe zhàoxiàng jī 他没有拿着照相机 (He isn't holding a camera).

2. The question Bú shì... ma? 不是...吗? This is a kind of rhetorical question used to confirm a statement. Nǐ bú shì yǒu bǐnggān ma? 你不是有饼干吗? (You have crackers, haven't you?), Mǎlì xǐhuan jīnyú, bú shì ma? 玛利喜欢金鱼, 不是吗? (Marie likes goldfish, doesn't she?).

3. Hǎowánr 好玩儿 shows it's fun. This expression 好玩儿 is widely used as an adjective to describe something as great fun or sometimes like the English "cute." Adverbs such as hěn 很 (very), tài 太 (too) and zhēn 真 (really) are usually used before it. Zhème duō jīnyú zhēn hǎowánr 这么多金鱼真好玩儿 (So many goldfish really make for great fun). □



Flowers on Yandang Mountains (traditional-style painting)

Pan Tianshou

