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## China's Great Scientific Achievements



THE SECOND ART FESTIVAL

Shepherd and shepherd boys.

*Photos by Sun Yi*





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**COVER:** Scenes from plays performed during the Second China Art Festival. by Xu Xiangjun

### The West's Peaceful Evolution Examined

□ The policy of peaceful evolution practised by the West is an attempt to subvert the socialist system and to restore capitalism in the socialist countries. While China is carrying out its own policies of reform and opening to the outside world, it must also conduct the struggle against peaceful evolution (p. 9).

### China's Fruitful Scientific and Technological Progress

□ Remarkable scientific and technological achievements have been chalked up by the People's Republic of China since its founding in 1949. Some achievements have met China's domestic needs while others propelled the country into the ranks of the world's scientific pioneering countries. (p. 14).

### Eyewitness Reports on the Clearing of Tiananmen Square

□ Misinformation spread by Western, Taiwan and Hong Kong press of a "Tiananmen massacre" has been refuted by the facts and more and more people have begun to understand the real situation. In this report, hunger strikers and doctors give eyewitness accounts of the army's operation to clear the Tiananmen Square on June 4 (p. 26).

### The Second China Art Festival

□ Rich and colourful performances such as the *White Snake* and *Spartacus* by both Chinese and foreign artists highlighted the Second China Art Festival (Centrefold).

### New Rules for Officials on Overseas Trips

□ In its campaign to fight corruption in the government, China has issued new regulations to strictly control overseas trips and visits to Hong Kong and Macao by all Communist Party and state officials above the deputy ministerial and provincial levels (p. 6).

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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## Important Role of the CPPCC Reiterated

China's non-Communist parties are neither not in government nor in opposition but are friendly to the Communist Party of China, and cooperate with it, said Li Xiannian, chairman of the National Committee of the Chinese People's Political Consultative Conference (CPPCC).

Non-Communist parties have all participated in the management of state affairs, and involved themselves in policy-making for major political and social affairs through consultation. By doing so, Li said, they promote close co-operation and mutual supervision with the Communist Party.

Li, a former Chinese president, made his comments at the closing session of a recent three-day enlarged meeting in Beijing of the chairman and vice-chairmen of the CPPCC's National Committee. The meeting was held to discuss a speech by Chinese Communist Party General Secretary Jiang Zemin on the occasion of the 40th anniversary of the People's Republic (for full text see No.41, *Beijing Review*).

As history has proved, Li said, the multi-party co-operation and consultative function of the CPPCC under the leadership of the Communist Party is a part of China's unique socialist political system. This new-type system was forged during the decades-long revolutionary struggle and ensuing socialist reconstruction of the country. It conforms to the realities of China and reflects the interests of all the Chinese people.

Such a system, together with the Communist Party's policy of

"long-term coexistence and mutual supervision" and "treating each other with all sincerity and sharing weal and woe" should be developed in practice during the whole socialist period, the chairman added.

This unique political relationship, characteristic of the Chinese people's political life, has a solid foundation and is a creation of common efforts of the Communist Party and non-Communist parties. Western democracy cannot compare with it, Li said.

Within the CPPCC, he said, members of the Communist Party and the non-Communist parties should co-operate to ensure effective participation in consultation before major policies are formulated.

The supervision of the Communist Party and the government by the other parties will

enhance the role of the non-Communist parties in political affairs and institutionalize the supervision system, Li noted.

However, China can neither introduce a Western multi-party system nor allow the existence of an opposition party, Li stressed.

Supporters of bourgeois liberalization attempted to reform China's political structure by modeling it on the multi-party system of the Western countries in which parties alternate power. This is, in essence, a negation of the socialist democratic system in which the people are the masters of the country, Li said. As a result, this will inevitably lead to the abolition of the leadership of the Communist Party of China and the negation of the socialist system.

The absolute prohibition on bourgeois democracy in China is directly related to China's fundamental social and political system. On this issue there can be no wavering, Li said.

In his speech, Li also said the leadership role of the working class should be strengthened and the worker-peasant alliance be consolidated. □

## China Meets Economic Challenges

The political situation in China has stabilized but the country is facing some temporary difficulties in the economy, said Chinese Premier Li Peng. He made the comments in Beijing on October 10 during a meeting with Paul Victor Obeng, member of the Provisional National Defence Council and chairman of the Committee of Secretaries of Ghana.

Li told Obeng that he believes China's economy will be improved through economic readjustment and rectification.

"Some people in the world are trying to use economic measures to force China to change current

policies, but they will never succeed," Li said. "We are determined to meet this challenge."

Li briefed Obeng about the turmoil and riots in Beijing last June and said the disturbance had domestic as well as international factors.

A few people in some foreign countries have taken advantage of China's reforms and opening policy to try to infiltrate and subvert China, Li said.

They have cherished an illusion that a "peaceful evolution" would come about on the third and fourth generations of the Chinese people after the founding of the People's Republic in



Chinese Premier Li Peng welcomes Ghanaian leader Paul Victor Obeng to Beijing on October 10.

TANG MENGZONG

1949, he said.

Meanwhile, he added, some members of the Chinese Communist Party have not been firm politically and have failed to see this international situation. Also there have been some people who have misunderstood China's policy of reform and opening to the outside world.

Li stressed that the correct understanding of this policy means a self-perfection of socialism instead of adopting capitalism in China.

Obeng said that the people in Ghana have shown great interest in China's reforms. He regretted the recent anti-government activities under the pretext of democracy and freedom.

In his toast to his Ghanaian guests during a banquet at the Great Hall of the People, Li spoke highly of the Ghanaian government's policy of positive neutrality and nonalignment, of opposing power politics, and dedicating itself to strengthening African solidarity. Li praised the Ghanaian government for its stand and the Ghanaian people for all their progress.

Li noted positive changes in the African continent in the past year and said the future looked

bright as regional "hot spots" have cooled and the quest for political settlement to disputes has been on the rise.

Li said that Namibia's independence in particular signifies

## Sino-Liberian Ties Cut

China announced on October 10 that it has been compelled to suspend its diplomatic relations with Liberia. The suspension went into effect immediately.

Liberian Ambassador to China J. Christopher Ricks was summoned to the Chinese Foreign Ministry and notified that China was suspending relations in the wake of the Liberian government's "re-establishment of diplomatic relations" with Taiwan.

At the meeting, a high-level official in the ministry's African Affairs Department said Liberia's action runs counter to the principles set forth in the Joint Communiqué on the Establishment of Diplomatic Relations between China and Liberia issued February 17, 1977. It also contradicts the Liberian government's commitment to recognize the government of the People's

that the day is not far off when the whole of Africa will be decolonized.

Obeng urged China to continue with its economic reform so that many countries including Ghana can learn from China's experiences.

Ghana would make efforts to strengthen its relationship with friendly countries like China.

Obeng and his delegation were in China for five days, with visits to Beijing and Shanghai. Obeng met with Jiang Zemin, general secretary of the Communist Party of China and Chinese President Yang Shangkun.

Jiang told Obeng that China will make use of the advanced science and technology and managerial experiences of capitalist countries in the West while continuing its reform and open policy. He also said that China and Ghana are far apart in distance, but have had contacts for 30 years. □

Republic of China as the sole legal government representing all Chinese people, the official said.

The Liberian government announced on October 2 that it was re-establishing what it called diplomatic relations with Taiwan and signed a joint communiqué to that effect on October 9.

The Chinese ambassador to Liberia had, upon instruction, made repeated, solemn representations to the Liberia government on activities carried out by the Taiwan authorities in Liberia for creating "two Chinas." However, a Foreign Ministry statement said, the Liberian government persists in its wrong decision in disregard of the position of the Chinese government.

China is firmly opposed to the establishment or re-establishment of official relations and the conduct of ex-



changes of a governmental nature with Taiwan by any country having diplomatic relations with China, but it does not take exception to their economic exchanges, trade and cultural contacts of an entirely non-governmental nature, the statement said.

The unification of China, and Taiwan returning to the embrace of the motherland, is an irresistible

general trend, a *People's Daily* commentary said about the suspension.

"It is inevitably a short-sighted view for some people to ignore the trend, conduct themselves against the national unity of China and hurt the feelings of the Chinese people merely for immediate economic interests," the commentary said. □

## Overseas Trips by Officials To Be Controlled

China has issued new regulations to strictly control overseas trips and visits to Hong Kong and Macao by all leading Party and government officials above the deputy ministerial and provincial level.

The regulations were issued October 7 by the General Offices of the Central Committee of the Communist Party of China (CPC) and the State Council in line with the country's on-going efforts to fight corruption and build a clean government.

The regulations stipulate that overseas trips by leading officials must be state or working visits for the purpose of executing public affairs over which they are in charge.

The regulations make it clear that these officials cannot travel overseas on trips incompatible with their official status. They are not allowed to accept sponsorships from foreign businesses or invitations from Chinese-invested enterprises outside the country. Nor are they allowed to get foreigners to send them invitations.

Officials who are retired or have left their posts will no longer be sent abroad to perform public affairs duties, the regulations state.

Those intending to travel abroad must apply according to adopted procedures while departments giving approval must en-

sure that the procedures are followed correctly and that the applicant's trip is necessary. Applicants will be refused if adopted procedures are not followed. The regulations add that no one will be allowed to go directly to Party and state leaders for permission to make an overseas visit in his own name. Party and state leaders will also not be allowed to accept or hear such requests from any individual official.

The regulations also urge leading officials to make their trips as short as possible. A visit to one country or region should be completed in three to five days and no one is allowed to travel in a roundabout way or overstay at will for any reason.

Unless it is necessitated by their work, no leading officials will be allowed to travel overseas more than once a year.

Proposed overseas visits by Party and state leaders will be examined and decided upon by the CPC Central Committee's Standing Committee based on suggestions and reports submitted by relevant departments.

Party and state leaders are entitled in principle to have an entourage of no more than 20 people for their overseas visits, and the number of accompanying correspondents will also be reduced. The entourage of other leaders on overseas visits should not exceed 10 people, while the

groups accompanying officials at the ministerial and provincial level should be no more than five people.

Leading officials should get approval to take their wives with them on overseas trips if it is necessary for their work. They are not allowed to take their children with them on such trips for any reason.

They have to strictly follow government regulations concerning presenting gifts to foreign hosts. Gifts from foreigners should be turned over to responsible departments in accordance with regulations and not be disposed of by officials themselves.

The regulations also state that no banquets or gifts should be given to visiting Chinese officials by Chinese embassies, consulates and other Chinese institutions and companies.

Urging various departments to strictly follow the rules, the regulations warn that violators will face severe measures and serious cases will be dealt with by Party and administrative discipline. □

## China Joins in Anti-Drug Campaign

China will take firmer action against any drug problem within its border and cooperate with other countries in the international campaign against drug crimes, said Chinese Public Security Minister Wang Fang.

Speaking at the opening ceremony of the Asian Regional Drug Law Enforcement Symposium on October 5, Wang called on police officials and experts at the meeting to pool their wisdom and experiences to eradicate drugs.

The five-day conference attended by about 70 specialists and police officials from 32 countries and regions covered such topics as the potential drug

trend in Asia, counter-measures against drug offences and proposals for international co-operation.

China has had a strict anti-drug policy since the founding of the People's Republic, Wang said.

"With the recurrence of drug trafficking crimes in China in recent years," he said, "resolute measures are being taken by the government, including improving law enforcement activities."

International co-operation is being positively encouraged, he added, noting that bilateral and multi-lateral co-operation in anti-drug efforts has been significant.

Liu Wen, director of the Criminal Investigation Bureau under the Chinese Ministry of Public Security, told the symposium that some people living in China's southwest border provinces, such as Yunnan, have been found taking drugs.

"We have increased the anti-drug police force in the border areas," he said, adding that a provincial law in Yunnan banning drug trafficking and drug use has been put into effect.

In his message to the symposium, Raymond E. Kendall, secretary general of the worldwide policing body, Interpol, said that drug problems have today become a "worldwide scourge with devastating effects on social, economical and even political life of the countries affected.

"Asia, despite maintaining a comparatively low rate of drug consumption, has focal points of production and serves as a distribution centre in trafficking," he said.

A number of Asian countries have been targeted by international drug syndicates as "ideal places for investment of their financial assets derived from drug trafficking," Kendall added.

