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**CHINA'S
SPACE
INDUSTRY
TAKES
OFF**

**The World Sees Growing
Trade Blocs**



Chinese fashion models spark renewed interest in the charms of the Orient.

Photo by Liu Kaiming



China's Space Industry Takes Off

□ Relying mainly on its own, China has set up a multi-launching missile system which has brought its space technology up to the world's most advanced level. In its effort to put out civilian as well as military products, the industry has done its best to develop exports and open up the international market (p. 13).

'Overheated' Consumption Cools Down

□ The consumer craze has cooled down as a result of implementing the policy for economic improvement and rectification, strengthening macroeconomic control, cutting down on consumption funds and readjusting the investment scope and industrial structure (p. 27).

A Magnificent Scientific Exploit

□ This article describes how Qin Dahe, a Chinese on a six-member 1990 international trans-Antarctica scientific expedition, completed a 5,986-km trek across the Antarctica after undergoing 220 days of strenuous struggle (July 28, 1989-March 3, 1990). This first-ever Antarctic adventure, conducted through international co-operation without mechanical aids, demonstrates human ability and determination to conquer nature (p. 22).

Regional Economic Grouping Booms

□ The formation of regional trade blocs developed further during the 1980. This trend has had a major impact on the structure and development of the world's economy (p. 8).

More Than 200 Law-Breakers Released

□ Another 211 people involved in last June's turmoil and counter-revolutionary rebellion in Beijing have been recently released upon completion of investigation. They are the second group of law-breakers set free since January, when public security departments in Beijing released 573 (p. 5).

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COVER: "Long March III" carrier rocket on the Xichang satellite launching-pad.

photo by Zou Yi

Unless written by Beijing Review correspondents, the opinions expressed in signed articles do not necessarily reflect the view of the Beijing Review editorial board.

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Sino-Mongolian Communiqué

China and Mongolia issued on May 7 in Beijing a joint communiqué. Following is the full text of the Joint Communiqué Between the People's Republic of China and the People's Republic of Mongolia:

1. At the invitation of President Yang Shangkun of the People's Republic of China, Chairman Punsalmaagiin Ochirbat of the Presidium of the Grand People's Hural of the People's Republic of Mongolia paid an official goodwill visit to the People's Republic of China from May 4 to 7, 1990.

General Secretary Jiang Zemin of the Central Committee of the Communist Party of China, President Yang Shangkun of the People's Republic of China met and held talks on separate occasions with Chairman Punsalmaagiin Ochirbat of the Presidium of the Grand People's Hural of the People's Republic of Mongolia in a friendly and sincere atmosphere. The leaders of the two countries briefed each other on their respective domestic situation and exchanged views on furtherance of the bilateral relations and international issues of mutual interest.

2. The leaders of the People's Republic of China and the People's Republic of Mongolia expressed their gratification at the normalization of the relations between the two countries and shared the view that their current high-level meeting opened up a bright prospect for further expanding and developing bilateral relations and that steady growth of the bilateral relations is not only in the fundamental interests of the two peoples, but also conducive to peace and stability in Asia and the world as a whole.

3. The leaders of the two countries confirmed that the two coun-

tries will continue to strengthen and develop their friendly relations and co-operation in the days to come in accordance with the Treaty of Friendship and Mutual Assistance Between the People's Republic of China and the People's Republic of Mongolia signed in 1960 and on the basis of the five principles of mutual respect for sovereignty and territorial integrity, mutual non-aggression, mutual non-interference in each other's internal affairs, equality and mutual benefit, and peaceful co-existence.

4. Vigorous efforts should be made to develop, in a planned way, relations between China and Mongolia in the economic, trade, scientific and technological, cultural and other fields on the principle of equality and mutual benefit so as to enhance the mutual understanding between the two peoples and their friendly and good-neighbourly relations.

5. The two sides believed that it was useful to exchange information and experience on socialist construction and economic reform and views on the bilateral relations and international issues of common interest. The two sides expressed their readiness to hold meetings and consultations at appropriate levels in the future when necessary.

6. The two sides agreed that peace and development are the two major issues of the present world. To maintain world peace and promote development of all countries calls for concerted efforts by the international community to properly handle various complex problems confronting the world in accordance with the universally acknowledged norms governing international relations. China and Mongolia are ready to make vigorous efforts to

promote prosperity and stability of their region.

7. Chairman Punsalmaagiin Ochirbat of the Presidium of the Grand People's Hural of the People's Republic of Mongolia invited President Yang Shangkun of the People's Republic of China and Premier Li Peng of the State Council respectively to pay an official visit to the People's Republic of Mongolia at a time convenient to them. The Chinese side expressed its thanks and accepted the invitation with pleasure. ■

Li Peng Meets US Study Group

China's investment climate has been improving and the mainland welcomes investment from the outside, Chinese Premier Li Peng told an economic and trade study group from the US Council for International Co-operation on May 8.

"We have worked out a series of foreign-related economic laws and regulations so that the interests of the investors have legal guarantees," Li said.

The quality of the labour force in China, he added, is relatively good and labour costs are relatively low. The premier also noted that in recent years China has set great store by building an infrastructure and has seen great improvements in energy and telecommunications, especially in coastal areas.

The group, headed by Anna Chennault and with Irving Kaufman and Chu Ai Ti as deputy leaders, came to visit the mainland of China and to study the investment climate at the invitation of the Chinese People's Institute of Foreign Affairs. Many group members are entrepreneurs from Taiwan.

After bidding the group welcome, Li said: "Although we live under different social systems, as far as most friends present are

concerned, we are all Chinese and all hope China will become prosperous."

He told his guests that despite some twists and turns, as well as mistakes, the People's Republic of China has made much progress since its founding in 1949. The problem of food and clothing for 1.1 billion people has basically been solved and a relatively complete industrial system has been established.

China's goal is to concentrate on its modernization drive, Li said. He pointed out that a peaceful international environment and stable domestic situation are necessary to achieve this objective.

China, he added, will continue its policies of reform and opening to the outside world, and feels that learning from the advanced ideas of other countries is important.

"This is to increase our capacity for self-reliance," he explained.

The premier described the establishment of direct links in postal, air and shipping services and trade between Taiwan and the mainland as the trend of the times.

Chennault told Li that the study group has made contact with many departments in Beijing. She expressed the group's willingness to make continued efforts to promote economic co-operation. ■

211 Involved in Turmoil Released

Another 211 people involved in last June's counter-revolutionary rebellion in Beijing have been released after full investigations.

A spokesman for the Ministry of Public Security said in Beijing on May 10 that all of them had been given lenient treatment.

Among those released were Cao Siyuan, former director of the

China Sitong Social Development Research Institute; Yang Baikui, former chief of the research section of the Institute of Political Science under the Chinese Academy of Social Sciences; Zhou Duo, former director of the Department of Strategy and Planning of the Beijing Stone Group Company; Li Honglin, former president of the Fujian Provincial Academy of Social Sciences; Li Nanyou, a former editor of the World Affairs Publishing House and Dai Qing, a former reporter of the Beijing-based *Guangming Daily*.

On January 18 this year, the Ministry of Public Security announced the release of 573 people involved in the turmoil and counter-revolutionary rebellion.

According to the spokesman, 431 such lawbreakers are still being detained and investigated by public security departments of Beijing. Some of the criminal offenders are to be dealt with by judicial departments, the spokesman added.

People involved in the turmoil and rebellion and guilty of criminal activities will be dealt with leniently no matter which social stratum they belong to as long as they honestly admit their criminal activities, make voluntary confessions and show repentance, the spokesman said. Those who obstinately stick to a wrong course, refuse to repent and continue to do evil, he said, will be punished strictly in accordance with the law. ■

China, Viet Nam on Kampuchean Issue

According to a spokeswoman for the Chinese Foreign Ministry, China's Foreign Minister Qian Qichen met with Dinh No Liem, first deputy foreign minister of Viet Nam in Beijing early in May.

The spokeswoman said at a re-

cent news briefing that Dinh No Liem came to the Chinese capital on May 8 to inspect the Vietnamese embassy.

During his stay, Dinh exchanged views with Assistant Foreign Minister Xu Dunxin on a comprehensive resolution of the Kampuchean question.

"This informal exchange of views is useful and has enhanced mutual understanding," the spokeswoman said. "Some common understanding has been reached, but there still exist different views on a number of major issues, which will be further discussed by the two sides."

When asked whether any views were exchanged on the normalization of the relations between the two countries, she said: "As is well known, the major obstacle to the normalization of Sino-Vietnamese relations is the Kampuchean question. Only when this question is given a fair and reasonable resolution can Sino-Vietnamese relations be improved."

Vice-Foreign Minister Tian Zengpei also met with Dinh and hosted a banquet in his honour. ■

Sino-UAE Ties Solid and Friendly

China has traditionally enjoyed solid and friendly relations with Arab countries, Chinese President Yang Shangkun recently told the visiting president of the United Arab Emirates (UAE), Sheikh Zayed Bin Sultan al-Nahayan.

During their meeting in the Great Hall of the People in Beijing on May 8, Yang said the Chinese government appreciated the efforts made by Arab countries, especially the Gulf states, to achieve unity and mutual development.

The United Arab Emirates is an old country but a modern one, Yang said, and under the leader-

ship of Zayed, the people's living standard has improved greatly.

The Chinese president visited the United Arab Emirates in December, and said the visit had left him with good memories.

Zayed said his visit to China would lay a solid foundation for the further development of bilateral relations and expressed the hope that the two countries would frequently exchange such visits to promote those relations.

The UAE president arrived in Beijing on May 7. It was the first visit to China by a president of the United Arab Emirates as well as the first by a leader of the six Gulf states.

Zayed also said he sincerely hoped that people around the world would live in peaceful and stable conditions because "it is impossible to let people lead a good life without stability."

Yang replied: "China is willing to contribute to maintaining world peace."

Later, at an evening banquet honouring Zayed, Yang said the Chinese government has always supported the Arab and Palestinian people in their struggle to restore their national rights and in finding a comprehensive solution to the Middle East problem.

China also supports efforts to promote peace talks between Iran and Iraq, and China will continue its efforts to promote friendly relations among Arab countries, Yang said.

Zayed said his country maintains that an equal economic relationship should be established between industrialized countries and developing countries to alleviate life-threatening hunger and poverty.

The Chinese Communist Party General Secretary Jiang Zemin and Premier Li Peng held separate talks with Zayed on May 9.

Jiang expressed admiration for UAE's outstanding achievements in the past 18 years. President Zayed has used the area's rich oil

resources to improve the standard of living, said Jiang.

Zayed said that the UAE will always promote good relations with China.

Talking with Premier Li, the UAE president said that the genuine friendship between the UAE and China has shortened the distance between the two countries and "now we stand shoulder-to-shoulder, like brothers."

During his five-day official visit to China, the UAE president and his delegation of more than 100 members also visited Shanghai and Suzhou. ■

News In Brief

China's Economy Picks Up

After a period of economic readjustment, inflation in China has been effectively curbed and the economy began to rebound in April, an indication that its economy is emerging from the doldrums, said Premier Li Peng on May 7 when meeting with former Japanese prime minister Sosuke Uno in Beijing.

Li said the Chinese Communist Party and the government are leading the country effectively, and he hoped the Western countries will soberly come to terms with this reality.

Uno expressed the hope that the Japan-China relationship would return to the way it was prior to last June. He held that China has made big efforts to improve relations with Western countries, a fact that should not be lost on the world community.

Tibet Sets Rules for Foreigners

Tibet will continue to carry out the policy of reform and opening to the outside world and Lhasa has reopened to the outside world following the lifting of the martial law on May 1, said Tang Zhenqi, deputy secretary-general

of the government of the Tibet Autonomous Region on May 7.

On account of the region's limited accommodation and tourism facilities, foreigners wishing to travel to Tibet should apply in advance to departments concerned, he said.

According to Tang, foreign diplomats and journalists (whether stationed in China or visiting) should present their applications to the region's foreign affairs office, while foreign tourists and foreigners coming for trade talks and economic and technical cooperation should apply, respectively, to the region's tourism administration and department of foreign economic relations and trade.

Smedley Commemorated

The 40th anniversary of the death of American writer Agnes Smedley (1892-1950) was marked at a memorial in Beijing on May 8 under the auspices of the China Federation of Literary and Art Circles and the Smedley-Strong-Snow Society of China.

Smedley came to China in 1928. Her writings, including *Battle Hymn of China* and *The Great Road: The Life and Times of Zhu De*, reported for the first time to the world the brave and arduous struggle of the army led by the Chinese Communist Party.

The woman was praised as a great international fighter who always sympathized with the oppressed labouring peoples and made contributions to their emancipation.

CPC Delegation Visits Cuba

A delegation of the Communist Party of China (CPC) visited Cuba from May 11 to 18 at the invitation of the Communist Party of Cuba. The delegation was led by Wen Jiabao, alternate member of the Secretariat of the CPC Central Committee. ■

Beijing Greet Antarctic Adventurers

The six adventurers who trekked 5,986 kilometres across the Antarctica over 220 days were given a warm welcome when they arrived in Beijing on May 8.

