

China *What's Happening in China's Education?* Reconstructs

VOL. XXVII NO. 4

APRIL 1978





China Reconstructs

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PUBLISHED MONTHLY IN ENGLISH, FRENCH, SPANISH,
ARABIC AND RUSSIAN AND BIMONTHLY IN GERMAN
BY THE CHINA WELFARE INSTITUTE
(SOONG CHING LING, CHAIRMAN)



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Front: At a university entrance examination, Peking.

Back: The Huangkuoshu Waterfall in Kweichow province.

Inside front: Stable and high-yielding fields transformed from stony river flats by a production brigade of the Hsiatingchia commune in Shantung province.

Inside back: Lung Shou Ya (Dragon-Head Cliff), one of the scenic spots of Mt. Lushan, Kiangsi province.

Editorial Office: Wai Wen Building, Peking (37), China, Cable: "CHIRECON" Peking. **General Distributor:** GUOZI SHUDIAN, P.O. Box 399, Peking, China.

What's Happening in China's Education?

China Reconstructs has been getting many letters from readers asking about the significance of the recent changes in China's education. For answers, this magazine went to a spokesman for the Ministry of Education.

Q There have been changes in China's educational work since the "gang of four" was ousted. Is China turning away from her revolution in education?

A On the contrary, steps being taken now are aimed precisely at carrying out the call to revolutionize education Chairman Mao made in the early days after liberation. Many significant achievements in education were made in line with this principle. However, the "gang of four", posing as "Leftists" and using the power they had usurped in education and the media, distorted Chairman Mao's instructions and did serious damage to our education.

For example, Chairman Mao said education should serve the cause of the proletariat and be combined with work. He said that our educational policy **"must enable everyone who receives an education to develop morally, intellectually and physically and become a worker with both socialist consciousness and culture"**. To serve their own purposes the "gang of four" said, "We'd rather have workers without culture than intellectual aristocrats." This kind of talk put being made cultured and being a worker with socialist consciousness in opposition to each other and caused much confusion among the people.

To back up their statement, the gang ordered the news media under their control to give wide publicity to a young man named Chang Tieh-sheng who handed in blank papers for his university entrance examinations. Chang did it because he didn't know the answers to the questions. But the gang called him a "hero who dares to go against the tide" and moved

him swiftly into high positions. Such examples made a lot of young people think there was not much use studying.

The gang disrupted school discipline when they touted another kind of "hero". A primary school girl made some critical remarks about her teacher in her diary. The gang seized on the incident, blew it up and made a heroine of the girl for "daring to defy teacher authority". This led to a breakup of the normal friendly, cooperative relationships between teachers and students in many schools. If the "gang of four" had been allowed to go on messing up education like this, our country would soon have gone back to darkness and ignorance.

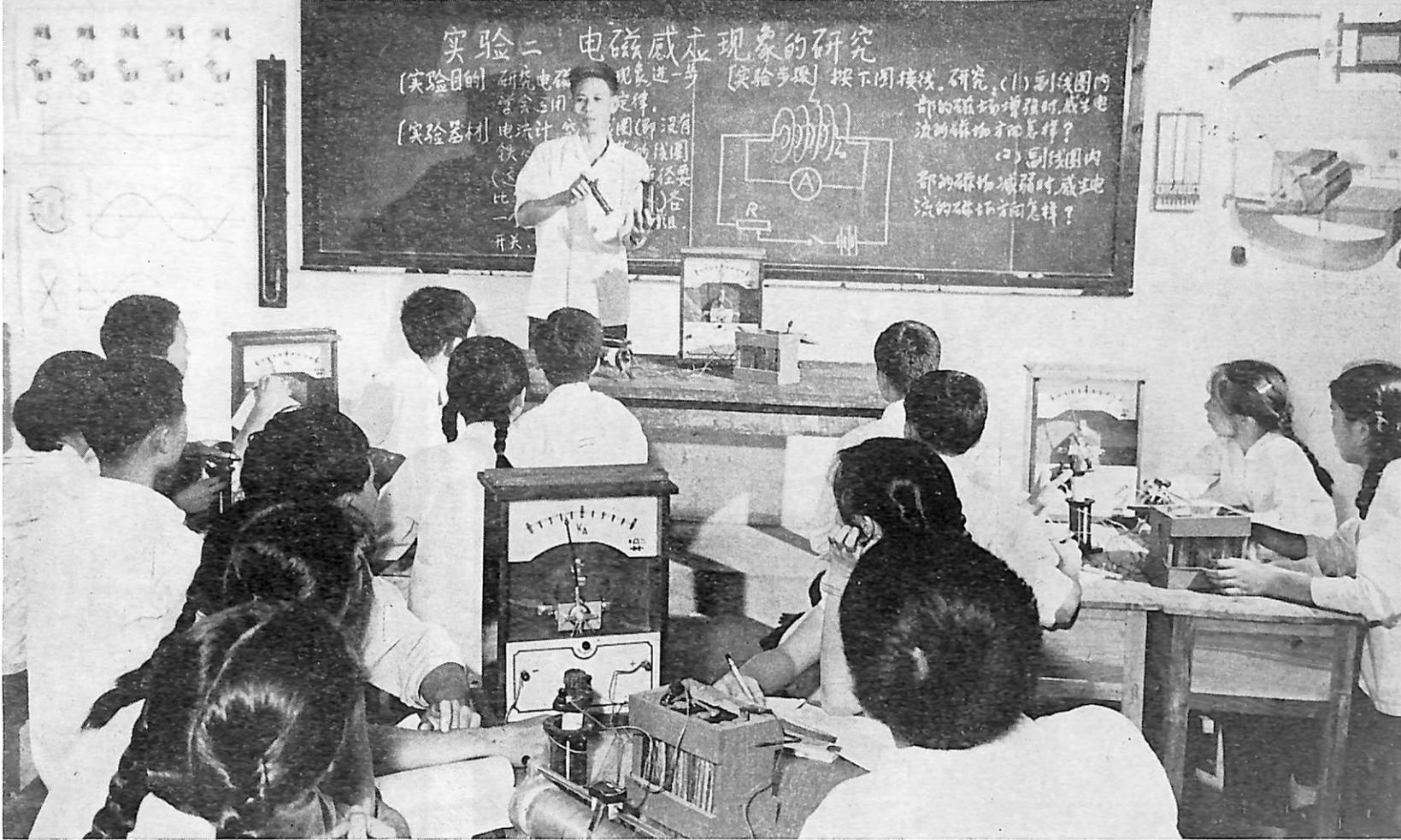
The measures now being taken under the Party Central Committee headed by Chairman Hua Kuo-feng in education are aimed precisely at carrying out Chairman Mao's principles in revolutionizing education correctly and comprehensively. For example, Chairman Mao had always stressed the importance of science and education. Even during the Chinese people's fight for liberation from reactionary rule, he pointed out that a higher level of education for the masses was important for winning the revolution. In the fifties he said, **"We have entered a period, a new period in our history, in which what we have set ourselves to do, think about and dig into is socialist industrialization, socialist transformation and the modernization of our national defense, and we are beginning to do the same thing with atomic energy."** He pointed out that **"the proletariat cannot build socialism without its own vast contingent of technicians and theoretical workers."**



Holding a class in a tangerine and orange grove for forestry students at the Kiangsi Communist Labor College.

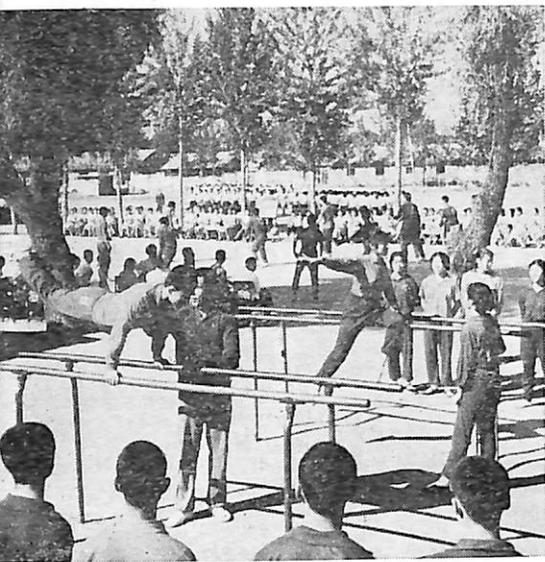
If we are to modernize our industry, agriculture, defense, and science and technology by the end of the century as Chairman Mao hoped, we have a tremendous amount of work to do. We must raise the quality of our education, from primary school through the higher institutions. We must give more attention to basic subjects and basic theory which were de-emphasized by the four. We must include the newest developments in science in our teaching materials. We must greatly extend research programs in institutes of higher education. We must reform these institutes' admittance regulations and train more people faster. This is the only way we can remedy the damage done by the "gang of four", set our work on the proper course and really do a good job of revolutionizing education.

Q People in education are criticizing the "two estimates". What is this all about?



A physics class at Kwangchow Middle School No. 29.

Physical education at Peking Middle School No. 12.



A The "two estimates" were put forth by the "gang of four" in 1971. They distorted the picture of educational work in the 17 years from 1949 to 1966, that is, from liberation to the beginning of the cultural revolution. One "estimate" held that Chairman Mao's line in education "had not been carried out in the main" and that "the bourgeoisie exercised dictatorship over the proletariat in education". The other "estimate" held that the majority of the teachers and the majority of the students trained in

that period were "bourgeois intellectuals".

But China is a country in which the proletariat holds power. To make estimates like these was to distort the truth and write off all the achievements in education of those 17 years. Because they held the power in education and the news media at the time, the "gang of four" was able to force their "estimates" on the public. Whoever disagreed risked being labeled as "opposing the revolution in education" and being persecuted.

Shortly afterward Chairman Mao pointedly refuted these "estimates". He pointed out that under the dictatorship of the proletariat only a small section of people, not the overwhelming majority, had followed the wrong line, that the majority of the intellectuals supported socialism. The "gang of four" kept quiet about these statements. Instead they grossly exaggerated Chairman Mao's criticism of certain shortcomings and mistakes made under the influence of Liu Shao-chi's revisionist line, such as divorcing education from reality, labor and politics; making the period of schooling too long;

overloading courses; and treating the students like an enemy in exams.

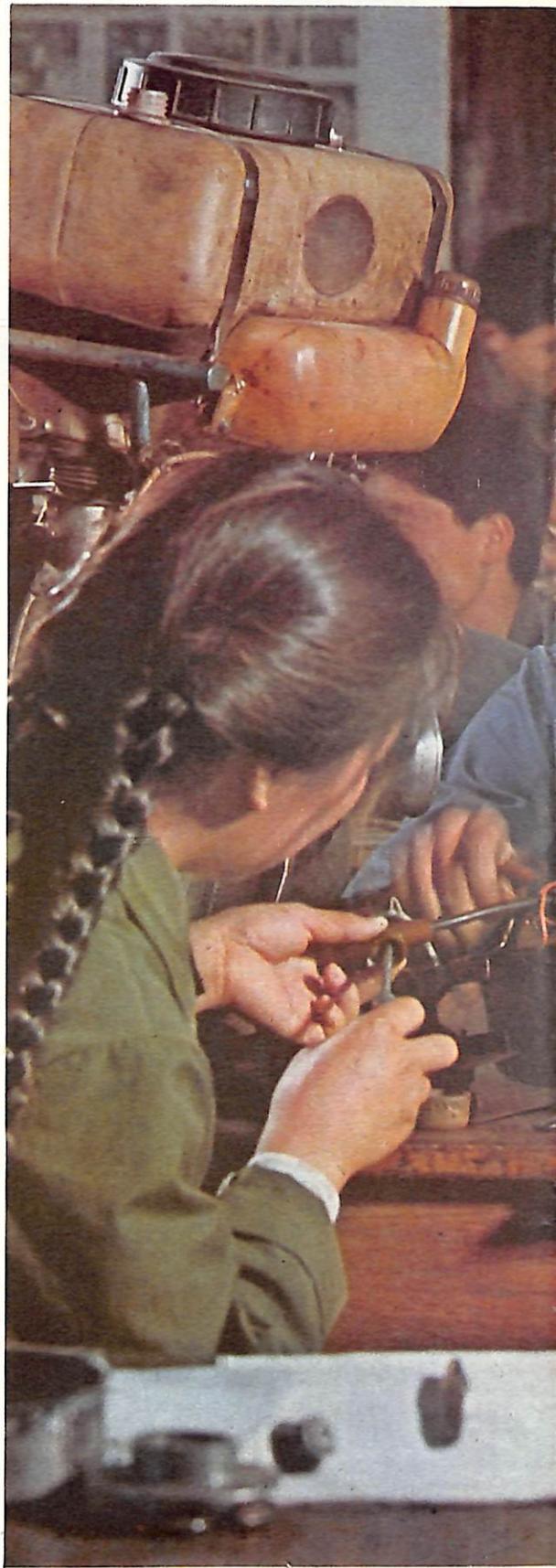
Chairman Mao had said that bourgeois intellectuals should no longer dominate the schools, but he was referring to individual cases. The "gang of four" exaggerated this to mean *all* schools and claimed that "the bourgeoisie exercised dictatorship over the proletariat" in education, which of course was not true. They raised the slogan "Oppose the 17 years" to make it seem that the socialist education system had all been wrong. This would enable them to attack teachers and cadres who followed Chairman Mao's revolutionary line in education. We could not let that go on much longer.

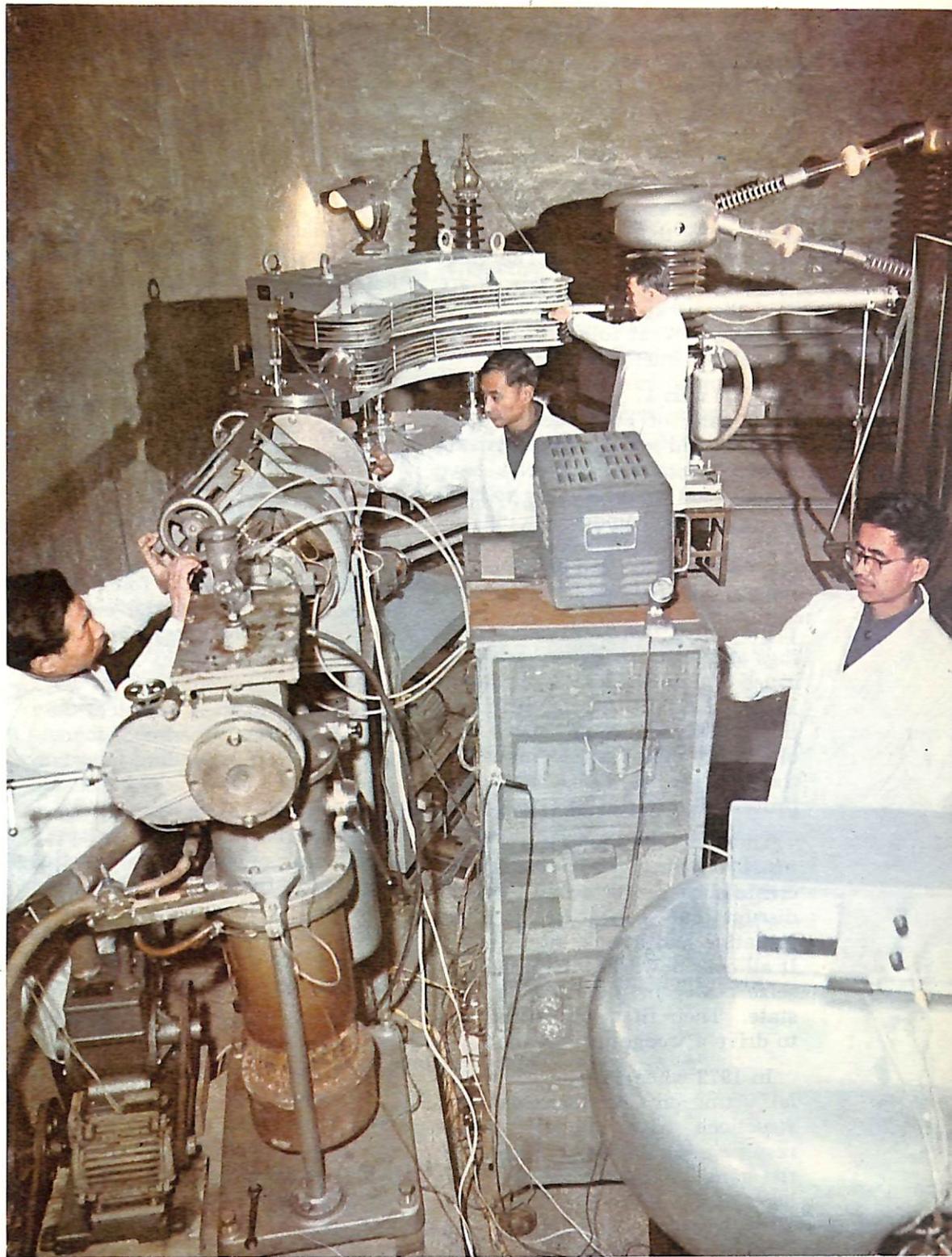
Q How, then, should one evaluate the education of the 17 years before the cultural revolution?

A Facts are the best answers. At every period since the founding of the new China, Chairman Mao guided our work with important instructions. Of particular importance was his statement in 1958 that "education should serve proletarian politics and be combined



Primary schoolchildren in and after class.





A 400-kilovolt heavy ion injector, first of its kind made in China, a research project of the nuclear physics faculty of Peking Teacher's University, made with the help of related factories and completed in 1977.