In this respect, he said he high-

ly appreciated the initiative taken by the Chinese authorities to organize the present forum. □

## High-Tech Pays Off

**A**fter decades of painstaking effort, China is beginning to get a toehold in establishing new and high-tech industries, a trend that will have an enormous bearing on the country's economic development after the year 2000.

Although only 6.8 percent of the nation's GNP is in high-tech, in recent years the government has given it increased attention in hopes that it will become a major part of China's national economic development strategy.

Since 1983, more than 6,000 scientists in the Chinese Academy of Sciences (CAS) have left their "ivory tower" to start new industries with their research results.

In 1988 alone, CAS sold hundreds of high-tech products which brought in more than 1 billion yuan.

The academy has also earned large amounts of hard currency by selling high-tech products abroad.

In one case, a substance developed by the Shanghai Institute of Silicic Acid and Technology, bismuth germanite crystal, has made more than US\$10 million in sales to Western Europe over the past few years.

The new permanent magnetic material developed by the Institute of Physics under CAS has fostered a number of internationally competitive enterprises.

Although the sci-tech picture looks hopeful, one CAS researcher warned that further major investments are still vitally required, "Even if China quadruples its industrial and agricultural output value by the turn of the century, if it fails to place a great emphasis on high-tech its world

economic position will probably slip."

Expansion must be grafted onto 40 years of technical growth that has absorbed over 100 billion yuan in high-tech investment since the nation's birth.

China has a well developed industrial and scientific infrastructure and now has a skilled army of 3 million scientific and technical personnel.

Science and technology are especially developed in the areas of aeronautics, nuclear technology, computers, biotechnology, new materials, communications, and precision instruments.

To help this development the Torch Programme was sparked by the State Commission for Science and Technology in August 1988 to encourage more Chinese scientists and engineers to develop and commercialize their ideas.

Torch aims to stimulate the development of products for both domestic and international markets and to promote economic growth with the introduction of competitive high-tech products.

It is considered a critical step in China's plan to substantially increase its share of the high-tech by the end of the century.

According to the program, 2,000 high or new technology enterprises will come on stream in the next couple of years.

In the 1989's Torch plan, the State Commission for Science and Technology has selected 234 projects in the fields of new materials, biotechnology, telecommunication, machinery and electronics, new energy, and high-efficiency energy saving technology.

Early this year, the Chinese government proposed international co-operation in 30 areas, including lasers, computers, telecommunications, new materials and anti-cancer drugs.

"As long as Chinese scientists and engineers adhere to reform

and creation, and with the strong support of the government and the public, the torch of high technology can be eventually lighted throughout China," said Li Xue, vice-minister of the State Commission for Science and Technology. □

## Ideological Work Should Strengthen

The ideological and political work in industrial and business enterprises must be improved to better meet the needs of China's development.

This remark was made in Beijing on September 25 at a national forum dealing with ideological and political work in enterprises by Song Ping and Li Ruihuan, members of the Standing Committee of the Political Bureau of the Chinese Communist Party Central Committee.

The strengthening of ideological and political work in industrial and business community is dictated by the socialist nature of enterprises and the position of the working class, they said.

Song Ping said the Party has consistently paid attention to ideological and political education for it is "the lifeline of all our work and our cherished heritage."

But, work in this field has been weakened in the past few years, Song said, adding that the seriousness of the error should be fully recognized.

Fortunately, workers in the ideological and political sector have been working very hard, he said, adding that the traditions of the ideological and political education haven't been abandoned, and the main core of ideological and political workers have not disbanded.

Instead, they have gained fresh experience from recent developments, which have reaffirmed the need for ideological

work, he said.

The ideological and political education in enterprises, Song said, must be based on the idea of full reliance on the working class; it must foster the idea that the working class is the master of the society and bring the workers' enthusiasm and creativeness into full play.

The present primary task of the ideological and political work, he said, is to adhere to the Four Cardinal Principles (adherence to the socialist road, people's democratic dictatorship, Communist Party's leadership and Marxism-Leninism—Mao Zedong Thought) and combat bourgeois liberalization.

In enterprises, Song said, the factory directors will still be held responsible for the productivity of the plant. But at the same time, the work of Party committees must be enhanced.

Li Ruihuan said that Chinese enterprises are not only economic entities, but also organizations involved in the training and nurturing of workers. Therefore, it is necessary to strengthen the ideological and political work in enterprises.

Yet, he said, the methods used must be suited to the present situation.

Li said there are still many problems to be solved while strengthening the ideological and political work in enterprises.

The forum was attended by representatives from more than 100 large enterprises, relevant departments under the State Council and related provincial departments. □

## News In Brief

### Hong Kong Breaks Entry Rules

The Hong Kong government has broken the agreement reached between Hong Kong and

Guangdong Province in 1982 to handle the cases of the legal and illegal entry to Hong Kong from the mainland, said Chinese Foreign Ministry spokesman Li Zhaoxing on October 12 in Beijing.

Responding to a question on the Chinese government's temporary move not to allow illegal immigrants from Hong Kong to return to the mainland, Li said at a news conference that over the years Hong Kong and the mainland have co-operated very well on this issue under the principle of mutual understanding.

However, this co-operation has been unilaterally damaged recently by the British authorities in Hong Kong, he said. The Chinese government hopes that Britain and the Hong Kong government will abide by the 1982 agreement so conditions can return to normal. □

### Burned-Out Forest May Turn Green By 1996

The burned-out forests of China's Greater Hinggan Mountains area, which were devastated by fire in 1987, are expected to be covered with trees again by 1996, said an official from the Ministry of Forestry.

The 1987 fire charred 1 million hectares of forest in this important timber producing base. □

### Tourist Numbers on the Rise

Statistics compiled by the National Tourist Administration show that a total of 2,095,000 tourists entered the country in August, 30 percent more than in the previous month and more than 70 percent of the number in the same period last year.

The number of tourists from the Soviet Union has increased rapidly. There was also an increase in tourists from Singapore, the Philippines and Thailand. □



# The West's Peaceful Evolution Examined

by Shu Yu

**P**eaceful evolution means the promotion by capitalist countries of a change from the inside in the character of political power in socialist countries through political, economic, cultural, ideological and other peaceful ways. So, in a sense, it is just a coup d'état by other means. Signs that it is being achieved are the following:

(1) The socialist political and economic systems are changed, public ownership is transformed into private ownership and the parliamentary democratic system and a free market economy are introduced. (2) Leadership of the communist party degenerates and the party cannot represent the fundamental interests of the working class and the broad ranks of the labouring people. This, first, is due to dissidents assuming power, and second, is caused by changes in the leading group itself. (3) The belief in Marxism and communism is given up, and Marxism no longer serves as the guiding ideology.

The strategic thinking of peaceful evolution among Western countries was first advanced in the 1950s by John Foster Dulles, Secretary of State in the US Eisenhower administration. He talked of "liberating" the peoples of socialist countries through "peaceful ways." Afterwards, Western countries started to practise peaceful evolution in their policies towards socialist countries. The course it has taken can be divided into three phases: Formulation and initial trial in the 1950s and 1960s, implementation in some areas in the 1970s, and energetic development in the 1980s when the struggle of evolution and counter-evolution had become the important content of

the trial of strength between the socialist system and the capitalist system.

In the 1950s and 1960s, because the two major camps of socialism and capitalism were in a heavy confrontation and there was a cold war, the main way for Western countries headed by the United States to subvert socialist countries was not to carry out peaceful evolution but to stage coup d'états and armed incursions, or to organize a mercenary army to invade.

East-West relations began to gradually thaw in the mid-1960s. By the 1970s, relationships between the two sides further developed and their economic and cultural contacts also increased, thus opening more passageways for infiltration by Western countries. So their main method for subversion of socialist countries was changed into peaceful evolution.

The practices followed by Western countries in carrying out peaceful evolution are varied but in the main there are three ways.

(1) To support and prop up intellectual "elites" who share Western bourgeois democratic ideology and theory, and accept Western political and economic systems as the breakthrough point for peaceful evolution.

(2) To provide economic and technological assistance as a bait to encourage socialist countries to carry out reform in accordance with Western standards (that is, to carry out Western-type reform), including practice of the parliamentary democratic system, a wide-open private market economy and ideological liberalization. The US *Foreign Affairs* (summer, 1989) carried an article on *East-West Relations* written by Valéry Giscard d'Estaing, Ya-

suhiro Nakasone and Henry A. Kissinger which stated this clearly: "We should give support to any movement toward market economies and democratic institutions." "The absolute prerequisite is a radical transformation of the Soviet system that will bring the USSR closer to Western concepts of market economies and democratic institutions. That is the definition of perestroika which the present authors support."

An important feature in this respect is that the degree and order of importance and urgency of economic and technological assistance are decided by the degree of Westernization of the recipient countries.

(3) To take joint action. Despite internal clashes, strife and struggle between control and counter-control among Western countries, they are identical in their thinking, tactics, strategy and actions when carrying out peaceful evolution towards socialist countries. They often consult, co-operate and co-ordinate. The West European countries' long-term courtship and infiltration of some countries since the end of the 1960s, and the economic "sanctions" applied to a different extent by Western countries and the "condemnation" of the European Parliament, International Democratic Union and an organ of the United Nations following the quelling of the counter-revolutionary rebellion in Beijing by the Chinese government, are not individual and accidental actions, but are all deliberately co-ordinated. The West also widely mobilizes various media (such as the *Voice of America*), non-governmental human rights foundations, trade union

organizations and other organizations to make joint efforts in support of infiltration and evolution.

The present international community is an open system. Historical experience has proved that if a country closes its door to international co-operation, it has no

future. Only with reform and opening to the outside world can it be revitalized and developed. However, under the condition of reform and opening to the outside world, peaceful infiltration and peaceful evolution inevitably exist. In order to guarantee the

smooth implementation and healthy development of reform and opening to the outside world, we must carry out a struggle between evolution and counter-evolution. □

## 'Dual Recognition' Not Acceptable

People's Daily Commentary (October 11)

Liberia on October 2 announced it was re-establishing what it called "diplomatic relations" with Taiwan, a move which creates a situation of "dual recognition" or "two Chinas," or "one China, one Taiwan."

Liberia's action seriously violated the principles set forth in the Joint Communiqué on the Establishment of Diplomatic Relations between China and Liberia issued on February 17, 1977, thus destroying the basis on which the diplomatic relations between the two countries were established.

The Chinese government and people can only express great regret over Liberia's actions.

It is well-known that there is only one China. The Government of the People's Republic of China is the only legitimate government and Taiwan is an inalienable part of China's territory.

This is China's unswerving position and is also recognized by the international community. In international exchanges the Chinese government has always developed friendly and co-operative relations with all other countries on the basis of the Five Principles of Peaceful Coexistence. China has opposed those countries that have diplomatic relations with it establishing official relations and conducting exchanges of a governmental nature with Taiwan. China, however, does not take exception to other countries' economic exchanges of a non-governmental nature with Taiwan. Therefore, countries that

have established diplomatic relations with China should observe the agreed principle of recognizing only China and avoid "dual recognition." Any situation which leads to "two Chinas" or "one China, one Taiwan" is a serious encroachment upon China's sovereignty and is firmly opposed by the people on both sides of the Taiwan Straits.

The Taiwan authorities have repeatedly claimed there is "only one China," but in recent years they have resorted to "elastic diplomacy" to end their diplomatic isolation. In the name of cultural, economic and trade and scientific and technological exchanges, they attempt to develop official relations with some countries by using their economic buying power. At the same time they have tried to set up representative organs of an official nature in countries that have diplomatic relations with China, violating the principle of "one China" and creating "dual recognition." By so doing the Taiwan authorities not only disregard the wishes of the Chinese people on both sides of the Straits for the peaceful reunification of their motherland, but attempt to seek recognition of Taiwan as a political entity. This leads to the situation of "two Chinas" or "one China, one Taiwan." Taiwan's actions have fractured the sacred unity of China and are held in contempt by the Chinese people at home and abroad. They should recognize that there is no "elasticity" on the issue of "one China" and "the reunification of the

motherland." Anybody who violates this is a national criminal and will surely be punished by history.