More than 1,000 people from all walks of life gathered on May 9 to meet the members of the 1990 International Trans-Antarctica Expedition, who had made the first crossing ever of the southernmost continent on foot.

They had battled the ice, snow and bitter cold along with their 41 sled dogs between July 1989 and March 1990.

The expedition members were Qin Dahe from China; Jean Louis Etienne from France; Will Steger of the United States; Victor Boyarsky of the Soviet Union, Geoff Somers from Britain and Keizo Funatsu of Japan.

Wu Heng, chairman of the China National Antarctic Research Committee, praised the team's spirit of international co-operation and their efforts to

help mankind better understand the Antarctica.

Beijing Mayor Chen Xitong welcomed the six adventurers and members of their families on behalf of the Chinese capital's 10 million residents. The expedition, Chen said, had attracted wide attention in Beijing.

When meeting the expedition members on the same day, Chinese President Yang Shangkun called the six adventurers "heroes" and "brave men."

Praising the six heroes, the Chinese president said: "There is a Chinese saying that 'You are not a true man if you do not mount the Great Wall.' But as for you, it should be said that 'You are not a true man if you do not reach the Antarctica and the South Pole.'"

On behalf of the Chinese government, Yang added: "I welcome you heroes to visit China because you have accomplished a great mission and made the first-ever crossing on foot of the continent."

Noting that the expedition was of great significance for the progress of mankind, Yang told the adventurers: "Your success was the result of common efforts and it is also a symbol of unity among the people of the world."

The people of China, he added, are particularly proud of the Chinese team member, Qin Dahe.

Yang also said that China has established two scientific stations in the Antarctica and will make further efforts in the future in Antarctic studies. In addition to China's efforts, Yang encouraged international co-operation in that polar region.

"Let the Antarctica become a common land for the people of the whole world," he urged.

Later at a news conference, team members said they had collected a wide range of materials useful for the study of oceanography, glaciology, physiology and the ozone layer.

by Zou Sicheng



The six Antarctic adventurers are: (top left to right) Jean Louis Etienne, Will Steger, Qin Dahe; (bottom left to right) Keizo Funatsu, Geoff Somers, Victor Boyarsky; the heroes of the International Trans-Antarctica Expedition are warmly welcomed at Beijing airport on May 8.

The World Sees Trade Blocs Increasing

by Ni Feng

Since World War II, the formation of regional economic groupings or trade blocs has developed widely, the establishment of the European Community (EC) in 1958 being the most prominent example.

Statistics for third world countries indicate that today there are nearly 50 regional trade blocs. If all bilateral and multilateral economic co-operative organizations are included, there would actually be more than 70 such groupings. In Asia, for example, 26 countries or regions with a total population of 1.43 billion have joined in various economic organizations.

New Conditions

During the 1980s, new conditions appeared in the trend towards grouping in the world economy. In June 1985, a summit of EC countries decided to establish an internal unified market to realize free movement of personnel, commodities, labour and currency among its members. In January 1988, Canada and the United States signed a free trade agreement to eliminate tariff and non-tariff barriers within 10 years. (The agreement went into force in January 1989.) At the end of 1987, Japan proposed to set up an East Asia economic circle to include countries in the Association of Southeast Asian Nations (ASEAN) and the "four little dragons" — South Korea, Taiwan, Hong Kong and Singapore. The economic circle would centre around the Japanese yen through a trinity of trade, investment and currency.

The Soviet Union is also pursu-

ing its new Asian-Pacific strategy. At the beginning of this year, Soviet Premier Nikolai Ryzhkov visited ASEAN countries and Australia for the first time and indicated the Soviet Union's desire to participate in economic co-operation in the Asian-Pacific region.

In 1988, Australian Prime Minister Robert Hawke visited East Asian countries and regions to discuss establishing an economic partnership. And last November, the first ministers' meeting of the Asian-Pacific Economic Co-operation Committee was held in Canberra. The possibility of establishing a loose economic organization in the Asian-Pacific region is, therefore, increasing.

In order to develop their economies and raise their position in the world economy, developing countries have also made calls to further strengthen regional co-operation.

The trend towards trading blocs and an increase in global economic activities have become important factors that all governments have to take into consideration when formulating domestic and foreign policies.

Reasons for Grouping

Upgrading production in developed countries requires economic grouping and the elimination of obstacles to the circulation of money and goods in internal markets. Trading blocs are therefore the natural result of the development of productive forces and an increase in the internationalization of production. When the productive forces develop to a certain point, they seek to cross

borders and eliminate market obstacles. And the closer the countries' production levels are, the more urgently these countries want to eliminate market barriers between them. This was the basic reason for the trend towards large-scale grouping in central areas of the world economy during the 1980s.

Realizing economic grouping and eliminating market obstacles can bring visible and invisible economic benefits to members of various groups. For example, countries in the European Community used to pay about 12 billion ECU (European currency unit) annually in service charges for personnel and goods passing their borders. Enterprises and consumers lost about 50 billion ECU because of differing technological standards of EC countries. These expenses and losses will no longer exist after the unified market system is established in 1992. The system will reduce transit services and unify technological standards, thus directly economizing on capital and labour. Regarding invisible economic benefits, because a strengthened EC competitive mechanism will invigorate enterprises and the entire economy, the competitive power of the EC's commodities on the international market will increase. Thus, the economy's healthy development will be maintained.

The trend is also related to the entire international political and economic structure and balance of power. After World War II, the United States insisted on multilateral free trade when it was economically strong. However, with the EC's rapid economic de-

velopment in the 1960s and 1970s and Japan's surge in economic strength during the 1980s, the US position in the world economy dropped. The move to a multipolar world became more and more evident. Currently, the United States faces two major deficits which it cannot control. Increasingly, it has relied on foreign capital. As the largest debtor nation, it has been unable to maintain a vigorous multilateral international economic system. In order to maintain its sphere of influence, the United States needs to set up free trade alliances to meet competition from Japan and Western Europe. And, for all their increased economic strength, Japan and Western Europe still are unable to replace the United States to play a leading role in the world economy. Devaluation of the American dollar and appreciation of the Japanese yen and European currency has resulted in increasingly sharp market competition. Trade clashes between countries have also intensified and a new emphasis has been placed on protectionism. Therefore, Western Europe and Japan also need to increase their economic strength and trade positions through grouping measures.

Meanwhile, rapid changes in the Soviet Union and Eastern Europe have virtually brought about the collapse of the Yalta system, established after World War II by the allied victors during a meeting in the Soviet Union at Yalta. As well, the Cold War situation of military confrontation between the United States and the Soviet Union has gradually come to an end. Because of their economic strength, Japan and West Germany have taken their place as countries to be reckoned with. This shows that the most important strategic problem for countries to tackle is to increase their economic strength so they can be part of the international economic race. The current interna-

tional situation brings new impetus to the development of economic trade blocs.

After World War II, the General Agreement on Tariffs and Trade (GATT) and the Bretton-Woods international monetary system became the pillars of international trade. However, the function of GATT has been greatly weakened due to an increase in trade protectionism and the Bretton-Woods system, which pegged all currencies in the West, collapsed early on. A fluctuating world monetary market has destabilized the international trade environment, provoking the trend towards grouping in the world economy.

Hit hard by the economic crisis at the end of the 1970s, the developing countries' economic development entered a difficult period during the 1980s. Development slowed or stagnated. Their position in the global economy slipped a few notches and the trade environment worsened.

In order to put an end to this situation, developing nations proposed establishing South-South co-operation. As a result, they have formed numerous types of regional economic groups, designed to resist unreasonably low prices for raw materials set by developed countries.

The Impact

The tendency towards regional trade blocs started when the United States lost its leading position in the world economy. World economics now follows a multipolar pattern. There are now three economic forces in the global economy — the United States and Canada, the European Community, and East Asia which includes Japan, the "four little dragons" and the ASEAN countries. Competition among these three economic forces is expected to increase.

The trend towards regionalizing the world economy will increase market barriers between

regional groups. As a result, the pace of integrating world industry will be slowed. As well, the formation of regional economic groups by developed countries will have a negative influence on developing countries' trade and export.

Such a trend has created some notable phenomena in world economics:

1. There have been speedy adjustments to industrial structures. Industrial countries are making efforts to develop high-technology industry. The comparatively highly-industrialized developing countries are trying to transform their labour intensive industries into technology intensive industries. Other developing countries are trying to diversify their economic structures which depend on the export of raw materials. In order to speed up the adjustment of their economic structures and revitalize industry, developing nations as well as Western European countries and the United States have adopted measures to reduce administrative involvement in enterprises and turn state-owned enterprises into private ones.

2. Overseas investment has increased. As a result of the industrial structural readjustment, some elements of industrial production have been transferred to lesser developed nations from industrialized countries. Various economic groups also are trying hard to enter each other's market. In recent years, overseas private investment has skyrocketed. According to a report delivered by the Japan External Trade Organization (JETRO), the accumulative total of direct investment made by all countries reciprocally by the end of 1987 was US\$962.8 billion. Japan's overseas private investments in 1987 reached US\$33.36 billion, a 50 percent increase over the previous year. In the past two years, investment abroad by Taiwan and South Korea has doubled or quadrupled,

and a large part of it is concentrated in Southeast Asia.

3. The merging of companies is in full swing. Company mergers in the United States in 1988 were valued at a record US\$200 billion. In that one year a total of 14 corporate mergers, each exceeding US\$1 billion, were concluded. A survey of the European Community shows a year by year increase in the number of mergers among the area's 1,000 largest enterprises. There were 303 such mergers in 1987 while in 1984, there were only 115. At the same time, trans-national mergers among corporations in the United States, Japan and Europe also developed vigorously. In 1988, 130 US corporations were merged by Japanese enterprises involving a total of US\$12.7 billion, compared with a mere US\$5.9 billion in 1987. The most noted merging activity was the alliance between Daimler-Benz, West Germany's largest industrial group and Japan's Mitsubishi. The merger of the two giant corporations shocked Western nations. The wave of merging indicates the desire of industrial countries to become stronger for future competition. The belief is that large enterprises and trans-national corporations will be in a beneficial position because they can find places in each other's markets.

4. Scientific and technological development has been given top priority. Nearly every country has been increasing its annual scientific and technological expenditures. Japan regards scientific and technological development as its basic national policy. The European Community is carrying out a programme known as the Eureka Plan, adopted in 1985, to promote technological research and co-operation among its members. It is now common knowledge that economic competition in the future will be concentrated on technology. ■

Economic Surge Seen in Thailand

by Xiao Wei

Premier Chatichai Choochavan initiated a concept of turning "the Indo-Chinese battlefield into a market" and conceived a "Southeast Asian economic rim."

The past decade was a golden period for Thailand's economic development.

The annual average growth rate reached 8 percent. The gross national product (GNP) last year neared US\$68 billion, 30 times higher than what it was in the early 1960s. Per capita income in 1989 soared to US\$1,200, eight times higher than the early '60s. The agricultural proportion of the national economy in 1988 shrank to 15.6 percent from 40.5 percent in the 1960s, while that manufacturing industry climbed to 25 percent from 15 percent. In recent years, Thailand's foreign trade increased at an average rate of 20 to 30 percent and last year's export volume surpassed US\$20 billion.

The rapidly developing tourist industry has become one of Thailand's economic pillars. Last year, Thailand earned more than US\$4 billion from tourism and its foreign exchange reserves amounted to US\$10 billion.

The stable political situation and harmonious social environment were responsible for this economic miracle. In particular, the export-oriented economic strategy conformed with Thailand's domestic situation.

In the early 1980s, when Thailand earned foreign exchange mainly from exporting the primary products of rice and rubber and depended on other countries for its energy resources, its econ-

The Thai government decided to replace the import-substitution strategy with the export-oriented development strategy to cope with economic challenges.

omy suffered heavily from continuous drops in the prices of primary products on international markets and prevailing protectionist trade policies. Some economists were pessimistic about Thailand because of its tremendous economic woes. They predicted the situation would worsen.

In coping with the challenge, the Thai government decided to replace the import-substitution strategy with the export-oriented development strategy aimed at making more foreign exchange, improving the international balance of payment, realizing economic diversity and strengthening its capacity to meet the emergency.

At the same time, measures were taken to tighten budget spending, limit the import of consumer goods, encourage tourism and devalue its currency. Through a series of readjustments, Thailand's economy

moved out of the darkness and into the sunlight.

It began to turn around in 1986, when, after 20 years, it gained a favourable balance of payment for the first time. Foreign exchange reserves increased to US\$4.3 billion from US\$2.5 billion in 1983.

In the ensuing years, the world economic climate became even more favourable to Thailand. It has profited greatly from sliding oil prices, the low exchange rate of its currency -- the baht -- to the US dollar, low interest rates and the refocusing of industrial structure in Japan and the "four little dragons" in Asia -- Singapore, South Korea, Taiwan and Hong Kong.

Taking the opportunity to attract foreign investment, the Thai government advanced a slogan of "economic diplomacy" and began to carry out "all-round diplomacy."