Students of the Peking Middle School No. 12 repair sprayers for a nearby rural commune as part of a program to apply what they have learned in physics.

with productive labor". This launched a revolution in education. At liberation in 1949 we had some 200 institutes of higher learning. Seventeen years later there were over 400. Some 130 million young people had gone to schools of various kinds. More than half of these were from worker or peasant families. The great majority of the trained talents are now the backbone in all fields of endeavor. What folly to call them "bourgeois intellectuals"!

In the first 17 years after liberation, many of our teachers were from the old society. Even among these, the great majority have made good progress in political and ideological understanding and been tempered in real-life struggles. Some have been accepted into the Communist Party.

Inevitably there were shortcomings and mistakes in our work because of Liu Shao-chi's revisionist line, and Chairman Mao criticized these. But Chairman Mao's revolutionary line had dominated in the 17 years, as our achievements proved.

Then why did the "gang of four" insist on their "two estimates", create such confusion in thinking, disrupt our education, suppress initiative and attack intellectuals? It all boils down to their scheme to seize power in the Party and the state. Their first step in this was to drive a wedge in education.

In 1972 when Premier Chou En-lai, acting on Chairman Mao's instructions, tried to clear up the resulting confusion in education, the gang attacked him for "going back to the revisionist line of the 17 years". In 1975 when Vice-Chairman Teng Hsiao-ping, again on Chairman Mao's instructions, raised the question of correcting wrong tendencies in education, the gang attacked him for opposing the "two estimates" and "tampering with the orientation of the revolution in education". You can see that education was one of the focal points of the struggle between the people and the gang. The damage in education seriously hampered our drive to modernize the country.

When Chairman Hua called on the nation to criticize the "two

estimates" last October, the country responded eagerly. Many teachers wept when they listened to the broadcast of "The Great Debate on the Educational Front", a critical article by our ministry. The "two estimates" had hung like a heavy rock over people's heads. Now that they were repudiated, educators, teachers and other intellectuals felt liberated.

Q Does that mean you are discontinuing the "open-door schooling" of the cultural revolution?

A Some of our friends abroad think that our revolution in education began only during the cultural revolution. This was a wrong impression. The principle of combining education with work, first expressed in 1958, was put into practice right away. It found fuller expression during the cultural revolution after teachers and students criticized Liu Shao-chi's revisionist line. Thinking up ways to combine them in practice, they coined the term "open-door schooling". It means spending a certain period of time every year outside the campus, taking society as a "big classroom" in which to apply classroom knowledge to practice and learn from the workers and peasants. One successful form of study the teachers and students created is a system combining teaching, production and research.

The "gang of four" pretended to support open-door schooling — and then pushed it to the extreme. They made such remarks as, "The wider you open the door the better, the longer you do physical labor the better." What actually happened was classroom study practically disappeared and the quality of education dropped. Even more serious, in some cases the gang's followers in education used open-door schooling as a pretext to recruit students for activities directly serving the gang's scheme to seize power.

Only now, with the "gang of four" out of the way, can we really combine study with productive work. Good practices are being promoted. These include letting students spend a suitable amount of time in school-run and other factories, on the farms and in army units. This helps them develop a

correct attitude toward work and a deeper feeling for the working people. A certain amount of practical work also helps give them a better grasp of theory.

In the higher institutes students will now do some practical work related to their specializations. Middle schools run by the petroleum, coal and metallurgical industries will add basic courses and practical work as better preparation for students in these fields.

Q There have been many changes in the higher institutes' enrollment regulations. Why were the changes made? Have they proved to be better?

A The current university enrollment is the first since the fall of the "gang of four". We reviewed the regulations of the past and made some changes in eligibility, qualifications and methods to cope with the present situation. In addition to admitting workers, peasants, middle school graduates already working in the countryside, as in the last few years, some students are being taken in directly from senior middle schools. All entrants must be under 25, unmarried, in good health, with a schooling of or equivalent to senior middle school.

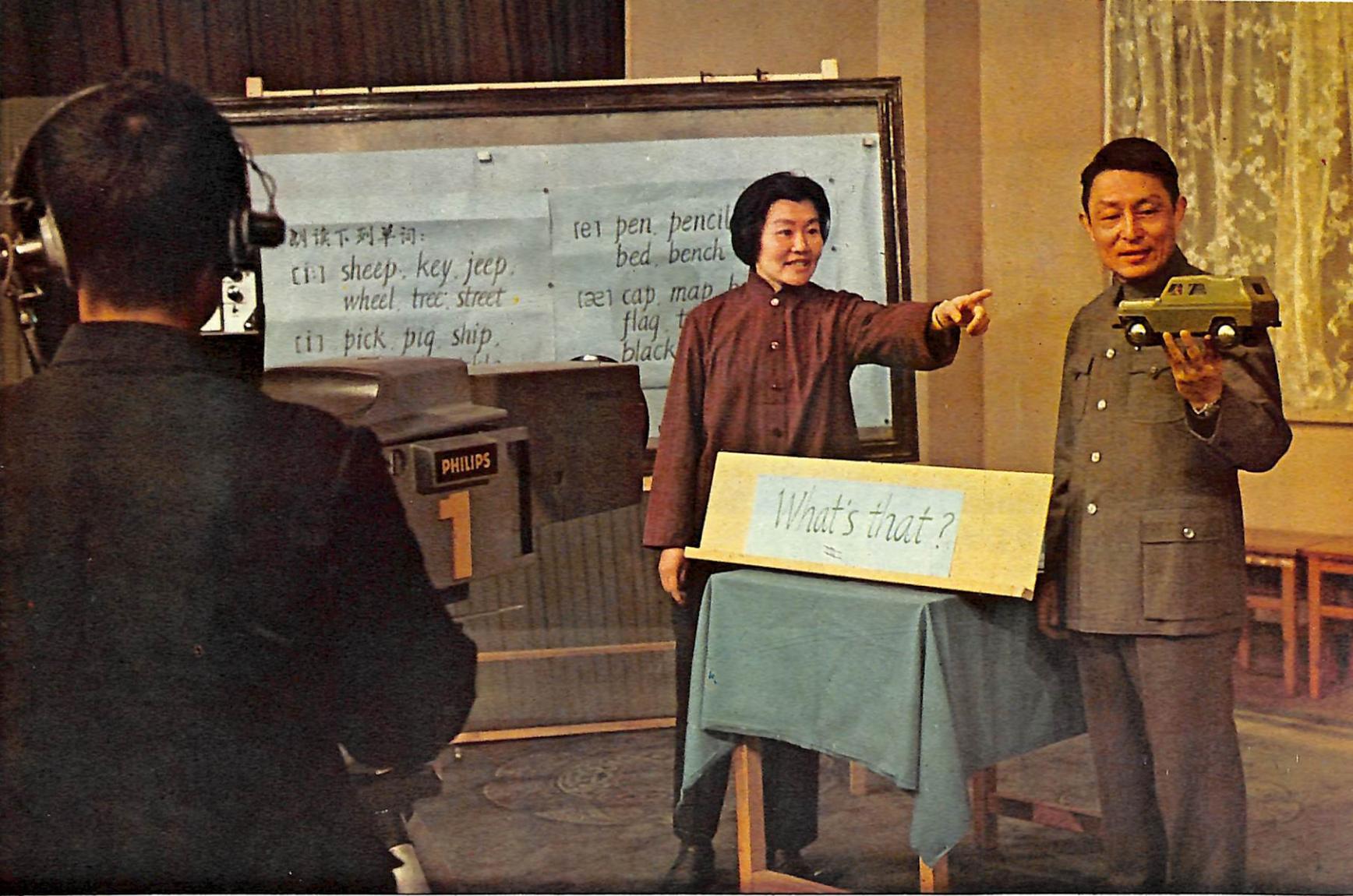
The age limit is extended to 30 for young people who have some special skill and have done good work. Preference in this category is given to senior middle school graduates of 1966 and 1967, the early period of the cultural revolution when schools were closed. Students still in senior middle school who have done exceptionally well in their studies can also apply on the recommendation of their schools.

These changes were made so that we can have a bigger pool of selected students. They will be the trained specialists we need to modernize our country.

This spring's admittance was based on an all-round appraisal of

Elementary TV English.

An advanced mathematics class at the July 21 Workers' College of the Chingyun Instruments Factory.





Teachers cited for outstanding work.



Su Pu-ching, well-known mathematician, pens inscriptions for youngsters encouraging them to scale new heights in science.

the applicants, politically, intellectually and physically. Where applicants proved equal in political and physical qualifications, preference was given to those who did best in the entrance examinations. Young people are now working hard for a solid education in their chosen fields. This is very important because the "gang of four" gave such wide publicity to frauds like Chang Tieh-sheng and abolished examinations of any kind, causing a drop in the quality of university students.

The new enrollment regulations were greatly welcomed. Last year 5,700,000 young people applied for entrance examinations. This has enabled us to discover a vast number of promising young people and guarantee the quality of our new students. Working hard at study has become a universal trend. Even primary and middle schools are taking extra measures to improve the quality of teaching.

About 30 percent of the new students came from among senior middle school graduates of 1977. In 1972 in line with Chairman Mao's directive Premier Chou had instructed higher institutes to enroll a number of students directly from among new senior middle school graduates. This would have enabled students to complete their studies without a break, a very important factor in training research personnel. They would have done a certain amount of physical work every year while in university. Interference by the

"gang of four" prevented this from being done.

Of course, because we have a huge population and there are not yet enough higher institutes, the percentage of accepted applicants is still very small. For the time being the majority of the middle school graduates will still be going to the countryside to take direct part in building socialism there. Some of them may still have a chance to enter higher institutes later. Others may be accepted into factories or other work places.

In the current admittance program, where applicants are equal in their political, intellectual and physical qualifications, preference is given to workers and peasants, children of worker and peasant families, and school graduates who have already settled in the countryside. Special consideration is given to young people of national minorities. Agricultural, medical and teachers' institutes give priority to activists in agro-science, barefoot doctors and rural school teachers. Young people from Taiwan province, Hongkong and Macao and returned overseas Chinese also receive special attention.

Q Are there other ways for the young people who did not get admitted to get advanced training?

A They can get it in many other forms. There are the Communist labor colleges for training agro-technicians, the factory-run "July 21" colleges for training technical personnel from among industrial workers, the commune-run colleges

for training rural cadres and specialized personnel. There are also television, radio and correspondence courses. TV courses now being offered jointly by the Ministry of Education and the Peking Television Station are in mathematics, electronics and English. Many factories, rural communes and government organizations provide counselors to help enrollees of the TV courses. Formal enrollees will take examinations and receive graduation certificates.

Q How do you visualize the future of China's education?

A China is entering a new historical period. The whole country is working to build a strong, modern socialist country. Chairman Hua has instructed us to set up more schools of all kinds as quickly as possible and to improve the quality of education. We're making plans toward that end.

For a first step, we plan to make senior-middle school education universal in the cities and junior-middle school education universal in the rural areas by 1985. We will work to give higher education to more people. We will give special attention to spare-time education and training on the job. In this last aspect, we hope in the next few years to give all skilled workers in the main branches of industry a course in modern technology in their fields. We are reforming our teaching materials. We have a tremendous amount of hard work ahead but we are confident of getting it done.

University Entrance Examinations, 1977

Staff Reporter



Applicants heading for exams.

During an entrance exam.



ASK anyone in China to name ten major events of 1977 and he is sure to include the new reforms in the university enrollment regulations.

Since the announcement last October on extending eligibility, holding entrance examinations, and selecting the best according to an all-round appraisal, this has been *the* topic of conversation

everywhere. In buses and restaurants even people who did not know each other would get into warm discussions about it. Bookstores quickly ran out of books helpful for reviewing middle school subjects. Factories, communes and government organizations allowed applicants two weeks off to prepare. Some units also engaged teachers to help.

Middle school teachers worked as hard as the applicants. Many who had retired returned to open special classes. A classroom seating fifty was often packed with twice the number, many of them applicants living nearby and working in factories or stores. A math teacher came home after a long day in her school and before she could sit down to supper, students were

already coming in for help. Telling them to be seated, she answered their questions while she ate. Asked if she was tired, she said, "Yes, but I'm glad to help. These are kids who hope to get into university so they'll be better equipped to help modernize our country."

The general atmosphere of hard work in studies extended even to junior middle and primary schools. Youngsters became more attentive in class and there were fewer idlers after school. Many more stayed on in school for extracurricular science activities or went straight home to do homework.

A special kind of atmosphere prevailed in Peking between December 10 to 12 when entrance examinations were held. At crowded bus stops people smilingly let young people obviously headed for the exams get on first. In restaurants they re-

ceived extra quick service. First-aid stations and food stalls were set up next to the 200 examination sites. Outside the gate of Peking Middle School No. 150 a retired woman worker stood with drawing compasses and triangles in her hands. "Waiting for somebody?" she was asked. She held up the things in her hands and said, "Just in case some kids forgot these."

'Now We're Moving!'

One couldn't help thinking of the notorious incident during the university entrance examinations of 1973. That summer a young man named Chang Tieh-sheng sat for the examinations in Liaoning province. When he couldn't answer most of the questions he filled a whole page of the exam papers with complaints against examinations. The "gang of four", looking for troublemakers to mess up the country in their bid for power, lost no time in setting him

up as "a hero who dares to go against the tide". He was not only admitted into university but also given wide publicity as an example for young people. This caused great confusion among the students. Entrance examinations were all but scrapped and there was a growing trend to try to get into university "through the back door", that is, through pull and connections or bribing people with influence, while vast numbers of really promising young people were kept out. The quality of students in the next few years dropped markedly. In all fields of work there is now a severe lack of young and competent trained personnel. If this situation had continued, modernizing the country by the end of the century would have been hopeless. People were deeply worried about the future of China.

With the "gang of four" out of the way, Chairman Mao's hope of seeing China a strong modern so-

Chu Hsiang-tung (left) and classmates reviewing for the exams.



cialist country by the end of the century is being made possible again. Plans to train scientists and technicians have been drawn up. Now the reforms in the enrollment regulations are opening the way to more talent and raising the quality of education. Thus when they were announced, people enthusiastically said, "Now we're moving ahead!"

The Applicants

Asked how they felt about the chance to enter university, many applicants said, "Chairman Hua has made it possible." These were sincere words. First, Chairman Hua halted the "gang of four". Second, the new regulations initiated by the Party Central Committee give all young people under 25 in good health and with a schooling of or equivalent to senior middle school a chance to be selected. Naturally they must love socialism and work and are willing to study hard. The age limit for those with some special skill and good job experience is extended to 30. This extension especially made entrance possible for young people who graduated from senior middle school in 1966 and 1967, the two years at the beginning of the cultural revolution when all universities and colleges were closed. There have never been so many applicants from among workers, peasants, army men, barefoot doctors, rural school teachers, school graduates already working in the countryside and new senior middle school graduates. By again selecting the best according to an all-round standard consisting of political, intellectual and physical qualifications, including appraisals given by the applicants' places of work, the universities are admitting a large number of very promising young people.

What are some of them like and what are their aims in getting a university education?

One worker, going on thirty, turned in a composition (for his examination in Chinese) that revealed one kind of driving force behind the thirst for knowledge. "Here I am," he wrote, "seemingly at odds with my age, burying myself in something I should have



Chen Li, a pig raiser who applied for university.

done a dozen years ago — cramming for university entrance exams. Of course there were all kinds of reactions to my decision — encouragement, support, also ridicule, even sneers." But one small incident spurred him on. In the factory where he worked there was an imported chromatograph that had broken down and been gathering dust for several years. For months he and his colleagues tried to get it working. But they failed. The factory had to get the foreign company that manufactured it to send people to repair it. They worked on it for several days and the machine began to run normally. Yet he never found out what went wrong and how it was fixed. Shamed and humiliated, he made up his mind to master his specialization and a foreign language in a year. He studied late into the night every day, and the difficulties were great. "The circuit diagrams began to look like cobwebs and I forgot the vocabulary faster than I learned it." But the memory of the chromatograph incident always made him go on. He would splash his face with cold water and continue until daybreak. He made some progress in six months, but longed for more systematic training in school.

"You can imagine how excited I was when I learned that I, a man turning thirty, still had a chance to go to college. I picked up my middle school textbooks and they were like old friends newly met.

When I took up a pencil to work out problems, it seemed as if my old teacher was standing behind me, and I could hear my own heart throb."

At first he didn't want to take his middle school textbooks to the factory, but the thought of the chromatograph incident erased all feeling of embarrassment. "There's no need to be ashamed of being older than most or starting from a low level. The thing to be ashamed of is failing to come up to par at crucial moments, of disgracing the country. . . ."

Younger applicants also showed this desire to do more for the country. Chen Li, a 20-year-old girl working as a pig raiser in the Tungpeiwang commune outside of Peking, said, "I hope to enter university so I can learn more in the science field and serve the people better. But whether I'm admitted or not, I'm going to keep up my studies and do my bit to help modernize our country." As soon as the exams were over she returned to her commune to work while she waited for the results.

Chen Li went to the countryside in the spring of 1976 after graduating from senior middle school, carrying a small bedroll and a big bag of books. She was assigned to the pig farm where everything was still done with manual labor. With a hundred pigs to look after, she had to carry a hundred double-loads of pig mash a day. But no matter how tired she was after a long day's work she would study before going to bed. She concentrated on mathematics and English and always carried a small English-Chinese dictionary in her pocket.

When Chen Li announced her intention to take the entrance exams, her fellow commune members took over her work so she could give all her time to reviewing her lessons. "Remember all the heavy loads you carried," they said to her. "If you get admitted, study to bring us mechanization sooner."

