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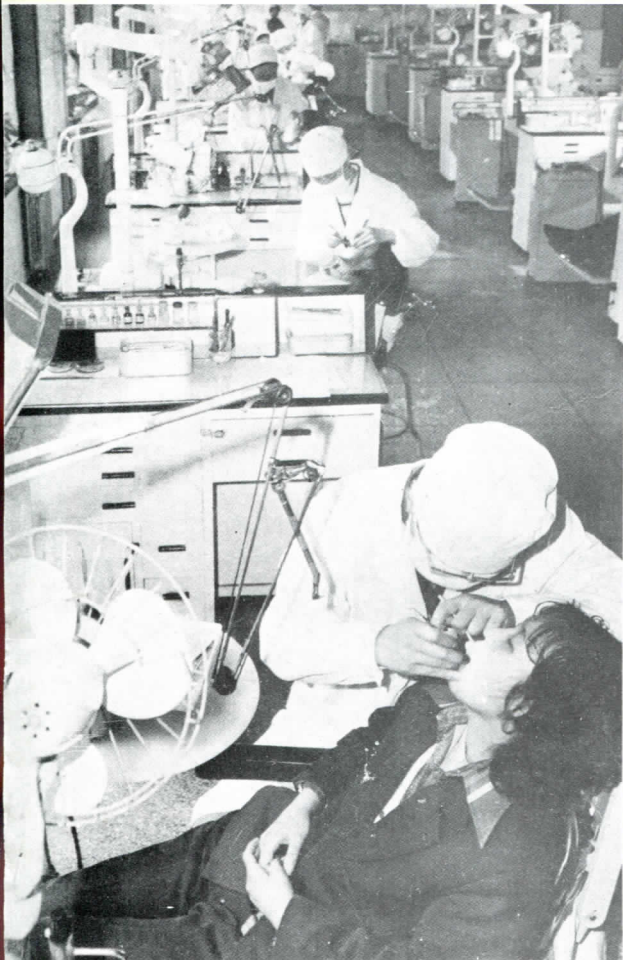
Vol. 29, No. 34

August 25, 1986



China's Space Industry

Huaxi (West China) Medical University



Doctors of the College of Stomatology Huaxi Medical University attend patients.



The bell tower on the campus, built in 1915.

President Cao Zeyi (right) of the university with graduat students.

SPOTLIGHT

The 76-year-old Huaxi Medical University is situated in the southern suburbs of Chengdu, the capital of Sichuan Province. The university has six departments, three hospitals and 16 scientific research and testing centres including a laboratory for nuclear medicine.



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HIGHLIGHTS OF THE WEEK

Improving the Party's Style of Work

■ A good start has been made in rectifying the Party's style of work, but much remains to be done in the next two years or so, in order to achieve the fundamental improvement necessary for the successful implementation of the policies of opening up to the outside world and revitalizing the domestic economy (p. 4).

Minister for Public Security Speaks

■ Ruan Chongwu tackles the questions of law and order, crime, prostitution, and the death penalty in China while meeting foreign journalists (p. 12).

China's Space Technology Takes Off

■ The first of two articles on space technology outlines the great strides made in China over the last 30 years which have seen 18 successful satellite launches and orders from abroad. The second introduces a space specialist and China's rocket and satellite factories (p. 21).

Tutu in Beijing

■ Archbishop Desmond Tutu, a Nobel peace laureate, who made a one-week visit to China from August 8 to 15 observed that China was not the rigid regimented society people imagined, but a society of diversity (p. 5).

Behind OPEC's Accord On Oil Production

■ The eight-month "oil price war" has ended with OPEC's recent agreement on oil production quotas. There are lessons to be learnt (p. 9).



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More on Improving the Party's Style of Work

by An Zhiguo

The style of work of a party in power is not only a matter of life and death to the party alone. It also concerns the future of the country. It is only natural that friends who are concerned with Chinese affairs should closely follow the development of the work style of the Communist Party of China (CPC).

In January this year, we published an article in this column entitled "Rectifying the Party's Style of Work." It discussed the CPC's efforts to restore and carry forward the fine style of work which was seriously distorted by the "cultural revolution." It also relayed the Central Committee's call to central organizations and the Beijing municipal organizations to set an example in this respect.

Now, what has been achieved seven months later? On the whole, the campaign has been developing well and some progress has been made. Party committees from the centre down to the local levels have placed the question high on the agenda and are tackling it in a down-to-earth manner.

Today, a situation in which the whole Party is involved in rectifying its style has begun to take shape. The main results are as follows:

- A number of major violations of law and discipline have been investigated and dealt with. Officials, including a few senior and middle-level Party cadres involved in these cases have been duly punished according to Party and government discipline. Some have been under judicial

investigations to see how seriously they have been implicated in a crime. For instance, a serious case of smuggling by the Guangyu Company under the Ministry of Astronautics Industry discovered last February involved a minister, a vice-minister, five bureau officials and four officials at or below the section level. Four of those who violated the Criminal Law have been arrested with approval from the state procuratorial organization and dealt with according to law. Former Minister Zhang Jun and Vice-Minister Cheng Lianchang, who committed serious bureaucratic errors, were held responsible for dereliction of duty and given a serious warning by the Party. All this demonstrates the principle that "no matter at which level they are working, officials who have committed wrongs or crimes will be dealt with severely and resolutely." As a result, misgivings have decreased, and the saying that "only flies but not tigers will be hit at" has been proved unwarranted.

- Bureaucratism has been criticized and the work style of offices has improved. Central government departments have sent thousands of senior and middle-level cadres on fact-finding tours at grass-roots, and to help local units solve whatever problems they may have.

In May, *Renmin Ribao* (People's Daily) published a letter of criticism by six Communist Party members, exposing the dilatory style of work and low efficiency of the office of the State Planning Commission, and offered their suggestions for improvements.

The CPC State Organ Party Committee transmitted this letter to Party organizations in the ministries, calling on them to adopt effective measures to overcome bureaucratism. Now, the office of the State Planning Commission has markedly raised its work efficiency; improvement of varying degrees has also been made by other state organizations.

- Initial results have been made in correcting malpractices in various industrial fields. These refer to the abuse of power by officials in allocating materials in short supply to satisfy personal interests. For example, some officials in the building trade lined their pockets by exaggerating the costs of construction projects and subcontracting work. Certain officials in the power industry, taking advantage of energy shortages, often cut power to put pressure on users and to blackmail them into paying more. In the transport industry, some misused their power by dispatching motor vehicles to extort money and materials from their clients.

Since the beginning of this year, the post, telecommunications, railways and construction departments controlled by the central government have achieved initial results in discovering and solving serious problems and working out appropriate rules and regulations. Despite their efforts, much remains to be done because there are still many complaints about unhealthy developments.

- The "six evil trends" existing in Party and government organizations have almost been brought



Bishop Tutu's Stay in China

Bishop Desmond Tutu of South Africa, a Nobel peace laureate, made a one-week visit to China between August 8 and 15, touring the cities of Shanghai, Xian and Beijing.

Tutu and his wife came to China as guests of the Three-self Patriotic Movement Committee of the Protestant Churches of China, the Christian Council of China and the Chinese People's Association for Peace and Disarmament.

At his meeting with Premier Zhao Ziyang on August 14, which he called the highpoint of his visit to China, Bishop Tutu was assured that the Chinese government and people always sympathize with and support the South African people in their struggle against apartheid and for racial equality.

The Chinese Premier strongly condemned the South African authorities for stubbornly continuing their policy of apartheid. "The brutal suppression of the

black people by South Africa can only arouse stronger resistance among the people and more severe denunciation by the international community," he added.

Zhao expressed his conviction that the struggle of the South African people will achieve final victory so long as people from various walks of life close ranks, unite all possible forces at home and abroad and adopt a variety of forms and means in the struggle. He said, "by their perverse acts, the South African authorities are, as a Chinese saying goes, 'lifting a rock only to drop it on their own feet.'"

Bishop Tutu said that he was very grateful to the Chinese people, who support the South African people in their struggle against oppression and injustice. He added that the people of South Africa could learn much from the Chinese people, who had thrown off the yoke of colonialism long ago.

under control. These trends refer to Party and government cadres engaging in business or running enterprises; competing for imported limousines; indiscriminately sending people abroad; travelling on public funds; using public money to give dinners and gifts or making illegal gains.

The check put on these unhealthy trends has strengthened the Chinese people's confidence in the Communist Party.

In short, while a good beginning has been made to rectifying the Party's style of work, the goal of a fundamental improvement has not yet been achieved. According to authoritative sources, the work in this regard will continue for at least two more years. At present, efforts will be concentrated on investigating and tackling violations of law and discipline, rectifying malpractices in different industries and improving the conduct of office staff.

Two years from now, while the existing unhealthy trends have been overcome, new ones may emerge and will need to be rectified. Looking to the future, we can see that this campaign must continue throughout the country's reform. Only by so doing can the policies of opening up to the outside world and revitalizing the domestic economy be implemented successfully. ■

Tutu and wife on the Great Wall.



Zhao told Tutu: "You command the respect of the South African people as well as the people of Africa and the world as a whole because you are in the van of the struggle against apartheid together with the black people there. We in China appreciate your just cause and noble spirit."

The same day, Tutu delivered a speech at the Great Hall of the People in Beijing, reiterating the opposition of the South African people to the unjust society in South Africa.

He told the 600 people from different walks of life in the Chinese capital that the South African government must lift the state of emergency, release political prisoners, and negotiate with the real representatives of the people to work out a new constitution.

Tutu called on the international community to intervene and take sanctions against South Africa. He also urged the South African government to act before it is too late.

On the situation in South Africa, Bishop Tutu said that the

South African people, who have been carrying out a non-violent struggle against apartheid, are now facing escalating violence from the South African government. Some 2,000 black people have been killed since the government promulgated the new constitution.

Tutu told the Chinese audience that although he is a Nobel peace laureate and has been elected Archbishop of Capetown, he has no right to vote, while an 18-year-old white person can vote.

Bishop Ding Guangxun (K.H. Ting) of China who accompanied Tutu on the visit said at the meeting that Chinese Christians are greatly concerned about their black brothers and sisters in South Africa who are suffering under apartheid day and night.

During his stay in China, Tutu said, he felt quite at home and he and his wife were blessed with love by their Chinese brothers and sisters.

In Shanghai, Tutu called on Bishop Louis Zhang Jiashu, dean of the Chinese Catholic Bishops

College, and visited the well-known Xujiahui Cathedral. He also preached to more than 1,000 Catholics at the Community Church of Shanghai, appealing for the safeguarding of human equality and dignity.

Tutu also visited a factory, a children's palace and peasants' homes. He also toured the Great Wall, where he told reporters that he jogs two or three miles a day.

At the end of his visit, Tutu said his China visit left an indelible impression on him. China is not the rigid regimented society people imagined, but a society of diversity. People holding different views could exchange them and live peacefully.

And he said he was pleased to see that people in China enjoy the freedom of religious belief. In Shanghai alone, there are 23 churches. "I saw many people going to church on Sunday," he said. The bishop told reporters when he left China for Jamaica, he carried away very happy memories and the obvious concern of the Chinese people about the situation in South Africa. ■

Returned Taiwan Pilot Flies Mainland Route

Wang Xijue, a former cargo pilot for Taiwan's China Airlines and now a deputy director and deputy chief pilot for the Civil Aviation Administration of China (CAAC) made his first flight since coming to the mainland on August 10. Wang flew the Beijing-Shanghai route as captain of a CAAC Boeing 747.



Adult Education Comes into Fashion

Zhang Baifa, 51, is a labour hero of national calibre and, as deputy mayor of Beijing, unquestionably a prime mover behind the city's burgeoning construction. But for a number of years he almost dropped from public view until late last month, when he hit the headline as one of the first leading municipal officials to be awarded a university diploma. It was not easy, however, for this former construction worker with only a primary school education and a failing memory to accomplish this. "Several times I wanted to call it quits," he says laughing. "But at last I pulled through and graduated."