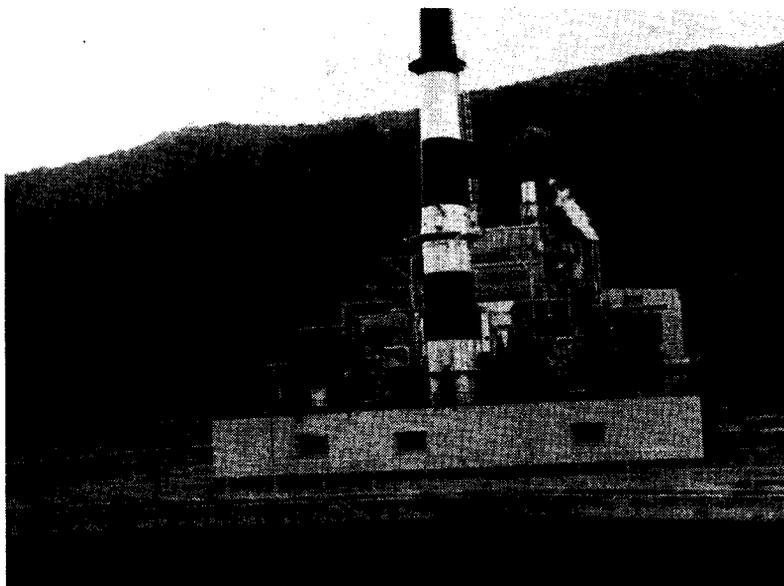
Businessmen, spurred on by the policy, accompanied government officials on journeys abroad, enthusiastically seeking economic information and enlarging foreign trade and economic co-operation.

In 1988, Premier Chatichai Choonhavan initiated a concept of turning "the Indo-Chinese battlefield into a market" and conceived a "Southeast Asian economic rim."

The fallout of these policies and measures included last year's economic growth rate rising to 11 percent from 10.3 percent the year before.

Thailand's success in developing its economy was the result of several factors. The Thai government not only provided legal protection over domestic capital and gave policy guidance to investments, but also put capital and credits on the construction of industrial and agricultural infrastructures and non-profitable social welfare services.

The Thai government also looked to foreign opportunities in its drive to promote the national economy. In the mid-1980s, Japan and the "four little dragons" transferred some of their labour-intensive industries to other countries because of the reorganization of their industrial structure, high exchange rates and the high cost of productions. Thailand responded by making a series of preferential policies to attract foreign capital. The government pledged that it would not confiscate foreign investments and would not establish Thai enterprises that would compete against foreign enterprises set up with its approval. Sanctioned foreign enterprises



A Japanese company builds a power plant on a ship and sails it to Thailand.

can freely take their profits out of Thailand and preferential conditions on taxation are provided to projects that are encouraged by the Thai government.

From 1985 to 1987, the Thai government approved 1,012 foreign-funded projects and the volume of investment totalled US\$9.7 billion, equivalent to that of the previous 25 years. In 1988, foreign businessmen applied for permission to launch a total of 1,271 projects in Thailand, involving US\$15.7 billion in investment. The increased amount of foreign capital greatly invigorated Thailand's economy.

However, Thailand has taken a cautious attitude towards foreign loans. Based on its actual need and capacity of repayment, the Thai government has set a strict ceiling on foreign debts and introduced foreign capital from various channels.

Thailand has restricted the amount of money that can be borrowed from leading foreign lenders and has established a corresponding checking system over the administration and use of foreign money, which enables the Thai government to constantly maintain its repayment rate at a rational level and successfully avoid a heavy debt burden.

Another factor that weighed heavily on Thailand's economic development was the relationship between industry and agriculture. As an agriculture-dominated country, Thailand has a large rural population, making up about 80 percent of the total. Thus, agriculture has a pivotal role in economic progress and social stability.

In its efforts to realize Thailand's industrialization, the government viewed agriculture as the foundation and promoted agriculture by developing industry.

By means of direct investments in construction of water conservation projects, favourable

policies and economic help, the Thai government has been constantly upgrading agriculture, developing the processing industry of farm produce and those industries that could bring in foreign exchange.

Therefore, Thailand's agricultural production is on the rise and Thailand has become one of the world's five largest grain exporters, with the export volume of rice and cassava ranking first in the world market.

However, there are some problems with Thailand's economy. Chronic fast-paced growth resulted in an overheated economy with last year's inflation rate increasing to 6 percent. It's expected to reach 6.5 percent this year.

Increasing inflation will not only reduce the competing edge of Thailand's commodities on the world market, but could also trigger social turbulence.

As well, there are grave regional imbalances in Thailand's economic development. Currently, 78 percent of all industrial products come from Bangkok, while 3 percent comes from the northern region, 5 percent from the northeastern region and 2 percent from the southern region.

In the districts ringing Bangkok, per capita income is close to US\$3,000, while in the poorest northeast district, it is less than US\$300. This unbalanced economic development has had a negative impact on the country's political and social stability.

Last year, the Thai government mapped out an over-all programme to vigorously develop all districts. According to the programme, Thailand is planning to establish a heavy industrial zone on its eastern coast with the petrochemical industry as its main industry. In the long and narrow region in the south, the government dreams of an "economic corridor" which will connect the Pacific and Indian oceans, thus, forming another industrial base for export.

In the northeastern region, the government is emphasizing the construction of water conservation projects, owing to the region's poor natural conditions for agriculture.

The Thai government has also adopted preferential policies to encourage investment outside of Bangkok, in order to support the country's backward districts. If Thailand realizes these goals, it will solve the problem of industrial concentration in a few areas, thus aiding the development of the economy throughout the country.

Another factor that is slowing Thai economic development is the level of education and science and technology. Currently, the greatest part of foreign investment is in labour-intensive and low-technology industries. Even at a higher level, in the electrical equipment and electronics industries for example, Thai workers merely do assembly-line work rather than develop high technology.

It is estimated that Thailand each year needs 8,000 engineers and technical personnel and the number will increase to 18,000 by the next decade. However, only 3,000 people graduate from technical colleges today, which falls far short of the demand.

The Thai government has taken measures to alleviate this problem. It has instituted a system of compulsory middle school education in urban areas, established new colleges and technical secondary schools and raised the salaries of teachers. In the next five years, the Thai government will spend 2 billion baht to send students to study abroad.

There is still a huge gap between Thailand and the "four little dragons" in terms of economic strength, technology, infrastructure and industrial structure. Some economists believe Thailand has a long way to go before it becomes the "fifth dragon."

China's Space Industry Takes Off

China has set up a multi-launching missile system, which has brought to the world's most advanced level the country's technology in the field of satellite recovery, multiple missile launching with a single rocket, satellite survey and control and high-energy cryogenic fuel rocket. The following article tells about historical development of China's space industry.—Ed.

Not long after the founding of the People's Republic of China in 1949, the Central Committee of the Communist Party of China, headed by Chairman Mao Zedong, made an important decision: While energetically developing the national economy, China must strengthen the building up of national defence in order to guarantee state security and independence, protect the economic construction of New China and maintain China's international standing.

In 1956, China established a missile research institute. When the Soviet Union launched the

world's first man-made satellite in October 1957, Chairman Mao Zedong foresaw the full impact of astronautic technology on mankind and issued the call, "We should also develop satellites." Even in 1960 when China's national economy was beset by serious difficulties due to natural calamities and other causes, Chairman Mao still proposed, "We must make up our minds to develop sophisticated technology. The development of sophisticated technology must not be relaxed, to say nothing of stopped." Also, the Party Central Committee made a relevant deci-

sion on the development of sophisticated technology and the Central Military Commission of the CPC Central Committee further defined the principle of developing both missiles and atom bombs and giving first place to the former. Under these circumstances, China basically established a test base for missile researching, production and launching from 1959 to 1961, a time when China's national economy met with temporary difficulties. In 1962, a special committee of the central authorities headed by Premier Zhou Enlai was set up to lead the work for developing sophisticated technology of the defence industry, including space technology, thus ensuring great achievements in this area in the mid-60s. During the ten-year turmoil (1966-76), the space industry was heavily undermined and buffeted, but Premier Zhou Enlai and other Party and government leaders adopted various measures to protect the ranks of astronautic scientific and technological personnel so that some key projects could be carried out uninterrupted and attain tremendous achievements.

Thanks to the joint efforts made by scientists, technicians, cadres and workers on the astronautic front over the past more than three decades, China's space industry, starting from scratch, has grown rapidly. A



Scientists and technicians of a remote sensing ground station study a satellite chart.

YANG WUMIN

fairly large, relatively complete space industrial system that combines scientific research, production and education has been established. The industry has made great contributions to the strengthening of the country's national defence and economy.

To date, China has developed many kinds of tactical and strategic missiles and carrier rockets and is able to produce short-, intermediate- and long-range and intercontinental missiles and ground-to-ground and underwater-to-air missiles. It initially has set up a missile system of multiple-range missiles and various types of launching meth-

ods, providing the country with a nuclear counterattack deterrent force. In the field of tactical missiles, an all-space missile system for air and coastal defence has been formed. Breakthroughs have been made in the development of ground-to-ground missiles and 27 man-made satellites have been launched successfully.

At present, in some important aspects, China's space technology has entered the ranks of the world's most advanced. For instance, China has successfully recovered 11 satellites and has become the third country in the world (after the United States and the Soviet Union) to master

satellite recovery technology. After the Soviet Union, the United States and the European Space Agency (ESA), China is the fourth country to have launched a number of satellites using a single carrier rocket. In satellite surveying and controlling technology, China has established a TTC network composed of more than 10 ground observatories with surveying, controlling and communications centres and telemeter control vessels. After the United States and France, China is the third country to master high-energy cryogenic fuel rocket technology, which represents a new level of modern rocket technology. In earth synchronous orbit satellite launching technology, China is one of five countries in the world that can launch satellites with such technology.

Depending on Socialism

Space technology involves vast, complicated systems engineering. Satellite communication engineering, for example, includes five big systems—satellite carrier rocket, launching site, TTC network, and ground communication network, and involves many branches of learning, specialized subjects and technologies. It demands well-organized work, co-ordinated actions, unified leadership and good co-operation of various fields. In a word, it requires a high level of planning. To develop a space industry, particularly in an underdeveloped socialist country like China which is hampered by a shortage of qualified scientists and technicians as well as funds, it is all the more necessary to bring into play the unique superiority of socialist planned economy, concentrate forces, organize co-ordination on a national scale for solving key technical problems. Only in this way can China quickly advance its space technology in a short



A launching pad at the Jiuquan Satellite Launching Centre.

HUA BAO

time.

To ensure the supply of various kinds of high temperature-resistant materials, high pure fuels, high-strength steel, precision alloys, rare metals, semiconductors, compound materials and rare gas for the space industry, the departments under the State Council, scientific research institutions and relevant factories, colleges and universities have co-operated in tackling key problems. From 1960 to 1966, nearly 4,000 kinds of new materials had been developed. The electronics and machine-building industries adopted strict management measures to ensure the development of products for the space industry, and so, very quickly, all the materials needed in the making of carrier rockets were being produced in China.

In co-operating, each department took the whole situation into account and selflessly contributed whatever the space industry needed in respect to manpower, materials and technology, fully displaying the political and economic superiority of China's socialist system. The manufacture of the Long March II carrier rocket, for instance, involved more than 4,000 projects undertaken by 1,300 industrial and mining enterprises, research institutions, colleges and universities under 27 ministries and commissions and 25 provinces, municipalities and autonomous regions. When it was being launched, tens of thousands of people from various posts (launching, survey and control, telecommunications, transportation, hydrological, meteorological, security and materials supply) in more than 20 provinces and municipalities and the People's Liberation Army participated in the work under the unified command of the Commission of Science, Technology and Industry for National Defence.

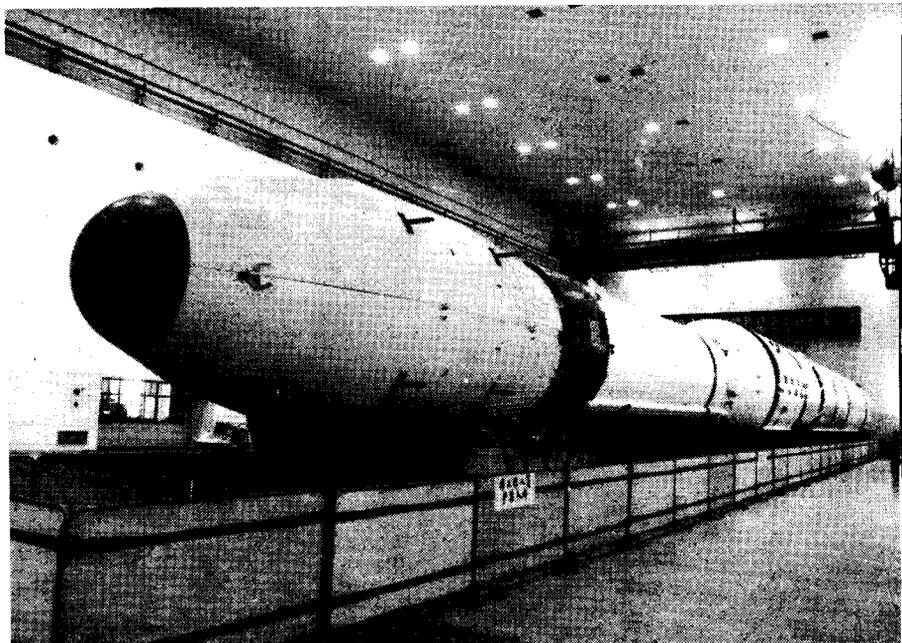
Chairman Mao Zedong point-

ed out, "We stand for self-reliance. We hope for foreign aid but cannot be dependent on it; we depend on our own efforts."