Chu Hsiang-tung, 19, a new graduate of Peking Middle School No. 35, hopes to get into Peking University and major in physics. Why physics? "It's a basic science subject," he said, "indispensable if we're to modernize in any field. I

want to dedicate myself to what the country needs most." His boyish face became eager when he added, "In ancient times our scientists invented the compass, paper-making, gunpowder and printing. But in modern times our science and technology have lagged. It's our generation's responsibility to catch up with the best in the world, and do even better. Chairman Mao said that young people are like the sun at eight or nine o'clock in the morning and he put great hope in us. We must live up to that."

Chu makes strict demands on himself in every aspect. Even during the time when the "gang of four's" misrule in education caused many students to neglect studying, Chu didn't waver. He prepared each lesson well, listened attentively in class and raised questions whenever he didn't understand. He did a lot of extra reading related to the subjects he was learning. Before he finished middle school he had already studied first-year college math and physics and started on derivatives and differential and integral calculus. He consistently got good marks in all his subjects. He was also monitor of his class, a sports activist and well liked for his readiness to serve the collective.

A Welcomed Pressure

More than one college professor has spoken of their gratification at discovering so many promising and talented young people. The feeling was especially strong at the Central Music Conservatory.

The conservatory had planned to admit 130 students — then found it had to choose from among 17,000 applicants! After stringent screening, qualified applicants still exceeded the original quota by several times. The teachers then submitted a joint request to the leaders to extend the quota. The conservatory finally accepted nearly three hundred.

"In my twenty-eight years of teaching," said Yu Yi-hsuan, vice-director of the conservatory and an accomplished soprano in her own right, "I have never had to choose from such a great number of applicants, and from so many who are already technically competent, or even proficient." She couldn't help comparing what she saw this time with the admittance work under the cultural dictatorship of Chiang Ching and her followers. At that time the conservatory was allowed to enroll students only from certain specified districts where children were "sure to come

from families who suffered bitterly in the old society and have a deep class hatred" (the "gang of four's" ultra-leftism). All other districts were ruled out. Even within the specified districts, unreasonable requirements — one of which was to investigate the applicants' family background back three generations — deprived many promising youngsters of the chance even to apply. With this method invariably the school had been unable to meet its enrollment quota. In 1975 the voice department under Professor Yu planned to enroll 14 students. After seven months of such investigations it selected only five tenors and four sopranos.

This time the entrance examinations turned out to be a grand review of musical talent. Applicants for the violin class played difficult pieces by both Chinese and foreign composers. Among those applying for piano was Nekt Igar, a ten-year-old girl of the Owenk nationality from Inner Mongolia who had been learning to play for a little over a year. Playing a prelude by Bach, the Czerny etude No. 599 and a piano adaptation of the Tibetan folk song "There's A Golden Sun in Peking", she showed sensitive musical feeling and unusual expressiveness, especially in the folk piece.

In one classroom, music played on the traditional instrument *pipa* was still heard at ten o'clock in the evening, past exam time. When a 14-year-old girl from Hangchow finished her piece, the teacher said, "Play another one." He seemed to have forgotten this was an exam and was as enthralled as at a concert.

For his examination for the composition class, a middle school graduate working in the countryside outside Kwangchow developed a musical theme into variations for the piano in three hours. He had learned composition entirely in his spare time.

The admittance of so many talented young people eager to make music serve socialism put pressure on the music teachers. It meant harder work to cope with the new situation. "This is the kind of pressure we like," they said.

Reciting, an exam required for applicants for the announcers' class at the Peking Broadcasting College.



Women Revolutionaries I Have Known

KANG KE-CHING

In our March 1978 issue Kang Ke-ching told the stories of several women she had known in the first and second revolutionary civil wars (1924-27 and 1927-37). Below she tells of three heroines in the War of Resistance Against Japan (1937-45) and the War of Liberation (1946-49). A third article will appear in the next issue.



Chao Yi-man

Chao Yi-man, Heroine of Resistance to Japan

WITHIN three months after their attack on China's northeastern city of Shenyang on September 18, 1931 the Japanese imperialists had occupied all three northeastern provinces and imposed a fascist rule there. In 1932 the Chinese Communist Party organized the Northeast Anti-Japanese United Army and began protracted war against the invaders. One of the army's outstanding regimental political commissars was Chao Yi-man.

Chao Yi-man was born in 1906 in a feudal family in the city of Yipin in Szechuan province. Under the influence of her brother-in-law, who was a Communist, she broke away from her family and gradually absorbed progressive ideas. She joined the Communist Party in 1926 while she was studying at the Central Military and Political School in Wuchang. Later she became an underground worker for the Party in the Kuomintang areas.

After the Shenyang attack, which became known as the September 18 Incident, the Communist Party sent large numbers of its best cadres to the northeast to mobilize the people to resist. Among them was Chao Yi-man, who was sent from Shanghai to Harbin. There she worked in the Manchuria province trade union office, cutting stencils, mimeographing and distributing leaflets and calling on the workers in Japanese-run factories to go on strike.

KANG KE-CHING is a member of the Central Committee of the Chinese Communist Party, a Standing Committee member of the National People's Congress, a Vice-Chairman of the National Women's Federation and widow of the late Chu Teh.

In 1934, while Party secretary of Chuho district in Heilungkiang province, Chao Yi-man often disguised herself as a peasant woman and passed through enemy areas to the countryside beyond. She aroused the young peasants to join the guerrillas, organized others to deliver grain for the army, raised funds and purchased medicines for the army, and found places for the wounded to stay. Everywhere she went she would spin and thresh with the women and help them with the cooking, so they treated her like one of their own.

In 1935 Chao Yi-man was appointed political commissar of the Second Regiment under the United Army's Third Corps. Her regiment frequently acted as a guerrilla unit. In a short fur coat and a fur hat and carrying two pistols, astride her white horse she led guerrilla raids on Japanese military trains and strongholds in Heilungkiang. That winter the enemy troops went out on a "punitive expedition". Chao Yi-man shifted her units deep into the forests where they lived by hunting.

The Japanese burned the villages in the guerrilla areas and drove all peasants who had not been able to hide into concentration spots, but the people remained unbowed. After the Japanese left they rebuilt their villages with the help of the United Army. In October 1936 Chao Yi-man and her unit were pursued and surrounded by enemy troops. She was wounded and captured while trying to break through.

The Japanese hoped to get information from her on the guerrillas' combat plans and the Communist

Party's grass-roots organizations. They made her watch other guerrillas being executed. They beat her ruthlessly, then drove slivers of bamboo into her wounds and under her fingernails. When she passed out they poured water over her to bring her to. All they could get from her were bitter denunciations.

Failing with hard tactics, the Japanese tried soft ones. They sent Chao Yi-man to a hospital in Harbin for treatment. Since this also failed to elicit any information from her, they went back to torture. Even when flames were held up to her face, blistering it, her only answer was, "I don't know." When they threatened her with death, she pointed to her heart and said, "The answers are all in here. You'll have to dig them out!"

Moved by her spirit, a nurse and guard assigned to watch over her helped her escape from the hospital, but their pursuers caught up with them.

On July 5, 1937 Chao Yi-man was taken to the execution ground. Refusing to be helped by the dirty hands of the enemy, she staggered along on her own. As she walked she sang the words of a song:

*The flag of our nation, crimsoned by blood,
For a fighter now serves as a shroud.
We fear neither prison nor guillotine . . .
This is our song of farewell.*

Chao Yi-man stood before a Japanese firing squad at the age of 31.

Her ringing cry, "Long Live the Chinese Communist Party!" was louder than the sound of their shots.

Jung Kuan-hsiu, Mother to the People's Army

On July 7, 1937 the Japanese imperialists attacked the Chinese garrison at Lukouchiao Bridge near Peiping (now Peking). Very soon they had occupied Peiping and Tientsin and were pushing on trying to swallow up all of China. Under pressure from the

Chinese people and the Communist Party, the Kuomintang government headed by Chiang Kai-shek gave verbal recognition to the legal status of the Communist Party and agreed to fight Japan. Resistance began on a national scale. Carrying out its policy of a united front to fight the Japanese, the main forces of the Communist-led Red Army in the northwest were redesignated as the Eighth Route Army and the guerrillas in the south, the New Fourth Army. Both threw themselves into the fight against the invaders in north and central China. But all through the eight years of war, Chiang Kai-shek remained passive in resistance to Japan but actively fought the Communists. Kuomintang areas in east and central China were soon lost to Japan. The people's armies under the Communist Party bore the bulk of the fighting and also expanded liberated areas behind the enemy lines.

MANY women in the anti-Japanese base areas joined the Eighth Route Army, New Fourth Army and the guerrillas. Women Party members organized peasant women to support the front and set an example by supporting their husbands and sons in joining the people's army. They fought spies and traitors, cared for wounded soldiers and led the people in production. One of these was Jung Kuan-hsiu in the Shansi-Chahar-Hopei border area.

Jung Kuan-hsiu caring for a wounded Eighth Route Army soldier.





Jung Kuan-hsiu chatting with armymen after liberation.

When an Eighth Route Army unit arrived in her native Pingshan county in Hopei province after the Kuomintang troops had withdrawn before the oncoming Japanese, Jung Kuan-hsiu was already over 40. She had spent the first half of her life under the oppression that was the lot of most Chinese peasants. The Eighth Route Army unit established the people's political power and helped bring the villagers together for resistance in mass organizations. Jung Kuan-hsiu, elected chairman of the Women's Association for National Salvation, organized the women to make shoes for the army, deliver grain for it and serve as stretcher-bearers. She was the first to send her son to join the army.

In 1943 the enemy mustered 70,000 troops for a huge "mopping-up" campaign against the border area. Jung Kuan-hsiu's village became a transit station for the wounded. She and other village women often tended them for days on end without rest. One midnight when Jung Kuan-hsiu had already gone without sleep for two days, a man was brought in with six saber slashes on his head. His breathing was so feeble at first that she could not be sure he was alive. Supplies were exhausted, so she wiped the blood from his face with some cotton wool torn from her padded coat. Carefully she fed him water with a spoon. After a long time he opened his eyes and saw a kind-faced gray-haired woman supporting him with one arm. "Mother, you . . . you've saved my life," he said. Jung Kuan-hsiu found his feet were frostbitten and wrapped them in cotton wool taken from her daughter's padded jacket.

When the wounded man was well enough to be moved to a hospital she prepared a stretcher with a thick layer of straw. "My name is Jung Kuan-hsiu," she told him. "If you ever come this way when you are well, you can always get food and rest here."

Summer or winter, Jung Kuan-hsiu often waited by the roadside with cornmeal buns and rice gruel to feed the wounded as they passed through her village.

In 1944 she was given the citations of Model in Supporting the Army and Mother to the People's Army at a meeting of outstanding representatives from all over the Shansi-Chahar-Hopei border area. She was awarded a mule and farm tools which she turned over to mutual-aid groups which had been formed for farming. Taking the lead in the campaign for production to support the front, she hung a bell on a tree and struck it every morning to call the villagers to work in the fields.

Jung Kuan-hsiu still lives in her village today. She treats the men of the People's Liberation Army stationed nearby with the same warmth, often telling them stories of the struggles of the war years. She has been a deputy to every National People's Congress since liberation and a delegate to every national women's congress. When I meet her at these meetings I am always impressed by her story, her straightforward manner and her warmth. She is deeply respected by everyone.

Li Lan-ting, Doctor at the Front

LI LAN-TING was leader of a medical team in the New Fourth Army fighting on the Yangtze River during the war years. In 1941 when she was a student of 18, patriotism had moved her to do her part in the resistance to Japan. She had left her school in Shanghai and joined a New Fourth Army medical team. "Our men are shedding their blood at the front for the revolution," she said. "The least I can do is to dedicate myself to serving them."



Li Lan-ting and members of her medical team transporting wounded during the liberation war.

One day in 1942 as Li Lan-ting was caring for 19 seriously wounded soldiers in a village, a Japanese detachment suddenly appeared in the distance, preparing to cross the river running past the village. There was no time to evacuate the wounded. Li Lan-ting dug a pit in a wheat field and buried the medical supplies, and distributed the wounded among the peasant homes. Then she disguised herself as a peasant woman and seated herself in front of a house to watch the enemy's movements. To her great relief it turned out that the Japanese were only passing through and did not search the houses.

In 1945 Li Lan-ting was head of the department of medicine in a field hospital. After a battle the troops quickly moved on, but the hospital, with 100 wounded, could not move fast enough and was surrounded. She and the hospital staff hid the wounded in fishing boats. Dressed as a poor boy she went around collecting food for the wounded. Our troops thought that the enemy had killed everyone in the hospital. But two weeks later, after the Japanese forces had left, the hospital was reunited with the army. By then most of the lighter cases had recovered and the serious cases were better.

During the liberation war Li Lan-ting was leader of a medical team in the Central China Field Army and was cited many times for her outstanding service. In 1946 her team evacuated more than 500 wounded from a battlefield under extremely difficult conditions. Bombed from overhead and pursued by enemy troops, they had to carry stretchers along slippery, rain-soaked paths, sometimes through knee-deep

water. Li Lan-ting helped carry stretchers. Once when taking one across a river she was so exhausted that she slipped and fell and broke a rib. But, clenching her teeth, she continued on with the evacuation.

During a campaign to liberate the south, Li Lan-ting and her team marched 400 kilometers at a stretch. Every time they came to a camping place, they had to put up shelters and camouflage them before they could treat the wounded. Once in only a day they stuck in branches to camouflage shelters for 800 wounded on an open sandbank. Another time she was in charge of a transport team which often moved the wounded day and night under intense enemy strafing. Li Lan-ting sometimes carried a wounded man on her back, or covered one of them from enemy fire with her own body.

In the summer of 1948 Li Lan-ting was received by Chou En-lai, then Vice-Chairman of the Party Central Committee's Military Commission, at Hsipai-po in Hopei province. He praised and encouraged her. I was also present at that meeting. Li Lan-ting looked so thin and small in an oversized uniform, but at the thought of her many valiant deeds I was filled with admiration.

In 1950 Li Lan-ting went to Korea with the Chinese People's Volunteers and again gave valiant service. Today, high-spirited and modest as always, she is a vice-head of surgery in a big army hospital in Peking.

* * *

Chao Yi-man, Jung Kuan-hsiu and Li Lan-ting were all ordinary women, but in times of national crisis, with Communist Party leadership they made extraordinary contributions and became examples for millions of women.

Li Lan-ting (second left) in 1977.



Rewi Alley in his home in Peking.



From the Old China to the New

REWI ALLEY

SHANGHAI in the spring of 1927 was an amazing place to come to. The Whangpoo River was jammed with warships of many nations. Detachments of the armies of various countries paraded through the streets. Money-changers' shops on Szechuan Road sold beastly atrocity photos of beheaded or tortured revolutionaries. Foreign residents of the West and French concessions continued with their round of little pleasures, only slightly angered that their house-boating and hunting parties in the countryside were temporarily impossible. For "trouble" had erupted, the reasons for which they did not quite understand nor care to try.

The big banks, the foreign soldiers, the row of battleships in the river and the big Chinese banks all helped buy off that traitor to the revolution Chiang Kai-shek and to arm the Green Band gangsters to massacre the worker rebels. In a great measure, the Green Band gang was the real government of both the International Settlement and the French concession, surely one of the greatest gangster setups in history. Shanghai held a monster collection of rascals from all China and the world, whose main occupation was fleecing the Chinese people.

All the great public utilities and much of the big industry were owned by foreign monopolies who steadily drained away countless millions in profit, their comprador henchmen on the China coast getting enough to keep their big houses, their bebies of concubines and their huge families of parasitic children in degenerating luxury. The enormity of the steal and its effects came home each day as one went through the factories of Shanghai, seeing everywhere people working in crude exploitation, suffering and misery.

Around the edges of this great parasitic city were whole towns of straw huts — the refugees of constant flood and famine in the interior. Shanghai's industry and cheap foreign goods had bankrupted the handicraftsmen of the interior. China was in chaos. Warlords trampled the land, supplied with guns by foreign arms merchants, selling the opium they now forced the people to grow to replace the imported drug that had hoisted so many powerful foreign banks and trading corporations to the position they now so arrogantly occupied in the coastal cities.

The Kuomintang government in Nanking was hopelessly corrupt. Foreign entrepreneurs made vast fortunes. Kuomintang leaders stole

whole loans and put them safely overseas in their own accounts, becoming millionaires out of the blood of their people. Once on the train to Hongkong I met one of these types. "Never make a trip on this rotten train without making a big haul of U.S. dollars," he told me.

Japanese imperialism wanted all this. American imperialism was bidding for a takeover. But the Chinese people had started to awake and it was becoming too late. From 1937 onward, the Kuomintang sought to appease the enemy.

For the common people, Kuomintang rule was hell. In Sandan in west Kansu where I then lived the great mass of the people was almost entirely destitute, with a handful of tyrant landlords backed by a Kuomintang army standing over them. Their misery had to be seen to be believed. I took a Kuomintang general to some of the villages outside of Sandan. He stared hard at the freezing, pot-bellied children, the sunken apathetic faces of their elders, and the utter poverty of their surroundings, and muttered, "The Kuomintang is bankrupt!" He was Chang Chih-chung, who not long after joined up with the forces for liberation.

A peasant boy of Sandan conscripted by the Ma Pu-fang warlord armies of Chinghai deserted. Ma's soldiers came to his home in Sandan, stripped his father on a cold winter's day, hung him up and beat him to death. In one night at Shuangshihpu in the Chinling Mountains 83 boy conscripts from Szechuan died.

Such cases as these were commonplace as one traveled in the hinterland. The old society had gone down about as far as it could go, and eventually in 1949-50 the whole land welcomed the forces of liberation while the Kuomintang sought refuge on the island province of Taiwan under the umbrella of the new chief imperialism of the world at that time.