Zhang is just one of tens of thousands of "night school" students in Beijing. According to the Beijing Municipal Adult Education Bureau, more than 20,000 people graduate from evening universities, worker's colleges, the TV university and correspondence schools in Beijing each year, nearly twice that of regular universities and colleges. In these times of reform and modernization, all people—old and young, rural and urban, workers and artists—need to learn. Since China is still not in a position to build as many universities as developed countries, and because the government spends 200 to 500 yuan per student in adult education each year as against at least 1,000 yuan on a regular university student, adult education is seen as a practical way to foster talented persons who were denied the opportunity to learn at an earlier age. There are more than 90 such schools in Beijing now. Most of the students are over 25. One of them said, "We are a delayed generation. But time does not stand still just because we lost important years of our lives during the 'cultural revolution.'"

Society does not forgive our ignorance."

With this approach, the "delayed generation" has returned to formal education with a determination to do better than others. Naturally they face many difficulties. Their children need them, their spouses need them, their aging parents need them, but the time they can share with their loved ones is limited, and they feel sorry about that. Zhang the deputy mayor, for example, went home once a week during his school years though he loved to stay with his family. "I had a poor grounding in mathematics, and I had to study late into the night in order to catch up with others," he said. Another young man, Wang Wenxuan, has a father who is hemiplegic, but he is too busy to look after him, and has to leave this task to his wife, who also takes care of all the household chores. "Whenever I see other couples go to cinemas or stroll in parks, I feel ill at ease. But love doesn't need to say sorry. I will repay my dear wife with an excellent school report."

For many other adult students, the problem is not so much emotional as financial. They have to pay for their tuition; some have had their bonuses docked because their leaders don't support them in their studies. Still, they press on with a purpose and steadfastness typical of China's "delayed generation."

Wang Daji, 38, is a suburban Beijing middle school teacher who is often seen riding a long-distance bus from his school to the Beijing Normal College where he studies. Since classes finish after the last bus is gone, he has to spend three nights a week on the benches in the waiting room of the Beijing Railway Station.

Liu Xiaoling found herself pregnant shortly after she started her first year of study. She was so sick that she could not get to classes for sometime. Unwilling to lose the hard-won learning opportunity, she asked her husband to attend the classes for

News in Brief

A new edition of 68 articles written by the late Chairman Mao Zedong between 1921 and 1965 will be published in September on the 10th anniversary of his death. Some of the articles have never been published before. In addition, other new books relating to Mao—*Selected Poems of Mao Zedong*, *Reading: Mao Zedong's Hobby*, and an English edition of *Mao Zedong: Biography-Assessment-Reminiscence*—are to be published next month.

Construction of China's largest heavy ion research laboratory is now in full swing in Lanzhou, capital of Gansu Province. It is expected the work will be completed in 1988. Built by scientists of the Lanzhou Institute of Modern Physics with a total investment of 100 million yuan (about US\$27 million), it will become China's centre for experimental ion physics on completion.

Archaeologists in China have discovered part of a painting dating back 5,000 years in Qinan County, Gansu Province. It is drawn on the ground of one of the ruins at Dadiwan in carbon black. The painting shows a man-like figure with long hair, crossed legs and hands holding stick-like objects, a figure resembling a walking woman on his right and two animals underneath.

her and tape-record the lectures. Then she had twins, a son and a daughter, who brought her double happiness, but also double trouble. She couldn't sleep well with the postnatal vocal duet of two crying babies. Sleep soon became a luxury for her.

Examples like Wang and Liu are many, but are these people just after a diploma?

A poll indicates that 80.4 percent of students go to night schools to "learn knowledge systematically," 7.6 percent want to "work better," 6 percent are learning so that they can give their children "a good upbringing," and 6 percent are seeking a diploma.

Facts prove that the quality of such schools is good and many students have become indispensable members at their workplaces. Indeed, adult higher education has now become part and parcel of higher education in China. ■

by Chen Dongjing

Beijing Desert Threat Recedes

Despite the threat of sandstorms, Beijing is unlikely to become a desert—thanks to afforestation efforts over the past few years.

This conclusion was reached by 14 scientists of the Lanzhou Desert Research Institute of the Chinese Academy of Sciences, who spent six months recently investigating conditions in Beijing, Tianjin and three rural areas in north China.

"The issue of Beijing's sandstorms has aroused universal concern and caused a great deal of argument over the past few years. But the actual situation is not as bad as some people imagine," declared Chen Guangting, an expert of the institute and member of the group.

"Historical records of the last 200 years show that Beijing, a city with a total area of 16,800 square kilometres and an average annual rainfall of 645mm, is not a semi-dry area, but a semi-moist area," continued Chen, a 1964 graduate of the Lanzhou University Geology Department.

Relying on data collected during the investigation, which also included the three areas of Tangshan, Chengde and Zhangjiakou, Chen said sandy wasteland occupied only three to five percent of the total area of Beijing. Because of continued afforestation, the environment of Beijing was taking a turn for the better.

Large-scale planting of trees and grass has been carried out in China since 1978. Thanks to the creation of three tree belts in northeast, north and northwest China, 10 percent of the country's desert land is under control and conditions in another 12 percent are much better.

However, scientists warn that sandstorms still pose a serious threat to the Chinese capital and the trend of desert growth in north China should not be overlooked.

According to these scientists, random felling of trees in some areas must come to an end and greater efforts should be made to plant trees and grass.

At the same time, they suggest that more grass such as sweet clover should be planted on the hills surrounding Beijing, instead of trees, and more winter wheat should be planted on the plain, instead of peanuts, sweet potatoes, and potatoes, to prevent further soil erosion. ■



China & the World

Hu Yaobang Meets Kemichi Koyama. Hu Yaobang, General Secretary of the Chinese Communist Party, on August 15, met Kemichi Koyama, Japan's representative on the 21st Century Committee for China-Japan Friendship, and told him that it is wise for Prime Minister Yasuhiro Nakasone to decide against paying homage Yasukuni Jinja Shrine. He said the decision shows respect for the sentiments of the Asian people and history. It is conducive to maintaining Japan's image as a defender of peace internationally, conforms to the fundamental interests of the Japanese people and will stand the test of time.

Hu said, "We always held that the Japanese people are also victims of Japanese militarism. It is understandable for the Japanese to cherish the memory of their relatives who died in the war and pray for peace in various forms. They have our deep sympathy."

Beijing Hosts International Aviation Symposium. The Civil Aviation Administration of China (CAAC) and the McDonnell Douglas Corporation of the United States co-sponsored a three-day international aviation symposium beginning on August 11 in Beijing. The more than 30 participating senior planning and management executives represented 12 foreign airlines and aviation manufacturers from the United States, Britain, Canada, West Germany, the Philippines and Hong Kong.

OPEC

Interim Accord Raises Hope

OPEC has recently reached an agreement on oil production quotas, thus showing the willingness of its members to stabilize the world oil market and the world economy as well.

On August 5, the 78th ministerial conference of the Organization of Petroleum Exporting Countries (OPEC), after nine days of hard bargaining, declared that 12 of its 13 member countries (Iraq excepted) had agreed to pare their oil output from the current level of 20 million barrels per day to 16 million barrels per day. This is an important step towards stabilizing oil prices and the world economy, despite the fact that the cut is valid for only two months—from September to October.

Perhaps the first thing which comes to mind is the realization of how closely humanity is bound together in today's world. Modern transport and means of communication have made our earth smaller, enveloping the whole world in a unified network of inter-dependence and co-existence. Mutual reliance and mutual development have become irresistible trends.

The "oil price war" was sparked by a challenge from some non-OPEC countries, with Britain and Norway taking the lead. Dissatisfied with their share of the world oil market, they decided to increase their output unilaterally, worsening an already unstable situation. As a result, OPEC began its "tooth for a tooth" retaliation by intentionally increasing its oil production on a large scale. This produced a huge oil glut and the price of a barrel of oil plummeted to below eight dollars. In addition to the friction between OPEC and the non-OPEC countries, OPEC itself split into two factions. The "majority,"

including Saudi Arabia, which has plenty of oil reserves and huge capital, insisted on setting the OPEC production ceiling at 17.5 million barrels per day, while the "minority," including Iran, at 15 or 16 million barrels per day. Consequently OPEC as well as the non-OPEC countries suffered profoundly from this sharp price drop. The industrialized oil producing and processing countries themselves had to swallow the bitter pill they intended for others. Moreover, some big commercial banks in these countries have provided huge loans to some of the developing countries. These include Mexico, Nigeria, Indonesia, Algeria and Venezuela, all of whose foreign earnings were mainly from oil exports. The continual decline in the oil price has made it very difficult for these countries to pay off their debts. If they failed to

do so, the banks would find themselves on the verge of bankruptcy.

Yet what has happened shows that a sense of inter-dependence and co-existence finally prevails over selfishness, which is precisely where the future hope of mankind lies. Thirteen years ago, in order to get a fair price for oil, OPEC shocked the world by collectively and sharply raising the price of oil. This time in the same disadvantageous situation, after many ups and downs, an accord was finally reached, based on a compromise proposed by Iran, the enemy of Iraq, which was allowed not to join the agreement. Mutual understanding and compromise can help solve many complicated problems. That is probably the second lesson one can draw from this event.

Today the world is confronted by many serious problems: peace and disarmament, social progress and economic development, territorial disputes, environmental pollution, etc. If the spirit of sincere and friendly consultation is honoured everywhere, the pace of human progress towards world peace will surely become faster. ■

by She Duanzhi

SOUTH AFRICA

New Provocations Censured

The fresh provocations of the South African authorities have angered the African people and aroused the concern of the international community.

Faced with the international outcry against apartheid, the Pretoria regime has shown its horns. It is trying to bully some frontline countries of southern Africa which are actively appealing for mandatory sanctions against South Africa.

South African Foreign Minister Pik Botha announced on August 5 that his government would consider introducing import licences and a levy on goods from Zambia and Zimbabwe, and threatened that tighter security measures would be imposed along

the South Africa-Zimbabwe border. As a result of this, Zambian imports are piling up at the port of Durban and Jan Smuts airport in Johannesburg, waiting for payment of deposits. The cash deposits, 25 percent of the normal customs duty or 25 percent of the value of the goods for duty free goods up to a maximum of US\$4,000, are only refunded when South African customs authorities receive written proof that the goods have arrived in Zambia.

The deposit on one shipment already being held up amounts to US\$75,000. A spokesman for Renfreigat, a major South African freight carrier, said demands for such large cash payments from Zambia, a country critically short of foreign currency, would lead to "chaos."

Zambian exports arriving at the South Africa-Zimbabwe border are now being meticulously checked at border posts. The amount of goods subjected to normal spot-checks has increased from 10 percent to around 50 percent. Meanwhile, South Africa has announced that a licensing system would be imposed on all exports from Zimbabwe and Zambia.

By taking these retaliatory measures, Pretoria hopes to bring pressure to bear on its neighbouring states. It also wants to demonstrate that it can reply with counter-sanctions and hit hard at the frontline states. It hopes to indicate to the West that international economic sanctions will harm neighbouring states even more than South Africa.

At the same time the South African authorities have sent their agents to spy on the Tanzania Zambia railway, the Tanzania-Zambia oil pipeline and road and rail bridges on the routes to Tanzania. To the west, South African troops attacked the positions of the Angolan armed forces and civilians in Cuando-Cubango Province. However, Pretoria has underestimated the

southern African countries' determination to defend themselves in this economic war and in the face of South African invasion.

The Tanzanian government has offered to put its ports at the disposal of the landlocked frontline countries. The Angolan people are ready to launch an offensive against the South African invaders. Third world countries and the international community have given powerful support to their struggle against apartheid.

More and more white people in South Africa have also opposed the Pretoria regime. Many oppose its outrages. An increasing section of South African businessmen have lost their confidence in the country. The index of South African business confidence is now only three-quarters what it was in 1980. Gross fixed capital investment fell by 40 percent last year, and continues to decline. South African papers report that nearly 200 corporations are in various stages of disengagement. Last year there were 6,278

bankruptcies as against 4,312 in 1984.