Self-Reliance

Recalling the historical development of the space industry of more than 30 years, we see that an important experience is steadfastly to uphold the principle of independence and self-reliance, while actively learning and introducing foreign advanced technology. As early as the founding of the industry, Chairman Mao Zedong and Premier Zhou Enlai approved the construction policy put forward by Marshal Nie

researching process, we tried our best to master designing and manufacturing skills. Therefore, we could immediately do our own designs and independent research when foreign assistance in this regard was suspended. From the 1960s, all our tactical and strategic missiles, carrier rockets and man-made satellites were developed through our own efforts under conditions of foreign blockade. The success fully showed the intelligence, wisdom and great strength of the Chinese people. This shows that foreign blockade and sanctions may bring us some temporary difficulties, but from a long-term



The "Long March" III Carrier Rocket.

ZOU YI

Rongzhen: "Relying chiefly on our own efforts while striving for foreign aid and fully using scientific achievements made by capitalist countries." In the 1950s, the Soviet Union gave us some technical assistance in the development of liquid-propellant rocketry. But from the beginning, we took its assistance as a means to strengthen our self-reliance. In the modelling and

point of view, it spurs us on to stand on our own feet.

After the Third Plenary Session of the 11th Party Central Committee, China adopted the open policy, and great changes also took place in the world, providing favourable conditions for China to actively develop international co-operation and exchanges, import technology, capital and talents, and expand ex-

ports. The result is the country's ability of self-reliance has been enhanced. Nevertheless, China still can introduce only some ordinary technologies. The real advanced technologies, especially space technology, are still highly restricted and not available to China.

Policy Redefined

Not long after the Third Plenary Session of the 11th Party Central Committee, Comrade Deng Xiaoping, analysing the international situation scientifically, came to the conclusion that a large-scale world war would be unlikely to break out for a long time to come. According to this judgment, the Party Central Committee and the Central Military Commission of the CPC Central Committee once again defined the policy for the building up of national defence and formulated the policy for the defence industry: "The industry should develop both military and civilian products, the plan for time of peace should be combined with a plan for time of war, give priority to the develop-

ment of military supplies, and the military industry should produce civilian goods to support itself." From then on, the space industry began to change from a mono-military industry into a combined military and civilian industry, and from looking inwardly to looking outwardly. Over the past few years, while fulfilling scientific research and production targets for weaponry, the space industry, using its advantages in technology, equipment and personnel, made great efforts to readjust product mix and develop civilian products and foreign trade. It has made a good start in developing civilian products. A large number of astro-physical data collected by scientific experiment satellites provided first-hand materials for the study of space basic science; photos taken by land survey satellites have been widely used in land and geological survey, petroleum prospecting, cartography and environmental monitoring; the communications satellites launched by China have enabled the country to realize nationwide television, broadcasting and communications cover-

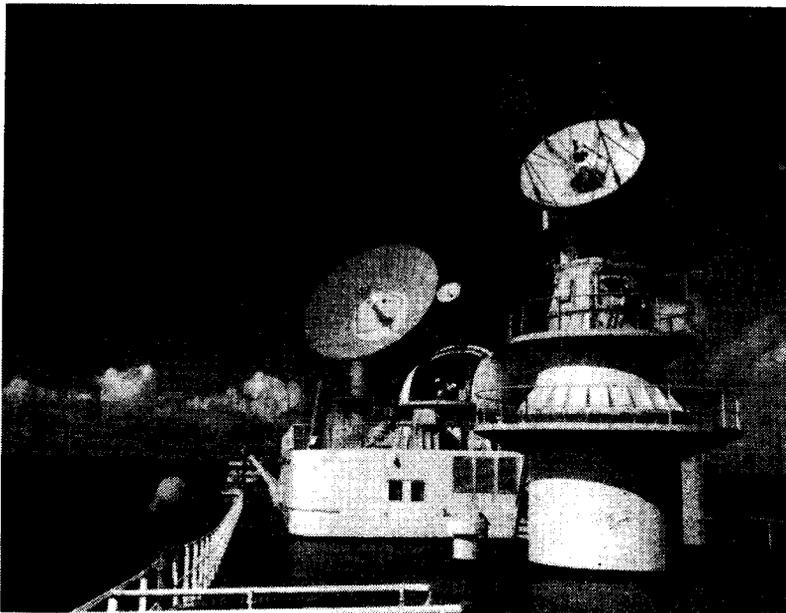
ages.

Taking full use of its technology, equipment and talents, the space industry has supplied a large amount of equipment and technology to the light, textile and chemical industries. Major efforts have also been devoted to the development of civilian products such as automobiles, motorcycles, refrigerators and air-conditioners. Now the output value of civilian products amounts to around 70 percent of the industry's total.

While concentrating on the domestic market, the space industry has done its best in recent years to open up an international market and develop exports. The Long March II, III and IV carrier rockets developed by China have begun to serve foreign countries. For instance, in 1987 and 1988, using a recovery satellite, China supplied carrying services to France and the Federal Republic of Germany, while in April 1990, China used its modified Long March III carrier rocket to successfully put into orbit the *Asiasat-I*, an American-made telecommunications satellite. This signaled the entry of Chinese space technology into the international commercial market.

Strong Technological Forces

In a developing country like China, the major factor in the rapid development of space technology is a strong scientific and technological contingent. In the development of the space industry, a large number of people with a high technological level and fine working style have matured. Among them there is a batch of famous experts who, cherishing high patriotic ideals and overcoming various obstacles, returned to the motherland from foreign countries after the People's Republic was founded and threw themselves into the



The "Yuanwang" telemeter control vessel on the Pacific.

ZOU YI

China's Township Enterprises

Township enterprises have developed rapidly as a new economic force all over China in the process of reform and opening to the outside world. They now number more than 18 million, employing 95.4 million people, 23.8 percent of the total agricultural labour force.

In recent years, they have paid 114.4 billion yuan in taxes to the state, and earned US\$8.02 billion in foreign currency. Their enterprise profits and farmers' income earned during this period combined to total 382.8 billion yuan.

The development of township enterprises has provided a necessary material base for providing rural social securities, developing rural education, consolidating grass-root political power and promoting ethics and culture.

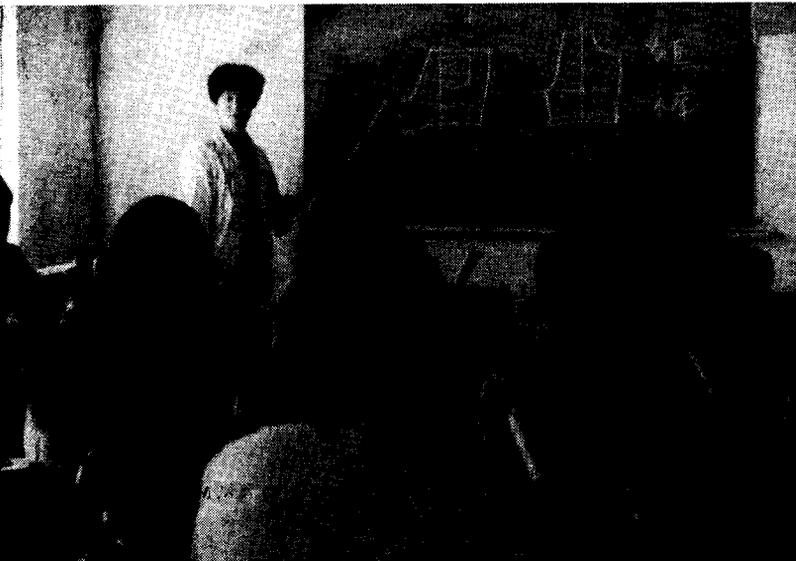
The state has designated township enterprises as part of the rural economic growth, and incorporated it into the national economic development plan. These pictures may help our readers get an idea of the nature of China's township enterprises.



Lu Guanqiu (left), an ordinary farmer, has built up a township farm tool repair shop that employed only seven workers and had 4,000 yuan in capital into a factory that exports universal joints and has more than 1,100 employees and fixed assets of 22 million yuan. Today, the Hangzhou Universal Joint Factory he directs earns US\$1 million in foreign currency for the state each year.



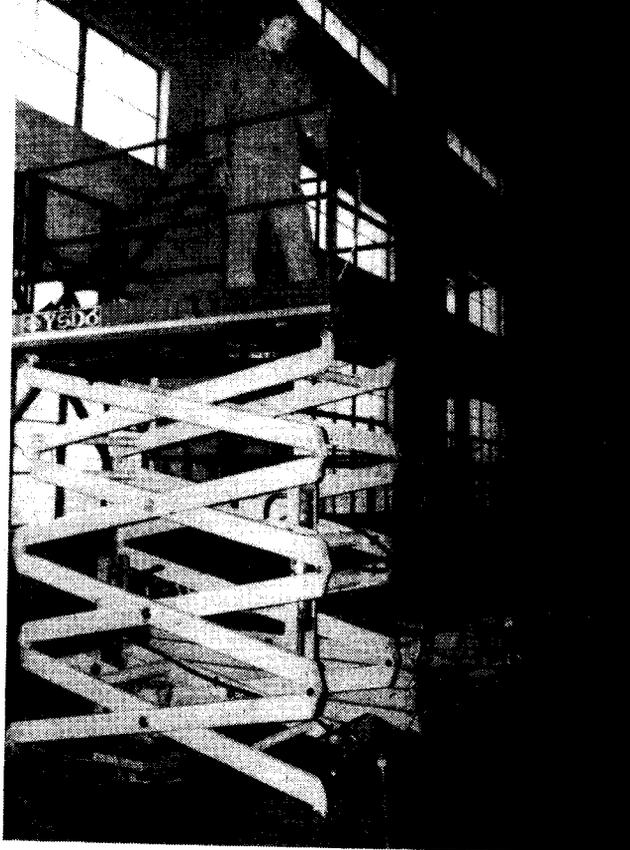
The Sea Fishery Stock Company established by farmer Guo Jiaming (right) and others in Wenling County, Zhejiang Province, exported over 500 tons of frozen shrimp and other aquatic products in 1988, earning US\$2 million in foreign currency.



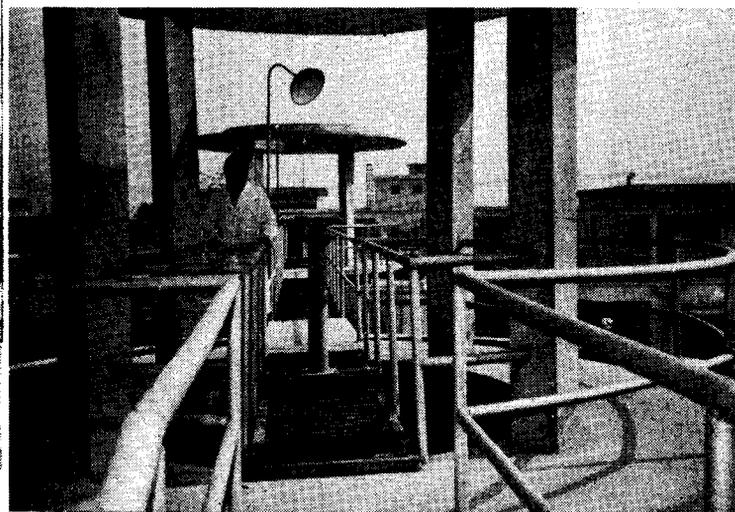
The Xinjin County General Garment Industrial Mill in Liaoning Province, established by Li Guilian and more than 80 other farmers ten years ago, has developed into a large factory with four branches, more than 900 pieces of garment producing equipment and more than 2,000 employees. It has more than 50 foreign clients. Photo shows workers attending a tailoring lesson.



The spray nozzle factory run by Fushan Town, Jiangsu Province, has established an integrated complex of production, scientific research and education with Beijing Iron and Steel College and Maanshan Iron and Steel College, which help the factory to produce new products and develop new technology by establishing a metallurgical and energy research institute in the factory. It sends students to do field work there every year. Here, factory technicians and students perform research on energy-efficient spray nozzles.