LOOKING back over the years from 1929 to 1949, one wonders how many millions of people lost everything because of the vicious, sordid nature of the utterly rotten society they were submerged in. A society that made men into beasts and gave only hopelessness and suffering to the great majority.

In the dark alleyways of Shanghai child workers toiled in suffocating conditions in sweat shops for long hours, making export items from imported materials for five-and-ten-cent stores in America. When one died he was swiftly re-

placed by another bought for a few dollars. Cotton mill girls were held under what amounted to prison conditions, allowed but one-fourth of their meager wages for 12-hour days. Some at times were sold to brothels on Foochow Road, where their average life was two years, as I found on investigation by a woman inspector.

In the three years after my arrival in China, eight million people died of famine in a drought-stricken northwest. The fact did not even get reported in the press. In Inner Mongolia, where I worked one summer in 1929, some 112,000 people who died there were buried in the city moat. They had come in from all over the countryside in search of some relief food, little of which was ever distributed. I worked in Hupeh after the great flood of 1931 in which at least a million people died. The most common sight around Wuhan then was that of the floating corpses of dead children. In Honan in 1941 the land was parched, the Japanese armies pressed in, the Kuomintang soldiers looted, and clouds of locusts ate everything that lived. There were human meat markets. Crowds of children came to the railway and passage to the west was fiercely chaotic. On one winter trip into Honan, I looked out of the window of the train wondering why all

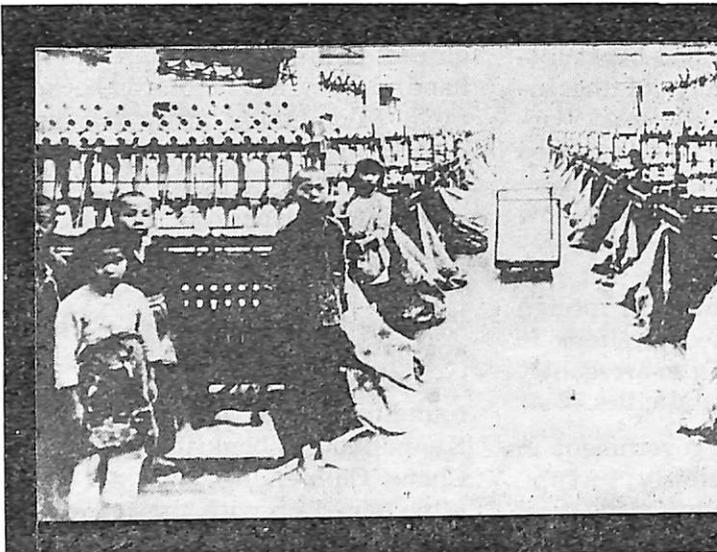
those soldiers were sleeping on a railway station platform, but then realized that they had been frozen to death.

There was mass suffering all over the Kuomintang and Japanese occupied hinterland on a scale too vast for it to penetrate the mind. It was the people, the true gold of China, who were suffering. The cunning ones got official jobs and lived well. Patriotic young people were finding their way to the Eighth Route or New Fourth Army of the Communists in increasing numbers. The end of a stage was approaching.

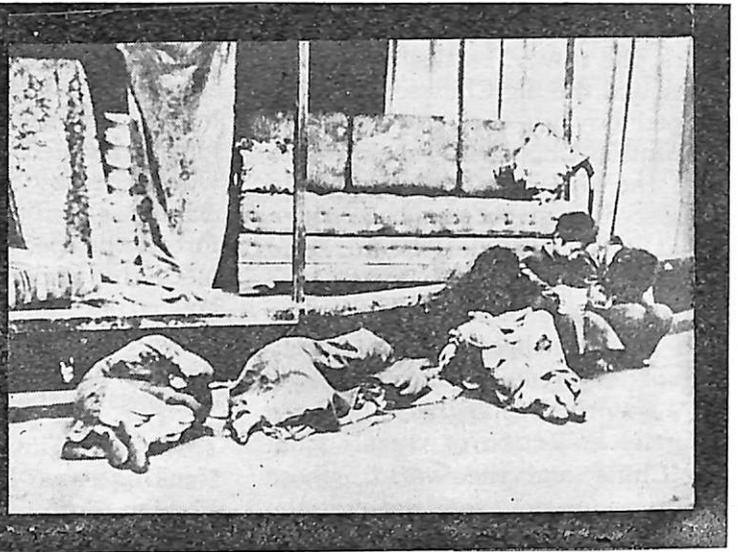
Like so much else, the life of the ordinary people in Shanghai was under the grip of the Green Band gangsters. Gunmen killed at will, though at times had to spend a good deal of money buying off verdicts in the "mixed" courts of the International Settlement. The list of criminal killings and general infamy would fill volumes.

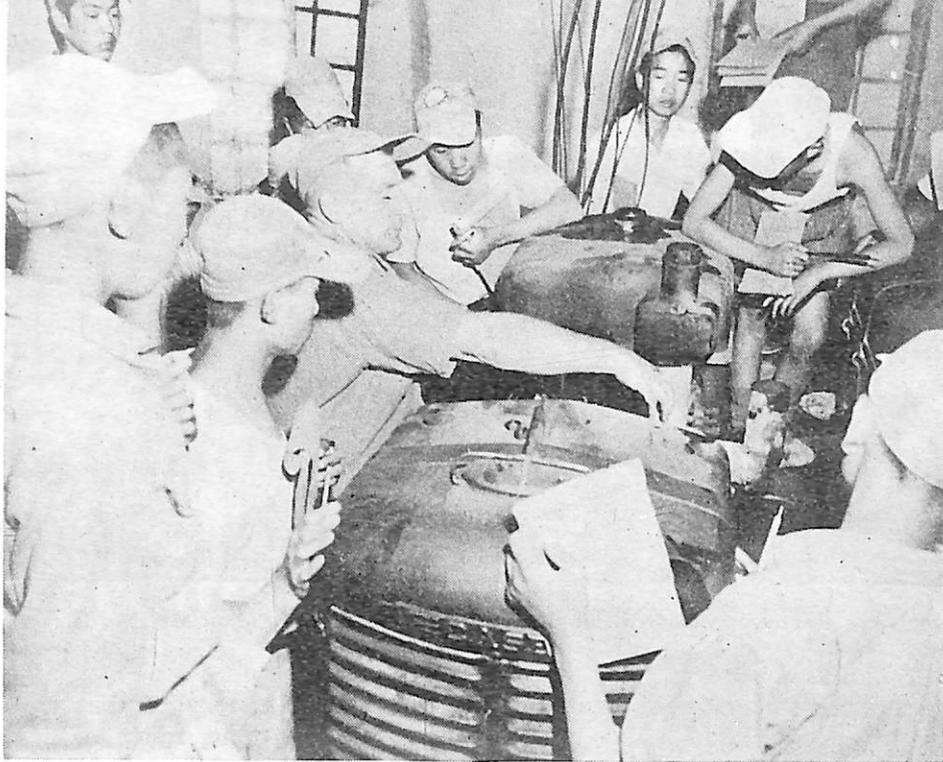
It was in spite of such powerful gangsters that the Shanghai Communist Party underground persistently went on with its work, finding ways and means to operate and educate, deserving immense praise for their efforts. Yet how many progressive people were killed by the Kuomintang between 1927 and 1937? The number has been estimated at 30,000. There

Child workers in a cotton mill in pre-liberation Shanghai.



Homeless children in old Shanghai.





housing, clothing and food. What has been done already since liberation took immense sacrifice and devoted work in the best traditions of the revolution.

Of course, no great work of this kind could be done without mistakes. The overall picture, however, has been one of immense progress, though there have been zigzags at times. Objectively, the years since liberation have been

Rewi Alley (pointing) explaining characteristics of a diesel engine to students at the Bailie Training School in Sandan, Kansu province, before liberation. He was school principal. (Below) Rewi cutting a student's hair.

were possibly more. A great many wonderful, intelligent people were taken to Nanking and executed at Yu Hua Tai there. There was nothing simple about revolutionary work in those days!

WHEN liberation came, I was in Sandan in west Kansu. The change was abrupt. The opium shop on the main street was closed — and never again in the subsequent years of travel all over China did I get the slightest whiff of its sickening smell. The chief landlord of Sandan no longer had the right of first night with newly married brides among his tenants. He also no longer went to Nanking as county representative, returning with V.D. as he had done. The people began to stand up and look at their heritage anew.

Change came faster as land reform was carried out and the people had the chance to look around themselves, assess and act. Bit by bit political understanding came to them as they saw the old order crumble and their once so feared despots laid low. Their children flocked to schools, no matter what they wore or did not wear. Landlord stocks of grain were distributed and vacant land tilled. Irrigation systems were put in and much fallow land reclaimed. Deep wells

were dug and pumps installed. Medical facilities came in. County cadres moved out among the people encouraging them. Livelihood bettered as organization bettered. Increasingly this picture spread all over the whole of China as all the southern provinces were liberated, until at last only the province of Taiwan remained in the grip of the huge army the Kuomintang had moved there.

I was able to start traveling throughout China, watching the immense progress being so steadily made. Sometimes great spurts would be made and big dams built. But then it would take many years of steady, hard work to complete the whole system of laterals. Highways, railways, canals, river and coastal transport had to be carried through. A full-scale war against the greatest military power on earth at that time had to be fought as the U.S. armies pushed up through the Korean peninsula toward the Chinese border. The struggle of the Vietnamese people against French imperialism had to be helped. And at the same time, inflation had to be checked, prices held stable and the whole nation put to work.

After 29 years there is still no unemployment. China's people today are not rich but they have



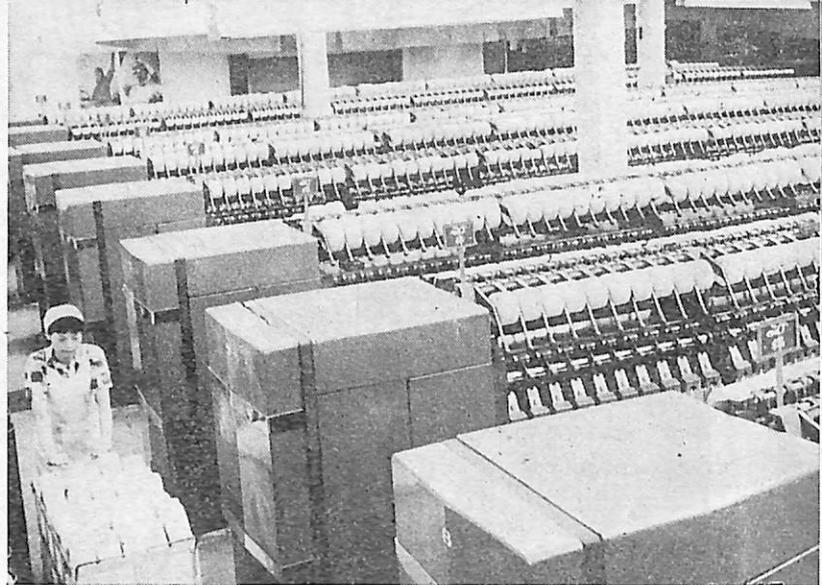
startlingly successful. Countless millions of trees grow where none grew before, deserts are reclaimed, hills pitched into valleys and new cropping land made, mechanization accelerated — and the people smile.

Yet the call is always to do still more — a mental and material building that will challenge the revolutionary spirit of youth for very many years yet to come.

Centuries of the impact of foreign imperialism united the people against it. The Korean war proved the necessity of vigilance and that imperialism could be kept out. The blockade of the western powers and then the change of the Soviet Union into a chauvinistic imperialist state proved the value of self-reliance. The basics for the new industry have now been well



A shop in the Tapu County Pottery No. 2 in Kwangtung province.



Modern spinning shop in the Shanghai Cotton Mill No. 14.

laid. With a million or so new machine tools already humming throughout the hinterland, self-sufficient industry will be easier than that of agriculture to master. But with the spirit of the people kept high, there is no reason why both should not march together victoriously into the next century. The year 2000 will certainly see a new, modern China.

OF COURSE there will be setbacks, especially with natural disasters. The great flood of the Yangtze River in 1954 was mastered. Violent earthquakes at Hsingtai, Sungpan, Haicheng-Yingkou, Tangshan and on the Yunnan border were dealt with. The flood at Chumatien in Honan in 1975 was mastered, with now a smiling, prosperous countryside there. Droughts have been conquered. The machinations of the "gang of four", who tried to create chaos in a bid for absolute power, have been mastered. All such victories—most of which I have personally witnessed—have inspired and encouraged the Chinese people, helping them to face up to new problems with renewed determination.

One enormous difference between the old society and the new one has been the betterment of relations between minority groups with each other and with the Han majority. From a society where every man's hand seemed directed against the other, where in some cases there was just an elementary primitive communism, or else a slave society, or the more developed pastoral societies of the borderlands, people looked at each

other with suspicion. Tribal lord fought tribal lord, and cunning traders exploited all. Deep superstition was the portion of many highland people. Dark temples with strange rites, but no schools, hospitals or modern factories.

To all these places change has come. Children are in school. Venereal disease, once rampant, is gone. Medical teams covered all border areas and eradicated the big population killers. Today medicine has come down to the people in a new way, right into the fields where farmers work, for with them is always a member who has had training in health work, first-aid and connection with a brigade clinic, commune or county hospital.

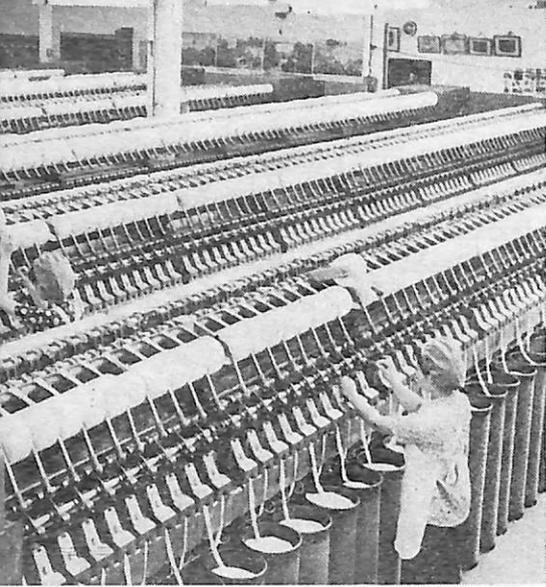
All of these things I have seen and thought over. There was almost total illiteracy among the peasant population up to 1949. Now one can find brigades with ten-year school courses. Many areas have local training colleges. Seven-year schools, with the last two years a lower-middle school, are almost universal.

In the arts and crafts it is very satisfying to see how famous old potteries like Tehua in Fukien, Lungchuan in Chekiang, Fengshun and Kaopi in Kwangtung have been reorganized and put into production again. To go among the tall hills and deep valleys of Tapu county in northeast Kwangtung and see the fine wares that come from the clever fingers of potters is truly exciting. Now the number of new potteries is legion. Even in earthquake-devastated Tangshan the potteries are producing. Some of the finest jade carving in

China's long history of that craft is now being done, much of it in rural areas. In art for the people, peasant art is flourishing and an appreciation of art forms is growing among the ordinary people.

Women all over China feel the change greatly. They have become persons in their own right, working for wages equal to those of the men for equal work. Shanghai, where once the average life of a street prostitute was two years after she had started in some brothel, does not know this scourge. The sick women were brought together after liberation, cured of their diseases and found homes and work. Cadres explained to them that their condition was simply the fault of a rotten society.

Gallantly the Chinese people push ahead with their many peaceful tasks, always endeavoring to build friendship with people around the world. Not for them hegemony. They have no wish to become a superpower. They have no troops outside their country. They simply want to be able to raise the quality of life of their own people, carrying on with their revolution to make this come true, teaching only by example for any who care to learn from them, sending out missions to third world countries to help when asked with medicine, industry or communications, doing their job and then going quietly away, in the spirit of true service to the people. From the China of incredible chaos and misery I saw when I came here in 1927, I have lived on into the new China of peace, health and progress.