China must be unified and Taiwan must return to the embrace of the motherland. This is the trend of the times and the desire of the people that no one can stop. It is shortsighted to harm the unity of China and the feelings of the Chinese people. The Chinese government is convinced that most of the countries that have established diplomatic relations with China will not agree with such a shortsighted policy. They will respect and understand the solemn and just stand of the Chinese government on the issue of Taiwan and continue to develop friendly relations with China. The Chinese government hopes that the Liberian government will put the friendship between the peoples of China and Liberia first and change its attitude and carry out a policy in accordance with the long-term interest of both countries. China also warns Taiwan authorities that their plan of making use of their economic strength to pursue a flexible diplomacy and their attempt to create "two Chinas" will not succeed. They will meet with increasingly stronger opposition from the Chinese people, including the compatriots of Taiwan. The realistic policy for Taiwan authorities is to seek a peaceful reunification of the sides of the Straits on the premise that there is but one China and not to do anything to harm the reunification of the motherland. □

# The Economic Revitalization of Turkey

by Zhao Zengquan

It is well-known that Turkey was caught in a major political and economic crisis during the years from 1978 to 1980. After taking power in 1980, the military government led by Kenan Evren began pursuing an economic development strategy worked out by leading economist Turgut Ozal which helped the economy recover from collapse. Over several years, Turkey's economy revived with its productivity and industrial exports increasing and its speed of development accelerating. Turkey's economic achievements have been noted by the world, especially as they were won in the 1980s when the economies of most Middle East countries were in difficulties.

## Old Strategy Replaced

Beginning in the early 1960s, Turkey established a mixed economic system which allows the existence of both state and private economies under the guidance of the government. The new economic development plan was mandatory for the departments of the government and provided guidelines for the private sector. It also aimed at developing the production of goods to replace the imports (the import-substitution strategy). And it tried to strengthen the economic functions of the state and to create conditions where private capitalism could flourish. High tariffs were introduced to protect the development of national industries from the effects of the intense competition of world monopolies. Investment to establish modern industrial enterprises was encouraged and the development of industrial depart-

ments to replace imports was urged.

The main economic achievements attained in this period were: 1. Based on rich mineral resources except petroleum, great agricultural potential and an adequate labour force, Turkey's national economy developed rapidly. The gross national product (GNP) increased at an average annual rate of 6.9 percent during the years from 1963 to 1977, with the industry increasing 10 percent annually; 2. The economic structure changed greatly. The proportion of the value of industrial production in GNP increased from 17 to 24 percent during the same period while the proportion of agriculture dropped from 41 to 25 percent. This shows that Turkey had become an agro-industrial country; 3. Capitalist economic relations replaced traditional ones and became dominant in both cities and countryside as the result of the encouragement of industrial development.

At the end of the 1970s, the speed of Turkey's economic development began to fall. Its GNP increased only 3 percent in 1978 while industry grew only 2.6 percent. In 1979 and 1980, there was negative growth in GNP while industry had negative growth of 5 percent. This steep economic decline was attributed to the lack of petroleum. Some 80 percent of Turkey's petroleum is imported from Middle East countries. Import of other goods had to be reduced when additional foreign exchange was needed to meet the rise in prices of Middle East petroleum. Many enterprises were operating under capacity and some were even closed.

In November 1980, Evren staged a coup d'état. The military government began carrying out a new economic strategy while trying to prevent social turmoil. It tried to revive the national economy and seek a way out of the economic crisis through the policy of reform and opening up to the outside world. After power was given to the civil government led by Ozal in 1983, the new government added fresh content to the new economic strategy.

## Transition to a Market Economy

A great increase in productivity, especially industrial production, and in the competitive capacity of Turkey's products in the world market is the prerequisite for transition to a market economy. So the new government set out to improve economic management, introduce advanced skills and techniques, encourage the development of the private sector, and provide many kinds of material assistance to enterprises engaged in producing for export. The Ozal government paid more attention to the role of prices than preceding governments had. It took the reduction of variable capital in production costs as the main element in increasing the competitive edge of Turkey's products on the world market. During the years from 1980 to 1986, the proportion of wages in total social product fell from 27 percent to 18 percent while that of profit and interest increased from 49 percent to 65 percent. Although the economic situation was improved and the profits increased, the living standard of the people remained at



the 1976 level. The interests of the people were sacrificed to support the development of the private sector.

A second objective was to attract foreign investment to ease the debt crisis and extend economic potential. The privatization policy of the Ozal government has gained the support of Western countries which have helped to successfully overcome the debt crisis. Most of Turkey's creditor nations have agreed to defer payments and provide new loans. Adjustment of its policy towards the Muslim world has helped the Ozal government to gain the support of the oil-exporting countries in the Middle East, especially financial support from Saudi Arabia. In addition, the decrease in world oil prices meant it had to pay less foreign exchange for oil imports. All these factors helped to stabilize Turkey's financial position.

Thirdly, the government encouraged foreign investment and accelerated the process of industrial modernization. It opened up "free trade zones" where low tariffs were introduced to encourage domestic and foreign enterprises to develop and compete in these areas. By the end of 1984, there were 246 foreign enterprises in Turkey, of which 69 belonged to Muslim countries. In addition, from 1981 to 1986, the number of joint ventures built up by Turkey and Arabian countries increased from 7 to 67, with Saudi Arabia investing the most. Ozal considered that an economy oriented towards the open door must have a modern productive base. Whether such a base could be built depended on acquiring new technology, attracting foreign enterprises and giving full play to the role of the country's scientific manpower resources. Turkey has achieved obvious results in this respect. A number of enterprises have established their own scientific centres and made great con-

tributions to the country's scientific and technological development. Fixed assets have been renewed rapidly. For example, Turkey had nearly a million of computers early in 1987.

The introduction of these measures has not only brought Turkey's economy back from the brink of collapse but also allowed it to maintain accelerating development. Agriculture is developing at an average rate of 3 percent annually. Industrial output value accounts for 25.2 percent of GNP, while agricultural output value has fallen to 21.9 percent. This indicates that Turkey has taken a significant step towards industrialization.

### World and Islamic Markets

Turkey has paid attention to equally developing trade relations with the West and East. Because of the limited domestic market, seeking entry to the world market becomes an important task for Turkey. The member countries of the European Economic Community (EEC) are the traditional trading partners of Turkey which became an associate member of the EEC in 1964 and applied for full membership in April of 1987. Turkey has spent much effort on expanding its exports to Europe, the United States and Japan, but the results have been less than it hoped for.

The Ozal government has paid much more attention than preceding governments to the development of relations with the Islamic countries. It has made a series of adjustments to its policies towards the Middle East and world affairs. It gave up the policy of identification with the North Atlantic Treaty Organization and tried in its external relations to distance itself from the West. On the other hand, it began stressing repeatedly the unity of the Islamic world and making

use of common points in religious belief. Although Turkey is a secular country, it has taken part in almost all the Islamic international organizations and its president or prime minister always presides at Islamic meetings held in Turkey. These unprecedented measures by the Ozal government have deepened Turkey's relationship with Islamic countries and strengthened economic, political and cultural relations with them. In 1986, Turkey actively supported the creation of a united Islamic market and entered this market depending on its comparatively developed industry. The kinds of products exported by Turkey to the West are limited. Only its textiles and leather goods are competitive. However, many of its industrial products and food items have good sales in Middle East countries. From 1981 to 1985, the volume of Turkey's exports to the Middle East countries increased from US\$2 billion to US\$3.3 billion. During 1981-1985 its exports to Iraq increased from US\$559 million to US\$961 million. Its exports to Iran increased from US\$234 million to US\$1.07 billion. Taking advantage of the lack of supplies in Iran and Iraq caused by the recent war, Turkey greatly expanded its exports of food and industrial products to the two countries. It also utilized its special relations with Iran and Iraq to import petroleum from them at a low price or in compensation trade on favourable terms.

Of Turkey's total exports, those to developed countries account for 49 percent, to developing countries 46 percent, and to socialist countries 4 percent. Imports from developed countries account for 46 percent of the total, from developing countries 45 percent, and from socialist countries 9 percent. Now Turkey has shaken off its dependence upon the Western market.

The development of trade with

Middle East countries has promoted Turkey's economy. Industrial development has brought about favourable changes in the structure of its exports. Its industrial products accounted for 33.4 percent of exports in 1977, but had risen to 74.7 percent in 1986.

Secondly, Turkey's building companies working abroad under contract have increased rapidly. In 1978, Turkey had 17 building companies in the Middle East, their contracts totalling US\$1.6 billion. The figure rose to 62 in 1980 with contracts of US\$3.5 billion, to 242 in 1982 with contracts of US\$12.6 billion, to 296 in 1985 with contracts of US\$15.5 billion, and to 311 in 1986 with contracts of US\$16.9 billion. The activities of these companies in the Middle East have not only gained much foreign exchange for Turkey, but have also stimulated exports of building materials as well as building facilities and technology. In an attempt to help Turkish capital infiltrate Middle East countries, the government has also actively promoted the formation of joint companies with capital provided by Turkey and Western and Middle East countries.

Thirdly, labour, of which Turkey has a surplus, has become an important export. A large number of unemployed will not only handicap development, but is also a potential factor in the country's social turmoil. To export labour therefore became very important and the effort was mainly oriented towards Western countries. In 1986, Turkey had 1.1 million workers abroad, and the figure reached 2.3 million if the workers' families were added. Of these workers 96.2 percent worked in Western Europe and in Australia. However, a notable trend in the last 10 years is that Western countries have sharply reduced the number of Turkish workers while Middle East coun-

tries have accepted more and more. Workers in Western countries have freedom to seek out ways to earn a livelihood by themselves, while those in Middle East countries have to sign contracts with Turkish building companies there and their residence period is strictly limited. Building projects under contracts thus become Turkey's major channel for exporting its labour to Middle East countries. In 1980, labourers going to Iraq, Libya and Saudi Arabia numbered 20,700 people or 72.7 percent of the year's total; in 1981, the figure was 55,500 or 94.2 percent; in 1982, 45,000 or 97 percent, and in 1986, 51,000 or 98 percent. That is to say, Turkish workers in recent years have mainly gone to the Middle East to seek jobs. And the labour market in the Middle East has the potential to absorb Turkey's surplus of labour. For example, in 1985, only 236 Turks went to Western Europe to seek jobs, while 35,100 went to Saudi Arabia.

### Problems and Risks

The first problem is that although increased foreign trade has brought about favourable changes to the structure of exports ( the proportion of finished industrial products rose ), exports and imports do not balance. Although the foreign trade deficit fell from US\$5 billion in 1980 to US\$3 billion in 1982, Turkey still had deficits of more than US\$3.6 billion in 1984 and 1986. This compares with a deficit of US\$2.3 billion in 1978.

The second problem is that foreign debts accumulate continuously and the burden becomes heavier. In 1979, foreign debt totalled US\$9.251 billion, and the principal and interest paid was US\$485 million. In 1983, foreign debt rose to US\$19.083 billion and the principal and interest paid to US\$2.234 billion. Agree-

ments have been reached that repayment of a majority of the debt can be delayed. However, accumulation of debts can only make the burden heavier. At the beginning of 1987 foreign debts had reached US\$31 billion. Although Ozal has encouraged Turks not to be afraid of foreign debts, an excessive debt burden will certainly affect Turkey's savings and its expanded reproduction.

The third problem is that unemployment is growing all the time. According to statistics from Turkey's state planning organization, unemployment in 1978 was 2.2 million people, and rose to 3.1 million in 1988. Turkey's law provides no allowances for unemployment. And at the same time, the number of the semi-employed has also increased rapidly.

The fourth problem is that social conflict is sharpening. One-sided encouragement for the development of the private sector has triggered a crisis in large-scale state enterprises and put them in a weak position in competition with private enterprises. As a result, workers in the state enterprises get lower pay. In spite of the increased speed of development, labourers still get very low incomes and relations between labour and capital are tense owing to a reduction by the government of the proportion of variable capital in the cost of products. Polarization worsens daily. Ozal's plan to reduce the inflation rate has not produced any results. The plan was for inflation rate to be reduced to below 20 percent in 1986 but actual inflation in 1987 reached more than 60 percent, and it rose to 79 percent in May 1988.