The dramatic slump in fixed investment has exacerbated the unemployment problem. According to a report issued by Cape Town University, the unemployment rate in South Africa reached 23.6 percent in 1985 and will hit 24.1 percent this year. Even white unemployment has become a serious problem, with 40,000 whites losing their jobs between March 1985 and March 1986. It is estimated that there are over 250,000 new job-hunters in the country each year. With no prospects of growth, the country cannot create jobs for either blacks or whites. With sanctions, the unemployment situation can only get worse.

The deteriorating economic situation will sharpen the contradictions between the minority government and the South African people, intensify political conflicts and destabilize state power. The fascist moves of the South African authorities will surely bring their own demise. ■

by Chang Qing

THAILAND

New Coalition Cabinet Formed

A new Thai government formed by Prem Tinsulanonda was formally approved by King Bhumipol Adulyadej. This is the third time Mr. Prem has led a Thai coalition government since 1980.

Following the general election on July 27, the Democratic, Chart Thai, Social Action and United Democratic parties have become the four political parties with the most seats in the Thai parliament. The Democratic Party has taken 100 out of the 347 seats, Chart Thai 63, Social Action 51 and the United Democratic Party 38.

The Thai constitution stipulates that a general election must be held every four years. This 14th election was scheduled to take place in April 1987. But on May 1, 1986, following the government's defeat in parliament on its land transportation bill, Prime Minister Prem Tinsulanonda announced that he would dissolve the parliament and call on a general

election. After the announcement, the major parties entered into a fierce contest for more seats. A total of 3,813 candidates from 16 political parties took part in the campaign, compared with 1,100 candidates in the 1983 election. Among them was a remarkable number of women candidates and candidates who had received a higher education. Prime Minister Prem Tinsulanonda called on the electorate to exercise to the full their right to vote.

During the campaign, the leaders of the various parties were allowed for the first time to speak for 30 minutes on TV and radio and also have a 20-minute electoral advertisement on TV. No party got an overall majority of seats in the 347-seat House of Representatives, and the leaders of the major parties all wished to take up the post of prime minister. However, since none of them could form a one-party government, the prime minister had to be a non-partisan acceptable to all parties. As the prime minister of the previous two governments and a non-partisan, Prem Tinsulanonda was the obvious choice. At first, some Democrats opposed the nomination of Prem as head of the next government. But the Chart Thai, Social Action and Rassadorn parties supported Prem and threatened to form a new government without the Democrats. Under pressure, the Democrats finally gave in.

The new cabinet is composed of five deputy prime ministers and 39 ministers and deputy ministers from the Democratic, Chart Thai, Social Action and Rassadorn parties together with non-partisans. Leaders of the four main parties hold the top posts in the new government.

The new coalition will take measures to improve the Thai economy, which has been affected by the worldwide economic

depression of recent years. The US trade protectionist policy has brought serious trouble to the Thai economy which depends

largely on exports of agricultural and mineral products.

■
by Ma Baolin

US-AUSTRALIA

Allied Relations Weakened

Ignoring the interests of Australia, an allied country for almost 35 years, the US government has sold 4 million tons of wheat to the Soviet Union at a knock-down price. This action has cast a shadow over the future of US-Australian relations.

Several hundred angry Australian farmers, representing wheat producers of the country, staged a demonstration in front of the US Embassy in Canberra to protest against President Reagan's decision to sell off 4 million tons of subsidized wheat at a bargain price. This action met strong opposition from its ally Australia, also one of the largest wheat-exporting countries, sending Australia's ever-growing resentment towards the United States to a new high.

Food exports play an important part in Australia's national economy. The wheat sale by the United States to the Soviet Union, which is Australia's largest wheat purchaser, means Australia might possibly lose its biggest customer. This will worsen the already difficult Australian economy, and threaten many farmers with bankruptcy, bringing with it more unemployment and social upheaval.

Soon after the news of the US wheat sale reached Australia, Prime Minister Bob Hawke sent a strong protest to President Reagan, asking him to think again about his decision. Hawke later telephoned US Secretary of State George Shultz, warning the US

government against harming their long-term strategic interests.

Hawke had proposed to Canadian Prime Minister Brian Mulroney and Argentine President Raul Alfonsin to establish an alliance of non-subsidized wheat exporting countries. Hawke's aim is to put international pressure on Washington and force it to give up its sale plan. Some sources in Australia have even suggested the closing of US military bases as a bargaining chip.

In order to show the unity of opinion across the political spectrum, the Australian government sent a parliamentary delegation of all parties, led by Federal Primary Industry Minister John Kerin, to the United States. But Reagan has taken no notice and is sticking to the sale plan.

People may remember that when Hawke visited Washington earlier this year, Reagan said the United States would never edge Australia out of the wheat market. Five months later came the US sale of subsidized wheat to Australia's main wheat importer. No wonder Hawke complained recently that US politicians are "a bunch of hypocrites."

■
by Luo Yiqing

Minister on Social Order in China

On June 20, China's Minister of Public Security Ruan Chongwu was invited to a luncheon given by the Chinese Journalists' Association, at which he met foreign journalists working in Beijing and answered their questions.

Lowest Crime Rate

Correspondent: Would you please say something about the crackdown on crime? What is the crime rate in China?

Ruan: Since serious action was taken to deal with criminal activities in 1983, cases brought

before the courts have dropped dramatically and the number of criminals reduced. Today between 400,000 and 500,000 criminals are discovered and arrested annually, representing a crime rate of about 0.53 per thousand people, the lowest in the world.

Correspondent: Has crime increased this year? If so, why is this?

Ruan: The crime rate in the first half of this year was some what higher than that of last year. Between 70 and 80 percent of criminal cases involved larceny. This has something to do with the big increase in the movement of people and property in the urban

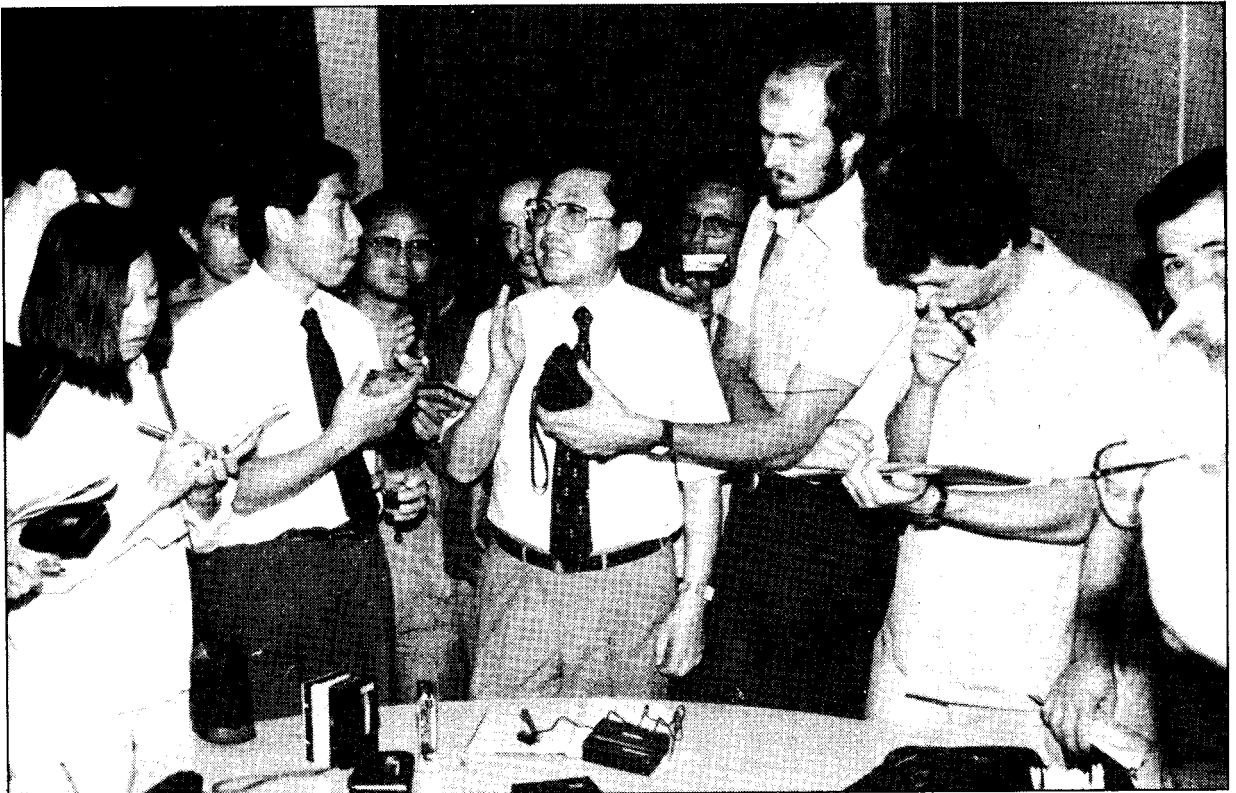
areas. Population flows in some cities have increased many times over. Along with the increase in the number of petty traders and purchasers, the circulation of money and materials has gone up correspondingly. We are considering adopting measures to tighten control over temporary urban dwellers and to strengthen order in public places.

Correspondent: Can public security departments carry out random searches of Chinese citizens?

Ruan: China's Constitution stipulates that the freedom of the person of citizens of the People's Republic of China is inviolable,

Ruan Chongwu answers correspondents' questions.

ZHU DONG



and that "unlawful deprivation or restriction of citizens' freedom of person by detention or other means is prohibited; and unlawful search of the person of citizens is prohibited." As an organization enforcing the country's laws, a public security institution is not allowed to conduct unlawful searches. If, however, there is the need to investigate a criminal case, then search of the persons involved, conducted according to law, is quite another matter.

Correspondent: Why do security personnel tap foreigners' telephones and shadow them?

Ruan: I don't know that such things happen. If you discover that you are being shadowed by someone, please tell me.

Death Penalty Cannot Be Abolished

Correspondent: Many foreigners find China's slogan "execute one as a warning to a hundred" incomprehensible, feeling that it goes against the principle that "all citizens are equal before the law." What do you have to say about that?

Ruan: Those who have committed very serious crimes that warrant the death penalty must be put to death; of course, nobody proved innocent should be executed. The Chinese saying "execute one as a warning to a hundred" means killing one in order to educate the many.

Correspondent: This slogan easily produces misunderstanding. Could you drop it?

Ruan: We will look into it. Perhaps doing as you suggest can avoid misunderstandings.

Correspondent: Will China consider abolishing capital punishment?

Ruan: Capital punishment cannot be abolished at present. Being benevolent to criminals means being cruel to honest and decent people.

Correspondent: Do public security departments set targets for

solving criminal cases? Do police arrest people indiscriminately in order to meet such targets?

Ruan: No targets are set for clearing up cases in China. Our rate of solving crime is generally about 70 to 80 percent. In some regions the rate is 90 percent or even 100 percent. There have never been cases in which people have been arrested indiscriminately in order to meet targets.

Correspondent: Will China continue the practice of open trial?

Ruan: It depends. Some cases need to be tried in public, others not. Generally speaking, a considerable number of representatives of the people are present at each trial.

Correspondent: Will China continue the practice of parading criminals who have been sentenced to death through the streets to expose them?

Ruan: No, we won't. We have in fact stopped doing it.

Correspondent: When did you stop doing it?

Ruan: Sometime ago.

The Policeman's Image

Correspondent: How many policemen are there in China?

Ruan: China has 1.2 million security personnel, of whom 600,000 are armed policemen.

Correspondent: Six months ago, you said you had criticized certain security personnel for abusing their power to beat up innocent people. Does this still go on? What is the image of the police among the people?

Ruan: There have been cases of security personnel violating discipline and law, but there are exceptions. China has more than 1 million policemen. I can't guarantee that no one of this number will not break the law. On the whole, however, our security people are a very good contingent. China's policemen are decent and honest. So far, there has been no case of our police using tear gas or water cannon against the populace. Whenever something happens

among the people, such as a street quarrel or the theft of things, their first thought is to call the police at the local station. While office workers have their hours, we work round the clock. Because we give devoted service to the people and they need us, we therefore have a good image among them. If one of us does something detrimental to the image of the police, he or she will be severely punished once their wrong doings have been investigated and confirmed. Those who violate the Criminal Law will be subject to the punishment of the law.