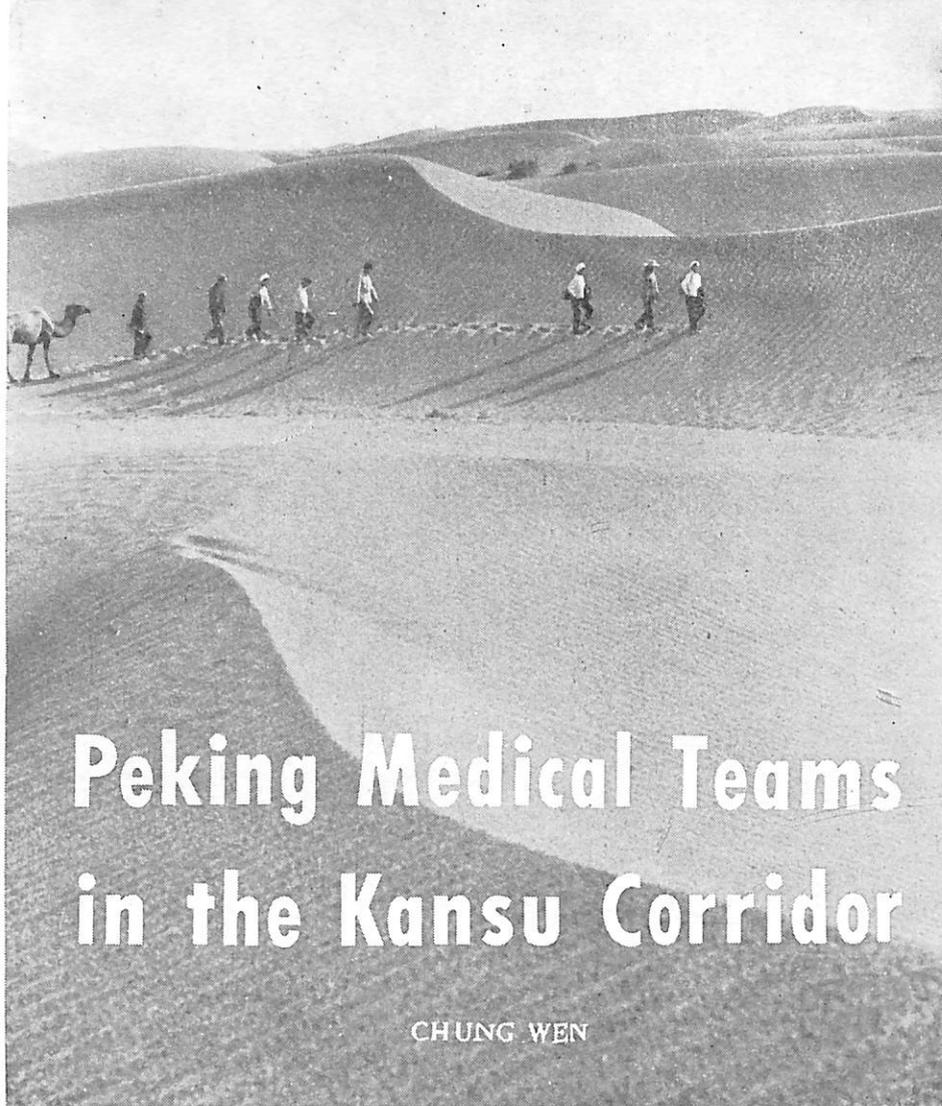


The Tanglai Canal which diverts water from the Yellow River for irrigation is one of the many projects to harness the river.



Better medical care in rural areas has greatly improved the health of the Olunchuns, one of the smallest nationalities in China.





Peking Medical Teams in the Kansu Corridor

CHUNG WEN

A medical team from Peking on the march in the desert.

stress of medical and health work should be on the rural areas, Premier Chou dispatched the first of many Peking medical teams to the Kansu corridor. Explaining that their task was like "taking fuel to people shivering in snow", he wanted them to do much more than give treatment. They were also to carry out mass sanitation campaigns and mobilize the people to rebuild wells, latrines and animal pens and learn how to keep them in sanitary condition, train barefoot doctors and help build cooperative medical care systems.

In the decade since then over 4,000 doctors, nurses and members of medical research institutes in Peking have been to the Kansu corridor in ten batches and worked with local medical personnel to greatly improve the health situation there. In the meantime, to carry out the Premier's instructions, many more city medical teams were touring frontier regions, minority nationality com-

THE Kansu corridor is thinly populated," Premier Chou En-lai said in 1967. "People have no place to get medical treatment. They need doctors badly."

Even though great changes had taken place in the northwestern province of Kansu after liberation in 1949 and health work had improved, overall development in health work had been hampered by the interference of Liu Shao-chi's revisionist line which stressed more attention to the cities than the countryside. The farming and herding areas of the corridor lacked adequate medical care.

In ancient times the Kansu corridor was the center of a brilliant culture. The Old Silk Road to the west went through it. The world-famous art treasures of the Tunhuang grottoes lay at its western end. Centuries of feudal rule and the creeping sands of the desert, however, left it one of new China's poorest and most backward areas.

In 1967 when Chairman Mao pointed out specifically that the



munities and other isolated regions all over the country.

In the Kansu corridor the city doctors and nurses face endless deserts and pastures at 4,000 or 5,000 meters above sea level. Their herdsman and peasant patients are scattered far apart. In some areas villages are a day's ride apart. They have to learn to ride horses and camels, overcome altitude sickness, speak languages such as Mongolian, Tibetan and Kazakh, and get accustomed to local habits.

Peking medical teams have covered 420,000 square kilometers in the Kansu corridor in the last ten years, given over a million treatments and done 10,000 operations. They have visited nine out of ten of all herdsman and peasant families, and saved thousands of lives. Theirs is not just medical service but down-to-earth living and working with the people. They wash patients' clothes, personally give them their food and medicine, donate their own blood for transfusions.

In 1973 three medical team members traveled on camels in a brigade deep in the Badin Jaran Desert. In 56 days they visited every family scattered over an area of 8,000 square kilometers. In the "impossible" conditions of a yurt they removed an ovarian cyst. To visit 24 families deep in the mountains in the Tienchu Tibetan Autonomous County, two members crossed fast streams and climbed steep, narrow trails, bringing serve-the-people medical care to every door.

Sanitary Environment

Kansu herdsmen and peasants have often named new water projects "Peking Doctors' wells" and "Peking Doctors' ponds" because the Peking medical teams helped design and build them. One of these, in the Hsintun commune, is a two-part project — a muddy pond now surrounded by a high earth wall and a nearby well lined with cement and filled with clear water. A pump and filter cleans

A rest-break lesson in hygiene.



One of the patients.



A covered storage well for drinking water.

up the muddy water as it flows from the pond into the well.

The Kansu corridor is dry. For centuries both people and animals drank water which came from melting snows of the Chilian Mountains through ditches into their villages. Here it was kept in open ponds — good breeders of microbes and worms. The result was intestinal disease.

The Peking medical teams decided to improve the drinking water first. It proved difficult in the face of ignorance and centuries-old

habits. "We've drunk water from the ponds for generations," people said, "how do you know diseases come from the water?" So the teams first taught hygiene and elementary science and showed the people the germs in the water under a microscope. Eventually even the most backward people were convinced. Together the Peking teams and local health work-

Peking teams, local medical workers and barefoot doctors carry out general surveys among the 930,000 people in the corridor on such diseases as brucellosis, tuberculosis, women and children's diseases, chronic bronchitis and eye troubles. In the Chiuchuan prefecture, for example, yearly general checkups on brucellosis have been carried out since 1970.

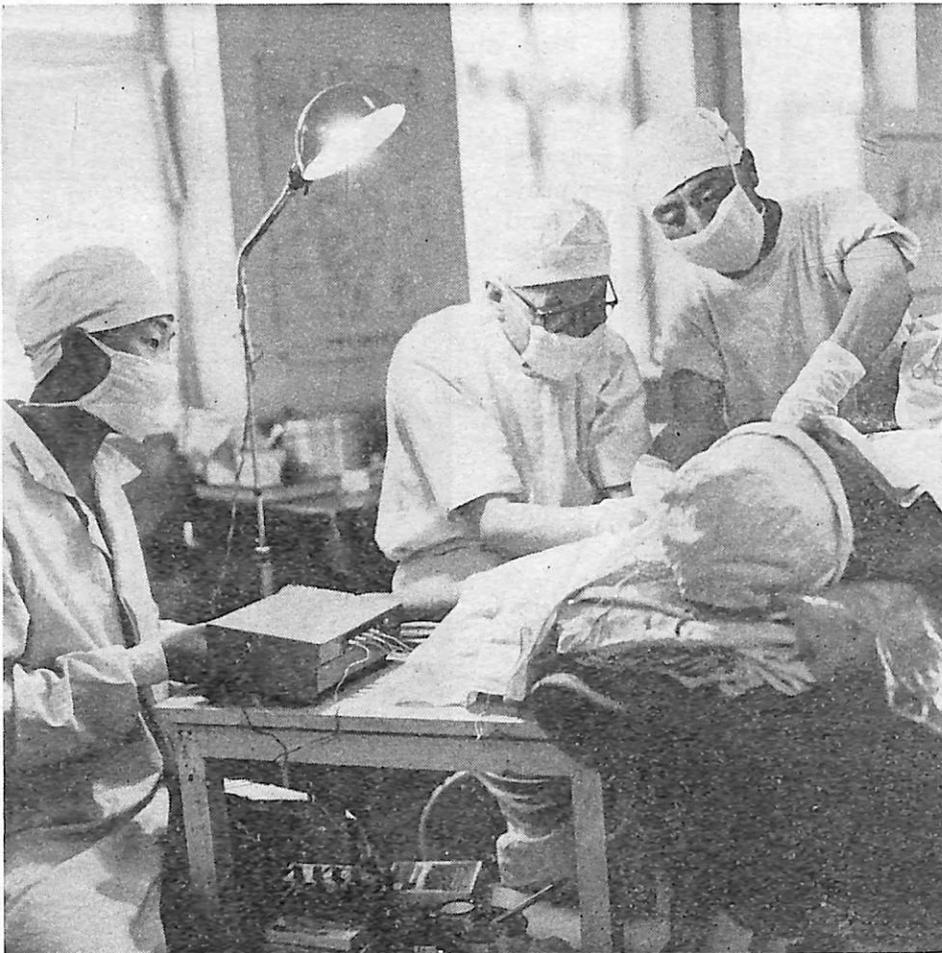
improve the skill of health workers in the brigade medical stations, commune clinics and county hospitals.

In ten years the Peking teams have given advanced training to some 10,000 barefoot doctors and professional health workers in internal medicine, surgery, gynecology, pediatrics, ophthalmology, Chinese traditional medicine, acupuncture, medicinal herbs, X-ray and fluoroscope diagnosis and laboratory work. This training includes lectures, clinical practice and home visits to patients. Many of their students are women.

The Nanhu commune 70 kilometers southwest of the Tunhuang grottoes is surrounded by the desert. An ancient poet called it "a place where the spring breezes never reach". Today the 4,000-member commune has a 14-bed hospital with five doctors, one nurse and a laboratory technician. There is a radiotherapy room, laboratory, pharmacy and operating room equipped with a shadowless lamp and an all-purpose operating table.

In the past it had no beds or operating room. Serious cases had to be sent to the county hospital far away. Today the clinic handles medical, pediatric and gynecological cases, and does ordinary and lower abdominal surgery. With the help of the Peking medical teams, in three years they have saved the lives of 60 critically ill patients.

The Peikung brigade cooperative medical station in Nanhu commune was set up in 1970 with the aid of a Peking medical team. The barefoot doctors and commune members collect, cultivate and process medicinal herbs. In 1975 a pharmaceutical center was set up with a high-pressure sterilizer and machines for making tablets and capsules. Today they make 50 kinds of pills, powders, ointments, pellets and tablets from wild and transplanted herbs from elsewhere — one-fourth of the medicines needed at the station. The three barefoot doctors use both traditional Chinese and western methods and know how to cultivate and process Chinese medicinal herbs.



An operation in a commune clinic.

ers transformed the muddy ponds into clear water with a filter system of stones, sand and charcoal. Walls were built around the ponds to keep animals out. Intestinal disorders declined sharply.

Sanitation was poor in the Kansu corridor. There were few latrines. Pigs ran loose. Cooking filled the rooms with smoke. The medical teams helped the peasants build latrines, pigsties and flues. Sanitation campaigns have improved environmental conditions and brought many infectious diseases under control.

This has enabled them to cure 85 percent of the cases. Because of better prevention no new cases have appeared since 1975.

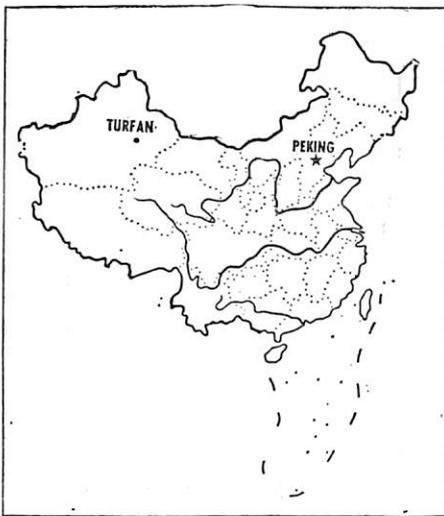
Training Medical Workers

The Kansu corridor has 22 counties and municipalities. Its rural medical network is made up of county hospitals, commune clinics and brigade medical stations. There are 7,000 barefoot doctors, averaging two or three to a brigade.

To help strengthen this network the Peking medical teams train more barefoot doctors and help

Turfan Basin Cemetery Excavated

WU CHEN



Painted wooden figure of groom, Tang dynasty (618-907).

the blazing sun makes the red rock look as though it is on fire, and also makes it the basin's hottest spot. The place is well known to the Chinese people from the 16th century novel *Journey to the West*. According to the story, the famous Buddhist monk Hsuan Chuang had to cross the burning mountain on his journey in search of the truths of Buddhism. In order for him to continue his journey, the Monkey King Sun Wu-kung, one of his disciples, had to steal a magic fan belonging to Princess Iron Fan and extinguish the flames.

As a matter of fact, historical records show that on his way to India in A.D. 627 the real Hsuan Chuang did spend several months in the city of Kaochang (the ancient name for the Turfan area) at the foot of the Flaming Mountains. A biography of Hsuan Chuang records that Chu Wen-tai, Prince of Kaochang, revered the monk so much that he wanted to keep him there. In protest the monk fasted for three or four days and was near death. Moved by Hsuan Chuang's resolve, the prince finally allowed him to go.

As early as 1910 a tombstone for Chang Huai-chi, a Tang dynasty military commander, was unearthed at Astana cemetery, but for

Painted clay figure of polo player, Tang.

AT THE FOOT of the Flaming Mountains in the Sinkiang Uighur Autonomous Region's Turfan basin in recent years we have excavated over 400 ancient tombs in a large cemetery. Some 10,000 objects unearthed date them from the Tsin (265-420) to the Tang (618-907) dynasties and shed much light on the history of this famous oasis. The graveyard covers the northern part of Astana village and eastern part of Karakhoja village, 40 kilometers from the administrative center of Turfan county.

The Flaming Mountains are a russet-colored rocky range stretching east to west across the center of the basin. In summer

WU CHEN, a staff member of the Museum of the Sinkiang Uighur Autonomous Region, participated in the excavations at the Flaming Mountains.





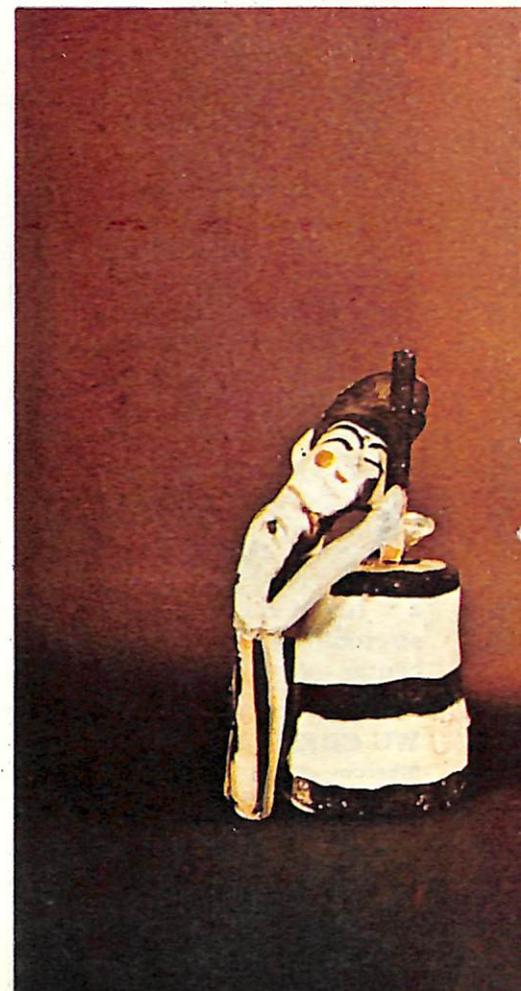
Silk with woven design of paired goats and birds among trees, Sui dynasty (581-618).



Two-tone dyed silk with hunting scene, Tang.



Silk flowers, Tang.



Clay figurines of working women, Tang.



Taking the Horse to Graze, Tang.



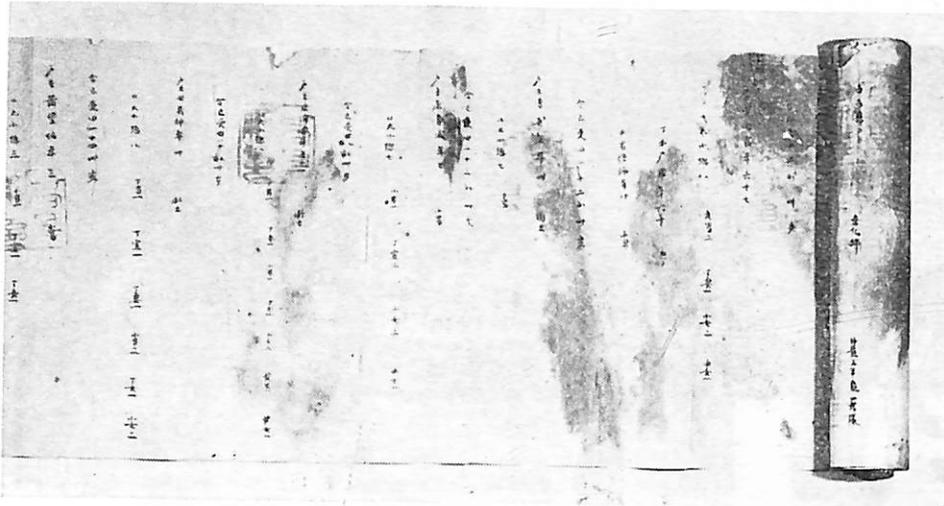
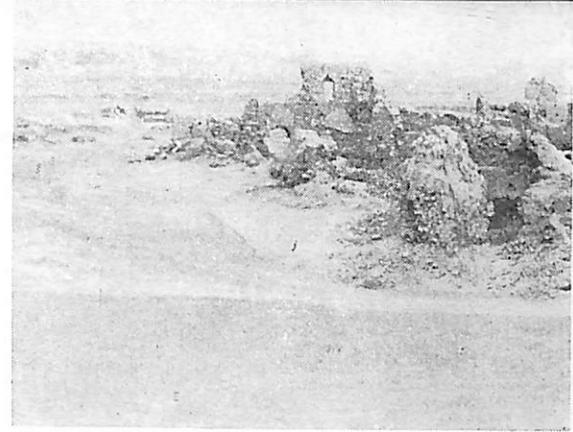
Playing *wei chi*, painting of Tang dynasty (618-907).



half a century nobody knew which of the tombs was his.