All these problems make the situation in Turkey severe, where the poor get poorer, the rich get richer, and unemployment expands continuously. And the activities of fundamentalists are still a factor contributing to social instability in Turkey. □

# China's Fruitful Scientific and Technological Progress

by Song Jian

In the past 40 years, significant scientific and technological achievements have been made under the guidance of the Party and government. A highly skilled workforce combined with various scientific research institutions have brought about wide-ranging benefits for society. Incomplete statistics indicate that over 30,000 new products had been registered in the country by December 1988. Many of these have been recognized by the state for their scientific value—1,858 products won the State Invention Prize, 337 the State Natural Science Awards, and 3,082 the National Science and Technology Progress Prize—in addition to the 7,657 awards presented by the 1978 National Science Conference for results

\* The author is minister of the State Science and Technology Commission of the People's Republic of China.

On an experimental plot, technicians in Zhejiang Province sow early rice seeds, "Yuanfeng," which they developed using radiation technology.

XU BANG



obtained since the founding of the People's Republic of China in the preceding 28 years. The products are estimated to have earned a total of 150 billion yuan for the state.

Some research was necessary for production of goods, others broke new ground in domestic scientific circles and still others were of international significance. Overall, the products brought about benefits for each stage of socialist economic construction. Industrial and agricultural production, national defence, the standard of living and the four modernizations all gained from the scientific and technological progress.

## Agriculture and Forestry

Progress has been made consistently in the breeding of plant material. In the mid-1950s, the

application of new high-yield varieties of dwarf rice resulted in an increase of 50 to 150 kg of rice per *mu*, making it the world's most productive strain of rice. In the early 1970s, geneticist Yuan Longping, together with others, successfully bred a ternary species of *Xian* long-grain paddy rice. A total of 80 million hectares was sown with this species by 1988 and 60 million-ton increase in rice production gained. In the 1970s, a strain of fine cotton and maize with an increased growth rate ranging from 20 to 35 percent were bred. In 1980, short-grain, hybrid rice was used to breed a ternary hybrid and another ternary hybrid of a wild cabbage type of rape, the first of its kind in the world, was developed.

Starting in the 1950s, China began research on rubber planting in areas to the north of the Hainan Island and succeeded in 1984 to move the northernmost latitude of planting from north latitude of 17° to the north latitude of 18°-24°.

In regard to the prevention and control of plant pests and diseases, beginning in 1951, systematic, multi-pronged research focused on the East Asian flying locusts and after more than ten years' effort, the problem of the locusts, plaguing China for several thousand years, was basically eliminated. The backward, locust plagued regions no longer had to funnel scarce resources to deal with the problem. Armyworm, a major destructive insect for grain crops, was also brought under control. China's research



and application on the biological control aroused international attention. The area under biological control extended to 6.7 million hectares. Finally, since the 1970s, China created a biological group of anti-rust varieties, solving the problem of rust on winter wheat in the north.

In regard to the prevention and control of animal diseases, in the 1950s China manufactured vaccines to eliminate rinderpest and control swine fever throughout the country. In the 1960s China began to study an infectious anemia disease affecting horses, a difficult problem throughout the world and, by 1977, had diagnosed the cause and developed immunization. The vaccine, an important immunological breakthrough, successfully prevented the infection in all horses and donkeys.

**Aquatic Products.** In the late 1950s and early 1960s, China developed methods for the artificial reproduction of four large fishes—the silver carp, bighead carp, snail carp and grass carp—a process crucial to the country's fish farming industry. At the same time, as an improved, higher-yield kelp species was produced, new breeding techniques were created. Between 1956 and 1957, kelps were bred from 36° to 30°30' north latitude, putting an end to reliance on their importation. In 1978, factory breeding of Chinese freshwater crabs using brackish water was successfully done. Between 1980 and 1983, the process of artificially breeding prawns in factories was developed and in 1988, the difficult problem of how parent shrimps could survive winter was solved. There was no longer a need to rely entirely on young shrimps from the sea.

In regard to the protection of forest land in the agricultural areas of the Huanghe-Huaihe-Haihe Plain and the coastal



The up-to-date open-end spinning frames developed by Xian-Far East Machine-Building Corp. are now used by many of China's textile mills. HE PING

areas, a comprehensive forest protection plan, which took into consideration economic efficiency, was introduced. Satisfactory progress has also been made in water and soil conservation. The cost of treatment has dropped and the quality has risen. In regard to the problem of wind and sand prevention, China adopted a comprehensive treatment in the area between Baotou and Lanzhou so that the railway line could be operated across the Tengger desert without a hitch.

## Industry

The level of China's machine-building industry has jumped from that of simply repairing and copying existing equipment to the current practice of designing and manufacturing its own sophisticated machinery.

In 1958, China successfully built the world's first 12,000-kw turbogenerator with inner water-cooled stator and rotor. Afterwards, prototypes of 125,000-kw, 200,000-kw and 300,000-kw turbogenerators were produced. A 170,000-kw and a 125,000-kw turbogenerator unit for use at Gezhouba Dam were successfully produced one after another in 1979 and 1980, thus giving China the world's largest low-

head paddle-wheel hydroelectric unit. They have already earned more than 1 billion yuan since beginning operation. In the 1960s, a 30,000-ton hydraulic press and eight other pieces of large equipment, along with a 12,000-ton hydraulic press for free forging, were successfully designed and manufactured. These developments marked China's entry into the manufacture of entirely self-designed heavy-duty machinery. In the 1980s, the first 1,700-mm hot and continuous roiling plate mill was constructed. China has manufactured many precision instruments and meters such as the 200 Kv superhigh electron microscope.

Significant research has been carried out in geological exploration, smelting techniques and on various alloy metals. Progress has been made in mining the mineral intergrowth deposits located in Panzhihua in southwest China, Baotou in north China and Jinchuan in northwest China. In the mid-1960s, a breakthrough was made when a new blast furnace smelting technique was used on the Panzhihua vanadium-titanium magnetic ore in Sichuan Province. Soon after, a technique to extract vanadium from molten pig iron was devel-

oped and it is now possible to recover a great quantity of vanadium slag, transforming China from a vanadium-import to a vanadium-export country. In the late 1970s, using ore dressing and separation techniques, fluorine, carbon and cerium ores from the Baotou mine were separated into their respective rare-earth concentrate, with a purity of over 95 percent. By using these rare-earth concentrate, high purity extract of single rare-earth oxides can reach 99-99.9 percent. And, in Gansu, the mechanized mining methods of Jinchuan nickel mine has greatly increased the nickel recovery rate along with the recovery rate for gold, platinum, palladium, osmium, ruthenium, rhodium, iridium and other precious metals.

Major research fruits have given impetus to the growth of China's light industry, accelerated the establishment of new industries and the transformation of the traditional industry. Paper varieties increased from 30-odd types in the early 1950s to the present 400 or so. Highly specialized papers are also being developed. A 4-micron capacitor (condenser) paper (1967), and a 500 Kv extra-high voltage cable paper (1980) were manufactured.

Oil workers at the Liaohe Oilfield, China's third largest.



Research on electrical light sources has progressed rapidly. More than ten types of light sources for general illumination and for instruments, as well as a variety of light sources for film, television and stage were successfully manufactured. In 1974, a high-voltage sodium lamp was successfully produced, and there is now a production capacity of almost two million a year. Beginning in the 1950s, China began to produce refrigerators, washing machines, vacuum cleaners, electric rice cookers and other household electric appliances. China is now quickly becoming the biggest household electrical appliance producer in the world. Finally, thanks to scientific research, the ceramics industry has been revitalized and the production of many traditional and famous kiln products resumed.

In the 1950s and 1960s, China's major efforts in the research and development for the textile industry resulted in two sets of spinning-weaving machines for cotton textiles along with printing and dyeing equipment. The technical goals and economic returns of the 65-type cotton spinning equipment reached international standards of the time. In the 1970s, research advanced on

spindleless spinning and a shuttle-free loom and, in the 1980s, advanced printing and dyeing devices, such as the highly-efficient singeing machines, the rotary-screen printing machines and flat-screen printing and dyeing machines were manufactured. In addition, a great quantity of researches were made in the techniques of spinning, weaving and dyeing on blended synthetic fabrics, manufacture of printing and dyeing equipment and in the techniques of printing chemically processed fabrics.

In 1964, a completely mechanized soda-producing technique was developed by Chinese chemist Hou Debang. It had an annual production capacity of 160,000 tons of soda ash and ammonium chloride. In 1966, cisbutadiene rubber was successfully synthesized and the setting up of a 15,000-ton installation in the early 1970s greatly expanded China's production of synthetic rubber. Between 1966 and 1976, China successively developed a production technique for synthetic ammonia using oil and natural gas as the raw materials and set up an industrial process with a chemical fertilizer catalyst capable of annually producing 300,000 tons of synthetic ammonia. This was the technical foundation for development of China's synthetic ammonia industry using oil and natural gas as raw materials. New varieties of agricultural chemicals quickly followed and helped meet the growing needs of preventing and controlling plant diseases and eliminating pests.

Since the mid-1950s, China's building material industry has increased production of cement products, and developed new building and glass fibre products. The manufacture of special glass and ceramics, man-made synthetic crystals and other inorganic, non-metallic materials has

Jiang Zemin, Yang Shangkun and other Party and state leaders talk with actors and actresses on September 15.



The music and dance of the Tang Dynasty (618-907) performed by the Song and Dance Ensemble of Shaanxi Province.



## Outstanding Performances Of the Second China Art Festival



Central Drama Institute performs highlights from the Peking opera *The Luosi Valley*.





Exhibition of Costumes of the Li nationality.



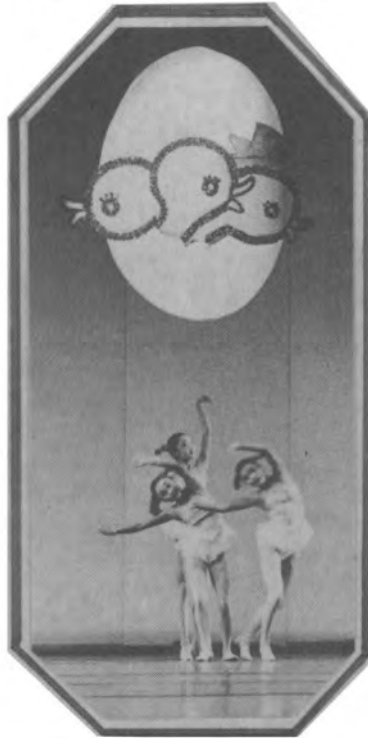
New ballet dancers Li Ying (female) and Pan Jiabin.

*Pagoda of Bowls* by the Shenyang Acrobatic Troupe.

Beijing Institute of Dancing performs *The Boy Who Raises Ducks*.



*Dance of Firewood Gathering*, a Li nationality creation performed by Hainan delegation.



Ding Jie of the Beijing Institute of Dancing performs *The Return of Mulan the Heroine*.





Dong nationality dance performed by the Amateur Nationalities Song and Dance Troupe of Huaihua Prefecture, Hunan Province.



The county official Bai Qing (performed by Li Xiaofeng), a character in the ancient Shaanxi opera *A Bungling Official*, performed by the Youth Experimental Troupe of the Drama Research Institute, Shaanxi Province.



*The Broken Bridge*, a part of the mythological play, *the White Snake*, performed by the Central Drama Institute.

Photos by Chen Zonglie, Xu Xiangjun and Yang Liming

*Top Restaurant* by the Beijing People's Art Theatre.



The dance *Rubbing Flaxen Thread* by the Amateur Nationalities Dance Troupe of Huaihua Prefecture, Hunan Province.



Dance performance *By Spring* by the Art Troupe of the DPRK.

The Bolshoi Theatre Troupe from the Soviet Union performs the ballet *Spartacus*.



"Solisti Di Veneto," Italy, in a concert at the Beijing Music Hall.



Japanese Cherry Visiting Delegation gives a performance.





met the needs of the country's defence and electronic industry.

A glass, antenna housing with a diameter of 44 metres for ground radar was manufactured and installed in 1972. In 1985, China began to research floating glass-forming technique and overcame many technical difficulties. In 1985, a 400-ton floating glass production line began operation. China's Luoyang floating glass production techniques, Britain's Pilkington method as well as America's Pittsburgh method are the three main floating production techniques in the world.