Correspondent: During the "cultural revolution" and the reign of the gang of four, the Ministry of Public Security was manipulated by Kang Sheng, Xie Fuzhi and others, and they persecuted and murdered a large number of good people, thus tarnishing the image of the Ministry of Public Security. Do the Chinese people have confidence in the present Ministry of Public Security?

Ruan: During the "cultural revolution," the Public Security Ministry, the Procuratorate and the Law Courts were disbanded. Public Security Ministry personnel were dismissed. The ministry was, therefore, itself a victim. After the "cultural revolution," we tried our best to perfect the legal system. Public security organizations have done a great deal to enforce the law, maintaining public order and protecting people's basic rights. The people are thus satisfied with and have confidence in us.

Correspondent: American police are notorious for their corruption. That police generally are engaged in criminal activities has perhaps become a worldwide problem. Is this a serious problem in China?

Ruan: It is only an exceptional case that a policeman engages in economic crimes. I cannot say that no one has done so because a policeman is also a human being. But whenever such a case arises,

(Continued on p. 15.)

A Look at Modern Chinese Sculpture

by Xin Yong

Today the living standards of the Chinese people are rising year by year. They no longer have to worry much about food and clothing, and are beginning to pay more attention to beautifying their environment. More and more street gardens and green verges are appearing in cities; and ponds, fountains and flower beds are springing up at factories and in villages. At the same time sculptures are seen everywhere. Some depict people's daily lives with a touch of realism or in an abstract way, others are for decorative or commemorative purposes. Some are fresh and lively, others solemn and dignified.

Innumerable revolutionary martyrs have given their lives for their motherland in battles against invaders and reactionary rulers, and they will always be remembered by the people.

Fifty-two years ago, to fight the Japanese invaders, the Chinese Workers' and Peasants' Red Army started the famous 12,500-kilometre Long March despite pursuit and attack by the Kuomintang. *The Monument to the Red Army Martyrs* was erected to cherish the memory of those revolutionary martyrs who died on it. The ring sculpture relives episodes of the Long March—forced crossing of the Wujiang River, welcoming the Red Army, great victory in Loushan Pass and crossing the Chishui River on four occasions. It expresses lofty sentiments using both Western and Chinese techniques. On the Long March,

the Red Army held an historic meeting at Zunyi, Guizhou Province, which marked a turning point to victory, and that is why the monument is situated there.

In the 17th century, the Chinese national hero Zheng Cheng-gong fought all his life to drive the Dutch out of Taiwan, and to recover the island. Now a statue of the national hero of the Ming and Qing dynasties towers aloft on a hill in Xiamen, a coastal city in southeast China. It measures 15.7 metres in height and faces Taiwan across the ocean. When a ship sails into Xiamen Harbour, the statue is the first thing passengers see; its right arm behind its back, standing tall and firm and with resolute eyes.

Fisherwoman, Zhuhai, is based on a fairy tale. In the blue sea, a typical oriental fishing woman raises her arms high holding out pearls beside high rocks. Nine metres high and looking beautiful and full of vigour, the sculpture compares favourably with *the Daughter of the Sea* of Hans Christian Andersen.

Yunnan is a multi-national province where 24 nationalities including the Hans, Yis, Dais, Yaos and Was, live in harmony while retaining their own national cultures and customs, and this is expressed well in *A Celebration of National Unity* erected in Kunming, the capital of Yunnan Province.

Harmony between the subject matter and the shape and colour of a stone used often works artistic wonders in sculpture. Look at *A Bust of Yang Jingyu* (1905-40). Here the sculptor, without any

further work, has merely made good use of the original shape and texture of an unusual stone to indicate the general's face and his inflexible will. His thick fur hat evokes memory of the difficult struggle of the northeast Anti-Japanese United Army in the immense forests and snowfields 40 years ago. *A Tibetan Woman*, also produces the same effect.

In recent years, some sculptors have created abstract works, such as the sculpture *Life* by Wu Mingwan, a teacher in Sichuan Academy of Fine Arts. He says: "The sculpture *Life* looks like a sturdy seedling, a growing embryo or a healthy woman. In a word, I hope to make use of the method of abstraction to show the growing up of a new life and its increasing strength."

Although environmental sculpture is a new art form in China, we can find its ancient "roots" in our country. When we look at the sculptures we are reminded of the Qin Dynasty terracotta warriors and horses in Emperor Qin Shi Huang's tomb of more than 2,000 years ago; the Yungang Grottoes carved 1,400 years before and of the stone horses and figures standing on both sides of the Ming Tombs, which date from 1368-1644. The difference is that the modern works reflect the features of our own age and so convey more to us.

Of course, there are also examples of unsuccessful sculptures ill-fit to the environment, and some are done in a rough and slipshod way. As time goes by, the good works will remain and the poor ones will fall by the wayside.

CHINA'S LANDSCAPING SCULPTURE



Monument to the Red Army Martyrs,
Zunyi, Guizhou Province.

China's Landscaping Sculptures

With the development of the country's economic construction and the building of socialist culture and ethics, China has created a number of sculptures in cities across the land to beautify the environment and gradually meet its people's cultural needs. Here is a sampling of some of the sculptures that have been recently erected for this purpose.

Monument to Revolutionary
Martyrs in Nanjing, Jiangsu
Province.



A bust of Yang Jingyu, an anti-
Japanese hero, in Beijing.



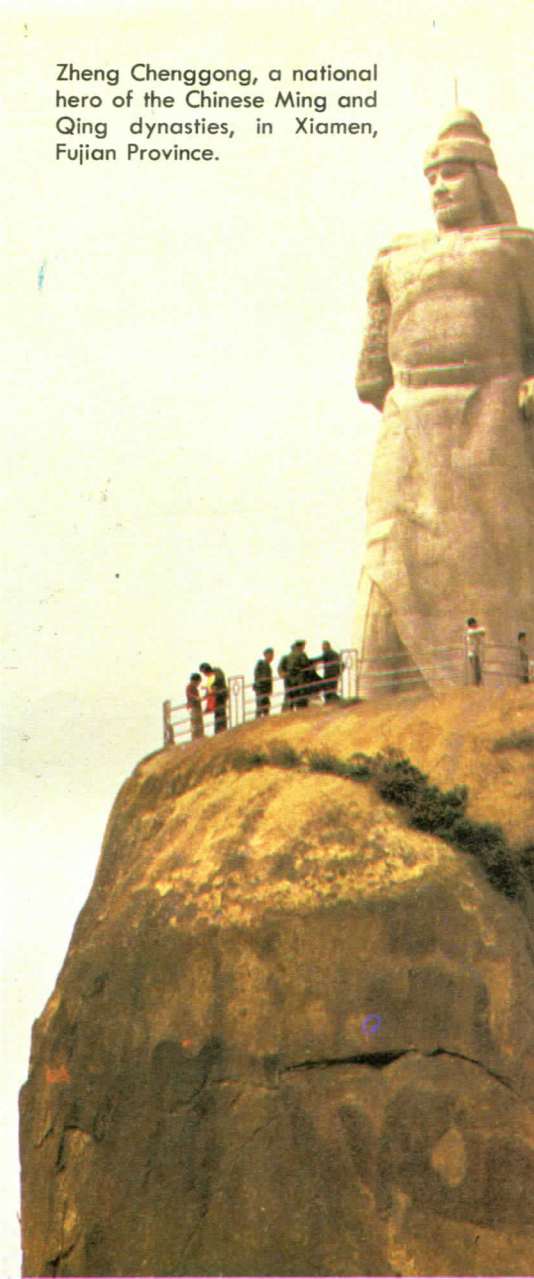


A Tibetan woman, Beijing.



Lu Xun, a renowned writer, Beijing.

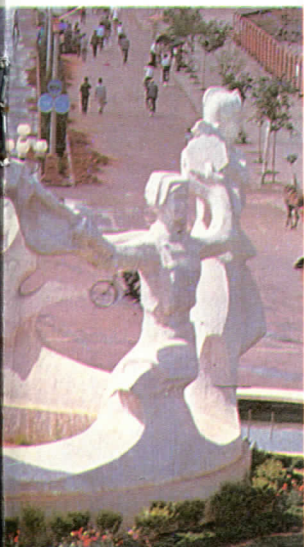
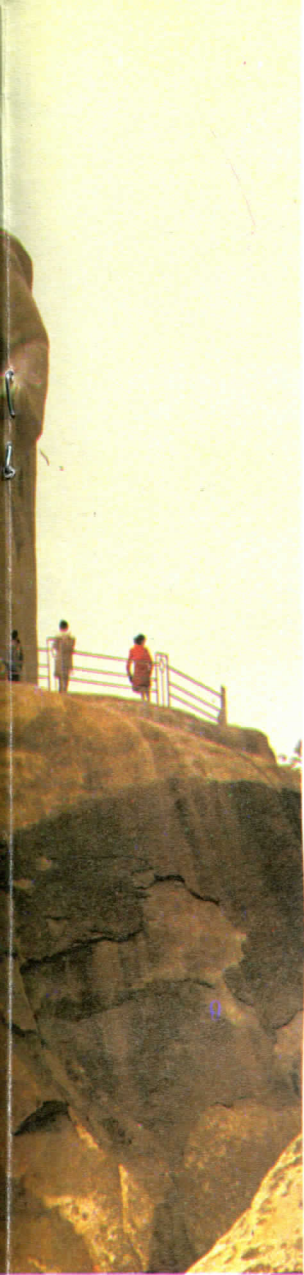
Zheng Chenggong, a national hero of the Chinese Ming and Qing dynasties, in Xiamen, Fujian Province.



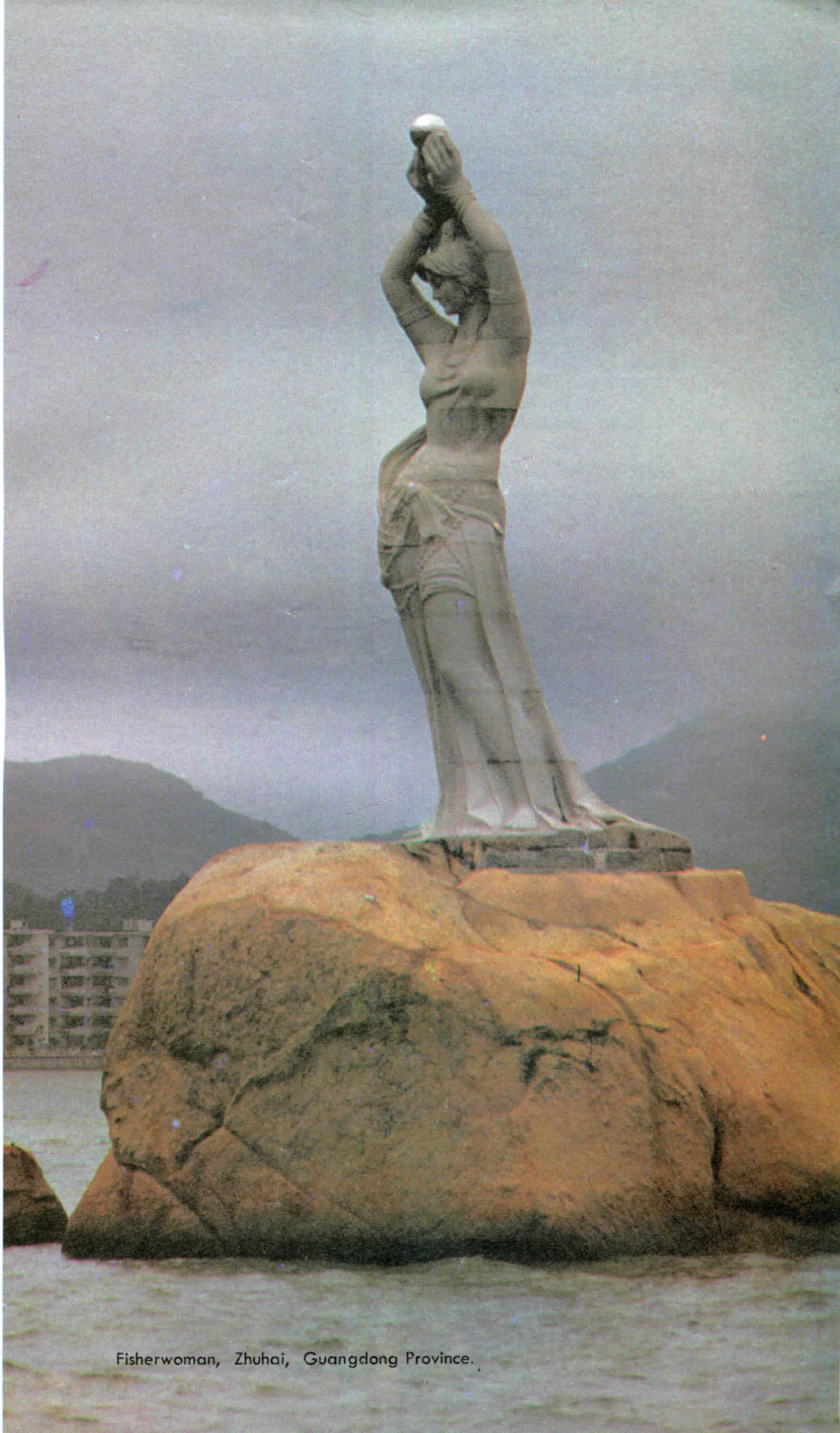
The music fountain, Hangzhou.