Now, in excavating the cemetery, we have found not only the tomb of Chang Huai-chi, but that of his son Chang Li-chen (located in late 1972), and his father Chang Hsiung and his mother, a member of the Chu family, buried

ing a period of some 200 years. The epitaph of Chang Huai-chi and those of his father and son contain about 1,000 characters each. They identify the Chang family as aristocrats of the Kaochang principality who had intermarried with the ruling Chu family for generations.



Residence register of Chungwen village, Kaochang county, from a Tang dynasty (618-907) grave.

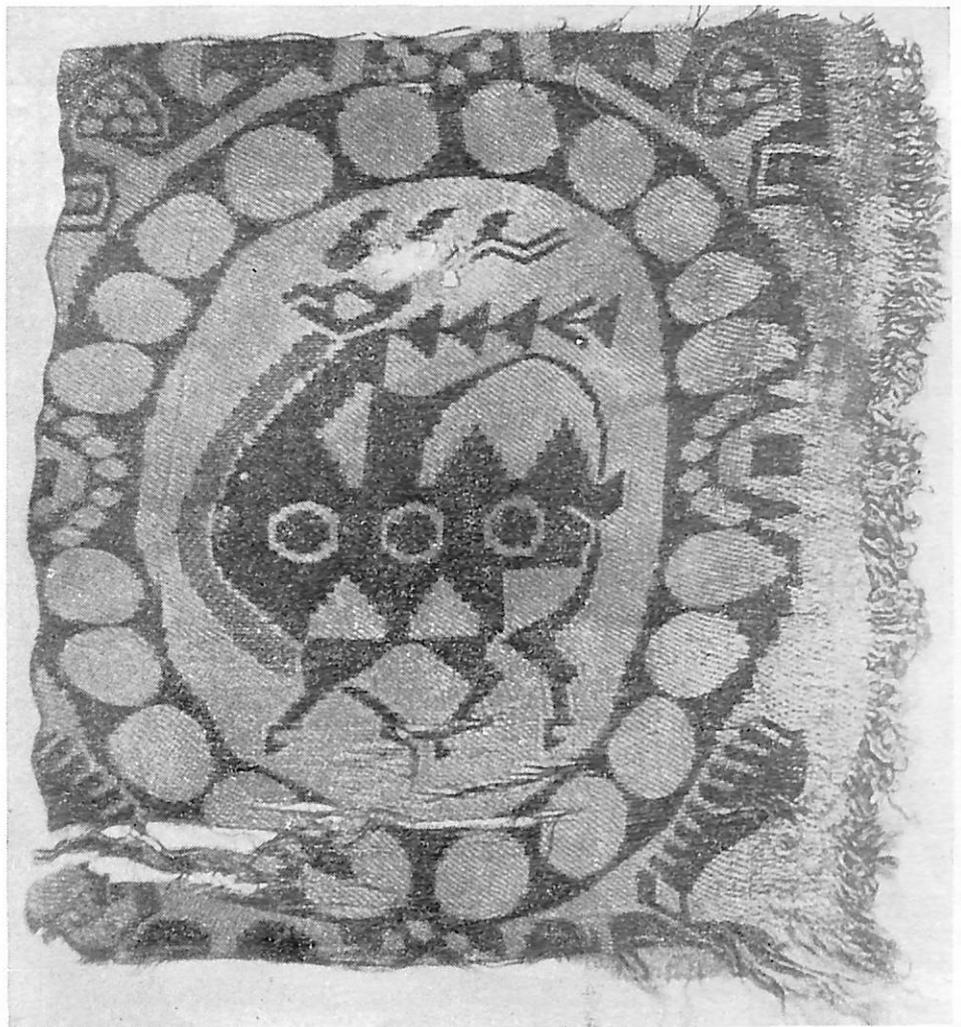
Chang Huai-chi's tomb is the largest in the section. From his epitaph and information about him in Tang dynasty chronicles we know that he participated in a campaign to put down an uprising of the Tubos, ancestors of the present-day Tibetans. In A.D. 692 he helped consolidate defenses along China's northwest border and bring back under Tang dynasty rule four military districts over which the Tubos had set up an independent rule — Kueitzu (now Kucha), Yutien (now Khotan), Shule (now Kashgar) and Suiyeh

together in a tomb opened in autumn 1973. The epitaph for Chang Hsiung, the father, who died in A.D. 633, shows that he was a cousin of Chu Wen-tai, Prince of Kaochang. His aunt was the mother of Chu Wen-tai. She was a wife of his father Chu Po-ya, and after her son succeeded him as ruler of the principality was given the title of Princess Dowager. From these finds we can assume that while the monk Hsuan Chuang was in Kaochang, Chang Hsiung was among those who heard him preach and was present at the grand reception in his honor.

The cemetery, dotted with thousands of ancient tombs, is divided into numerous family graveyards clearly designated with markers. These contain from a few tombs up to several dozen, with the older tombs at the back of each family section and the newer ones toward the front. Such a burial system was characteristic of patriarchal-feudal society in China. Practically every tomb has a stone recording the name, age, identity of the dead and the year of death.

In the Chang family section are 65 tombs of six generations cover-

Silk brocade with design of deer encircled with pearls, Tang.





The ancient city of Kaochang.

(the area west of the Tianshan Mountains).

Silks on the Silk Road

More than two thousand years ago Chinese silks began to be transported to western Asia and Europe via the Old Silk Road. Turfan was an important stopover along the road's northern route. Thousands of pieces of ancient silk have been unearthed from tombs around Turfan in the last few years. Among them are a wide variety of silks dating from the fourth to eighth centuries — bright polychrome brocades and embroideries, single-color damasks with shining designs, gauze as thin as cicada's wing and silks with tie-and-dye designs. Most of the designs are in traditional Chinese style, but many of the Tang brocades show a foreign influence. There are, for instance, designs featuring a boar's head encircled with pearls, which is a Sassanian (Persian) motif. This indicates that some of the fabrics were specially made for export.

From these silk discoveries we have learned more about ancient silk dyeing and printing techniques. Tang silk dyers were able to produce two-tone designs. An example is a piece of dyed silk gauze which was unearthed showing a lively hunting scene executed in a free-flowing style: mounted hunters aiming their arrows, birds flying behind floating clouds, and flushed hare and deer fleeing amid the rocks and shrubs. It is in lighter green against a dark green background.

Until these recent discoveries archeologists did not know exactly how this effect was achieved. By testing the new finds they have discovered that part of the design was painted in with an alkaline solution which removed the natural

gum from the silk in certain places so that the dye penetrated more easily. We now know that this method, though not recorded in any documents, was used as early as the beginning of the eighth century.

Another significant find is a one-centimeter-wide sash of *ke szu* in eight colors unearthed from a Tang tomb. *Ke szu* is a well-known type of silk in tapestry weave. Formerly it had been thought that this type originated in the Five Dynasties (10th century) and did not come into wide use until the Sung dynasty (10th-13th centuries). The new finds show that this technique was well developed in the seventh century.

There was a brocade of cotton and silk from the sixth century with geometric patterns. It was possibly manufactured in Kaochang, for recently unearthed records show that sericulture and silk weaving had been introduced into Sinkiang not later than the fifth century and cotton was also grown and used for textiles in the Kaochang area even earlier.

A bill dated to the Kaiyuan and Tienpao periods of the Tang dynasty (early eighth century) records that a trader received 235 bolts and 24 feet of silk for a quantity of medicine. This reflects the brisk trade in silk along the road.

Precious Documents Discovered

The graves revealed an interesting funerary custom so far found nowhere but around Turfan — the clothing, shoes, hats, sashes, pillows and covers for the deceased and even the coffin were made from waste paper. Further study is needed before we can know why paper instead of cotton cloth or silk was used for this purpose. Certainly it was not for reasons of economy — the funerary objects

show that many of the tomb occupants were landlord officials or other rich people. One thing we can say for certain at present is that these layers of waste paper, even though partly damaged, provide a wealth of material on a wide range of subjects for study of the period.

Many of the papers are official documents, including letters, residence registers, account books noting the distribution of land among the tenants, records of trials, certificates appointing officials and awarding titles of honor, and travel passes. Some of the documents and papers bear the seal of Hsichow prefecture, of which the Turfan basin was a part, or counties under it — Kaochang, Chiaoho, Liuchung, Puchang and Tianshan. These papers show that as far back as the fourth century the organs of political power and lower units (prefecture, county, village and ward) were the same in the Turfan area as in the rest of China. Even during the period when the Chu family ruled the area as a separate feudal state, the administration of the prefectures and counties, political system, economic measures, culture and education in the area differed little from other parts of China. The Turfan area came even more firmly under the jurisdiction of the central government after Hsichow prefecture was set up in the Tang dynasty.

One of the papers is an application submitted in A.D. 733 for a permit to enter Foochow prefecture on the southeastern coast. A vice-prefect of Hsichow prefecture had been transferred to become vice-prefect in Foochow. The document records that his nephew Tang Yi-chien, an official in Anhsi prefecture with headquarters in

(Continued on p. 34)

Good Fields on Loess Plateaus

Second in a series on controlling the Yellow River. Erosion in the loess highlands of the upper and middle reaches causes most of the silt that gives the river its name. Visiting a county in this area, our reporter describes how erosion is being halted through field improvement, water conservation and afforestation.

IN the lower part of the great bend of the Yellow River, a piece of Kansu province bulges up between the Ningsia Hui Autonomous Region and Shensi province. This is loess highland drained by six rivers, among them the Ching which flows into the Wei and eventually into the Yellow River. For ages these waterways have carved the land, cutting up its flat plateaus into deep and wide valleys in which there are peaks at a lower level. Serious erosion left the soil poor, water scarce and harvests small.

How to change the picture and promote agriculture? Ninghsien county is providing good experience in this.

The county has 68,700 hectares of cultivated land. Sixty percent of it is distributed over six plateaus, the largest 200 square kilometers, the smallest seven. Eighty percent of the county's land suffered from erosion. Moreover, the 3,400 ravines in the county had been eating into the plateaus over the centuries, causing more and more fields to collapse. Harvests were low and undependable.

At a north China agricultural conference in 1970 the achievements of Hsiyang county in Shansi province were offered as a good example of transforming nature to improve agriculture. This county is the home of Tachai, the national agricultural model brigade. County leaders had vigorously promoted Tachai's experience so that in three

years the county as a whole had caught up with Tachai's per-hectare crop yields.

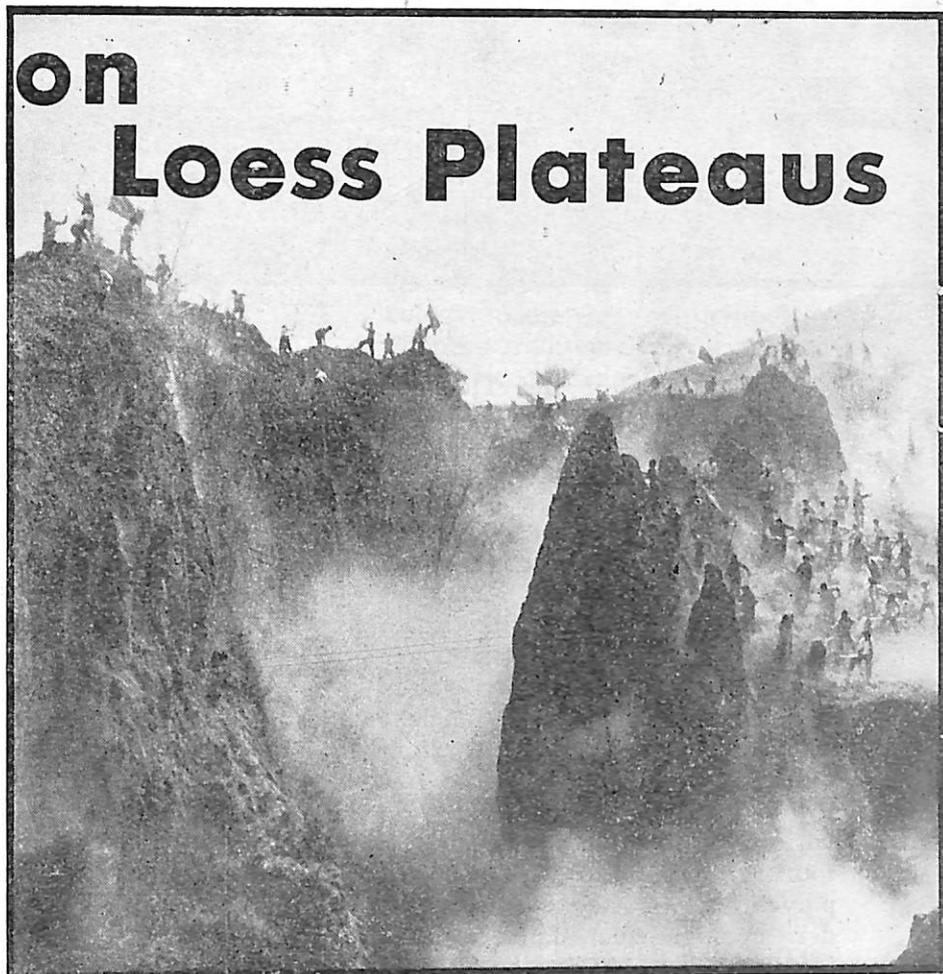
The Party leaders of Ninghsien county in Kansu were impressed by Hsiyang's fast progress. They called meetings and forums and asked the members and leaders of communes and brigades to discuss how to change the county's natural conditions. It was decided that the first step should be to control runoff in the county through leveling uneven plateau fields. This would not only create conditions for bigger and more stable crop yields but reduce the silt flowing into the rivers and therefore help with the basic overall control of the Yellow River.

Leaders from the county's Party committee and 16 communes went to study the land improvement projects at Hsinhua, a brigade that had increased its harvests while others had suffered losses. Two hundred hectares of this brigade's farmland are on a plateau where unevenness had caused serious

erosion. In 1964 members began trying to follow Chairman Mao's call to learn from Tachai, centering their efforts on improving their wide, gently sloping strip fields. At first they edged them with loosely-packed earth ridges. But these washed out in heavy rains and had to be repaired again and again.

In 1969 they sent members to see how Tachai had built terraced fields. After this they leveled their strips and edged them with rammed earth walls. These proved able to withstand the rains. By 1970 they had transformed half of their fields in this way. That year there was a long dry spell. Though harvests in many brigades fell, Hsinhua reaped a 12-percent increase.

Encouraged by Hsinhua brigade's success, the county's communes and other brigades made their own plans for basic farmland improvement. The county Party committee used these to draw up an overall county plan.



Working to transform a ravine.

At Hosheng commune, for example, leaders explained to their members the advantages of Hsinhua brigade's improvement and led the work. They joined the members of a production team in turning their three hectares of

sloping plateau fields into level strips protected by compact earth walls. That year the winter wheat sown on these strips was 1.7 tons per hectare more than the wheat planted on the unlevelled fields.

Such basic farmland improvement was mentioned in 1973 when Hua Kuo-feng and other State Council leaders summarized the work done in the middle Yellow River valley. This area, they pointed out, should put field im-

New terraces in Ninghsien county, Kansu province.





A new road.



Pump wells like this have expanded irrigation.

provement first and supplement it with water conservation and afforestation.

With the orientation clearer, Ninghsien pushed ahead and was cited as an advanced county at the First National Conference on Learning from Tachai in Agriculture held in 1975. At this conference Hua Kuo-feng pointed out that basic farmland improvement is a vital part of building socialism. Ninghsien county continued its drive and by this year had transformed two-thirds of its plateau fields into wide, level strip fields and one-fourth of its steep slopes into terraces.

IMPROVING the soil also brought yields up. It took hard

work. The Liushuhutung production team of Kaotsang brigade, for instance, has 18 hectares of sloping, badly-eroded land. The brigade asked people in three other production teams to help Liushuhutung work a change. First they removed the top layer of mature soil and set it aside, then leveled the earth beneath. This was covered up again with the mature soil and harrowed well. Then the land was deep-plowed. After letting it lie fallow over the winter, they dressed it with weed ash and deep-plowed it again. Then it was manured and turned over once more. Now the land had a much deeper layer of mature soil that could absorb and retain moisture better. Its first crop after the improvement was much bigger.

In 1970, before these intensive efforts, Ninghsien county had averaged 1.4 tons per hectare, a total of 85,000 tons. In 1977, in spite of drought, hail and insects, the county got 2.3 tons per hectare and a total of 130,000 tons.

Water has always been a problem on the plateau — yet there had to be irrigation if harvests were to increase. Only deep wells could reach water, a question of drilling instead of digging. With experienced peasants suggesting possible sites, the Kaotsang brigade surveyed the land carefully and sank its first deep well. Later a county well-drilling team sank three more for them. The brigade also installed an electric pumping station to lift water from a stream

below. Now nearly half of its fields are irrigated.

Other brigades worked the same way to extend irrigation to more of their fields. Across the county the area of irrigated fields nearly quadrupled between 1970 and 1977.