### Basic Industries

The famous geologist Li Siguang's theory of continental genesis of oils was the foundation for the discovery and exploration of China's northeast Daqing Oilfield in the 1950s. Since then, China threw off its "oil-poor" label and its need to import. The successive drilling of oilfields in Shengli, east China, Dagang to the north and Liaohe in the northeast in the 1960s kept up the steady flow of China's petroleum and natural gas reserves. Since the end of the 1970s, oil wells in Tarim Basin, Xinjiang Uygur Autonomous Region, have been quite successful and, in the South China Sea, the Beibu Gulf, the Yinggehai Basin, the East China Sea and the Bohai Sea, high-yield airflows have been drilled one after another. The water injection technology invented by Daqing Oilfield has ensured the steady increase in Daqing's oil output for the past two decades running.

In the 1960s, China's mastery of key oil refining techniques and the manufacture of related equipment pushed China's production techniques to world advanced level. Further development in the 70's and 80's kept China's petroleum production and refining technology level



Shanghai Zhongshan Hospital's use of new technology for the early diagnosis of liver cancer has an accuracy rate of over 90 percent. ZHANG YAOZHI

with world standards.

China's coal industry also went through great changes from a rather primitive and backward method of mining to the development of mining mechanization technique in the 1960s. Starting in the 1970s, China began using comprehensive mechanized mining techniques and turned out the specialized equipment needed for 60 percent of its retrievable coal seam reserves. Improvement came again in the early 1980's, when both the reliability and durability of the equipment kept pace with the international standards. The 1980s also witnessed the development of mining equipment designed to fulfil many functions as well as improvement in overall quality.

China's post and telecommunication system lagged far behind foreign countries in the years just following the founding of New China in 1949. During the 1950s and 1960s, China developed a 60-channel carrier cable, the 600-channel microwave suspension and the carrier terminal telecommunication systems. By the mid-1970s, all the technical goal of both the concentric coaxial cable with 1,800-channel car-

rier and the 4,000-MHz, 960-channel microwave telecommunication systems conformed to the relevant standards established by the International Telegram and Telephone Consultancy Committee. China thus joined the most advanced countries in carrier technology. The same was true of China's manufacture of the concentric coaxial 4,380-channel carrier and the 6,000-MHz 1800-channel telephone and coloured TV microwave telecommunication systems since the 1970s. The 6 and 11.6-metre satellite communication station facilities are now the backbone of China's satellite communication network.

China's irrigation system expanded rapidly since 1949 as the country harnessed its major rivers and built up a large number of sluice gates, dams, reservoirs, irrigation canals and pumping stations. In 1952, the People's Victory Irrigation Canal with a total length of 200 kilometres was built in Henan Province, a major step in channeling water to irrigate the fields of the lower reaches of the Huanghe (Yellow) River. In 1959, China successfully experimented with the out-

ward blasting method of dam-building, a technique since used in more than 40 dams. Since the first design of its turbine pumps in the 1960s, 100,000 turbines have been put to use. In the early 1980's, Hangzhou in China's Zhejiang Province was chosen by the United Nations Development Programme as the training centre for Asian and Pacific small river power studies. Important breakthroughs in China's dam-building technology include the completion of the Gezouba Dam in the upper reaches of the Changjiang (Yangtze) River in the 1980s and the hundreds of spin-off products resulting from the project.

China's achievements in railway construction demonstrate its ability to build railways, bridges and tunnels even in difficult geological and topographical conditions. Examples are the successful construction of the Chengdu-Kunming Line and the Baotou-Lanzhou Line in the 1950s, the Nanjing Yangtze River Bridge in the 1960s, and the prestressed concrete oblique-framed railway bridge over the Honghe River in

Guangxi Zhuang Autonomous Region, the oblique-legged and thin-arched steel bridge over the Hanjiang River at Ankang in Hubei Province, and the Dayao Hill Tunnel on the Hengyang-Guangzhou double track.

China's plane, automobile and ship-building industries started from scratch and the country has undergone the difficult transformation from an industry of repair and imitation to one capable of developing, designing and manufacturing its own products. The first China-made plane "Chujiao-5" was produced in 1954. During the 1960s, China succeeded in developing high-speed, high-altitude fighters, light and medium-sized bombers, and all-weather fighters. The final design of its all-weather, attack fighters in the 1970s marked the beginning of a new period for China's aviation technology and new developments in the 1980s further strengthened the country's national defence capability.

China built two large motor vehicle works in 1953 and 1969. The first batch of 4-ton-class lorries manufactured in 1955 was

modelled on foreign products. Since then, however, China has developed an auto industry of its own design and can now manufacture 5-ton-class lorries, cars and cross-country vehicles of different sizes.

The ship-building industry in China joined the world competition in the 1980s after overcoming numerous difficulties and setbacks. The country has first-class scientific research and experiment facilities and technological resources for designing and manufacturing both nuclear-powered submarines capable of carrying ballistic missiles and guided missile destroyers. In regard to civil shipping, China turned out a 10,000-ton-class oceangoing freighter *Dongfeng* in 1964. The first multi-purpose 10,000-ton-class freighter, designed and manufactured entirely in China in 1980, is actively competing in the world's shipping market and has given China a strong role in the field of ship-building technology. Today China can provide the world market with consumer boats, bulk ships and large refrigerator freighters of sophisticated technology. Finally, completion of the first semi-submerged drilling rig in 1984 led the ship-building industry into a new field of marine engineering construction.

The electron beam transport line of the electron-positron collider in Beijing.

YANG WUMIN



## Medical and Health

After liberation, the first goal of medical workers was the research, prevention and treatment of deadly infectious diseases. Cholera and smallpox were basically eliminated, the plague and infantile paralysis were thoroughly controlled and snail fever, rampant before liberation, essentially wiped out in two-thirds of the disease prone areas.

Medical research and treatment of liver cancer, esophagus cancer and chorioma are at an international level. For example,

China first proposed the hypothesis that mycosis could be the cause of esophagus cancer and was the first country to successfully treat chorioma with chemical medicines. A survey of 618 chorioma patients treated from the mid-1950s to 1981 shows that all lived active lives for more than five years and that some are still living after more than 20 years. One hundred and fifty-nine women of child-bearing age who suffered from chorioma and were treated have given birth to healthy children. The oldest is now 18 years of age.

China is well recognized for its achievements in the surgical techniques of reattaching severed hands and fingers and for its treatment of severe burns. Since the first successful surgical attempt to reattach severed hands in Shanghai in the early 1960s, China has made significant progress in reattaching severed arms, legs and palms, skin transplantation from one part of the body to another and in the use of artificial organ for implantation. It was in the late 1950s that China first succeeded in healing a patient with a burn area covering 89 percent of the body, thus overturning then-current medical judgement that patients with burn areas over 80 percent of the body were incurable. Since then, several thousand patients with burn areas of more than 80 percent have recovered after treatment and more than 100 patients with burn area of more than 90 percent have recovered. The recent success in the technology for burn treatment, known as "Moisture and Exposure Treatment," has transformed the approach to treatment of burn therapy around the world. The theory and use of acupuncture and moxibustion to relieve pain, originating in China, has been substantially expanded. This is true, in particular, in the theory of channels and



The high-powered "No. 12 laser experiment" equipment, developed by the Shanghai Optical Precision Machinery Research Institute of the Chinese Academy of Sciences, received state appraisal on June 27, 1987 and is now in normal operation.

WANG ZIJIN

collaterals of acupuncture and *qigong*, both of which have been the focus of increasing interest by numerous foreign countries.

In the 1950s, China's pharmaceuticals were copied from foreign countries. By the 60s and 70s, however, China already had the capability to research and manufacture such sophisticated compounds as hormone and anti-cancer drugs. The medicine furapromide, manufactured in 1963 to treat snail fever, was the world's first non-antimony oral drug. After 30 years of efforts, China can now produce 1,300 different medicines and 3,000 preparations, and is able to satisfy the needs of its domestic markets. The processes for manufacturing medicines have also improved during this period. One example is the two-step fermentation technique for manufacture of vitamin C, developed in the 1970s, while pharmaceutical companies in other countries were still using an expensive and complex procedure developed in the 1930s. In 1985, the right to use the new technology was transferred to Hoffmann-Le Roche Inc., Switzerland, the largest vitamin C producer in the world.

China is rich in medicinal plant resources and, as a result of many years' effort to develop new medicines from herbs, some internationally recognized medicinal compounds have entered the market. These include *dian-yuhong*, a new medicine to cure chronic granulocytic leukemia; crystallized snakegourd root protein, for inducing labor; and herb of sweet wormwood, regarded as the best anti-malarial medicine in the world.

The business of herb and plant preparation has greatly developed and now more than 60 varieties of pharmaceutical bases, formerly only found in the wild, such as the tuber of elevated gastrodia, are domestically cultivated.

Along with this expanded use of traditional Chinese medicines, more than 20 varieties of foreign plants found useful for medicinal purposes have been transplanted to China.

China's medical equipment and instruments industry got off to a poor start in the 1950s. Now, though, a wide range of medical instruments using sophisticated electronics, ultrasonic waves, laser, fibre optics and nuclear material are produced.





An electron storage ring in China's synchronous radiation laboratory.

FU ZHENXIN

## Environmental Sciences

In the 1950s, the study of meteorology in China was geared towards the provision of scientific data for nationwide weather forecast. In the 1960s, however, the emphasis shifted to expanding the weather forecast capability of the Changjiang and Huaihe river's valleys and areas to the south. A number of scientific results in storm forecasts, for example, were developed and in the 1980s, the weather forecast techniques reached new levels with the increased use of weather satellites, radar meteorological instruments, telemetering meteorological instruments and computers.

In 1958, a nationwide general marine survey helped Chinese scientists obtain systematic material covering China's offshore regions for the first time and, in the four related surveys of the late 70s, China's research of areas of the central Pacific provided a wealth of climatic information. These surveys were the scientific basis used in the selection of China's experimental long-distance carrier rockets' firing range. Survey data, such as that generated by the 1980 coastal survey, also is useful for coastal economic planning.

China's first shipboard equipment for desalination of sea water was developed in 1975 and following that, the desalination by use of electro dialysis, having a daily capacity of 200 tons, began operation in 1981. Between 1984 and 1985, Chinese scientists made their first exploration of the Antarctic, where they established China's first scientific exploration station, known as "Great Wall Station."

## Science and Technology

Although China's technological sciences really only began in the 1950s, it wasn't that far behind the developed countries, compared with the world standards at the time. And, in its pace of development, China has not been slow. Only later, in the 1960s particularly, did it slacken its pace for a time, but after the 70s, China's science and technology regained momentum. A slew of newly emerging industries and research institutes in electronics, laser, remote-sensing and biological engineering, all of which have since found wide application throughout society, was formed.

Electronics: In the 1950s, China developed and manufactured relatively advanced elec-

tron tube-based products. For example, in 1959, it successfully manufactured the first Model 104 large, universal digital electronic computer, marking China's electronics industry matching at international standards. The semi-conductor industry began in 1957 with the manufacture of China's first germanium triode and eight years later, the first integrated circuit was produced. In the late 60s, small-scale integrated circuits, containing less than 100 components, began trial-production. At the time the introduction of semi-conductors was opening new horizons in electronic design, China devoted its effort towards the manufacture of large and medium-sized integrated circuits. It was based on these advances that the third generation of computers was produced. In the early 80s, China made breakthroughs in first-generation, large-scale integrated circuits, including a super-computer capable of 100 million calculations per second.

China's nuclear era began in 1956. In the last 30 years and more, China has mined and refined uranium, produced nuclear fuel, and been able to build nuclear weapons. China's entry into the world's nuclear club was announced in October 1964 with the detonation of its first atomic bomb, its first hydrogen bomb in June 1967 and was followed up in 1971 by China's launching of its first nuclear submarine.

Nuclear technology has also been used for a myriad of scientific research and industrial applications. More than 600 types of isotopes have been produced to date for civil use in the medical, agricultural and industrial fields. Over 200 new horticultural varieties alone have been cultivated through radiation technology, a field in which China has a leading position in the world. Although nuclear energy for use as a power source had a

late start in China, the 300,000-kw Qinshan Nuclear Power Station and the Guangdong Daya Bay Nuclear Power Station are now under construction.