A celebration of national unity in Kunming.



g, Yunnan Province.

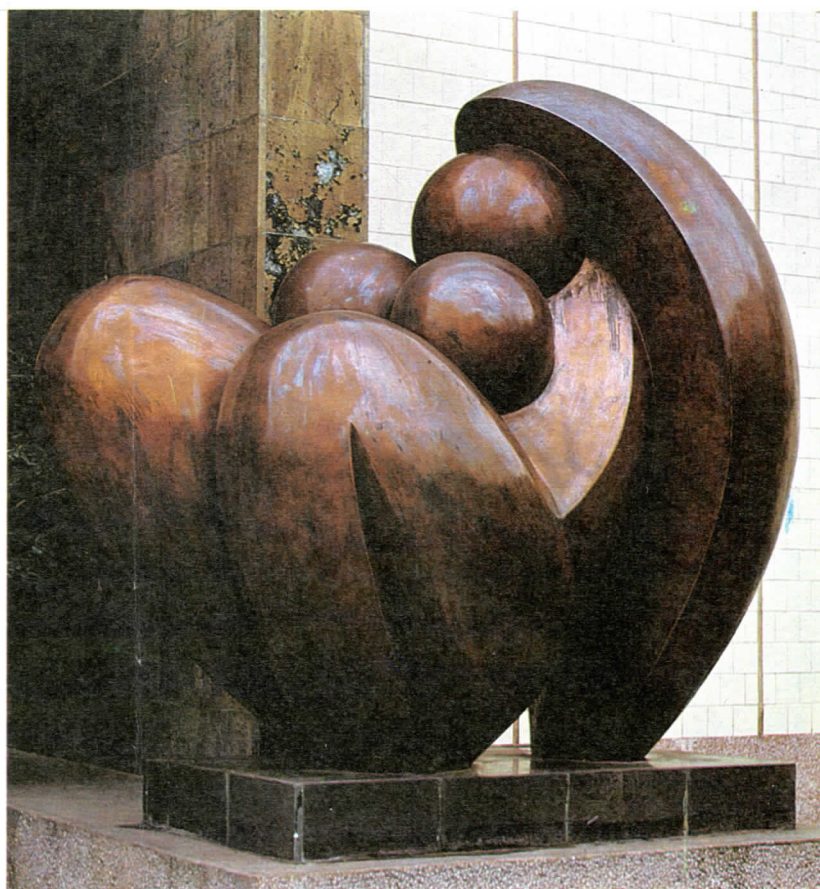


Fisherwoman, Zhuhai, Guangdong Province.

Youth, Beijing.



Peace, Beijing.



Life, Chongqing, Sichuan Province.

(Continued from p. 13)

we deal with it. We make high demands of the police.

Correspondent: Are there any requirements in regard to the cultural level of your security personnel?

Ruan: We want all police officers to have a university or college education, but we have not reached this level yet. At present about one-fifth of police officers have reached university or college level. We are working towards more specialized schools and vocational education to improve training.

The Biggest Challenge

Correspondent: As a newly appointed minister, what is the biggest challenge you face in your work?

Ruan: The biggest challenge at the moment is the need to solve the problem of crime. Efforts should be made to reduce the crime rate and to make people feel secure. I hope I will get support from the various sections of society. Public security is a social problem, the solution of which cannot be achieved by relying on the police alone. We must also make use of social forces, including education and economic growth.

Correspondent: Thousands of visitors from other parts of the country who come to appeal to the authorities in Beijing gather at Yongdingmen every day. Are you aware of this?

Ruan: The number of visitors is not so great. There are people who come to Beijing every day, to seek solutions of their problem, or to lodge a complaint against somebody, but the number of people is not as great as you suggest.

Correspondent: Some of those visitors have told me that they have been beaten up by the police. Did you know that?

Ruan: That is not true. Those who want to spread rumours are many. Don't give credence to them; stress should be placed on facts. It is dangerous to believe every rumour.

Correspondent: More than one person has told me this.

Ruan: You should not think that because many people say the same thing, it becomes a fact. A rumour does not become a fact even it is repeated a thousand times.

Correspondent: Will you go there and see for yourself?

Ruan: I have been to many places to look into things at the grass-roots in order to solve practical problems. I do not listen to reports only; instead, I often go and conduct investigation to see whether what someone says is true. I never believe rumours.

How the Gang of Four Are Getting Along

Correspondent: How are the gang of four getting along? Are they allowed to read books and newspapers?

Ruan: The gang of four are serving terms of imprisonment. They are allowed to read books and newspapers and to watch TV in prison. We are taking good care of them. We treat them much better than they treated us.

Correspondent: How much money do you give them each month?

Ruan: Criminals are given no money. They have good food and good living conditions.

Correspondent: Are our correspondents allowed to cover them?

Ruan: I don't think there is much hope of foreigners being able to visit them.

Correspondent: How about the health of Jiang Qing and Zhang

Chunqiao? Can Zhang get out of bed and take a walk?

Ruan: They both are quite healthy although they are advanced in years. I haven't heard that Zhang cannot get out of bed and go for a walk. He will be treated if he falls sick.

Correspondent: Has he contracted any illness?

Ruan: Since he is at an advanced age, he suffers a little from the diseases of old age.

Correspondent: What is Jiang Qing's attitude? Does she show any signs of repentance?

Ruan: Jiang Qing's attitude is irrelevant now. People like her are unlikely to have any intention of mending their ways.

Correspondent: It is said that Jiang Qing is compelled to make cloth dolls in prison. Is that true?

Ruan: (Shaking his head) Did you learn that from an Italian correspondent's report? How could he know Jiang Qing is making cloth dolls? Maybe he saw it through the crack in a door.

No Political Prisoners

Correspondent: According to an estimate of Amnesty International, China has hundreds of thousands of political prisoners. Is this estimate correct? How many political prisoners are there in China?

Ruan: None. We only have criminals, no political prisoners.

Correspondent: When the September 18 incident and the December 9 movement were marked last year, were any students arrested or expelled?

Ruan: No.

Correspondent: Recently two Beijing university students were arrested. Can they be counted as political prisoners?

Public security is a social problem, which cannot be solved by relying on the police alone. It is also necessary to use social forces, including education and economic growth.

"Reform through labour" and "education through labour" are two different concepts. The former involves punishment according to the Criminal Law. The latter, dealt with through administrative measures, is essentially a matter of education.

Ruan: The two students are absolutely not political prisoners; they are economic criminals. One of them tried to swindle others out of money in petty trade. When this failed he tried to run away. Having violated the law, he, of course, could not go unpunished. The other student is also an economic criminal. They have not really been active politically.

Prostitution and Other Problems

Correspondent: Does prostitution exist in China today? How are prostitutes punished?

Ruan: Prostitution has resurfaced in recent years. Although it had long been a thing of the past, it has reappeared because, following the implementation of the open policy in China, negative influences from various areas have increased as the mobility of people increased. Nevertheless, prostitution is exception. We do not arrest girls who are prostitutes, but take them in and educate them.

Correspondent: Does prostitution come about as a result of the open policy? Does it occur in such open cities as Shanghai and Guangzhou?

Ruan: The open policy has indeed invited some negative influences. Therefore the wider the door of a city is opened, the more attention should be paid to the emergence of such problems.

Correspondent: How do things stand in Beijing?

Ruan: Things are much better in Beijing.

Correspondent: How many women engage in prostitution?

What punishment is meted out to those who abet prostitution?

Ruan: Because the problem of prostitution is handled by the relevant local government departments, I cannot give an accurate figure. It is necessary to educate women prostitutes and punish those who live off immoral earnings according to the Criminal Law. What punishment should be meted out depends on the seriousness of the case.

Correspondent: Is it necessary to mete out severe punishment? Are you in favour of this?

Ruan: I suggest you read China's Criminal Law. Abettors should be severely punished according to the provisions of the law. I think they should be severely punished, but we must handle their cases according to the law, and not as we might wish.

Correspondent: The Standing Committee of the National People's Congress recently promulgated a decision on prostitution, calling for severe punishment for those who abet prostitution. Does this show that prostitution has become a serious problem? And to what degree?

Ruan: It would be a serious problem even if there is only one person engaging in prostitution. It is absolutely impermissible. Generally speaking, the number of prostitutes is very small and they are not a national problem.

Correspondent: Are there any foreigners who take part in prostitution? How would foreign prostitutes be dealt with?

Ruan: There are both Chinese and foreigners engaging in prostitution. They should all be punished according to Chinese law.

Correspondent: In which cities do foreigners take part in prostitution?

Ruan: Where there are foreigners, there are likely to be problems concerning foreigners.

Correspondent: With regard to "education through labour," we have heard that a public security department can hand down a sentence of "education through labour." Do they pass sentence without a trial by the judicial departments?

Ruan: Reform through labour and "education through labour" are two different concepts. The latter is dealt with through administrative measures and is essentially a matter of education. The former involves punishment according to the Criminal Law, and cases should be handled by the judicial departments. "Education through labour" committees are set up in Chinese government at all levels. Public security departments take part in the work of these committees and the representative of a public security department is only a member of the committee concerned.

Correspondent: What is the longest time limit for "education through labour"?

Ruan: Three years. "Education through labour" is an administrative penalty. The period is equivalent to three years' study in a senior middle school.

Correspondent: What are the differences and relations between the Ministry of Public Security and the Ministry of State Security?

Ruan: The Ministry of Public Security is in charge of law and order, traffic safety and fire control. The Ministry of State Security is in charge of anti-espionage work to protect national security. The two ministries do not have much connection with each other in their work. ■

Lifting Off With Flying Colours

After 30 years of independent hard work, China can now develop and launch its own satellites. Since 1970, it has successfully sent 18 satellites into space and is beginning to launch satellites for other countries.

by Sun Jiadong

China began developing its astronautics industry in 1956 and launched its first man-made satellite in 1970. Since then it has sent 18 satellites into space, with only one failure in 1974.

China is the fifth country in the world to develop and launch man-made satellites independently, the third to be able to retrieve satellites, the fourth to launch multiple satellites with a single rocket, and the fifth to launch geostationary satellites with its own carrier rockets (see box on pp. 22-23).

The *East Is Red II* telecommunications satellite launched on February 1 in Sichuan Province's Xichang area embodies China's latest achievements in space technology. Its successful launch indicates that the satellite's structure, the means of delivery and the ground control and launching systems were all up to their designed standards. The strong beam antenna used by the satellite is able to cover all of China's territory with its signals. The launching power of the satellite is the same as that of the International IV and International V, the most advanced telecommunications satellites in the world, but with transmission of clearer television pictures. Its communication capacity is five to six times higher than the experimental telecommunications

satellite China launched in October 1984. After it was successfully positioned above the equator at 103 degrees east longitude, it began trial transmission for telecommunications, radio and television. The results were better than expected. The satellite started formal operation on July 8.