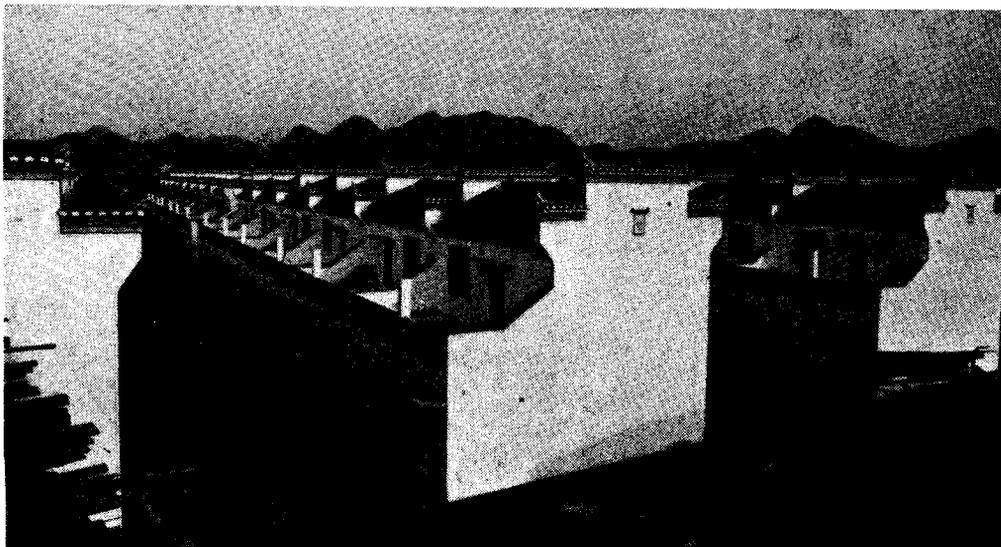


YSD hydraulic lifts produced jointly by a farmer-run machinery plant in Tongan Township, Jiangsu Province and Shanghai Zhongli Lift Factory are sold in Southeast Asia.



The Mudu town waterworks in Suzhou was built with capital accumulated from township enterprises. It guarantees clean drinking water for local farmers.

Products of the Art Porcelain Factory, established by farmers in Chaoyang district, Beijing, are sold in Italy, the United States, Britain, France, Spain, Japan and other countries. Its painted and enamelled bronze work, produced with techniques that originated in Europe, came to China in the 17th century and are now forgotten in Europe, are warmly welcomed by foreign businessmen.



Tunxi District in Huangshan, Anhui Province, has made great efforts to develop township enterprises in recent years and local farmers have become rich. Photo shows a newly built village for farmers.



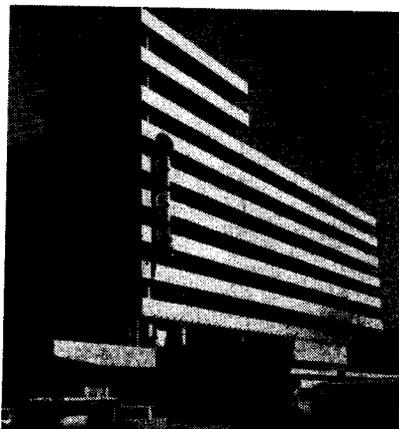
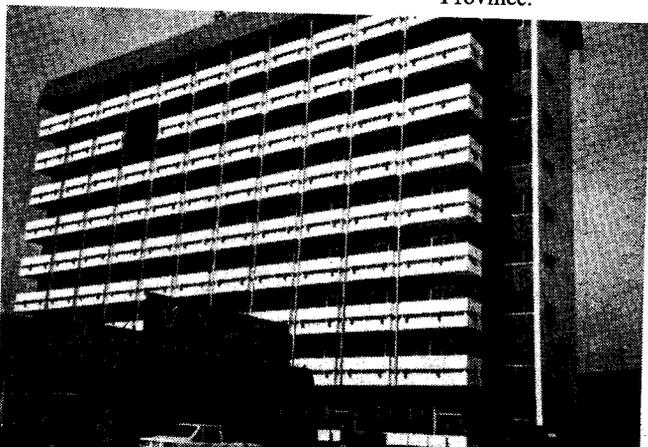
Farmers of Taojiang County, Hunan Province, use local bamboo to make handicrafts for export, gaining economic benefits.

An expert (right front) from the Beijing Solar Energy Research Institute introduces new scientific and technological results to representatives of suburban township enterprises.



The Eel-Breeding Ground of Nanjing County, Zhangzhou City, Fujian Province, exported over 100 tons of eels in 1987, earning US\$630,000 in foreign currency.

The Wangjiang Guest House (left) and Tongjiang Hotel (right), in downtown Hefei were built with funds from farmers in Anhui Province.

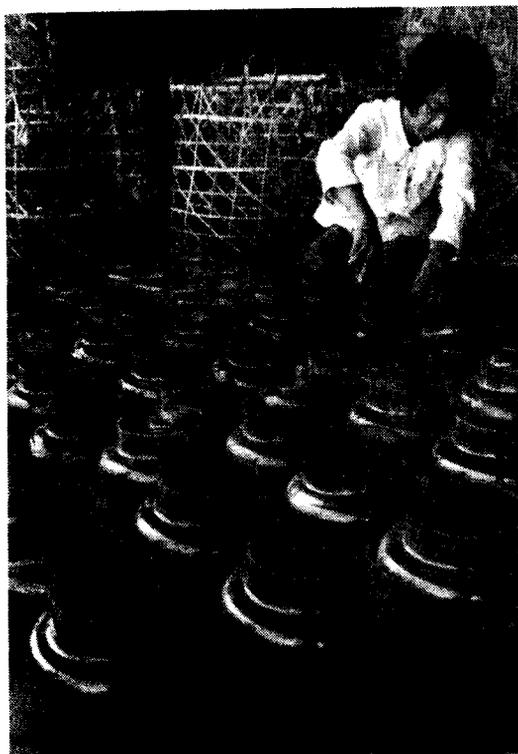




Kites produced under the guidance of veteran skilled workers by Yangjiabu Kite Factory in Shandong Province sell well at home and abroad.



Various kinds of pickled vegetables produced by Daliangxiang Pickle Factory, in Wuqing County, Tianjin, sell in Japan. Photo shows workers preparing pickled sweet potato vines.



Waste iron, steel, glass and plastic from industry and the public are made into farm tools and daily articles by some township enterprises in Luchuan County, Guangxi Zhuang Autonomous Region, with an annual output value of over 15 million yuan.



City youths from Nanchang, Jiangxi Province, chosen to work in a township enterprise in Shunwai village, in the suburbs of Nanchang, are greeted by the director.

building up of New China's space industry and made great contributions. Most of the cadres, workers, scientists and technicians grew up after liberation. They take pride in working under difficult conditions and give no thought to personal fame, position, and pay. Their deeds mark them as the backbone of the space industry and an important segment of the whole country's most highly-qualified scientific and technological workers.

Among the large number of experts emerged in the space industry, there are Qian Xuesen, Ren Xinmin, Liang Shoupan, Tu Shoue and Huang Weilu, who played a leading role in its development.

Although China has achieved a great deal in its space industry, it still has a long way to go to reach the world advanced level. Since the 1980s, the developed countries, one after another, have formulated plans for developing high technology and some developing countries have also taken the building of space technology as a national policy.

Deng Xiaoping said, "If China had not exploded atom and hydrogen bombs in the 1960s and launched satellites, it would not have been considered one of the three big powers and would not occupy such a position in the world. These things can mirror the capability of a nation and symbolize a country's vigour and prosperity." He also noted, "Be it in the past, present or future, China must take a place in the high-tech arena." According to its national conditions and the requirements of the four modernizations, China is set to develop a new generation of astronautics equipment in the 1990s. This year, it is to launch several satellites of diversified functions and to further expand international co-operation in the field of astronautics. ■

Chronicle

Satellites Launched By China

Since 1970, China has successfully launched 27 man-made earth satellites.

April 24, 1970	the "Dongfanghong" (the East Is Red) No. 1 Satellite
March 3, 1971	a scientific experimental satellite
July 26, 1975	a technological experimental satellite
November 26, 1975	a recoverable satellite
December 16, 1975	a technological experimental satellite
August 30, 1976	a technological experimental satellite
December 7, 1976	a recoverable satellite
January 26, 1978	a recoverable satellite
September 20, 1981	for the first time, sending into predetermined orbit by a single carrier rocket a group of three spacephysics experimental satellites
September 9, 1982	a recoverable satellite
August 19, 1983	a recoverable satellite
January 29, 1984	an experimental satellite
April 8, 1984	an earth synchronous orbit communications satellite
September 12, 1984	a recoverable satellite
October 21, 1985	a recoverable satellite
February 1, 1986	a communications satellite
October 6, 1986	a recoverable satellite
August 5, 1987	a recoverable satellite
September 9, 1987	a recoverable satellite
March 7, 1988	a communications satellite
August 5, 1988	a recoverable satellite
September 7, 1988	China's first experimental meteorological satellite
December 22, 1988	a communications satellite
February 4, 1990	a communications satellite
April 7, 1990	AsiaSat-I

A Magnificent Scientific Exploit

Geologist Qin Dahe is the first Chinese to walk across the Antarctica. This article describes how he and five others in an international expeditionary team trekked for seven months across the Antarctic Continent without mechanical aids, an historical first.—Ed.

The 1990 International Crossing-the-Antarctica Scientific Exploratory Team set out on July 28, 1989 and arrived at the Soviet Peace Station, the terminal set for the exploration, on March 3, 1990. The team experienced 220 days of difficult struggle as they covered a distance of 5,986 kilometres, travelling via the Antarctic point and "inaccessible area." The exploration involved extreme danger, arduous effort and difficulties; its success de-

monstrated human prowess in conquering nature.

The exploration was an important scientific endeavour, not simply a venture into the unknown. This was emphasized, in particular, by the participation by the Soviet and Chinese scientists. The scientific expedition helped to temper humanity's wisdom.

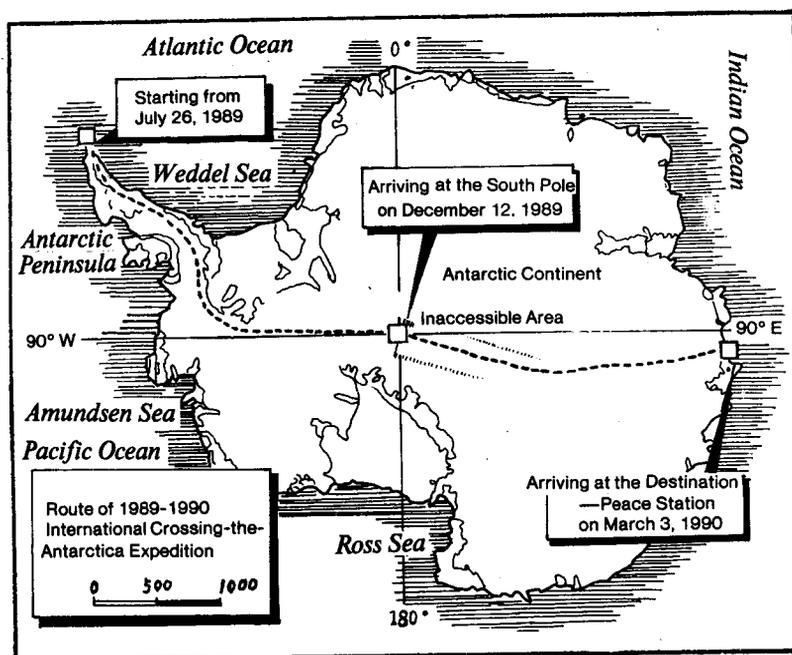
Qin Dahe, an associate researcher of the Lanzhou Glacier and Frozen Earth Research Institute under the Chinese Acade-

my of Sciences, completed his work of glacial observation and of ice and snow sample collection on route. The rare specimens he gathered from the Antarctic "inaccessible area," in particular, provided scientists with fresh study material. He sent more than 800 snow samples to laboratories in China, the United States and France for analysis of chemical composition in order to discover more about changes in the earth's climate and environment over the past century.

The recent exploration held the attention of the world. On the day it arrived at the terminal point, the team received congratulatory messages from Chinese Premier Li Peng, US President George Bush and his wife and French President Francois Mitterrand, as well as messages from Japanese Prime Minister Toshiki Kaifu and British Prime Minister Margaret Thatcher. All members of the expeditionary team met with the French and US presidents and were accorded a warm welcome in Australia. They will also visit the country of each member of the expedition team.

Composition

The exploration, co-sponsored by American professional explorer Will Steger and French



doctor Jean-Louis Etienne, comprised six members from six countries.

Will Steger, 45, graduated from the geological department of a university in Minnesota, USA. Jean-Louis Etienne has been not only an ardent mountaineer but also an ocean and Arctic explorer for the past dozen or so years. Once, travelling solo by sledge, he reached the North Pole. Dr. Victor Boyarsky, 40, is a Soviet glaciologist and meteorologist, with strong poetic learning. Jeoff Somers, a British team member and a middle school graduate, is an enthusiastic explorer, who has never been disheartened. Keizo Funatsu, 33, the Japanese team member, once covered the American continent and crossed the Sahara by bike.

Qin Dahe, 43, specialized in the study of glaciers. He twice worked in Antarctica and served as the Fifth Overwintering Team leader of the China Antarctica Investigation Team.

Two Saudi Arabian scientists worked as a support team and manned a survey boat, conducting an oceanographic investigation of half the Antarctic Ocean.

The investigation team set off from Minneapolis, capital of the State of Minnesota, USA on July 16, 1989, on board a Soviet Il-76 jet transport plane. Also on board were the crew members, around 20 reporters, and 42 dogs as well as 40 tons of goods. Flying via Cuba, Argentina and Chile, the expedition finally reached the vicinity of China's Antarctic Great Wall Station on July 24, 1989.