China's exploration of space has developed rapidly, and forms an integrated system of research, design, manufacture, testing and production. In 1959, it successfully launched its first rocket. In 1970, it placed its first satellite in orbit and, by the end of 1988, 25 satellites, including scientific and technical experimental satellites, retrieval remote-sensing satellites, ground-surveying satellites, and telecommunications

and broadcasting satellites, were successfully launched. These all provide economic, scientific, technological and military value while new applications are still being developed. Satellite ground stations, for example, using remote-sensing technology, have been set up and the satellite atmospheric imaging equipment has reached international standards.

China's astronautics industry, particularly the technology for launching satellites into earth static orbit, is among the world's most advanced. Another example is its ability, the world's third country to do so, to manufacture

low-temperature, high-energy rockets.

## Theoretical Developments

Beginning in the mid-60s, China made several major research breakthroughs regarding the synthesis of organic macromolecules. In September 1965, China was the first to totally synthesize crystalline bovine insulin which has the same size and biological characteristics of natural bovine insulin. And, again, in another breakthrough, in September, 1974, China was the first to synthesize a fragment of RNA (ribonucleic acid) nucleotide. Chinese scientists were continuing to synthesize the 41 nucleotides of RNA in 1979. In November 1981, China completed the synthesis of RNA from yeast alanine (Ala), and continued to lead the world in the synthesis of organic macromolecules.

Well-known Chinese mathematicians Chen Jingrun and Pan Chengdong have made important progress in the study of Goldbach's conjecture, the study of which had remained stagnant for 200 years. The achievement is universally acknowledged as the best in the field so far.

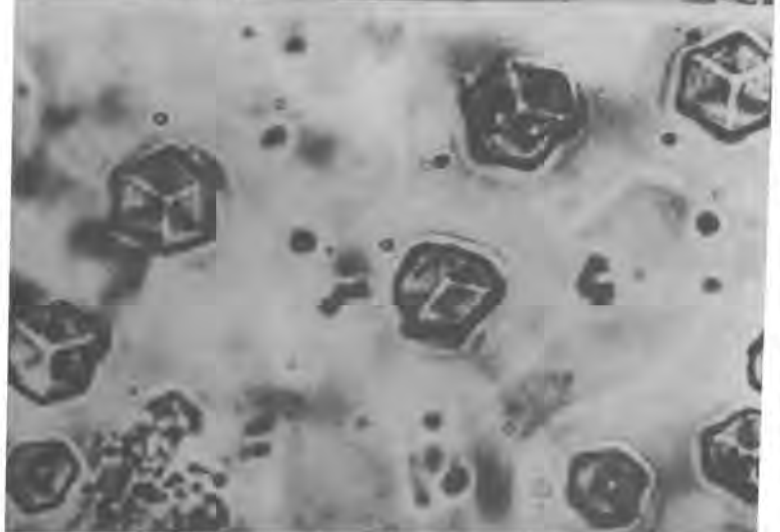
In 1959, Chinese scientists were the first to discover Sigma-negative hyperon, that is anti-particles carrying odd numbers of electron-gravity. This is a breakthrough in the study of basic particles.

In 1986, Chinese scientists developed a new 93 degrees Kelvin superconductor, a barium-based oxide made of barium, yttrium and copper, that reaches zero electrical resistance at a temperature higher than was before possible.

In 1988, the completion and operation of the electron-position collider in Beijing indicated that China's technological equipment was at an international level. □

(above) Chinese scientists injecting artificially synthesized protein solution into a white mouse to test the protein's biotic activity. (below) The insulin crystal protein as viewed under a high-powered microscope.

WANG ZIJIN



## Eyewitness Accounts of the Clearing of Tiananmen Square

In the more than 100 days which have passed since the putting down of counter-revolutionary rebellion in Beijing, tales spread by the Western, Taiwan and Hong Kong press, such as the "Tiananmen massacre," have been decisively rebutted by the facts and people have gradually come to understand the real situation. There are those, however, such as Wuer Kaixi and others, who after fleeing their country, still talk glibly about a "Tiananmen bloodbath." In order to help readers have a better understanding of the facts, we publish eyewitness accounts of the army's operation to clear Tiananmen Square on June 4.—Ed

**H**unger strikers report armed forces did not shoot people or run them over with tanks.

Hunger strikers Hou Dejian, Zhou Duo, Liu Xiaobo and Gao Xin, responded to the call of the people's government and the martial law enforcement troops to negotiate a peaceful withdrawal from Tiananmen Square. They witnessed the entire departure from the square and, in the end, withdrew themselves together with students.

**Zhou Duo** (a staff member of the Stone Group): I last saw Wuer Kaixi, head of the illegal autonomous students union of Beijing universities, at about 12 midnight on June 3. Afterwards, I heard that he had another attack of myocarditis and had been carried away from the square and, if true, it's clear that he could not have been in the square during the clearing operation. As an eyewitness, I am responsible for history. Whereas what I say is fact, Wuer Kaixi's comments on the "Tiananmen bloodbath" are sheer fabrication. He is not eligible for comments on the events of the evening of June 4.

During their withdrawal, some students turned round and abused the PLA soldiers. But,

the PLA men exercised great restraint and didn't open fire. At the start of the withdrawal, we walked slowly because so many people were crowding about. When we were leaving the Monument to the People's Heroes, I saw several armoured cars stopped in an area to the rear of the student procession. I clearly remember that a soldier opened the cover of an armoured car, leaned out and motioned the students to move quickly. That was about 5:00 am. We finally left the square at the southeast corner and walked to Xidan via Liubukou and the Concert Hall, where our group separated.

**Gao Xin** (a staff member of Beijing Teachers' University): On the afternoon of June 3, I saw several thousand highly disciplined armymen sitting on the ground to the west of Chairman Mao Memorial Hall as they waited for orders. The armymen who were encircled by the masses had no guns or clubs. At about 12:00 midnight, I heard sporadic shots outside the square followed by a government broadcast. Because it was very noisy, I only vaguely heard that a shocking counter-revolutionary rebellion had occurred in Beijing. Some students at the time became excited and others carried clubs. Assessing

the situation in the square, Liu Xiaobo, Hou Dejian, Zhou Duo and I all decided that we must keep to our stand for peace. So we persuaded students to keep back their clubs. Later, we found a machine gun and a submachine gun on the Monument to the People's Heroes. But, after much persuasion we got the students to keep the guns back. Afterwards, we decided that Hou Dejian and Zhou Duo should contact the troops and ask them to open a corridor through their ranks for us to withdraw, while Liu Xiaobo and I stayed on the steps which led up to the Monument to the People's Heroes. After Hou and Zhou returned and announced the decision of the army, the students began to withdraw by way of the southeast corner of the square. At the same time, some soldiers headed by a commander marched towards us. They fired their weapons at the loudspeakers set up by the autonomous students union of Beijing universities but at no time did they fire at the crowd. Tanks also began to move in a line from the north of the square to the south. The first was about 20 metres behind us. As we passed Qianmen tower, I lagged behind and stayed to the rear. I witnessed the entire withdrawal southward



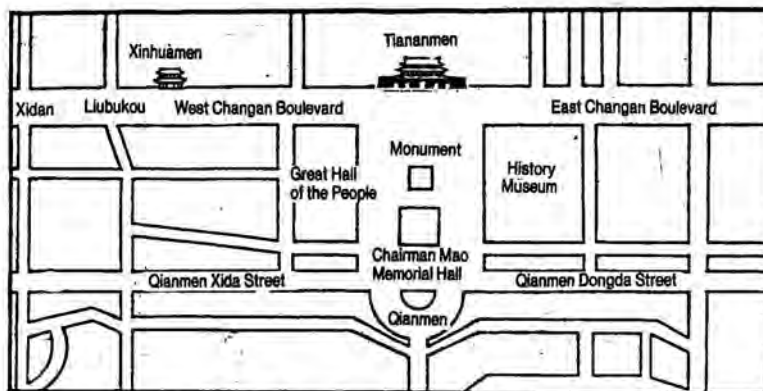
from the monument.

**Liu Xiaobo** (a lecturer of Beijing Teachers' University): Out of my sense of responsibility for history, it's necessary for me to say what I saw at Tiananmen Square. About 2:00 am on June 4, I heard Wuer Kaixi say over the loudspeakers that they would fight to the finish at Tiananmen Square. While talking he began to cough and wheeze, perhaps because of myocarditis. From that time on, I didn't see him or hear him give any announcement, because he lay on a litter to the east of our tents. We didn't find the litter as we were leaving. After a discussion with Hou Dejian, Zhou Duo and Gao Xin, Hou Dejian and Zhou Duo were sent to meet with the troops. We also asked the autonomous students union of Beijing universities to send two representatives. But, Chai Ling, one of the union leaders, refused.

I never saw army troops firing into the crowds. Nor did I see one person killed, not to mention a "bloodbath" on the square.

**Hou Dejian** (a composer from Taiwan) went into hiding in a foreign institution in Beijing for over two months after he left Tiananmen Square on June 4. During this period, there were many opinions abroad regarding his safety. Talking about the clearing of Tiananmen Square, however, Hou said, "In the whole process I didn't see a single person killed, neither student, resident nor soldier."

Hou has also said, "I didn't see any tank or armoured vehicle run into the crowd." I saw three or four tanks parked outside the square, and heard some gunfire when the students began to withdraw. Some ten fully armed soldiers rushed over and shot at the loudspeakers put up by the autonomous students union of Beijing universities at the corner of the Monument to the People's Heroes. Before, I



had seen on Changan Boulevard flashes of bullets streaking west to east across the sky. I also saw a few tear-gas shells fired towards the southwest corner of the square. When we were asked to withdraw by the troops, I saw more shots fired into the sky."

Hou Dejian said, "during my stay in the foreign institution, I wrote an article on June 12 'The Withdrawal From Tiananmen Square,' describing what I saw and heard." Hou said, "My friends thought the facts in the script are quite different from what they have heard. Yet I have written what I really saw."

Hou recalled that at three o'clock in the early morning of June 4, the atmosphere in the square was tense. Many students near the monument were unwilling to leave. "Liu Xiaobo, Zhou Duo, Gao Xin and I were there and after thinking it over, we felt that it was best that everyone should withdraw. We began to persuade the students to leave." "Many people at that time, including the four of us who are over 30 years old, were not very sober-minded except for two doctors from the Red Cross. The doctors suggested that we negotiate with the martial law troops and gain time so that we could all withdraw peacefully."

Hou talked about the negotiations between themselves and the martial law troops, "It was half past three in the morning. The

doctors, Zhou Duo and I stopped an ambulance at the west side of the monument and rode towards the north. A few picketers joined us. As the ambulance stopped at the northeast corner of the square we saw many troops on Changan Boulevard. We got out of the ambulance and ran towards the troops, but as we approached we heard the clicking of rifles. After the doctors identified themselves and introduced us to the troops, saying that we hoped to talk to the commanding officer. The soldiers relaxed a little. I heard them mention my name but quickly realized they were not hostile. The officer, standing close by, came over with four or five soldiers after being informed of our intentions. He appeared quite normal: a three-star senior officer, about 40, stocky and slightly over weight. After calmly shaking hands with us, he listened to our request and then when we finished speaking, asked us to stop our hunger strike. We replied that we had already done so. He then, in a very gentle manner, said he would consult the headquarters. Among the four of us, the doctors were the most self-controlled. They advised us not to move. They lifted their hands as they called on the commanders to hurry. He reappeared several minutes later and told us that his superior had agreed to our request. He also said the sa-

fest route for withdrawal was in the southeast corner. He gave his name as Ji, the political commissar, but I forgot his regiment number. We needed to know his name and regiment number to persuade the students. During the negotiations, commissar Ji said that if we succeeded in persuading people to withdraw from the square, it would be of benefit to all concerned. He seemed sincere in his intentions.

"With the guarantee of a safe withdrawal from the square, we walked back to the monument, picked up a microphone and announced to the students that I had taken it upon myself to negotiate with the troops.