Compared with other countries, China encountered more difficulties in launching its telecommunications satellites. The inclination of China's launching site is 28 degrees, 2 degrees more than that of its counterparts in France and the United States. The larger launching angle means that a stronger thrust is needed to send

up a satellite of the same weight and tracking the satellite is more difficult. The United States and other Western countries share a continuous tracking network around the equator, and the Soviet Union uses a fleet to track its satellites round the globe. China's tracking system is based on its own territory alone. Thus, when the satellite is on the other side of the earth, China's scientists have to rely on counting to know when it will reappear in their sphere. The accurate positioning of the satellite attests to the sophistication and reliability of China's launching and controlling systems.

The telecommunications satellite was launched by the China-

Sun Jiadong observing the satellite in orbit.

YANG WUMIN



The author is an expert in space technology, chief satellite designer and vice-minister of the Astronautics Industry.



developed *Long March III (CZ-3)* three-stage liquid-propellant carrier rocket. With a diameter of 3.35 metres and 43 metres long, the rocket is a large multi-purpose low-temperature carrier rocket. With a lift-off mass of 202 tons, it has restarting and manoeuvring functions. It also able to launch 1,430-kg telecommunications satellites and send up planetary probes of one ton to space with the second cosmic velocity. The engine of the rocket is fueled by liquid hydrogen and liquid oxygen, a method mastered only by the United States, France and China.

Self-Reliance

Many foreign scientists and China watchers have been amazed at China's ability to master space technology—a synthesis of all branches of science—with a comparatively low industrial level in such a short period of time. China's success can be attributed to the following three reasons:

First, the Chinese people's determination and talent has made it possible for the nation to rely on its own forces to develop its space technology. In spring 1956, under the guidance of Premier Zhou Enlai, a 12-year scientific and technological development plan was drawn up that incorporated rocket and jet technology into the state key projects. In October the same year, led by Vice-Premier Nie Rongzhen, China's first rocket research institute was founded and preparatory work began on building a rocket manufacturing base and launching site. In May 1958, Chairman Mao Zedong proposed that China develop and launch its own satellites and that this too, be incorporated into the state plan.

In the 1950s, Western countries imposed an economic and technological embargo on China. That problem was compounded by the Soviets when they scrapped their contracts and withdrew their

experts from China in the early 1960s. This situation compelled China to take the road of self-reliance to develop its then embryonic space industry. In the past two decades and more, in order to catch up with the advanced world level of space technology, large numbers of scientists and technicians have worked long and hard under harsh conditions and achieved rapid progress.

Second, the socialist system has enabled China to concentrate its technological superiority and limited material resources on developing the most advanced branches of science and technology badly needed by the state. The system also makes nationwide co-operation possible. Take the launching of the long-distance carrier rocket on May 10, 1980, for example. This was a scientific test of an unprecedented scale in China and involved more than 30 economic, scientific and military departments from 27 provincial-level administrative regions. More than 1,000 enterprises and scientific research institutes also directly participated in the project. Before the test, scientists provided accurate geodesic parameters and went on four expeditions on the open sea. The State Maritime Bureau, the Ministry of Communications and the navy organized a large fleet responsible for escorting, guarding, measuring, rescuing data carrier telecommunications, hydrologic survey and meteorological observation for the test. The Ministry of Posts and Telecommunications and the Headquarters of the General Staff of the People's Liberation Army put to use 5,000 telecommunication stations and employed tens of thousands of telecommunication workers on the telecommunication network, ensuring that the command system would work unimpeded and all the information would be transmitted accurately.

Third, China's "fewer but

better" development principle conforms with its actual conditions. The development and launching tests of large rockets and space crafts are enormously expensive. Without a material foundation as solid as that of the United States, the Soviet Union and other developed countries, China has not been able to conduct frequent launching tests and has had to make the most detailed studies possible from and most extensive preparations for its limited launching tests. Chinese scientists have tried their best to control the quality of each link in the work in order to make every launching a success. They have also tried to limit their research to the varieties most practical and needed in China.

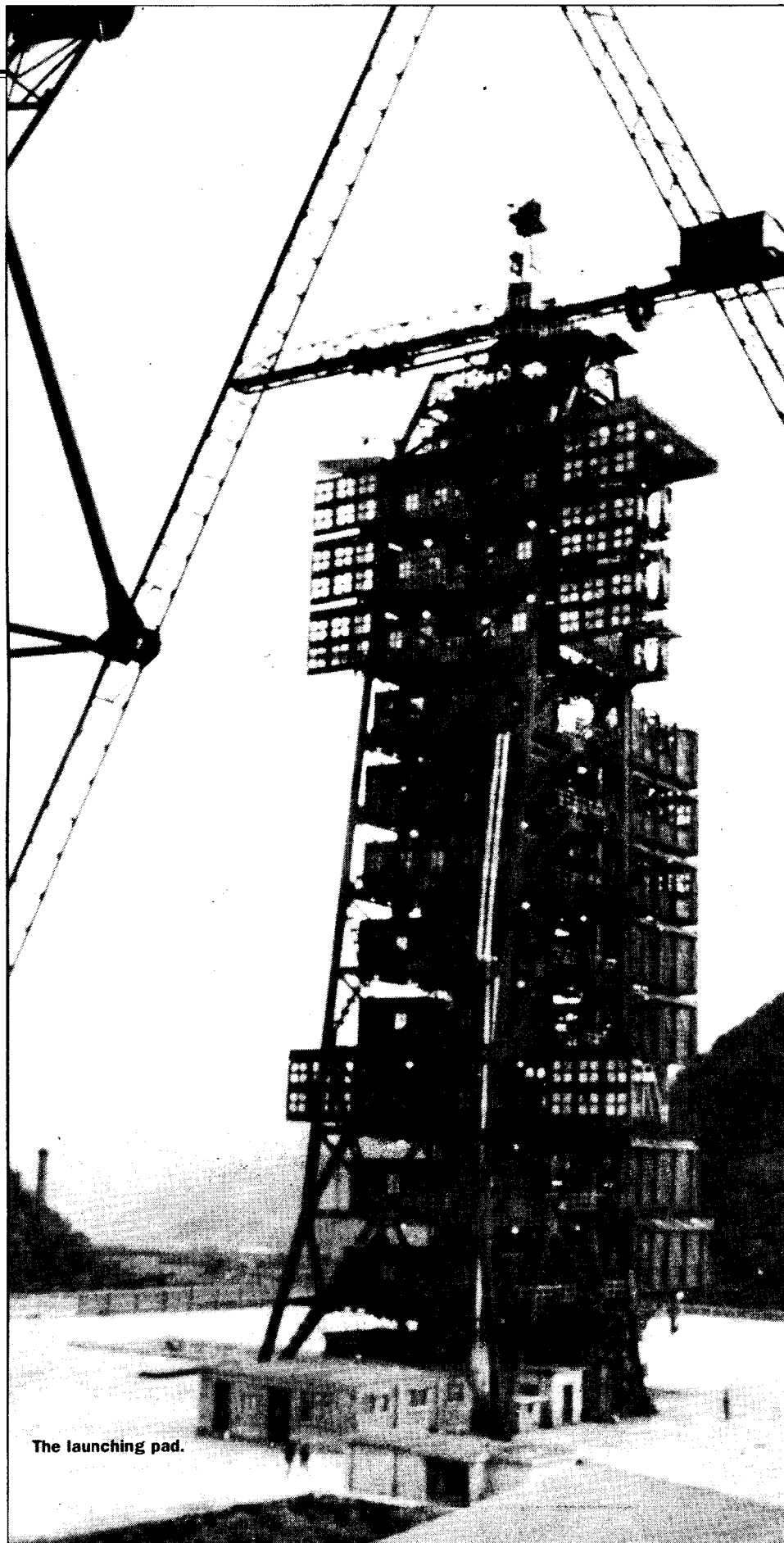
From the very beginning, China has attached importance to the work involved prior to testing and to data collection. The scientists began studying the key technology and ground control facilities of man-made satellites in 1958. The possession of a large amount of technological data has laid a solid foundation for the development of all kinds of space crafts. It has also shortened the time involved in developing each model of these crafts. Thanks to these efforts, China's scientists took only a bit more than four years to develop the first satellite and seven years for the first retrievable satellite. Deducting the 10 years of the "cultural revolution" (1966-76), it took China only 10 years to send up its more complicated telecommunications satellite.

In developing its space industry, China proceeded from its actual conditions and the needs of socialist construction. Given its vast territory and complex geological conditions, China badly needs to use advanced scientific means and technology to upgrade its methods of conducting natural resources investigation, geological surveys and meteorological observations, and to improve its telecommunication

and broadcasting services. China's rising space industry has made tremendous contributions to the nation's modernization. The remote-sensing reconnaissance survey satellite has provided large amounts of accurate, useful pictures of the country's territory, environment and mineral resources, as well as reliable data for urban construction, the construction of large projects, grassland and livestock breeding planning, the estimation of large areas of agricultural production and the forecasting of natural disasters. It has also provided information on changes in the ecological environment, geological disasters and environmental pollution.

Opening to the World

China's open policy has broadened the vistas of its space industry. In 1980, at the 31st conference of the International Astronautical Federation, the China Astronautical Society was accepted as a member of the federation with voting rights. In 1983, four Chinese space scientists were elected officers of the International Astronautical Federation. One of them, Yang Jiachi, was elected executive vice-president of the federation. At the federation's 36th conference last October, 12 Chinese space scientists were elected full members of the International Academy of Space Science. The 36th conference of the International Astronautical Federation also decided then to hold the 40th conference in Beijing in 1989. About 1,000 space experts from round the world are expected to attend the meeting. A symposium on the development and application of space science and technology in the Pacific region, sponsored by the China Astronautical Society, the America Astronautical Society and the Japanese Rocket Society, will also be held in Beijing next June.



The launching pad.



To date, China's space circle has increased its contacts and exchanges with its counterparts abroad, and has signed governmental and non-governmental co-operation agreements with many other countries for space projects, and it has established bilateral or multilateral relations with these countries. At the end of May this year, the Ministry of Astronautics Industry signed a memorandum with the European Space Agency to the effect that the two sides will co-operate in future space programmes involving satellites, space laboratories and manned space shuttles. Prior to this, China had signed bilateral governmental or ministerial-level co-operation agreements with the organization's member states, including Italy, France, Britain and Federal Germany.

In October last year, Li Xue, minister of the Astronautics

Industry, said the China-made *Long March II* and *Long March III* carrier rockets would enter the world market and China would launch satellites for other countries. Soon afterwards, the Great Wall Industrial Co., which is in charge of the ministry's foreign economic relations and trade, received interested responses from more than a dozen countries, including Sweden, Indonesia, Australia, Italy and Argentina. The Great Wall Industrial Co. has already agreed to launch a postal satellite for Sweden. The company is currently holding talks with other countries and is expected to reach agreement with two American companies.