A World of Snow

China's Great Wall Station, two kilometres from the airport, was the supply and rear-service base. On the morning of July 26, a small airplane ferried small groups of team members and ma-



Qin Dahe with well-wishes as he returns to Beijing on April 5, 1990.

DAI
JIMING

terials to the starting point and, on July 28, the exploratory team began its journey.

Antarctica, a continent covered almost entirely by ice and snow some 2,000 metres thick, is the most frigid, most windy place on earth. At the Antarctic Pole, the mean annual temperature is minus 50 degrees C. In July 1983, tests showed a record low temperature of 89.2 degrees C. below zero. Wind speed can reach 240 kilometres per hour. On December 14, 1911, the first exploratory team led by the Norwegian explorer Roald Amundsen arrived at the Antarctic Pole by dog-sled. A month later, on January 17, 1912, an exploratory team led by the British explorer Robert F. Scott reached the Antarctic Pole but perished completely on its return journey. Several decades later, people discovered from a reading of Scott's diary that, in the last few days of the expedition, team members could walk only two kilometres a day; Scott died only 18 kilometres from his food storage area. It was also discovered that the sledges were loaded with ores, not food grain; the ores, therefore, had been gathered at

the cost of the team members' lives.

The route marked out for the recent exploratory team was to set off from the Antarctic Peninsula located northwest of the South Pole, travel via the South Pole in the centre, pass through the "inaccessible area," cross the Antarctic plateau in the east and finally arrive at the Soviet Peace Station. This was the longest route across the Antarctica.

Learning to Ski

The weather was rough and the journey difficult; it was particularly hard for Qin Dahe because he was the only one among the six explorers who had not learnt to ski. In the beginning he fell behind the others but would run for all he was worth to keep up. It placed an extreme strain on his body and he was forced by necessity to take up skiing. Though he often fell, he kept at it. At first, he skied for just one hour, then two, gradually reaching four hours a day. His skiing time increased daily until by August 22 he was able to stay on his skis all day long like the others.

The going was difficult; they took up two-thirds of the allotted



Collecting snow and ice samples from a pit during the expedition.

XINHUA NEWS AGENCY

time to advance the first one-third of the journey. Their closest, most important partners were 40 rigorously trained dogs, 12 to a team, which pulled sledges strenuously across the snowfield. The Antarctic Peninsula was covered with ice crevices, and though the snowfield looked flat and smooth, cracks would suddenly appear in the ice layer beneath the snow. Sometimes, when dogs fell into the ice cracks, a member would have to tie on a safety belt and lower

himself into the crevice in order to save them.

Meeting a Blizzard Head-on

August passed and in September they continued their journey heedless of wind and snow. They got up at 5:30 every morning, prepared their meal and set off at 8:30; they set up quarters for the night at 6:00 in the afternoon.

In September and October, they were struck by a blizzard, the fierce sheet whipping against

their faces like knives. They used their worn-out trouser legs for headgear to cover their faces, leaving only slits to look through. At the end of each day, their eyelashes were covered with ice particles as big as soya beans, and the surface of their clothing was frozen into a hard shell. Returning to their tents, they had to smash the ice layers covering their clothes and dried their wet clothes by a fire. During the blizzard, Qin's right eyelid became frost-bitten, leaving a scar on his face still visible on his return to China.

Food supplies were in dried or powdered form; the team members generally had to use a hammer to smash it up before cooking it. What with the tasteless, monotonous food, the bitter cold, the strenuous skiing, and the arduous physical exertion, everyone lost weight. After three months, Qin's weight dropped by 15 kilogrammes.

They used a 20 watt radio station to communicate with the outside world. However, this could not guarantee the safety of their lives. Under bad weather conditions, such as a strong blizzard with low visibility, if they were in danger, it was impossible to mount a rescue by airplane. In that case, the radio was rendered useless. For a time, their ties with the outside world were frequently cut off. They had a hard time getting into contact with the plane. However, because the blizzard was too strong and the visibility low, the plane could not determine their location accurately and therefore could not deliver food. In order to ensure safety, they dropped food in the area ahead of the expedition. However, much of it was not found or was simply lost. When the food at two neighbouring material distribution centres was lost, they had to reduce their rations by 1/4 for the men and 1/2



Qin Dafe and five other explorers trudge across the "ice-and-snow world" with the help of 42 sled dogs.

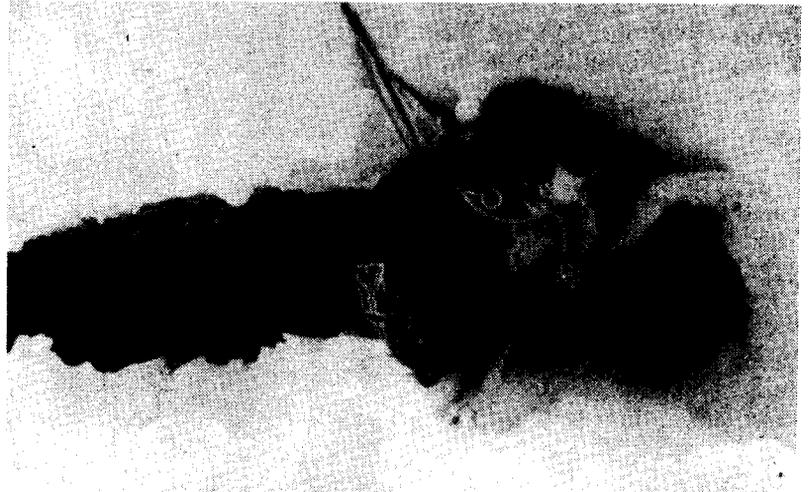
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for the dogs. At one time the situation was very dangerous because there was only enough dog-food to last two days.

Crossing "Inaccessible Area"

The "inaccessible area" in the 1,250-kilometre section between the South Pole and the Soviet eastern station is a vast expanse in Antarctica without any meteorological information for guidance and therefore demanding the utmost caution on the part of the explorers. Before crossing it, they had to be fully prepared mentally. They first rested for three days at the South Pole. They discarded many things, so that each person brought only one suit of clothes and no more than their carefully reckoned rations. All these preparations were aimed at reducing the weight of the sledges to a minimum. According to plan, they trekked more than half a month in this area, averaging 48 kilometres a day. At the time, Qin's work load was increased visibly because, as a scientist, he had to shoulder the task of scientific study in addition to exploration. Like the other team members, every day he had to feed the dogs, prepare meals, clear the snow, pitch tents, and transport goods. These accomplished, everybody entered the tents, Qin, however, still had to cut the ice and dig snow samples for examination; these tasks generally took him 30 to 60 minutes.

He had to pay a high price for each bit of data, each photo taken, and each snow sample collected. He worked unceasingly every day and so gathered a complete set of materials. The Soviet scientist was responsible for meteorological observations. The apparatus was quite heavy. Scarcely had they travelled half the set distance, one of the dogs was frost-bitten and the load had



French adventurer Jean-Louis Etienne uses a rope to climb down into a hole to save a sled dog.

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Members of the expedition team dig out provisions from under the snow.

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to be reduced. Under the circumstances, they held an "international meeting" and decided to abandon the meteorological instrument. Thus, in order to ensure a safe crossing of Antarctica, the Soviet scientist agreed with the decision, however reluctantly.

Friendship and Co-operation

Their common life experience and mission, along with their fearless spirit, closely linked the destiny of the six men together and so they harmoniously shared

both weal and woe. The need for their co-operation was readily apparent. When he arrived at the "inaccessible area," Qin needed to dig a 2.5-metre-deep snow pit. Alone, the task would have taken about three hours to finish but with the help of the other five members the work went much more quickly.

Their communal spirit was both social and practical. Even in times of hardship, they never forgot to celebrate such an occasion as a birthday. For the six members, the birthdays which occurred once a month between

March 1989 to February 1990, excepting October, offered them a chance to socialize. On each occasion, they would gather in a tent to sing for 30-40 minutes and to listen to the Soviet explorer reciting one of his poems dedicated to the "magnificent contributions" made by the "birthday" explorer during the expedition. The British explorer, a very precise companion, took the time to prepare five birthday cards as presents for his friends. At each celebration, there were no sweets nor colourful lights to give a festive atmosphere, only a cup of tea brewed with friendship and warmth.



British adventurer Geoff Somers dons a celebratory mask when the expedition team arrives at the South Pole on December 12, 1989. XINHUA NEWS AGENCY

The Destination

When the expedition team left the Eastern Station on January 21, 1990, the temperature of the area was minus 41 degrees Centigrade. According to the Soviet scientists at the station, the temperature would drop to minus 40-50 degrees Centigrade in February. After hearing the latest weather forecasts, the members could not help but feel anxious; they had only completed a little more than half of their trek. Moreover, as they headed towards the Antarctic plateau and the

lower latitudes, it would become increasingly colder. Twelve days later, when they arrived at the Communist Youth League Station, a summer station of the Soviet Union, the temperature was already minus 49 degrees Centigrade. Many sled-dogs were frost-bitten and as they gnawed at the ice on their legs, tearing away their fur and skin, their opened flesh dripped with blood. The situation was critical. Fortunately, two tractors provided by the Soviet side were waiting for them and the wounded dogs

received treatment in time.

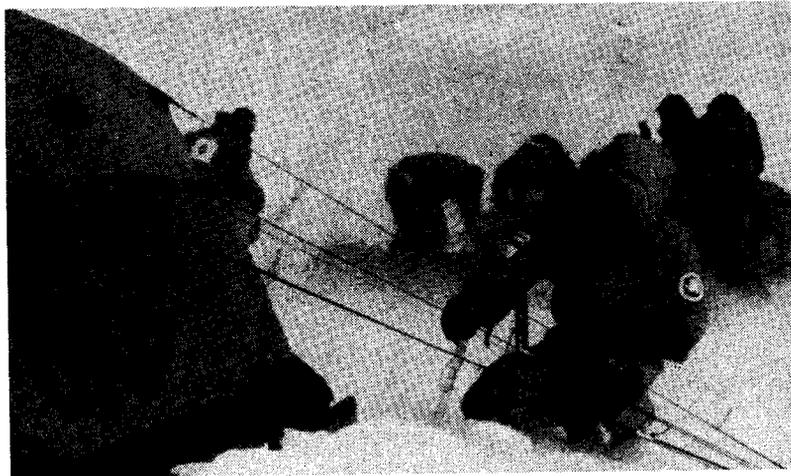
At 20:10 hours on March 3, 1990, all members of the expedition team reached their final destination—the Peace Station of the Soviet Union. It was a successful end to the 220-day "1990 International Crossing-the-Antarctica Scientific Expedition."

After returning home, Qin Dahe recalled how great an honour it had been for him to take part as a scientist in the historic expedition and how he would never regret his decision to go despite the hardships encountered. It would, he said, not have mattered even if unforeseen accidents had occurred.

"Our efforts were crowned with success," Qin said, "I think this was brought about by the indomitable will instilled in all of us by the people's trust. My faith in the expedition came from my feelings of pride in being a Chinese citizen and in being a descendant of the Yan and Huang Emperors of China. Therefore, the honour belongs to all the people. My actions are a tribute to my motherland, and to the people who encouraged me."

Members of the expedition team fight a blizzard to put up a tent.

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Consumerism Loses Its Appeal

by Ma Zhanping and Wu Zhenping

During the first ten years of reform and opening to the outside world from 1979 to 1988, China successfully met the goal of doubling its agricultural and industrial output value, gross national product (GNP) and national income. In recent years, however, due to an "overheated" economy and a desire for quick results, consumer demand seriously outstripped supply, funds for capital construction and consumption increased dramatically and institutional purchasing power rose by a large margin. The result was an over-issuance of money, serious inflation and several rounds of buying sprees. Statistics indicated that national income increased by 70 percent between 1984 and 1988, while investment in fixed assets increased by 214 percent, and per capita income of urban and rural residents increased by 200 percent.

The situation, however, has taken a favourable turn since 1989 thanks to the government's efforts in implementing a policy of economic improvement and rectification, strengthening macro-economic control, curbing consumption funds, readjusting the industrial structure and product mix and correctly guiding consumption.

Achievements

The government has initially slowed down the increase of consumption funds and harnessed the expanding demand. According to 1989 figures announced by

the State Statistical Bureau, urban and rural residents' income was 904 billion yuan, an 18 percent increase over 1988, clearly lower than the previous year's rate of 22.6 percent. The total employee payroll reached 264 billion yuan, an increase of 14 percent over the previous year, a drop of 9.1 percentage points as against 1988's growth rate. This includes 55 billion yuan in bonuses, an increase of 23 percent and a reduction in growth rate by 18 percentage points. Total retail sales was 810.1 billion yuan, an increase of 8.9 percent over 1988. Deducting the rise in prices, sales actually dropped 7.6 percent. Retail sales of consumer goods, reaching 708.4 billion yuan, rose by 8.4 percent, a rate lower than the 1988 figure.