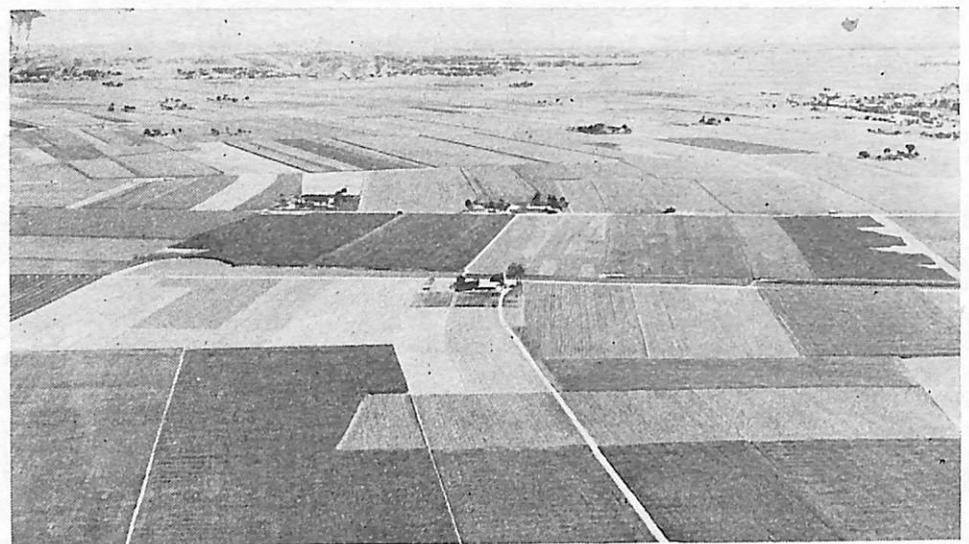
THE county also tackled afforestation. The Fangma Mountains in Hosheng commune are in a deep, wide valley cut between two plateaus. Their peaks lie below the plateau surfaces.

In 1964 members of the Tientzu brigade in the commune tried planting trees on the mountainsides. Lack of water killed them. In 1966 brigade Party secretary Kao Yi-min and two other members tried again. This time they built three hectares of terraced fields with solid embankments and planted over 100 apple, walnut, date and pear trees. All lived. The brigade then increased its afforested areas this way year by year. Today 164 hectares of trees have turned the brown slopes of the Fangma Mountains into green staircases.

All 256 brigades in the county have their own forest farms in the ravines. A third of the production teams have their own smaller ones. Afforested areas have doubled in seven years.

One-fourth of Ninghsien county's eroded land is now being protected through hard work on field improvement, water conservation and afforestation — a good beginning.

Improved fields on a plateau.

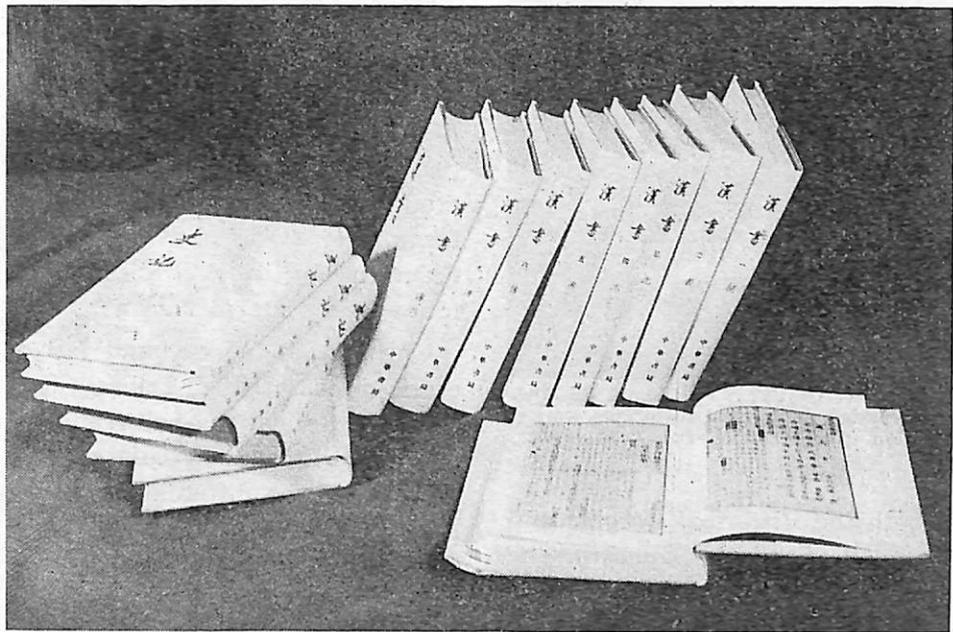


Modern Edition of 'Twenty- Four Histories'

TSUNG WU

AFTER almost 20 years of massive, painstaking efforts by more than a hundred historians and editorial personnel, a new edition of the *Twenty-Four Histories* with modern punctuation and paragraphing is now available to the public. Consisting of 24 titles in 3,249 ancient volumes totalling 40 million words, the set covers 4,000 years of Chinese history, from the time of the legendary Yellow Emperor to the end of the Ming dynasty (1368-1644). It was printed by the Chunghua Publishing House which specializes in Chinese classical works.

The writing of the first history to be included in the 24, Szuma Chien's *Historical Records*, was begun c. 200 B.C. during the reign of Emperor Wu Ti of the Western Han dynasty. The last of these was finished in 1739, the 4th year of the reign of Emperor Chien Lung of the Ching dynasty (1644-1911). The first complete woodblock printing of the histories was finished in 1775 in the imperial palace



The newly-published hard-cover editions of *Historical Records* and *Book of the Han Dynasty*.

The Twenty-Four Histories

NAME	ORIGINAL VOLUMES
<i>Historical Records</i>	130
<i>Book of the Han Dynasty</i>	120
<i>Book of the Eastern Han Dynasty</i>	120
<i>Chronicles of the Three Kingdoms</i>	65
<i>Book of the Tsin Dynasty</i>	130
<i>Book of Sung</i>	100
<i>Book of Southern Chi</i>	59
<i>Book of Liang</i>	56
<i>Book of Chen</i>	36
<i>Book of Wei</i>	130
<i>Book of Northern Chi</i>	50
<i>Book of Chou</i>	50
<i>Book of the Sui Dynasty</i>	85
<i>History of the Southern Dynasties</i>	80
<i>History of the Northern Dynasties</i>	100
<i>Old Book of the Tang Dynasty</i>	200
<i>New Book of the Tang Dynasty</i>	225
<i>Old History of the Five Dynasties</i>	150
<i>New History of the Five Dynasties</i>	74
<i>History of the Sung Dynasty</i>	496
<i>History of Liao</i>	116
<i>History of Kin</i>	135
<i>History of the Yuan Dynasty</i>	210
<i>History of the Ming Dynasty</i>	332

in Peking. Decreed by Chien Lung as the official chronicles, this became popularly known as the imperial edition.

Dynasty events sometimes overlap in the different histories. For instance, highlights of the Western Han period (206B.C.-A.D.8) appear



A discussion among the historians working on the *Twenty-Four Histories*.

in both the *Historical Records* and the *Book of the Han Dynasty*. The *Old Book of the Tang Dynasty* and the *New Book of the Tang Dynasty* both record events of the Tang dynasty (618-907). Sometimes a history records not one but several dynasties. The *History of the Southern Dynasties*, for example, chronicles the events of the Sung (420-479), Chi (479-502), Liang (502-557) and Chen (557-589) dynasties which had their capitals south of the Yangtze River, while the *History of the Northern Dynasties* deals with the Northern Wei (386-550), Northern Chi (550-577), Northern Chou (557-581) and the Sui (581-618) dynasties, which had their capitals north of the Yangtze. The overlapping contents are not simply repetitions. Different titles stress different details

or even events. Styles and viewpoints also vary.

The form used in the *Twenty-Four Histories* is biographical—the narration of events centering around historical figures. This form was first used by Szuma Chien in his *Historical Records* and followed by later historians.

Chronicling the rise and fall of each dynasty, the *Twenty-Four Histories* reflect the political, economic, military and cultural endeavors of the different historical periods. Scientific inventions, literary and artistic achievements, astronomy, geography, administrative divisions, rites and laws, and foreign relations are dealt with under different headings. Mostly indirectly, the chronicles reflect the contributions of the people of different nationalities to the social progress of China as a whole and their struggles against reactionary rulers.

WRITTEN in a systematic and unified form, the *Twenty-Four Histories* is a rich source material for research in ancient Chinese history. The lack of punctuation and paragraphing in all previous editions, however, made study difficult. The old editions contain errors and omissions, and sometimes there are

different versions of the same incident.

The work on the new edition began in 1958 when the State Council asked the Chunghua Publishing House to put out an edition as close to the original and with as few errors as possible, and with modern punctuation and paragraphing. The guiding principle was Chairman Mao's "making the past serve the present".

It was a prodigious undertaking. Verifying a doubtful word, for instance, or deciding on the correct meaning of an ambiguous term sometimes involved months of consulting reference materials. Hand-copying and reprinting by carved woodblocks over the centuries resulted in dozens of different editions of many of the books. Past scholars had done a great deal of collation and written many textual criticisms on them. Today's historians gave equal attention to both the earliest and the later collated editions.

Each title in the new edition is accompanied by a brief textual criticism, a preface explaining its value, a short biography of the historiographers, the times and conditions under which they wrote, and the different editions referred to.

(Continued from p. 29)

the present-day Kucha county, applied on his behalf for a pass for his family to go to Foochow. This shows that by that time official orders were uniform in China, from the southeastern coast to the northwestern border.

The papers are written in the Han characters, but contain many non-Han names. In A.D. 762, according to one Kaochang county document, a man named Kangshihfen injured someone as he was driving a horse-drawn cart. The names indicate that both the plaintiff and the defendant were non-Hans.

Most of the private papers are contracts concluded for selling slaves, draught animals, houses and land; for laborers or hiring someone to perform a feudal obligation in one's stead; for leasing land or houses; or for the loan of grain, silk, money, carts and cattle—all reflecting feudal exploitation.

One coffin is made of two layers of paper painted red. Restored, it measures 2.3 meters long, with a width of 66 cm. at the head and 46 cm. at the foot. It is 87 cm. high at the head and 50 cm. at the foot. Papers and documents it was made from, when laid end to end, stretch out for 50 meters. (The usual size of a sheet of paper in the Tang

dynasty was 42 by 29 cm.) Most of the papers are accounts for horse fodder used between A.D. 753 and 755 at post stations in the prefectures of Hsichow and Tingchow (now Jimisar in Sinkiang).

Well-Preserved Art

Among the tomb finds are a great many paintings and sculptures which have remained intact in the hot, dry climate. The murals and paintings on paper found in the tombs dating from the Eastern Tsin dynasty (317-420) deal mainly with the life of the occupant of the tomb. One, for instance, features the master and mistress seated in the middle of the picture

How Ancient Books Are Made Wormproof

AN ANCIENT method for protecting books from insect destruction has been rediscovered by members of a wormproof research group of the Museum of Chinese History. Simple and effective, it is used for preserving traditional-style volumes, which are hand-sewn with thread. The method involves binding pieces of specially-treated paper into each volume.

While making an inventory of the museum's collection of ancient books, the members of the group noticed that almost none of the books published in Kwangtung province during the Ming (1368-1644) and Ching (1644-1911) dynasties had been damaged by worms. Inside the front and back covers of each was a paper with an orange coating on one side which is regarded as a distinguishing mark of Kwangtung editions. Turning to other thread-stitched books from the same period, they discovered that where conditions for circulation and preservation had been similar, those containing the orange pages were in good condition while the majority of those without had been damaged.

Especially interesting was a copy of *Kwangtung History* printed

in 1864. The coating on the orange pages inside its covers did not extend all the way to the top. Consequently the top of the book had been worm-eaten, while the rest had remained untouched. To get further proof, the staff went to other libraries and studied their collections of thread-stitched books. They found the same situation, even where preservation facilities were not of the best. Obviously the orange paper was wormproof.

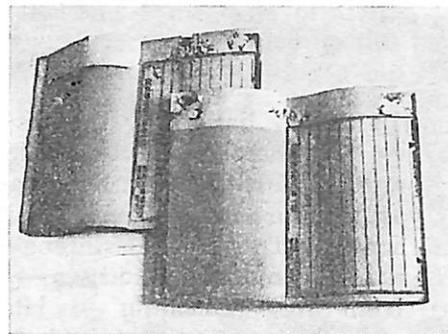
The staff then studied the chemical composition of orange papers taken from the museum's Kwangtung books printed in 1631, 1700 and 1875. Microscopic analysis of the fiber showed that such paper was made mainly from bamboo. There were glistening granules in the coating. Laser microspectrometer analysis revealed that these were compound of lead. X-ray diffraction analysis determined that the main component of the coating was red lead (Pb_3O_4), a poison. This was the reason for the wormproof effect of the orange pages.

The main insect attacking books in north China is the silverfish (*Ctenolepisma villosa fabricius*). It eats starch and other sugar-con-

vertible food. It likes damp, dark places, flees light and is active at night. To test the toxicity of red lead on silverfish, the members put insects in dark, damp containers and fed them a mixture of small quantities of red lead mixed with flour. Most of the silverfish ate the flour and avoided the bitter red lead. They dissected the ones that withered and died and found microscopic orange granules in their middle intestinal tract.

The experimenters coated some paper with red lead and put it with uncoated paper in a vessel containing silverfish. In 300 days of observation they found the worm had eaten through the uncoated paper at many spots while the coated paper was intact. This experiment confirmed their analysis of the Ming and Ching orange paper as wormproof. Now when thread-stitched books are restored the orange pages are bound inside them.

The *Kwangtung History* showing the top of the fly-leaves without the orange coating.



with several servants working on both sides: tilling the land, cooking, carrying utensils and serving food. The figures are outlined in black ink and filled in with color. The style is free and rather rough, and the artist pays more attention to content than form.

In Tang-dynasty paintings on silk more attention is given to form. They are characterized by flowing lines, fine workmanship and fresh, bright colors. The colors are applied in a way that makes the figures look three-dimensional. Three sets of paintings for screens show people playing musical instruments, playing the chess game of *wei chi* and grazing a

horse. Though incomplete, these show the high standards achieved in the Tang dynasty and provide material for the study of the development of Chinese painting.

The sculptures consist mainly of figurines. A few of them are of wood, but the majority are of clay, made in molds and then painted. Some of the painted figures, horses and camels stand a meter high. The smallest ones, only a few centimeters high, are of acrobats doing handstands or balancing a bamboo pole, and others performing a mask dance, the lion dance and the horse dance. A few of the figurines portray minority nationality peoples in China's north-

west in Tang times, and black people with curly hair.

There is a set of painted wooden figurines of working women: one hulling grain, one with a winnowing basket, one turning a grindstone, and one rolling out dough for a pancake. They all look tired and have rather unhappy expressions on their faces.

Particularly interesting are two sets of figurines in garments of silk, funerary objects for Chang Hsiung's wife. One set is a group of eunuchs, the other a group of women dancers. On the order of puppets, the figurines' upper portion is carved of wood and painted.

Shih Yen-ching giving special attention to a young customer.

An Ordinary Restaurant Outdoes the Famous Ones



Staff Reporter

PEKING has many famous restaurants, but a very ordinary one on West Changan Boulevard is setting the pace as a model for good service. This is the Hsinfeng — 77 waiters, cooks and others — open from early morning to late at night — over 60 low-priced steamed, stewed, simmered, braised and fried dishes on the menu. The cooks make delicious and varied items. The waiters are warm toward all customers. The leaders work among the tables and in the kitchen like the others.

Did you ever get meat well done outside and raw inside? It happened here sometime ago. The customers were always leaving some of their sautéed pork cubes with peppers or soy paste. The cooks sat down to discuss why. The cubes sent back to the kitchen were cooked unevenly, scorched outside and underdone inside. The cooks began slitting the cubes to let the heat and oil penetrate, then frying them in oil not overheated. Result? — the cubes came out a fine golden brown.

Ever get served fish that was flat and tasteless? Customers complained of this with the restaurant's croaker stewed in soy sauce. The fried fish was kept with its seasoning in a pan, then heated quickly over a high fire when ordered. The cooks changed their method. Now the fish is put in a pot with seasoning such as minced gingerroot, chopped onion, crushed garlic and wine, then cooked over a slow fire for half an hour. All the flavor penetrates the fish and makes it particularly tasty.

The Hsinfeng uses fresh vegetables in season to make tasteful dishes. In the winter time this means mainly Chinese cabbage. Instead of just boiling or quick-frying it, the cooks make many dishes with it, such as deep-frying it with shrimp, chestnuts, fresh mushrooms, shrimp roe or sliced pork, or making sweet-and-sour cabbage.

They once heard that two Shantung-style dishes — fish in vinegar and pot-cooked fish — served in a

restaurant in the eastern part of the city were very popular with customers from north China. Chef Yang Pai-ju went there for a week to learn how to make them. Chef Li Lai-ju went to visit Shanghai restaurants especially to learn how to make dishes from this southern city.

Really Serving Customers

The Hsinfeng Restaurant workers don't just serve food. Cordial and warm, they often find themselves helping customers with different problems.

Once a woman wanted only one ounce of small dumplings with vegetable filling for a sick person. But all the restaurant's dumplings that day had meat filling. The cooks promptly started making the dough and chopping the vegetables. In a few minutes the woman had her hot dumplings — 12 *fen* (5 cents U.S.). "You gave me an ounce of dumplings," the woman told them, "but you've given me a ton of concern and help!"

One day a peasant came in with a cold baked wheat cake and asked a waitress if she would heat it for him. "But that will only make it harder," she told him. "Why don't you let us slice it and braise it for you?" A few minutes later a bowl

of piping-hot braised cake slices spiced with green onion was put on his table.