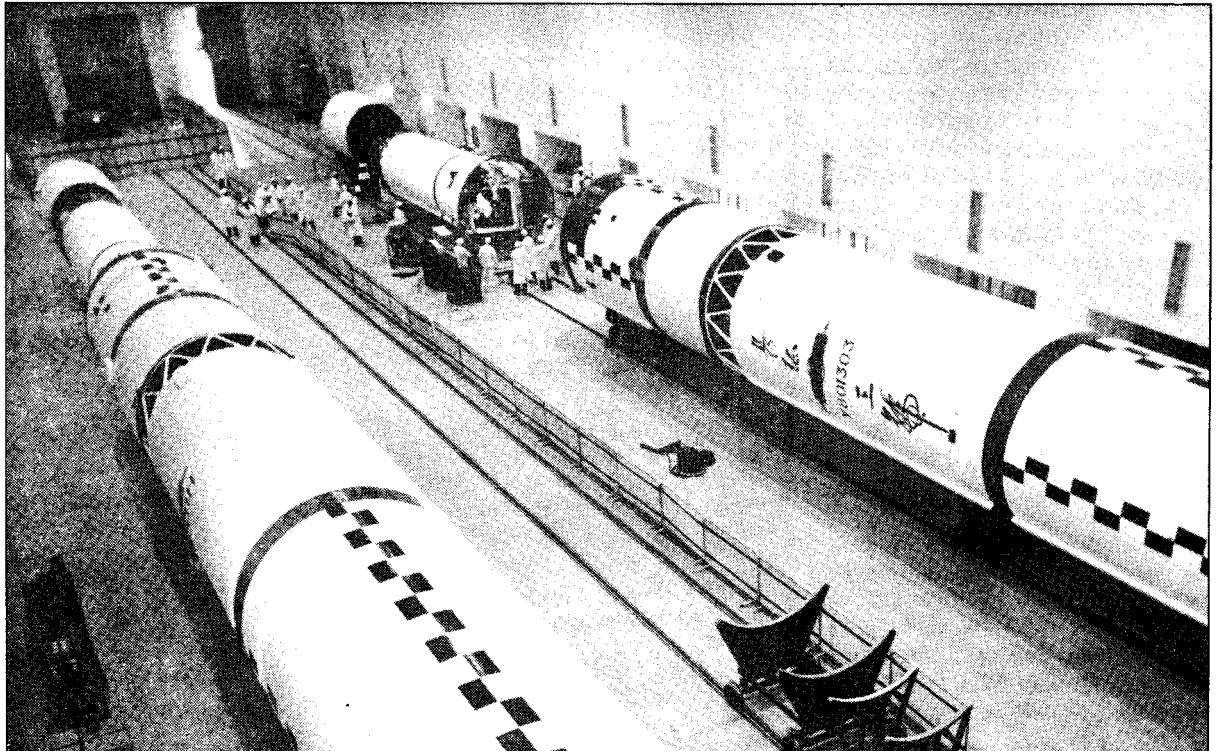
To expand exchanges with other countries, China's rocket production plants, satellite manufacturing factories, satellite launching sites and scientific research institutes will also

gradually open to the world for academic exchanges and technological co-operation.

Limited by China's underdeveloped economy, its space industry is not likely to develop on a large scale in the near future. The priority of the nation will be given to developing and launching practical satellites needed by the state, particularly satellites for territory surveys, meteorological observation, telecommunications and broadcasting services, resources investigation and scientific experiments. Efforts will also be made to improve carrier rockets and develop rockets with larger thrust and new space crafts and means of delivery, including manned space shuttles. At the same time efforts will be pooled to turn out more space industrial and civilian products to meet the needs of both domestic and international markets. ■

The assembly shop for the carrier rocket.

ZANG XINHAN



Brains Behind China's Space Industry

by Our Correspondent Han Baocheng and Guest Correspondent Zhou Ziyuan

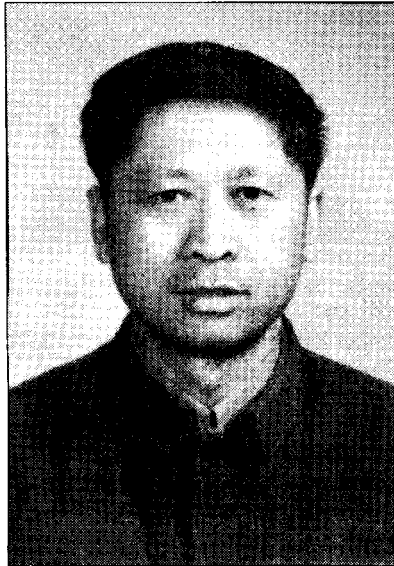
In the past China's satellite research and construction was secret. This has gradually been declassified as the country has opened its doors to the world. The following is a report on a recent visit to satellite scientists, research institutes and factories.

Located in Zhongguancun in the northwest of the capital, the Academy of Space Technology's Beijing Institute of Control Engineering, which is affiliated with the Ministry of the Astronautics Industry, is the birthplace of China's satellite control system.

Zou Guangrui, 52, satellite control system chief designer and head of the Beijing Institute of Control Engineering, said the institute consists of eight research offices and a processing factory, and it has a staff of 800, of whom 400 are engineers and assistant engineers, including 30 senior ones most of whom have graduated from universities since the founding of the People's Republic in 1949.

Zou was born into a poor family in Liaoning Province. He has taken quite a fancy to mathematics since he was a child and always excelled in his studies. He finished middle school courses in only four years, two years earlier than normal. He then entered the Harbin Industrial University, where he majored in automatic controls and again did exceedingly well in his studies. After graduation in 1960, Zou turned down an opportunity for advanced studies at the Automatic Control Research Institute of the Chinese Academy of Sciences in favour of a job working for China's space technology. He took the job, he said, because he thought he could learn more from work than from additional studies.

In 1962, Zou displayed his talent in manufacturing the piezo-electric crystal accelerator for



Zou Guangrui

static experiments on the atomic bomb. Since then he has been in charge of many important and successful research projects and experiments. In 1970, he began to research satellite control systems and became a leader of the control systems group of 32 members.

At that time, Zou said, much of the developed world imposed a blockade on technological information and exercise on China, the embargo compelled Zou and his colleagues to look up all reference materials available at home for research into the sun sensor and infrared horizon sensor, the most important surveying instruments for control, which determine the precision of satellite operation. During the "cultural revolution" (1966-76) Zou and his 32 colleagues then could not work in the day for being preoccupied by participation in the political

movement, so they went to work at night. After a long period of studies, Zou, based on the principle of gyroscopic and electronic inertia, advanced a new circuit theory for scanning the earth-chord centre. He also devised an earth signal centre installation, which ensured that a satellite's aerial was not affected by changes of the satellite in orbit and was always directed at earth.

An important reason for the failures of foreign rocket launchings was interference from the sun. The satellite in orbit receives 300 times the amount of sunshine that it does on earth. In order to examine the quality of the infrared horizon sensor and determine whether it could withstand the interference of sunshine, Zou and his team had to perform a series of tests on the ground first. Though information on such tests is kept secret by other countries, after one year's experiments, they had collected all the needed data.

Rocket Factory

In 1956, China built its first rocket research department and the carrier rocket assembly factory under the Ministry of Astronautics Industry in Beijing.

The factory's spacious, high-ceilinged workshop is installed with advanced equipment and is now the site of construction for the Long March-II carrier rocket (CZ-II).

Zheng 54, head of the workshop and an engineer, said the two-stage liquid rocket was 3.35 metres in diameter and 191 tons in lift-off



mass. It is used to launch retrievable satellites. Many successful launchings have demonstrated the reliability and stability of the Long March-II rocket.

Li, an engineer at the factory, said a successful launching of the Long March rocket is ensured by the many ground experiments and quality control tests it undergoes.

All instruments, whether a major piece of equipment or a spare part, and whether on the satellite or rocket, are first tested on the ground. Various adverse circumstances can possibly arise after a simulated launching in the course of testing, but this will enable factory engineers to promptly find out the problems in the design and manufacturing technology and improve the quality of products. Although the ground tests are very expensive, they are cheaper than a launch failure.

The factory also established a quality control centre to examine spare parts, equipment and production procedures. The quality control examinations in the assembly workshop is very strict. The workers must often be taught how to operate the equipment safely and new workers must pass an examination before beginning work.

The two production lines in the workshop can assemble four Long March-II rockets or Long March-III rockets simultaneously.

Though their bonuses are fewer because the workshop has operated under capacity, the factory workers remain conscientious and proud of their work. Wei Wenju, leader of a production group, said: "I was very nervous before the satellite launching, because I was afraid we might have made some mistakes in our work. After the successful launching of the satellite, I felt very happy; We sent the satellites into space with our own hands and won honour for our country."

Whenever a new assembly task is begun, the designers, engineers and leaders of the factory come to the shop to explain the main points so that every worker knows his or her duty. According to the factory leaders, production is one of the most critical stages of getting a satellite from the drawing board to the launching pad, and therefore must have the participation of worker representatives.

The rocket shell is made of a copper-aluminum alloy. The process at first was quite difficult and left many weld cracks on the surface of the shell. The factory's designers and engineers invited workers and some veteran engineers and technicians from other factories to research on a new method of operation. After several days' co-operation, they finally solved the difficult problem.

When the factory built the Long March-III rocket, it also encountered some unforeseen difficulties. The second-stage ignition of the liquid hydrogen-oxygen motor on the third-stage rocket was conducted in zerogravity, a technique mastered by only a few countries. The assembly workshop set up a six-person team to explore the situation. After much painstaking work, the group created a new method to detect leaks, which met the technological requirements.

Satellite Plant

In recent years, many foreign astronautics delegations have visited the Satellite Assembly Plant in Beijing, which 18 years ago, was only a small factory with several hundred workers producing precision instrument. In 1967, it began to assemble and test satellites, and the next year it began using its present name.

The plant has since been extended and developed into a large, modern facility. It has sent into orbit 52 earth resource, experimental, communications and broadcasting satellites (including the satellites for ground tests).

In the assembly workshop, built in 1983, one can see the successfully launched and recovered East Is Red-I satellite model and the models of an earth resource and communications

Chronicle of China's Space Technology

1956: The Ministry of National Defence establishes a department in charge of the development of missiles, marking China's first step in developing its means of delivery for space industry.

February 19, 1960: China succeeds in launching its first

indigenously developed sounding rocket. In November the same year it succeeds again in launching its first mock ballistic missile.

1963: The Chinese Academy of Sciences establishes the space committee, which immediately begins investigating possibilities for China's first man-made satellite.

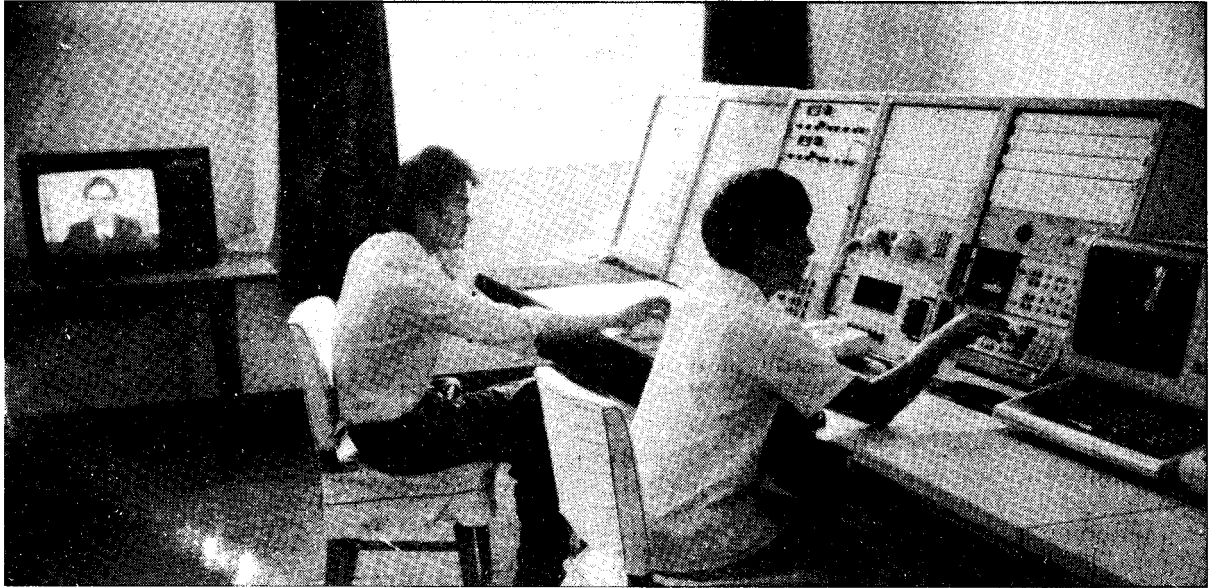
June 29, 1964: China successfully launches its first ballistic missile

and completes the entire test.

July 1965: On the basis of painstaking feasibility studies, the Chinese Academy of Sciences draws up plans for developing satellites.

January 30, 1970: A China-made long-distance missile is successfully launched.