In 1989, the government carried out a retrenchment policy on financing and loan granting by which banks kept the total volume of loans under control, readjusted the financial structure, and ensured supply of funds to key projects as they curbed investment in ordinary projects. As a result, the supply of money was effectively brought under control. Some 21 billion yuan was issued last year, 69 percent less than the previous year. The reduced supply of money curbed the rapid growth of industry and consequently the growth of consumer income. At the same time, banks were able to directly control those enterprises that paid wages and bonuses by relying on borrowings. On the negative side,

sluggish markets appeared after April last year, bringing about an increase in industrial and commercial inventory and a drop in sales. Also, since some industrial and commercial enterprises lacked raw materials and funds or entangled with each other in debts, their economic returns dropped, so did the income of their employees.

Institutional spending dropped, too. Because special measures were taken to strictly control institutional spending, instances of waste such as extravagantly wining and dining, entertaining guests and presenting gifts at public expense decreased somewhat and the volume of retail sales of institutional consumer goods has dropped monthly since last June to reach 69.3 billion yuan, an increase of 4.2 percent over the previous year, a drop of 16 percentage points as against 1988's growth rate, the lowest in ten years.

Investment in fixed assets has been kept under control. In particular, the government drastically reduced such investment in 1989 by screening and scaling down projects under construction and suspending non-productive projects. Investment in fixed assets was thus reduced by about 50 billion yuan, 11 percent less than in 1988. Generally speaking, about 40 percent funds for capital construction were diverted into consumption funds in 1989. That meant that an equivalent of 20 billion yuan consumption funds was reduced last year.

Commodity circulation has improved. In 1989, the government instituted a series of measures to screen companies and rectify the circulation system. Many companies which had engaged in speculation were disbanded. Market management and collection of taxes on individual businesses was improved by punishing tax evasions. Last year, taxes collected from the

private economic sector was 13.2 billion yuan, a rise of 43.5 percent over the previous year, and personal income regulation taxes reached 590 million yuan, 5.2 times as much as in the previous year. These measures played a positive role in curbing high consumption and correcting the unfair distribution of income in society.

Problems

The growth rate of consumption funds is still higher than that of the national economy. The nation's GNP in 1989, in terms of current price, was 1,567.7 billion yuan, an increase of 11.9 percent over 1988. Consumption demand, however, increased by 17 percent and employee payrolls by 14 percent. Judging from a macro-economic point of view, China's financial revenue constituted 18 percent of the GNP, while that of market economy countries, 30 percent. The current mechanisms for financial distribution, however, still tilts favourably towards individual consumption.

Overall demand, though, still outstrips overall supply. In 1989, the purchasing power was still 20 billion yuan more than the value of available commodities. The national aggregate total purchasing power (that is, total volume of savings deposits) at the end of last year was more than 700 billion yuan, equivalent to 86 percent of all retail sales that year. In particular, some commodities vital to the national economy and people's livelihood were in serious short supply. Because of imbalance between overall supply and overall demand, the inflation rate, though dropped every month, averaged as high as 17.8 percent (slightly lower than 1988).

The various factors which led to the rapid growth of consumption funds have not yet been eli-

minated. Judging from a micro-economic point of view, the growth of enterprises' consumption funds outstripped the growth of production efficiency, and the proportion of an enterprise's profits kept for consumption surpassed that kept for production. Judging from a macro-economic perspective, planning and market force alternated to influence the distribution of income in the process of economic restructuring. In controlling the total amount of consumption funds, the state can only relied on planning and administrative means. A set of more effective macro-economic management mechanisms has not yet been established.

Incomes other than wages increased too fast. According to a sample survey of urban households, the average per-capita income of employees from other sources than wages in 1988 doubled that of 1984, or 23 percentage points higher than normal wage increases for the same period. Extra-wage income thus accounted for 40 percent of an employee's income. Individual businessmen and private entrepreneurs, in particular, were able to obtain high incomes mainly through tax evasion. It was estimated that one third of their net income was obtained through tax evasion.

Countermeasures

To sum up, the decrease in consumption funds is clearly the result of the macro-economic retrenchment policy. However, the contradictions deeply imbedded in the economy have yet to be resolved. It is still necessary to take a series of comprehensive measures to rectify the situation:

—To keep the increase in consumption funds under the growth of GNP and properly arrange the relationship between accumulation and consumption,

between consumption funds and national revenues available for distribution and between wage increases and improved labour productivity, making total demand and supply generally balanced.

—To establish a macro-economic control mechanism for consumption funds. Steps should be taken to establish a central, unified and authoritative decision-making organ to use economic, legal and administrative means to co-ordinate income distribution. Both local and central control systems should be improved and the powers and responsibilities of the state and localities in the management of consumption funds clearly defined. An effective supervisory and regulatory system should be instituted to ensure implementation of state consumption guidelines, policies and statutes.

—To further reform and perfect the wage system by linking wages with economic performance. Government departments should continue to experiment with the civil service system, rectify the existing wages system and come to grips with unfair income distribution and egalitarianism. Different organizations of public undertakings should establish different wage distribution policies that are in line with their conditions.

—To strictly control extra-wage incomes. The general idea is to prevent the widening of income gap by levying personal income regulation tax. At present, it is imperative to establish and improve the personal income regulation tax system in the areas of declaration and collection, and to maintain strict supervision and examination of income sources. The scale of individual businesses should be strictly defined, and their business accounting improved to prevent them from evading taxes. ■

Jiang Zemin Assures Returned Students

SHENZHOU XUEREN
(Intellectuals' Journal)

On October 6, 1989, Communist Party General Secretary Jiang Zemin met with returned students in Beijing and assured them there would be no changes in government policy for sending people abroad to study.

Excerpts of his statement follow:

China's policy on sending students to study abroad has not changed since it is part of the country's policy of reform and opening to the outside world. It is understandable that some Chinese students abroad, influenced by biased propaganda and inaccurate reporting by the foreign press, misunderstood the turmoil in Beijing last June and made some errors in words and deeds such as issuing a statement or taking part in a demonstration. As the old saying goes, "Men are not saints; how can they be free from faults?" It is always good for one to correct the error upon realizing it.

We should keep in mind that we are the descendants of the Chinese nation which enjoys 5,000 years of culture. I was greatly moved by the speeches you made just now. I understand that you have overcome many barriers to return from a foreign country, especially the enticement of high paying jobs offered by foreign enterprises. Under such circumstances, it is really a test for you to turn down the comfortable life abroad and come back to China with a lofty ideal and determination to contribute your knowledge to the motherland, particularly during the period of turmoil. I once

spent one year at the Stalin Automobile Factory in the Soviet Union. Every Chinese festival would make me homesick. In any case, we are Chinese. We demand every Party member, not every citizen, acquire a Communist outlook on life. But all Chinese should at the very least love our motherland. Liu Xiaocheng, who spoke first today, did very well in quoting a Chinese saying that a mother never looks ugly to her son. Our motherland is our mother. It is interesting that the English word "motherland" is made up of the words "mother" and "land."

Some foreign reactionary forces, knowing that launching a war can no longer help them achieve their goals, exert influence on socialist countries by way of peaceful evolution. We should be vigilant to this. Of course, our opening policy will not change because of this.

Nowadays, international competition has become the test of each country's comprehensive strength in which science and technology play an important role.

We lag far behind Western developed countries in economics, but we are proud of our achievements in some areas of science and technology which have reached world advanced levels. Because the Chinese nation is clever and diligent, many Chinese students abroad spend only two years instead of four or five obtaining a doctoral degree. They spend their spare time studying while others are playing. Their success mainly stems from their diligence.

We must boost China's econo-

my. For this purpose, we should rely on the leadership of the Communist Party, the joint efforts of all Chinese people and, in particular, the working class. What's worth mentioning here is that intellectuals are part of the working class. What special role will they play? The realization of China's modernization depends on science and technology and education which in turn depends on the indispensable role of intellectuals. All intellectuals, old and young, are expected to do their best for the rejuvenation of China and its advances in science and technology. Young people, in particular, should be aware of their responsibility in honouring our motherland. Chairman Mao Zedong once said that young people are the sun at 8 or 9 o'clock in the morning, and great hopes are placed on them.

To sum up, we now face a good political and economic situation and our nation is a promising one. Currently, there are two major tasks. First, we must maintain a stable and peaceful domestic environment, and second, we must continue the vigorous development of the country's economy. We have drawn rich experiences and lessons from our country's 40 years of socialist construction. We must try hard to retain this stable situation. Otherwise, how can we engage in economic construction? China cannot afford any disturbances. We must enliven our economy as quickly as possible. We thereby place much hope on you young people present today, and young people in all walks of life.

(Issue No.2, 1990)

1989 Foreign Debt Figure Published

The State Administration of Foreign Exchange Control (SAFE) announced in early May that, at the end of 1989, China's foreign debt balance amounted to US\$41.3 billion, with a funded debt balance of US\$37.03 billion and an unfunded debt balance of US\$4.27 billion.

A senior SAFE official said that, at the end of 1989, China's foreign debt was US\$1.3 billion more than at the end of 1988. The growth rate was only 3.25 percent, far less than the 36.29 percent average growth rate of the previous four years. These figures indicate that the scale of China's foreign debt has been brought under tight control.

Furthermore, the foreign debt structure showed a rational improvement in 1989 in terms of date due. The proportion of short-term debt decreased from 18.25 percent in 1988 to 10.34 percent in 1989, a proportion much lower than the internationally recognized warning level of 25 percent. The present condition of China's foreign debt was good, the official said.

This official pointed out that, since the second half of last year, China has been confronted with temporary difficulties in foreign trade, tourism and raising funds overseas. A few enterprises have had problems in repaying debts. However, the general condition of the economy shows that last year China successfully serviced its debt and was fully competent of its debt repayment ability. As for the difficulties of a few enterprises over debt repayment

and the disputes over debt servicing between creditors and debtors, the relevant Chinese government departments will handle these cases carefully and responsibly in line with state laws and regulations on foreign debt management in order to ensure the legal interests of creditors.

This official added that, in recent days, there has been a rumor in overseas banking circle that the Chinese government has provided guarantees totalling US\$70 billion to foreign banks for domestic companies and joint ventures. In fact, the rumour is sheer nonsense. China has established a management system for providing guarantees to a foreign bank. Each guarantee provided to foreign banks is under the strict control and supervision of the system.

by Yao Jianguo

Space Services for Foreign Clients

China's successful launching of the AsiaSat-I for the Asian Satellites Company on April 7 has increased the confidence in its ability to conduct international cooperation in this field. According to information from an authoritative person responsible for space affairs, China will provide more service items in terms of recoverable, communication and broadcasting satellites as well as satellites ground system.

These items include:

In terms of recoverable satellites, foreign clients can rent space in a satellite and conduct experiments on

micro-gravity, or take photographs for their geological survey. The terraces for satellite retrievings can be provided to them, while the whole recoverable satellites can also be rented.

In term of communications satellites, in order to satisfy the need of developing countries or small and medium-sized countries for domestic and regional communications, China will provide them with C Frequency Channel satellites or C-Ku Frequency Channel satellites. Meanwhile, China is willing to cooperate with relevant foreign companies to jointly manage regional communication and broadcasting satellites.

In regard to satellite ground systems, China can provide various home monitoring stations and ground applied system including meteorological satellites ground receiving station, ocean-going cloud chart receiving ships, and resources satellites ground receiving stations and etc.

Besides, China will seek bilateral or multilateral cooperation with foreign companies in the research and launching of mutually needed satellites and share with them responsibility for their operation and market development.

After the entry of China's space services into world market, the above new service items provided by the Great Wall Industrial Corp. show that China's space technology has assumed a new position and China will satisfy foreign clients' different demands with more flexible management, the person in authority added. ■

News in Brief

● From May 1, 1990, China began to implement a quality licensing system on imported commodities involving matters of safety, health and environmental protection.

The system would be first applied to imported goods such as automobiles, motorcycles and their engines, refrigerators and their compressors, air conditioners and their compressors, television sets and kinescopes. These goods are allowed to enter China only after being issued quality certificates and certain safety guarantees.

Since this system was promulgated in August last year, the State Administration of Import and Export Commodities Inspection of the People's Republic of China has received 169 applications from more than 40 foreign

factories; the sample appraisals on half of them have been completed.

● The China Second New Technology and Products Exhibition will be held from November 8 to 14 this year in Guangzhou, Guangdong Province.

The exhibition will demonstrate China's latest new technology and products having practical and marketable properties. On display are products, photographs and there will be on-the-spot operations, just as at the first exhibition. This time, however, Hong Kong, Macao and Taiwan will have special stalls.

At the China First New Technology and Products Exhibition, a total volume of 315 million yuan was earned and contracts worth of US\$13.12 million and 1.2 million Hong Kong dollars were signed.

● The Pacific Rim Ecotech

Inc., a joint venture between the China International Economic and Technical Co-operation Consultant Inc. (CIETCCI) and the Canadian Norasian Enterprises Inc. (CNEI), will begin work this May in Vancouver, Canada. This is CIETCCI's first joint venture overseas.

Relying on CIETCCI's information network and consultant services and through CNEI's extensive business relations and trade channels with countries in North America and Southeast Asia, the Pacific Rim Ecotech Inc. will undertake to provide opportunities in economic and technological co-operation and trade, promote the two-way investment, supply consultant services in regard to commerce, investment and laws, and carry out various trading activities for countries in North America and Southeast Asia. ■

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New Method of Treating Vasculitis

Chinese doctors have adopted an effective new method of treating vasculitis, a disease of the cardiovascular system that usually disables and can even kill its victims.