"Even though we tried our best to persuade the students, things moved slowly. It was difficult to persuade them and we started to go back to ask the troops for more time. Zhou Duo, the two doctors and I headed towards the north again and halfway there, met the commissar. The troops had begun to move towards the monument because the deadline had come for them to carry out their orders. I ran back to the monument immediately upon hearing that students were shouting. At the time, I became muddled. I didn't care about anything except pulling the students up on the ground. Some of them began to withdraw slowly towards the southeast. I don't know how long the process of withdrawal took."

Hou also said, "I felt a little weak after two days without any food and all the running and shouting. Some students helped me to the emergency treatment station of the Red Cross near the Museum of Chinese History. At that moment I heard that students had finally left the monument, passed the Chairman Mao Memorial Hall and reached Qianmen. I was, along with the doctors and the wounded, about a hundred in all, were the last to

leave the square."

**Song Song**, (surgeon of the Beijing Union Medical College Hospital), who, together with Hou Dejian and others, negotiated with the martial law enforcement troops in the early hours of June 4, said, "I was sent by my hospital to the square for duty on the afternoon of June 3 and stayed through that evening. About one o'clock in the morning on June 4, I heard the government's broadcast asking students to leave the square. At that time, I was to the north of the monument treating several students injured by flying glass. From there, I also saw a burning car and heard shots from the direction of Changan Boulevard."

Song continued: "At the time, I heard slogans broadcast from the loudspeakers of the autonomous students union of Beijing universities such as 'fight to the bitter end.' Many students were excited, not at all cool-headed. I thought that I, as a doctor, should do something to help them withdraw from the square as required by the government. However, my impact on the students was minor. I thought of Hou Dejian and some others, older than the students and more experienced, and thought they might be able to keep calm. They enjoyed a reputation among the students, and it was possible they could play a role in what the students did next. Between two and three o'clock, I climbed to the top rung of the monument, on the north side, to find them. In my capacity as a doctor, I suggested it would be best if the students withdraw and that it would do no good if any trouble happened. Hou and others said they had the same idea, but that they were not members of the autonomous students union of Beijing universities, and that they were afraid their advice would not be taken. I suggested that they have a talk direct-

ly with the PLA. Hou and the others agreed, and hoped that I would go with them. At the western side of the square, we got on a minibus, which drove to the northeast, where we saw the boulevard was thronged with PLA men. Several PLA men stopped us to ask our purpose. Hou said, 'On behalf of four hunger strikers, I want to negotiate with the PLA to help students withdraw from the square in a peaceful manner.' Several minutes later, a PLA political commissar, named Ji, came back and said to us that the martial law headquarters agreed to our suggestion."

"During the withdrawal," Doctor Song said, "I saw with my own eyes that nobody was killed. I also saw no PLA men fire at the crowds, or any students battle with them."

**Wang Haiyan**, (professor and vice-president of the No.1 Hospital of the Beijing Medical University), said, "In the night of June 3, seven or eight key members of our hospital took part in rescue teams and were on duty in the square. In the small hours of June 4, as I began to doze off, I vaguely heard a broadcast announce a withdrawal from the square. I got up in a hurry, heard the *Internationale* sung by students at the square and saw their banners moving southward. Tanks in front of the Jinshui bridges were moving slowly forward. But as far as I could see, no demonstrator was run over or injured by them. Some army men in multi-coloured uniforms and carrying submachine guns came towards us and at about a metre's distance, I said to them 'We are medical workers despatched by the Red Cross.' An armyman carrying a video camera ordered other soldiers to draw back about three metres and I immediately walked forward and shook hands with him to express my thanks. Another soldier, around 50 years old, then stepped forward. I told

him we were all medical workers caring for the wounded and hoped we could safely withdraw under their escort. Soon afterwards, six columns of PLA soldiers came to protect during the withdrawal. At the time, day broke. I saw nobody was killed or run over. We left the square through a passage in the southeast corner."

A group of Qinghua University students was at the tail end of the crowds withdrawing from the square.

**Zou Ming**, (postgraduate student of engineering physics department at the university), said, "I went to Tiananmen Square around 8 o'clock on the night of June 3. At about 10 o'clock, the autonomous student union announced over the loudspeakers that it was quite possible PLA troops would enter Tiananmen Square between 12 midnight and 1 a.m. I stayed at the square because I wanted to know how the troops would treat the students and the masses. At ten minutes past twelve, I saw an armoured vehicle enter Tiananmen Square from the direction of Qianmen Tower and some people holding wooden clubs followed the trail of it. About nine minutes before 1 a.m. many troops came into the square from the eastern side of the Qianmen Tower and gathered at the eastern side of the monument. About 1:30 a.m., some troops also came from west Changan Boulevard. Standing near the national flag pole, I saw some people begin to throw bricks and bottles at them. I went towards Qianmen Tower, but because troops were moving in our direction, I returned to the eastern side of the monument. From there, I saw many soldiers coming out of the Great Hall of the People and surround the monument. It was there that the autonomous students union of Beijing universities broadcast the announcement that Hou Dejian

and others had contacted a political commissar of the army and arranged a peaceful withdrawal. Some students, however, still disagreed with the withdrawal. From my vantage point, leaning on railing at the eastern side of the monument, I saw a dozen or so soldiers walking through crowds of students. Staying in formation they asked students to give way and then mounted the monument steps. One soldier, who looked like an officer, took his automatic rifle and shot at the loudspeakers. Several soldiers then went to the southeast corner of the third layer of the monument, and tore down the tent from which the students were broadcasting. Soon afterwards, I withdrew with the line of students towards the southeast corner of the square. Looking back, I saw a soldier shooting at another loudspeaker of the autonomous students union of Beijing universities. Some students were cursing soldiers but the soldiers did not open fire on them. It was about 5 o'clock in the morning when I walked out of the square."

**Dai Donghai**, (student of the thermal energy department), said, "I arrived at Tiananmen Square about 11 o'clock on the night of June 3. Shortly after 12 o'clock, I heard the first rumble

of an armoured car and saw it move forward along the Museum of History from Qianmen Tower. About the same time, some people were pulling the iron fence railings on the square onto the road as roadblocks and an armoured car was set on fire near the east reviewing stand. As some people helped a wounded soldier to a medical rescue station located near the Museum of History they were pursued by others with wooden clubs. Afterwards, I went to the second level of the monument, where people from the headquarters of the autonomous students union of Beijing universities were giving out gauze masks and soda water for protection against tear gas. It was rumoured that a dozen rifles had been taken from the soldiers and I began to hear proposals over the loudspeakers to use the weapons for self-defence. But many objected to these proposals. When the clearing of the square started, I followed the crowds out of the square by way of the southeast corner. No one around me was killed or wounded as we left. I returned to my school at about nine o'clock in the morning."

(This is a report from five journalists including Qiu Yongsheng, Huang Zimin, Yi Jianru, Zhang Baorui and Zhu Yu.)

## The History of the MGM Project

by Meng Zijun

**R**ecently, the Tianjin Economic and Technological Development Zone (TETDZ) has signed a 70-year-term lease contract for 5.3 square kilometres of land with the MGM Development Co. of the United States.

This contract is the largest solely foreign-funded project in China since the implementation of reform and open policy and

marks a big step in China's opening to the outside world.

### Open Policy Bench Mark

After a ten-year effort, under the guidance of Deng Xiaoping, China's reform and opening-up policy is demonstrating substantial benefits.

Thanks to Deng's foresight and



determination, China has overcome many obstacles encountered in opening to the outside world.

—In 1979, Deng Xiaoping proposed the establishment of the Shenzhen, Zhuhai, Shantou and Xiamen special economic zones. In 1984, despite opposition and the problem which arose in the early stages, Deng reaffirmed his support.

—At the end of 1984, Deng Xiaoping put forward his bold policy to open 14 coastal cities. Since then, more than ten economic development zones have been successfully developed.

—In 1986, due to the austere economic situation, the development zones encountered difficulties. But when Deng Xiaoping visited the Tianjin Economic and Technological Development Zone in August, he reiterated his support by writing an inscription reading "The development zone has a bright future," and encouraged the people to improve management of the zone.

—During this past May and June, when Beijing encountered turmoil and a counter-revolutionary rebellion, some foreign investors and business people, unaware of the truth, had doubts about the country's stability. Deng Xiaoping made three clear statements in this regard, stressing the fact that both general and specific policies would not change. His statements were essential to strengthening people's conviction and stabilizing the confidence of foreign investors.

The special economic zones, economic and technological development areas, and tens of thousands of joint ventures and solely foreign-funded enterprises set up in the past decade, have all played a major role in developing China's economy. One concrete step, however, in the opening to the outside world was begun two years ago by various central government departments.

On July 7, 1987, the Special

Economic Zones Office under the State Council proposed the transfer of land use rights in designated areas, a proposal which the State Council has already accepted. Soon after, under the guidance of the State Land Administration Bureau and the Special Economic Zones Office, the Tianjin municipal government began a policy study and subsequent drawing up of regulations for the transfer of land use rights in the Tianjin Economic and Technological Development Zone.

Leasing the land use right and transferring it with compensation are a common practice throughout the world. For instance, development rights for some areas in the United States have been transferred permanently and land use rights in Britain and Japan have been transferred for up to 200 years. Such arrangements, however, are still a new thing in China. Legal revisions have to be undertaken to ensure that the transfer or leasing of land use rights can proceed only within those limits permitted by law.

On April 12, 1988, some articles of the Constitution of the People's Republic of China were revised at the First Session of the Seventh National People's Congress. For instance, Article 10, Section 4 was changed from its original wording, "No organization or individual may appropriate, buy, sell or lease land, or unlawfully transfer land in other ways," to its current reading, "No organization or individual may appropriate, buy, sell or unlawfully transfer land in other ways. The right to the use of land may be transferred in accordance with the law." Based on this change, the land administration law of the People's Republic of China has also been revised, clearly stipulating that the right to use state and collective land may be transferred according to the law.

On July 17, 1988, the Tianjin

municipal government issued the administrative regulations on lease and paid transfer of land use rights at the Tianjin Economic and Technological Development Zone, thereby establishing a legal basis for the lease and transfer of land use rights at the Tianjin Economic and Technological Development Zone.

### Malekpour's Vision

When the Tianjin municipal government drew up these regulations, a foreign investor with a long-term interest in land development arrived in Tianjin.

Mr M.G. Malekpour, an Iranian, comes from Seattle, Washington, USA. When he was a young man, he studied architectural design in the Federal Republic of Germany and later became an architect. After returning to Iran, he established a building company that engaged in land, industrial and housing development and successfully developed a satellite town in the north of the country. Later, when he moved to the United States, he continued his work.

When he was in Tianjin, Mr Malekpour was impressed by the convenient transportation network composed of the Beijing-Tangshan Railway Line, the Tianjin Xingang Harbour, the Zhangguizhuang Airport and the Beijing-Tianjin-Tangshan Expressway currently under construction. He believed that although the land value was presently low, the situation would dramatically change with the Tianjin Economic and Technological Development Zone becoming fully operational.

Mr Malekpour understood China's reform and open policy and, with the intuitive sense of a seasoned land and housing investor, began discussions with the Tianjin Economic and Technological Development Zone. His work bore fruit on November 21, 1987



Li Ruihuan, member of the Standing Committee of the Political Bureau of the Party Central Committee, meets with M.G. Malekpour, president of the MGM Development Co. of the United States.

when his company, MGM, signed an agreement with the zone to plan, within two years, the development of nearly four kilometres of undeveloped land and to generate investment funds for industrial construction. A lease for land use rights was to be signed after the relevant laws and regulations were perfected and ratified by the higher authorities.

In June 1988, MGM asked that the land to be developed be expanded from 3.9 to 5.3 square kilometers and that the term of the lease be changed from 50 to 70 years. The request was approved, relevant revisions made to the contract and on January 29, 1989, both sides initialed the contract. After more than a year of negotiations, both sides were satisfied.

### Unusual Circumstances

Just as the two sides were planning to sign the contract, however, the turmoil and a counter-revolutionary rebellion occurred in Beijing. This filled Mr Malekpour with worry about the plan's completion. His preparations had generated many contacts with corporations from the Federal Republic of Germany, the United States, Switzerland and Italy and he had planned to lead a group of

potential investors to Tianjin. At the same time, many companies were waiting for the supply of materials. Anxiously following developments, he was relieved to hear Deng Xiaoping's statements. Mr Malekpour's belief in China's bright future was strengthened and, deciding to go forward with his plan, made arrangements to visit Tianjin to sign the contract.