April 24, 1970: China successfully launches its first satellite. Weighing 173 kg, the satellite is heavier



BAI LIANGUO

China's domestic satellite communication network began operations on July 8. Technicians at the Beijing Central Earth Satellite Control Centre monitor a TV relay.

satellites and the return module of an earth resource satellite that has been severely burnt. The satellite models show the successful yet difficult process of the development of China's space industry.

Song said the workshop is in charge of the assembly, testing, simulated launching and flights of satellites.

Technicians and workers there were assembling a complicated territory surveying satellite. Song said it had more than 10 branch systems, many conducting cables, conduits and circuits. Wu Dianlian, workshop head, said the

satellite shell should be light, strong, resistant to high and low temperature and tested in a simulated space environment. He said none of the satellites assembled by his crew have broken down.

In manufacturing satellites, the factory has to make its own precision instruments because they are unavailable on the market. One of the machines—a high performance running balance machine for inspecting satellite quality was made by a group headed by engineer Xue. Another

spare part required very precise grinding for which the factory had no equipment. Xue and other workers solved the problem by grinding it themselves—by hand.

Song said according to the country's overall plan, the factory will eventually be involved in developing space shuttles and other advanced astronautics equipment. Song said the factory is ready to co-operate with foreign astronautical circles in developing and exploiting the latest achievements in space technology. He said some such projects are now under negotiation. ■

than the combined weight of the first satellites launched by the Soviet Union, the United States, France and Japan. The satellite's tracking, signal transmission and temperature-control systems all top the level of the first satellite launched by other countries. This success narrows the gap between China and the developed countries in space technology by 10 years.

March 3, 1971: *Practice I*, a

scientific experimental satellite is successfully launched. It works as planned in space for eight years and continuously sends back scientific test data.

November 26, 1975: China successfully launches a retrievable remote-control satellite. Since then China has sent up seven such satellites, which have all been retrieved in the northwest.

May 10, 1980: A carrier rocket is

launched from land to the southern Pacific, laying a foundation for sending up telecommunications satellites.

April 8, 1984: China launches its first geostationary experimental telecommunications satellite, which functions normally for the following two years.

February 1, 1986: A practical telecommunications satellite is successfully positioned in its orbit.

CENTRAL PHILHARMONIC

Thirty Years of Development

A week of concerts was held in July to mark the 30th anniversary of the founding of the Central Philharmonic Society at the Beijing Concert Hall and elsewhere in the city. Programmes included Chinese and foreign symphonies, choral music, and piano, violin and vocal solos.

Since it was established in 1956, the 500-member Central Philharmonic Society, which includes a 100-member symphony orchestra, a 120-member choir

and many soloists, has given 8,100 concerts to nearly 10 million people. The society has played with 30 world-renowned conductors and 58 musicians and singers from abroad, including Herbert von Karajan and Seizi Ozawa. Composers performed range from the classical composers to Igor Stravinsky, Gustav Mahler and well known contemporary composers, as well as Chinese composers of the older generation such as Xian Xinghai, Ma Sicong,

He Luting, Li Huanzhi, Wu Zuqiang, Luo Zhongrong, Chen Peixun and Shi Wanchun, and the younger composers Huang Anlun, Su Cong, Tan Dun, Qu Xiaosong and Ye Xiaogang.

The society has put on 371 Sunday concerts and others to help popularize symphonic music. Its members also go to factories and universities to perform and enhance workers' and students' appreciation of music. ■

China's First Ph. D. Conductor

At the end of June, the 371st Sunday concert given by the Central Philharmonic Society attracted the particular attention of the audience as it was conducted by Chen Zuohuang, China's first Ph.D. conductor.

The concert included Beethoven's *Egmont Overture*, Barber's *Revenge Dance From "Medea"* and Berlioz's *Symphonie Fantastique* in its programme. After repeated encores, Chen conducted the overture to the American musical comedy *West-Side Story* by Leonard Bernstein.

After he left the secondary school attached to the Central Conservatory of Music in 1965, Chen first became a conductor of the song and dance ensemble of the All-China Federation of Trade Unions, and then conductor of the orchestra of the Beijing Film Studio. In 1977, he entered the Central Conservatory of Music to study composition and conducting under famous Chinese conductors Zheng Xiaoying, Han Zhongjie, Huang Feili and Li Delun. He was also helped by Seizi Ozawa at

this time. Four years later, on graduation, he was sent by the Ministry of Culture and the Ministry of Education to the college of music at the University of Michigan to study under prof. Gustav Meier.

Chen got his master's degree the following year and three years later his doctor's degree, in the art of conducting, the first of its kind ever awarded by the University of Michigan. He became the first Chinese conductor with a Ph. D.

degree and "one of the most promising young conductors," as Seizi Ozawa put it.

In 1985 Chen was invited to be associate professor and guest conductor at the college of art, University of Kansas. He was elected an "outstanding educator" the same year and admitted as a member of the American Music Educators' Association.

Chen Zuohuang is now a conductor of the Central Philharmonic Society. ■

Chen Zuohuang conducting the Central Philharmonic Society in a performance of Berlioz's "Symphonie Fantastique" at the Beijing Concert hall on June 29.

ZHANG FENGQI



Banowetz's Eighth Visit to China

To mark the 100th anniversary of the death of the great Hungarian pianist and composer Franz Liszt (1811-86), American pianist Joseph Banowetz and the symphony orchestra of the Central Opera Theatre put on a concert in Beijing on July 21, which included Liszt's *Spanish Rhapsody* and three piano pieces—*Les Jeau Deau a la Villa d'Este*, the *Hungarian Rhapsody No.3* and the *Paganini Study No.2*, giving the Chinese audience the chance to hear "the best contemporary interpretation of Liszt's works."

The second half of the concert included Banowetz's playing of the G minor piano concerto by the young Chinese composer Huang Anlun especially for him. Banowetz described the piece as beautiful and full of emotion.

Huang began to learn music at five from his parents. He then went to the primary and secondary schools attached to the Central Conservatory of Music. He composed his first piano piece at the age of 7. Later he became a composer for the Central Opera Theatre.

Huang went to Canada to study music at the University of Toronto in 1980, and continued his studies at the college of music at Yale University in the United States in 1984. He got his master's degree in May this year.

Huang's works include opera, ballet, symphony, chamber and vocal music, and music for the cinema. His works have received awards many times in China.

Although this is his eighth visit to China, Banowetz is the first American invited by the Ministry of Culture to play a piano concerto composed by a Chinese composer.



Banowetz at the piano.

Zhou Huayin

Geologists Discover Secrets of Tibet

If the Tibetan Plateau were a large building, Chinese geologists say it would have 13-storeys. That is to say, the plateau consists of 13 strata of rock and earth.

Geologists at the Tibetan Bureau of Geology and Minerals said recently that though the plateau's earliest stratum has not been discovered yet, the oldest so far dates back 660-640 million years to the Sinian Period. The 12 geological systems above this include eight strata formed of marine sediment before the Cretaceous Period, 180 million years ago, and two strata formed of both marine and continental sediments 70 million years ago.

The team also found that the newest systems, namely the late tertiary and quaternary systems, are complete continental sediments. This indicates that Tibet was an above sea level land mass as far back as 40 million years ago.

During their survey over the last area of 100,000 square kilometers to be investigated, Tibetan geologists collected fossils of similar organisms from both sides of the fracture zone of Yarlung

Zangbo River. Their findings negated an earlier theory that the zone was the seam of the Indian and Eurasian plates.

The theory, which attracted attention of both Chinese and foreign geologists, was based on the hypothesis that the Indian plate drifted northward from the Tethys (Ancient Mediterranean) 250 million years ago and joined the Eurasian land mass 40 million years ago. It was raised by Chinese geologists in the mid-1970s after they found a fracture zone comprised of ophiolite (rocks with snake-like veins) and marine sediments.

The recent survey shows, however, that fossils found on one side of the fracture zone of the Bangong Lake-Nujiang River are of cold-water organisms, typical of the Indian subcontinent, and on the other of warm-water organisms, representative of the Eurasian land mass.

"Fossils are the most accurate way to verify geological stratification," a local expert said. Therefore the seam between the Indian plate and the Eurasian plate should be about 200 km, north of the former fracture zone, according to the regional bureau of geology and minerals. ■

Huangdao Island Development Zone

During the Seventh Five-Year Plan period (1986-90), the Chinese government will spend 2.1 billion yuan on the infrastructure of Qingdao City's development zone on Huangdao Island. Major items include the second stage (now under construction) of the Huangdao oil terminal, which will increase the terminal's capacity by 17 million tons; the goods docks at Qianwan to be constructed next year, the railway line between Jiaoxian County and Huangdao Island, and a 200,000 kw power station.

Huangdao Island, covering 15 square kilometres, is 2.26 nautical miles east of Qingdao. Much preparatory work has been done by the municipal government since 1984, including a 130-kilometre highway around the island, a 250,000 kw power plant, and an oil terminal which handles 10 million tons of oil annually. Construction has centred on a two-square-kilometre piece of land, which is now supplied with running water, electricity and gas, roads, telecommunications, heating and sewers. Two six-storey standardized factory buildings with 34,000 square metres of floor space and a 15,000-square-metre, five-storey ware house have been completed. The Hualin Mansion, a 22-storey office building with a floor space of 21,000 square metres, will be finished by the end of the month. The 22-storey Zhushan Hotel is also under construction. Other buildings include housing estates and 2,000 square metres of light factory buildings.

The development zone is negotiating joint-venture projects with more than 900 businessmen from 24 countries including Japan, the US, Federal Germany, Singapore, Italy and Hong Kong.

Ten of the 12 storeys of the two factory buildings have already been let. It has been very difficult

for the municipal government to decide on the remaining two storeys since there are so many applicants. Five joint ventures are expected to start operation by the end of this year. Another dozen joint ventures are under negotiation. Contracts have been signed for a Sino-US holography project, for the manufacture of a lace embroidering machine, Sino-Japanese fast-food outlets, and for the production of high-resistance electric meters.

Wang Zhengting, an official from the development office of the municipal government, told *Beijing Review* that the emphasis of development will be placed on

technology-intensive enterprises concerned with electronic instruments, textiles, food processing, refined chemicals, and marine chemicals. He said the need to balance income and expenditure of foreign currency has restricted the choice of joint ventures. However, the municipal government has already approved 60 joint operations and foreign businesses are welcome to make enquiries.

Qingdao, on China's eastern seaboard, is known for its light and textile industries, foreign trade, marine research and beautiful scenery.

Tsingtao Beer Sold in the US

One million crates of China's Tsingtao Beer will be exported to the United States in 1986. Last year the figure was 850,000 crates, placing China ninth among countries exporting beer to the US.

A 355-ml bottle of Tsingtao Beer costs US\$2.55 in the United States, making it one of the more expensive beers. Tsingtao Beer appeared on the US market in 1978 and won first prize at the 1981 and 1985 world beer fairs in Washington. Sales have increased 40 times over in the last seven years.

The Tsingtao Brewery has trial produced a low-sugar and low-alcohol beer, which will soon go into commercial production.

Tsingtao Beer uses soft spring water from Mount Laoshan, top-quality hops from Xinjiang and barley from Australia and Canada. Quality control is strictly observed throughout the process.

For example the first stage of fermentation takes 7 to 9 days and the second stage no less than 50 days. Some foreign breweries combine the two stages and allow only one day for fermentation.

The Tsingtao Brewery is China's oldest, largest and most up to date. It started to export in the 1950s. At present, Tsingtao Beer is sold to more than 20 countries other than America, including France, Britain, Italy, the Federal Republic of Germany, Australia, Singapore, Japan, Thailand, the Philippines, Indonesia, Hong Kong and Macao. The factory exported 305.34 million tons of beer in the first half of 1986 and earned US\$14.16 million.

In recent years, the Brewery has imported equipment to expand production. Three of the five bottling lines are imported from Japan and West Germany. Branches are to be set up in Qingdao's Huangdao Island economic and technological development zone and in the Shenzhen special economic zone in co-operation with foreign firms.

ART PAGE

Traditional Chinese Painting by Zhou Zhilong



Zhou Zhilong, born in Guangxi in 1940, now teaches painting at the Chinese Institute of Traditional Opera in Beijing.

Zhou's landscapes are realistic and as fresh as nature itself.

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