After years of study, Zhang Xinghui, a doctor at a vasculitis hospital in Shandong Province, has succeeded in developing an effective therapeutic approach by combining Chinese and Western medicine.

Most patients treated by the new method are cured in a short period without resorting to the previous drastic treatment of

amputation.

Zhang began his study of vasculitis in the 1960s and effected his first cure in 1967. In 1986 his method was designated as a key project in Shandong's programme of developing science and technology.

It was certified by the Shandong Science and Technology Committee after an appraisal last November. The committee, composed of 12 professors and experts from Beijing and Shandong, agreed unanimously that the treatment was original, advanced and worthy of wider utili-

zation.

According to the committee's appraisal, the treatment has a high rate of therapeutic effectiveness. Among the 200 patients treated with Zhang's method, 186 were cured and 14 showed signs of improvement. Of the 83 patients in the first and second stages of the disease, all were cured. Among the 34 patients whose disease had reached the third stage and were suffering from necrosis (dead tissue), 22 were cured and 12 showed signs of improvement. No side effects were detected.

The proper scientific name of vasculitis is *thromboangiitis obliterans* or Buerger's disease. It is caused by inflammation of the lining of a blood vessel due to the formation of a clot. This restricts the blood supply to the toes and/or fingers, causing these parts to ulcerate; in severe cases gangrene can set in. As the disease progresses, it spreads to the feet and even the lower legs, accompanied by great pain.

The disease has long been considered difficult to treat and many patients have had to accept the traditional treatment of amputating the affected limbs. In some cases vasculitis has been fatal.

In his early years, Zhang read *Pathology, An Introduction to Chinese Medicine, The Yellow Emperor's Manual of Internal Medicine* and other medical books. Later, influenced by Russian physiologist Ivan Pavlov's work, he tried a new method of tackling vasculitis by regulating the autonomic nervous system, which controls bodily functions that are more or less automatic, such as the expansion and contraction of blood vessels.

In doing so he hoped to smooth the circulation and reduce blood viscosity. Concurrently, he removes dead tissue so that ulcerated flesh can heal. The new therapeutic method includes



Doctor Zhang Xinghui (right).

LU YUN

three elements: ion-induction at acupuncture points, ingestion of Chinese pulsating pills and application of No. 1 ulcer liquid, a Chinese medicine for external use.

Interviews with more than 20 patients revealed that most were satisfied with the new method.

Xu Qingxian, a Shandong farmer began to develop vasculitis in February 1963. Three years later the toes on his left foot became ulcerated. He was urged to have the foot amputated but refused. In 1966, he began to receive Zhang's treatment and a year later was cured. He has not suffered any relapse.

Gao Chongshan, a worker at Shandong's Jinan Dye and Weaving Works, got vasculitis in 1969. His legs were operated on four times and six of his fingers became ulcerated. Even after amputation, an ulcer measuring 30×25 centimetres formed on the stump of his right leg. By January 1985 he was running a fever higher than 39 degrees Celsius and later developed blood poisoning.

As a last resort, Gao received Zhang's new treatment. The disease quickly took a favourable turn. Two and a half years later he was cured. He even got married and last year became the father of a daughter.

Fu Pengzhi, a worker at the Inner Mongolian Baotou Iron and Steel Company, is currently receiving treatment at Zhang's hospital. Fu first began to suffer from vasculitis in 1974 and the disease eventually advanced to the necrosis stage. In February 1988, after refusing to accept amputation, Fu came to Shandong to try Zhang's new therapy. He is now able to climb three flights of stairs and is planning to write and to study Japanese and play table-tennis as soon as he has recovered.

by Lu Yun



A scene from *Don Pasquale* performed at the founding ceremony of the Shoudu Opera Training School.

Opera School Stages World Classic

The new Shoudu Opera Training School, the first private opera school in China, recently mounted a successful production of Donizetti's *Don Pasquale*.

"The school grew up as we rehearsed the opera," said Shoudu director Lou Qiangui.

One of China's leading tenors, Lou has starred in many Western operas, such as *La Traviata* and *Eugene Onegin*. Last summer, Lou and several other veteran artists dubbed *Don Pasquale* into Chinese and organized rehearsals with a group of young performers who wanted to study Western opera. Teachers gave free tuition and the students rehearsed in their spare time. After six months of hard work, they finally put the opera on the stage.

Western opera was introduced into China in the 1930s but in recent years the popularity of television and other forms of entertainment has cut into the opera audience. Thus the founding of the training school was welcomed by opera lovers.

By rehearsing famous Western operas and giving lectures, the school can play an important role in training performers and recommending suitable Chinese

and Western operas to performing troupes, promoting both the popularity of opera and international cultural exchanges.

Compared with the official Central Opera House, the smaller Shoudu Opera Training School has its advantages. It is flexible in its choice of operas and economical when it comes to production costs. A piano substitutes for an orchestra, old furniture is used for props, costumes are not luxurious. Performances have been mounted at Beijing University, the Central Conservatory of Music and the Central Institute of Nationalities, winning a loyal audience of college students.

Li Delun, one of the school's advisors and a well known Chinese conductor, said, "As people who are living on Earth, we should absorb all of the world's artistic accomplishments and enrich our national culture."

Lou Qiangui said, "Although the task is difficult, we are not lacking in confidence. With the support and encouragement of more and more people, I believe that we can make our cause a success."

by Hong Lanxing

Nuoxi Operas Lure Scholars and Guests

Masks, music, and unrestrained dancing drew big crowds one day in late April to the usually quiet courtyard of Xiao Haifeng's home.

Those entering the courtyard were caught up in a mysterious and holy atmosphere created by the wooden statues of gods and deity paintings there.

Xiao Haifeng, a farmer in Dejiang County in south west China's Guizhou Province, was throwing a party to celebrate his 80th birthday.

The songs, dances and all the props made up for a local art performance dominated the party throughout.

The indigenous performance, called *Nuoxi* opera, is a common scene in the slack winter-spring farming season on the mountainous Guizhou plateau.

Once it was performed to combat witchcraft. Today, it is staged when elderly people celebrate birthdays and when middle-aged couples have their first baby as a way to pay pious respect and express hearty thanks to the gods, represented by the masks.

For Chinese scholars who have been making a comprehensive study of *Nuoxi* opera since the early 1980s, it presents interesting subjects of research in the fields of anthropology, ethnology, history, religion, mythology, and the ancient Chinese theatre, Qu Liuyi, a well-known Chinese drama expert, said in an article.

After trips all over the province in the past few years, researchers found that nearly all the nationalities in the province—the Han, Tujia, Dong, Miao, Buyi, and Molao nationalities, have their own *Nuoxi* operas. There are slight differences in performance, but the operas of each nationality share a common prop—wooden masks.

Most researchers hold that current *Nuoxi* opera is based on ancient sacrificial ceremonies to worship gods. Almost all nationalities in the world went through a god-worshipping period, they say. The period appeared in China more than 3,000 years ago.

The opera was very popular in central China in the following years. Its major function shifted eventually from reverence for gods to a form of entertainment, said Xie Yong, deputy director of the Cultural Bureau of Dejiang County.

At first, only songs and dances were performed at the ceremonies, Xie said. Then story-telling and epic narration were added to the performances during the Song Dynasty (960-1279). Opera began to emerge.

Xie has collected 40 manuscripts of opera plays handed down from the Ming (1368-1644) and Qing (1644-1911) dynasties. He has also gathered 200 finely carved face masks, considered perfect works of art.

He said that Dejiang County has the country's largest number of *Nuoxi* opera troupes, 160 altogether, with six to ten members each.

Amusement

"*Nuoxi* opera has basically disappeared in central China. However, it has been fairly well preserved on the Guizhou plateau and is widely spread in remote mountain villages," Xie said.

It is a major amusement for local people. Performances are usually humorous. Actors sing in a tone very much like local folk songs, and dance in a way similar to actions in a farm field. Many villagers prefer *Nuoxi* opera to television programmes.

Why the opera still has a great vitality in the area remains a subject for study.

"Vestiges of god worship still exist," Xie said. Performers often cut off the heads of a pig and a goat during a performance, saying the animals are sacrificed to the gods. The animal heads are cooked to entertain the audience later, he added.

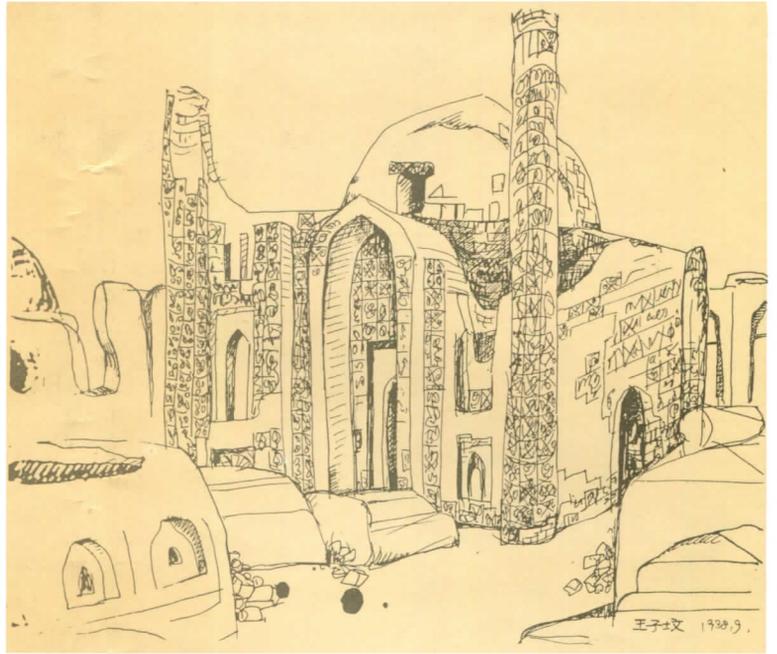
Nuoxi opera has attracted the attention of researchers in other countries. Last year dozens of foreign scholars and many tourists came to Guizhou specially to see the performances. A group of about 100 scholars in Guizhou formed an association for the study of *Nuoxi* opera in 1988. ■



Sofia Lorene, the Italian Movie Star.



Lata Mangeshkar, the Indian Movie Star.



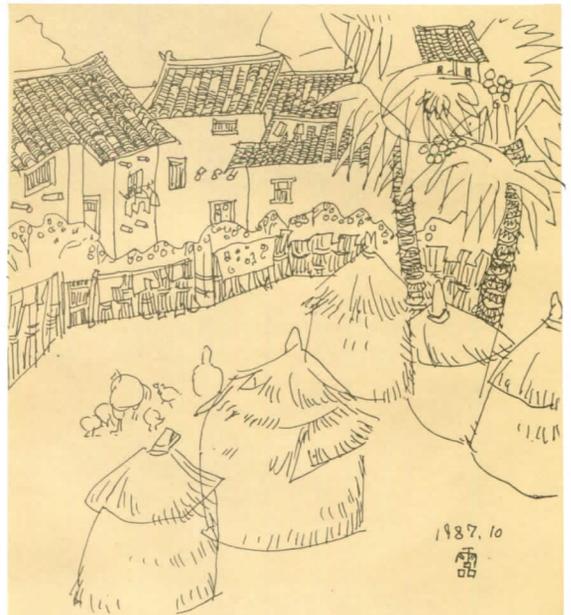
Tomb for a Prince of Xinjiang.

Sketches by Zhang Xiaolei

Zhang Xiaolei, born in Tianjin in 1964, is a student of the Central Academy of Fine Arts in Beijing. These sketches are selected from her painting album.

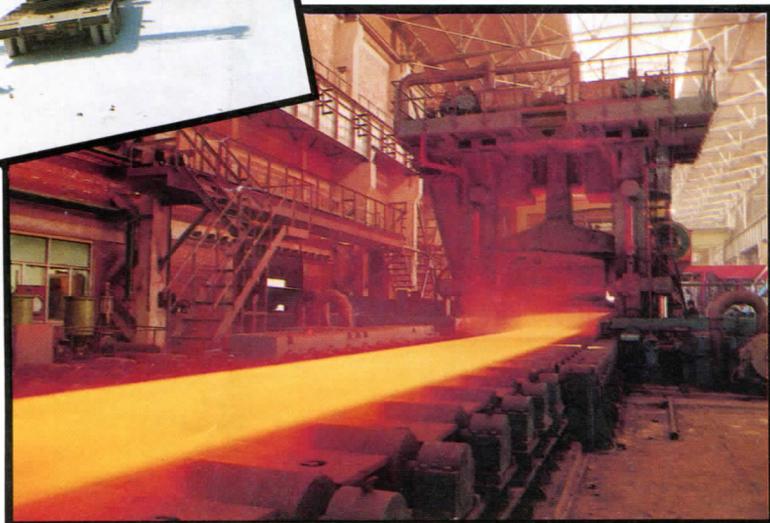


A Street Scene of Kashi, Xinjiang.



A Farmer's Home.

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Yingkou Medium Plate Mill

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