Before signing the ceremony, Mr Malekpour told a press conference in Tianjin that China's open policy was successful. He would use all his resources to build the best project in the world, and the signing ceremony would take place on August 8.

Both Nie Bishen, acting mayor of Tianjin, and James Lilley, American ambassador to China, attended the signing ceremony. At the ceremony, Zhang Zhao-ruo, deputy mayor of Tianjin in charge of foreign economic relations and trade, said, "The MGM project is the largest to date in leasing land use rights. It marks both China's will for greater reform and the foresight of foreign business people to have full confidence in China's future. Tianjin municipal government takes seriously the task of safeguarding the interests of foreign investors and will give its all-out support to

ensure the project's success." Mr Malekpour stated that it was his intention to build the world's most unique industrial zone (the Malekpour Comprehensive Industrial Zone), which gives China a route to enter the world's markets and foreign industrial manufacturers a way to invest in the country.

On August 10, Li Ruihuan, mayor of Tianjin and now a member of the Standing Committee of the CPC Political Bureau, met with Mr Malekpour and the American Ambassador, James Lilley, in Beijing. He told them, "The Chinese government has attached great importance to the contract signed between you and the Tianjin Economic and Technological Development Zone." He also said that it is a historical necessity to carry out reform and opening while abiding by the four cardinal principles in order to make China strong.

According to the contract, MGM will pay US\$3.25 per square metre of land and within the first five years will invest US\$300 million in infrastructure construction and US\$300 million in building a door-shaped 52-storey twin tower, the design of which is intended to symbolize China's opening to the outside world. Thereafter, MGM will generate an estimated US\$2 billion of investment for establishing advanced industrial projects.

Products of the projects, mostly foreign owned, in the Malekpour Zone will be in line with China's policies and law; these projects are entitled to all the benefits provided by the development zone. They shall export most of their products, creating an annual output value of more than 10 billion yuan.

It is expected that most products of the TETDZ will be sold abroad and that, by the time the project is completed, it will generate a 10 billion yuan profit annually. □

## Folk Arts of Inner Mongolia and Gansu

**B**eijing audiences were treated to a rich, colourful and wide selection of folk arts from the Inner Mongolian Autonomous Region and Gansu Province during the recent Second China Art Festival.

Artists and master craftsmen discussed their works and the history of their regions at the exhibition held at the China Art Gallery.

Of special note from Inner Mongolia in northern China were arts and crafts related to horsemanship, archery and wrestling—sports Mongolians excel at. On display was an exquisitely designed saddle with a sculpted flower pattern and inlaid with precious stones. There were also embroidered garments for wrestling and an embroidered bag used for carrying arrows. The Mongolians were very skilful at shooting from the back of a galloping horse.

The folk art exhibition focuses on the life of the Mongols and other minority people like Daur, Ewenkis and Oroqens, all of whom have contributed colourful and beautiful art to what's known as the "Northern Grassland Culture."

Brightly coloured embroidered dresses with beautifully beaded tiaras were on display along with embroidery intertwined with intricate floral patterns. Woollen blankets, yellow and green Mongolian cattlehide boots with a raised pattern and turned-up toes, and delicately carved ornaments made of bone could also be seen.

The exhibition also featured the Mongolians' skill in metal work with fine examples of casting, sculpting and engraving of flowers in milk pails, knives and bowls.

The influence of Buddhism was featured in frescoes, paintings and woodcuts. Of particular interest were chess pieces carved of wood in the shape of animals. (Animal husbandry is the main source of work for Mongolians.)

The Daur, Ewenkis and Oroqens are mainly hunters, which provides the catalyst for their artwork. The hide of the roe deer, a small, delicate Eurasian species found throughout the region, is used to make garments and gloves with numerous flower designs. The bark from the birch tree is used in the creation of intricately carved containers.

Turning to Gansu Province in northwest China, a blending of various cultures from this "cradle of civilization" was reflected in the artwork and multi-coloured costumes.

From east to west, Gansu Province covers more than 2,000 kilometres and is home to a dozen nationalities, among them the Hui, Mongols, Tibetans, Dongxiangs, Yugurs, Baoans and Hans. For generations, they have been enriching one of the world's oldest cultures.

The famed "Silk Road," along which camel caravans carried goods and the much-sought silk in and out of China, threaded its way through Gansu. Buddhism was also carried into China along the "Silk Road." Shining examples of the Buddhist cult are found at the Mogao Grottoes at Dunhuang, Mount Maiji Grottoes and the extensive Binglingsi Buddhist Caves.

The exhibition featured Gansu painted pottery and painted house base dating from the Yangshao culture around 5,000 years ago—the oldest painted piece found in China. The painting on the house base shows

three people, two of whom are naked, and a rectangular basket containing two reptiles. Experts concluded that the people were worshipped idols.

Also displayed were bronze warriors and horses, nearly 100 pieces, unearthed from a tomb of the Han Dynasty (206 BC-220 AD) in 1969. The display included 39 horses, 14 chariots, 17 warriors and 28 slaves. The set is not as large as the famous army of thousands of terra-cotta soldiers found guarding the tomb of Qin Shi Huang near Xian in Shaanxi Province, but it reflects the ancient bronze casting techniques used in Gansu.

The eastern and central parts of Gansu Province are noted for brick and stone carvings while the western part of the province features murals and jade carvings. The rich imagination of folk artists from various ethnic backgrounds is portrayed in lacquered paintings, papercuts, shadow figures, toys, masks, wood, stone and brick carvings and colourful embroidery work. Common themes are fertility and the worship of animals. An example is the brightly coloured animal-shaped pillows, each having a hole in the centre where the sleeper puts his ear. For girls, there is the "frog-shaped" pillow which is supposed to bring about "strong child-bearing capacity." "Tiger-shaped" pillows are for boys to make them grow up "strong and healthy like a tiger."

The art work of Gansu has not only attracted Chinese collectors but interest from foreign countries. In recent years, hundreds of thousands of valuable artifacts have been displayed in museums and galleries and millions of pieces have been sold throughout the world.

by Wei Liming



## Athletic Talent Seen at Second National Games

**B**etter quality athletes and an increase in the number of participants at the recent Second National Youth Games should ease China's acute need for junior athletic talent, said Xu Yinsheng, vice-minister of the State Physical Culture and Sports Commission.

Aimed at discovering young talent, the 10-day games at Shenyang in Liaoning Province ended in mid-September after intense competition. More than 4,000 athletes under the age of 18 from all parts of China competed in 26 events. In track and field, Jin Bingjie clocked 43 minutes 15.6 seconds for a new world best in the women's 10,000-metre track walking. Breakthroughs were also seen in swimming, shooting, archery, weightlifting and cycling with three athletes bettering Asian records and five athletes breaking national records. Thirty-seven national youth records were set and 26 national junior records were broken. Quite a number of young hopefuls—table tennis player Wang Chen, and gymnast Zhang Wenning—turned up in China's traditionally strong events. Progress was also seen in China's traditionally poor events of swimming and track and field, thanks to Jin's win. And there was potential in football, basketball and volleyball.

Compared with the inaugural competition held four years ago, the games attracted a higher calibre of athletes in such events as gymnastics, weightlifting, badminton and synchronized swimming, Xu said. More attention has also been paid to discovering talent and training them both physically and psychologically. Furthermore, these games

showed the winners of any given event weren't coming from the usual provinces. For example, Liaoning Province in the north collected four gold medals in boating events while central Shaanxi Province picked up two, breaking the pattern in which athletes from southern provinces pocketed all the golds. The 62 gold medals in swimming were shared by 10 teams, with athletes

from Henan, Shandong and Yunnan provinces showing remarkable progress.

Commenting on these achievements, Xu said that many junior athletes have reached or come close to adult record-setting standards. Some of them have even reached or come close to world or Asian records.

However, Xu said, the Second National Youth Games also revealed problems needing prompt attention, such as the lack of scientific and basic training and a limited supply of new talent. □

## TV Serial Reflects Minority Life

**A** significant historical record is being presented in a 16-episode television serial that depicts the traditional customs of the many minorities as

well as the Han people who live in the shadow of the Great Wall.

*Amorous Feelings for the Great Wall*, which recently started showing in Beijing, is a sister

A bridesmaid of the Yuku nationality and her friends prepare for a wedding.





An old man of Han nationality who lives at the foot of the Great Wall.

programme to last year's highly successful *The Ten-thousand Li Great Wall*.

Taking the Great Wall, symbol of the Chinese nation, as the focal point, the TV serial looks at the lives of the 21 minorities living near the Great Wall. The minorities—Hui, Uygur, Tibetan, Mongolian, Xibe and Salar to name a few—have distinctive national features in economic, religious and traditional activities. The programme is the first of its kind to give an overall view of the varying nationalities in north China.

Production of *The Ten-thousand Li Great Wall* took two years and a 100,000-kilometre journey to complete. Television workers from China's 10 provinces, municipalities and autonomous regions were involved. The production focused on the historical transformation, events and people, architecture and folk

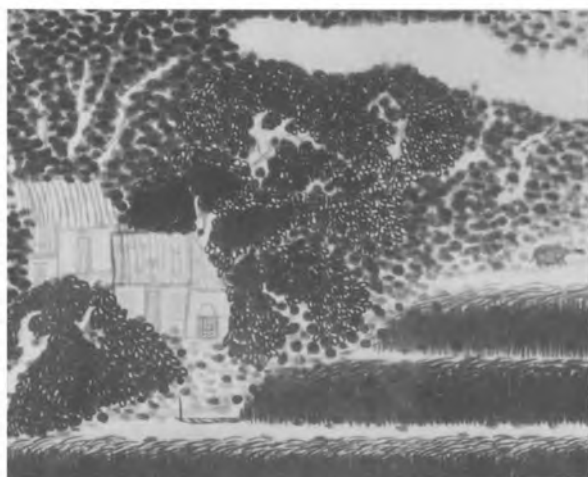
tales surrounding the Great Wall. *The Ten-thousand Li Great Wall* was highly praised both domestically and internationally. This time, the same production team, with support from the China Great Wall Society and the Beijing Yanhai Development and Trade Co., produced *Amorous Feelings for the Great Wall*.

Zhou Yuanzhao, one of the screen writers, said that because of the influence of modern life, some minorities along the Great Wall are changing their original lifestyle. This may lead to the extinction of their traditional customs, Zhou said. The latest television serial has captured many valuable scenes, providing a significant historical record. □

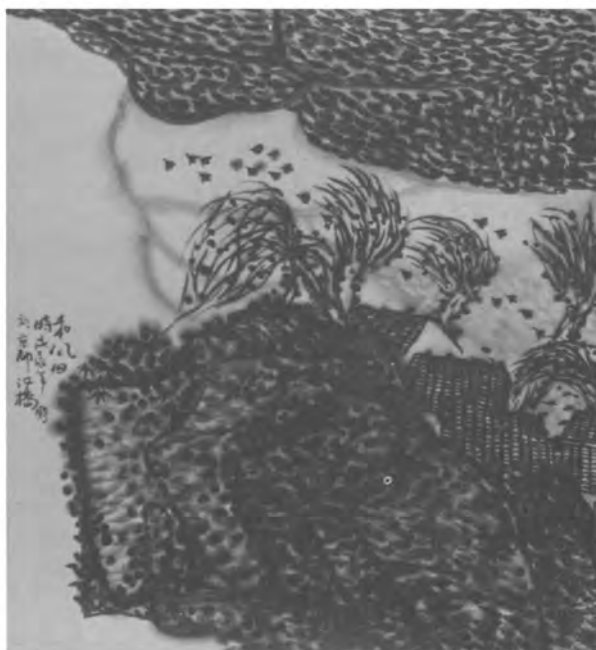


## Ink and Wash Paintings by Qiu Hanqiao

Born in Xiaogan county, Hubei Province, in 1959, Qiu Hanqiao is an artist in the Shenyang Military Command Headquarters. He specializes in Chinese landscape paintings. His work allows viewers, while appreciating the scene, to imagine that they themselves are roaming far afield.



Homeland.



Breezes.

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### ART PAGE

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Mountains and Waves.



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