Many times customers have asked for services not normally done in a restaurant. So last year the Hsinfeng added some of these. Now they will kill a chicken for you, clean a fish, cook special dishes for sick people, fry and braise for people eating at home. Once some out-of-town customers came in with a big fish and asked if they would cook it for them. In spite of the fact that it was rush

Manager Tuan Pao-cheng discusses customers' suggestions with waitresses.



The chef has improved his method of cooking sautéed croaker in soy sauce.



Getting dishes ready for the snack shop.



hour, the cooks sent it to the visitors' table as three different dishes — the salted stewed fish in soy sauce, sweet and sour fish and the peppery fried fish in brown sauce.

Have you ever wanted just to sit down a moment but not order anything? One cold winter afternoon a stranger came in and sat down at a table. When a waiter asked him what he would like, the man replied, "I've walked a long way and I just want to sit here a while and rest. Is that all right?" The waiter smiled and brought him a cup of hot water to warm himself with. Later they found that he had written in their comment book, "Stepping into your restaurant I seem to have returned home. The cup of hot water shows your spirit of wholehearted service to the people."

Masters of the House

Waitress Shih Yen-ching was born and brought up in the new society. She came to the Hsinfeng after graduating from junior middle school in 1974. Her job is to serve food, wash dishes, sweep the floor, greet and say goodbye to the customers. She is doing an excellent job. How does she like this work? "I like it. In our new society we all work for the revolution. There's division of labor but no distinction of high or low. We're service-trade people — our work is revolutionary because it meets the needs of the people."

Shih Yen-ching always comes early before her noon shift and gets everything in order ahead of time. If the breakfast group is short-handed, she helps them. When a waitress in the Shantung Restaurant was cited as a model worker, Yen-ching went there to work with her and learn how to improve her service.

One day she picked up a purse in the restaurant but couldn't find its owner. It had bills and a ration book in it. When no one came looking for it after several days, she took it from the cashier and examined it more carefully. She found the name of a small lane almost obliterated. On her day off she traveled a long way, found the owner and returned it.

The Hsinfeng's manager is Tuan Pao-cheng, who used to be a waiter and is a well-known model worker in Peking. He works with the others in the restaurant on all kinds of jobs. His motto is "Come early, leave late, keep busy during working hours". When someone told him he should begin to take it easier at his age, he answered, "We're masters of this place, we belong to a revolutionary family. It's our duty to do a good job of running it because the Party has trusted it with us."

He gets up early every morning to see that everything is clean and ready. Then he joins the breakfast crew to help pick up dishes and clean the tables. He seldom sits in his office but is either out getting food and supplies or working like the others. This, he says, enables him to hear customers' opinions, see the problems as they arise and solve them quicker. He often studies Mao Tsetung's works at night. On off days he usually stays on the job or visits some restaurant worker in his home. Many times he tries to help with personal problems.

Some time ago one of the snack shop workers proposed that they change from low-priced items to higher-priced ones in order to take in more money. In the dining room some of the waiters were pushing expensive dishes for the same reason.

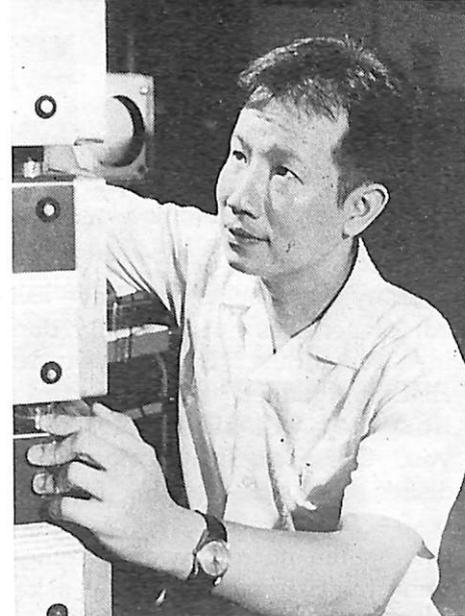
Manager Tuan called the restaurant crews together for a discussion. "Should profit or good service to the people be the main purpose of a socialist enterprise?" he asked. This discussion sharpened their political understanding and resulted in a more conscious determination to serve the people without reserve. The restaurant is now constantly adding new low-priced dishes, cooking orders separately and serving them hot.

Tuan's devotion to his work has gained him the trust and respect of many people. He was recently elected a deputy to the Seventh Municipal People's Congress of Peking. The other leaders in the Hsinfeng Restaurant follow his example and lead by being good ordinary workers.

The Making of an Electronics Researcher

YAO CHIN-CHUNG

At a national electronics industry conference on learning from the industrial model Taching last November, a youngish, unassuming man was one of the featured speakers. He was Yao Chin-chung, who has played a major role in developing 15 ultrasonic flaw detectors and diagnostic instruments, ten of which had never been made in China before and four of which were up to world advanced level in their main characteristics. He is now an engineer at the Swatow Ultrasonic Instruments Factory and head of the Swatow Ultrasonics Research Institute. His story, which he tells below, affords some insight into one of the ways China is developing her science and industry.



Yao Chin-chung

had been solved more than two decades before. If I had known that I wouldn't have had to do all that hard work.

Night School

That same year the people's government started spare-time education for workers in Swatow and I became one of the most enthusiastic students at a night school. In four years I finished middle school. Then I went to a spare-time college for workers and took the main university courses in radio fundamentals, higher mathematics, physics and chemistry and also studied English. I spent another six years doing this.

When I was in my second year at the college our factory, to give me a better opportunity to learn through practice, asked me to help with the trial production of ultrasonic instruments. In the early sixties ultrasonics was still a new thing in China and I knew nothing about it. Only a simple type of flaw detector was then in production in China, and it was also being used on an experimental basis in medicine. I heard that a hospital in Swatow had one of these detectors so I went there, copied the circuits and asked the doctors to teach me the principles of diagnosis with it. An ultrasonic device especially for medical use was badly needed. I studied relevant materials and decided to try to make one.

After six months of experiments I produced a prototype. The factory leaders sent me to hospitals in

THOUGH I began with little schooling I worked hard for over 20 years and gradually learned enough ultrasonic electronics to engage in research. I was born in a poor family. My father was a metal engraver. Before liberation my home town, Swatow, on the southeast coast, was like a colony. Even matches and socks were imported, for China's national industry was backward and feeble. It could not develop, and my father could do little to contribute to his craft no matter how much he would have liked to.

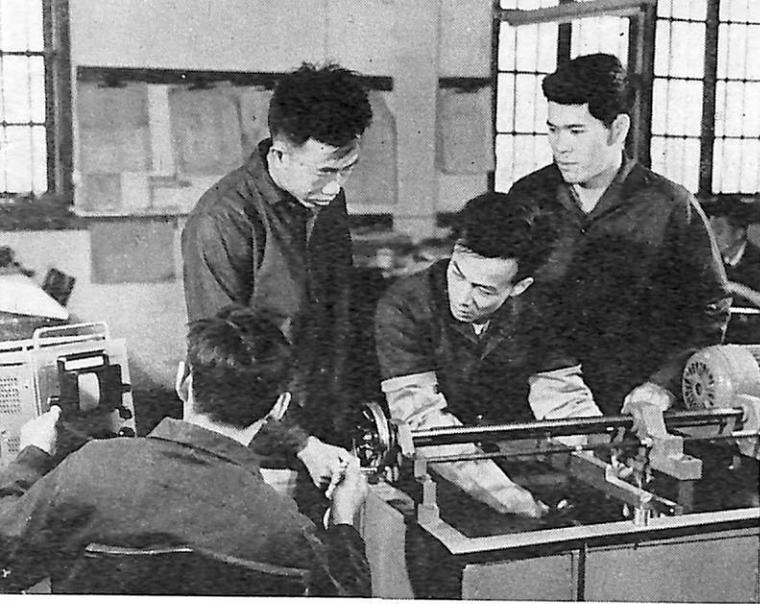
In 1956, after only one year in junior middle school, I had to go out to work. I was placed as an apprentice in a radio repair cooperative. Almost all the radios we worked on were made abroad. "We Chinese people have stood up," I would think. "Why can't we ourselves make the instruments and equipment our country needs?" Just about that time Chairman Mao called on the whole nation to go in for science in a big way. I made up my mind to master radio in order to help build socialism and build up our country.

From the Beginning

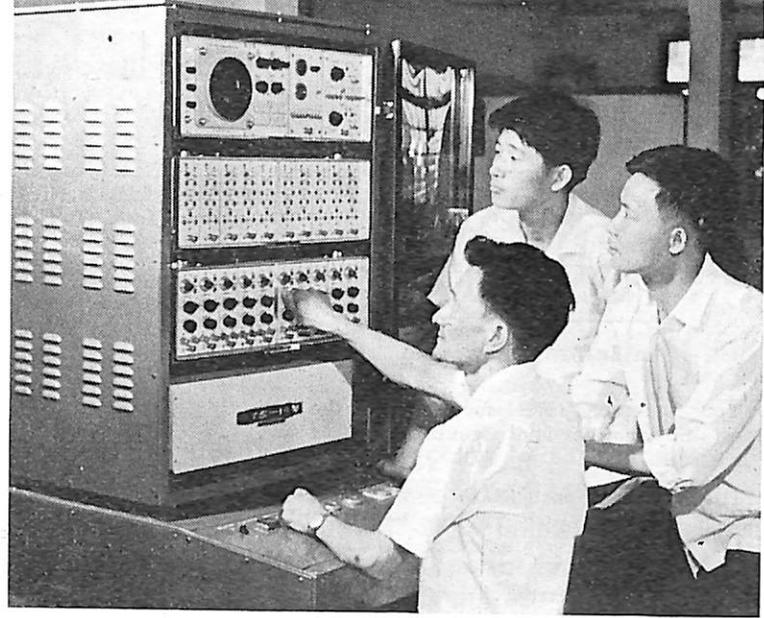
My first aim was simply to be able to make radios. I was put to work soldering connections. In the daytime I learned about radios

from the old workers and in the evening I took parts home to study. After about two years I became a skilled repairman. In 1958 our cooperative decided to manufacture radios and I took part in producing the first batch of them made in Swatow. This was at the beginning of the big leap forward, and during it our cooperative renamed itself the Swatow Ultrasonic Instruments Factory and began making preparations for production in that field.

Though I had a great vision, at every step I was handicapped by my lack of general education and scientific knowledge. Well, I thought, I have a will. Maybe I could still succeed if I worked ten times as hard as others. In 1959 the factory decided it was going to produce oscilloscopes for testing radio characteristics and asked me to make a trial model. Originally we had been a group of small radio shops brought together, and in 1958 there was still no one with real technical training to guide me. All I knew about a circuit was that it was made up of coils and capacitors. I did not know how to make the calculations and so had to test and align the circuit over and over again by trial and error, so spent a prodigious amount of energy before I got it right. Later I found the formulas for such calculations and learned that these problems



Testing an ultrasonic flaw detector under water at the Swatow Ultrasonic Instruments Factory.



Aligning a newly-developed high-speed automatic ultrasonic flaw detector.

Swatow, Kwangchow and Shanghai to work with the doctors and test it. Through coming into contact with all kinds of patients I collected a mass of firsthand data. For instance, I became familiar with the different waveforms indicating a diseased liver and a normal liver. I gradually improved the device.

On to Semiconductors

Early in 1966 I learned that ultrasonic instruments employing semiconductors were being made abroad. The factory was then working on an instrument for use in the field to detect flaws in welded steel rails. Many mountain districts have no alternating current, so semiconductor circuits would be most suitable for this device. I was assigned to the project. I went to the factory laboratory and, as I studied up on semiconductors, I tried to design the circuits for the new device.

Then came the cultural revolution. At the very beginning Liu Shao-chi promoted a reactionary line of "hitting hard at many in order to protect a handful". Influenced by this, a few people in the factory put up big-character posters attacking me as "a typical reactionary expert" and "a tyrant in ultrasonics". This shook the whole factory. News of it even reached my elder sister in faraway Hainan Island. She wrote me a long letter expressing regret that I had gone wrong.

I felt miserable. "Have I really done anything against the interests

of the country? Have I really followed the wrong road?" I asked myself. The only answer I could come up with was, "No." I recalled that many years before I had copied a passage from a novel saying that a man must live so as to feel no torturing regrets for years without purpose or the shame of having accomplished nothing. I had pasted it on the wall and determined to try to live by it. I thought it over and felt that when I had made the first diagnostic device it was neither personal fame nor fortune that had prompted me but the feeling that as a member of the working class I had a responsibility for fulfilling the country's needs. How could they call me "reactionary expert"? Still, for a time these attacks made me feel that studying advanced technology was a thankless task and maybe it would be better if I changed my profession altogether.

Just about that time—I remember it was at dusk on a rainy, windy day—one of the factory's leaders came knocking on the laboratory door. "When you are being criticized," he said to me, "you should act on the principle, 'If you have committed mistakes, correct them; if you have not, guard against them.'" The cultural revolution, he said, was a test for everyone, and that I should not retreat but advance in the face of the storm. His words gave me courage and strength.

I looked at the two samples of welded steel rails some workers at a construction site had sent us and

could almost hear them asking me, "How are you getting on with that flaw detector?"

Then I knew the answer to the questions in my mind: What did it mean to "serve the people"? What did the phrase "technology should serve proletarian politics" really mean? You couldn't carry on socialist construction without modern technology. My research must not stop. I felt a strong sense of responsibility to the revolution urging me on. Finally, with help from my colleagues, I did develop a semiconductor flaw detector.

Collective Achievement

In April 1969 a jet plane brought myself and two colleagues to Peking. We had been asked by a government department to design and make an ultrasonic instrument for detecting minute flaws in tubing of a special kind of metal. It had to be highly sensitive and stable and to record automatically. I learned that it was made in only a few countries and that someone had said that China would probably not be able to make it for a decade. The leader of the department told me that several units in China had already tried, without success.

I asked to go to these units to learn from their experience, and thus save time for us. My two colleagues agreed. They went back to the factory to ready things there and I myself began a 500-kilometer tour of the units in Peking, Nan-

(Continued on p. 52)



An Informative Issue

Your December 1977 issue is one of the most informative and beautiful that I have seen.

I found every article to be of great human interest to me. The two I enjoyed most were "The Monument to Mao Tsetung" and "Yang Kai-hui, Wife and Revolutionary Comrade".

The illustrations throughout the whole magazine are spectacular; like your past issues, this one is also a real keepsake.

I would like to read as much as I can about hospitals and clinics and health care in your country. I would also like to read more about how you manufacture clothing.

I was privileged to visit the People's Republic two years ago and I was so impressed that I think about it almost every waking moment to this day, and I am working to build friendship between our peoples at every opportunity.

Cincinnati, U.S.A.

C. Z.

Glad to See Pa Chin

What a pleasure it was to read Pa Chin's memories of Chou En-lai. While it is always important for any progressive nation to be aware of new trends, and to give a voice to young writers, many friends of China were dismayed in recent years by the silencing of those experienced writers of the past by the gang of four.

The January issue of *China Reconstructs* was a definite improvement over some other issues, and I hope that this marks a new trend in your publication, giving fascinating written and pictorial details

about different aspects of life in China, expressed in terms readily understandable for foreigners.

Brussels, Belgium

J. F.

Computers

I am a student of electronic technology in our country. Could you write in one of the forthcoming issues of what is happening in your country concerning the computers? This will interest me very much and I believe that it will impress my classmates very much as well, because we have never heard of Chinese computers, how they work and the way they are programmed.

Quebec, Canada

M. D.

Revolutionary History

I want to read about the history of the Communist Party of China and its People's Liberation Army; also about the first great proletarian cultural revolution and the Long March in detail. I wish greatly to read the life stories of revolutionary persons who died for the cause of the people, including great teacher and leader Chairman Mao, Premier Chou En-lai and Commander-in-Chief Chu Teh.

Addis Ababa, Ethiopia

M. Z.

Chu Teh's Article

The article "My Mother" by Chu Teh is really full of feeling. I hope you will continue to publish articles of this kind. You have not forgotten your people who have died and you put out Chu Teh commemorative stamps on the first anniversary of his death. I read your magazine from first page to the last.

Remiremont, France

H. P.

Wants to Know Things Admirable

Your magazine is readable and the themes of the articles are moving. Through it we are happy to know about the life of many great personages such as Mao, Hua and other comrades as well as the achievements in industry and other fields.

I hope the magazine will carry more articles about sports, agriculture, culture, geography (landscapes, parks, rivers and cities), great personages, children and anything admirable.

Arauca, Colombia

D. E. Z.

Life of Ordinary People

It would be nice if you could emphasize family life. What does an average worker do in his spare time? In addition to theater, dance and art, maybe something about Chinese films.

Haamstede, Holland

B. M.

Children's Column

As little children in Sri Lanka we are very anxious to know how Chinese children study. Like in Sri Lanka are they taught before they join the school? As a school child I'm very interested in this page and I hope you will give a special attention for this page.

Chadayantalawa, Sri Lanka

N. P. R.

The Life of Painters

I am a girl who enjoys reading *China Reconstructs*. Frankly speaking, your magazine has nothing to criticize, but still I hope you will open a column devoted to the lives of painters and the creation of art works, and that you will publish from time to time some paintings in color on the back cover.

I am not a subscriber. I met some difficulty in obtaining it because I was late when I came to the local post office.

Jabla, Syria

R. U.

Sports

The sports in China interested me very much. We are beginning once again to see Chinese sportsmen in international competitions. Mass sports is not an empty word in China. In what manner and in what spirit do the sportsmen approach the championships? The international competitions?

Gagny, France

C. B.

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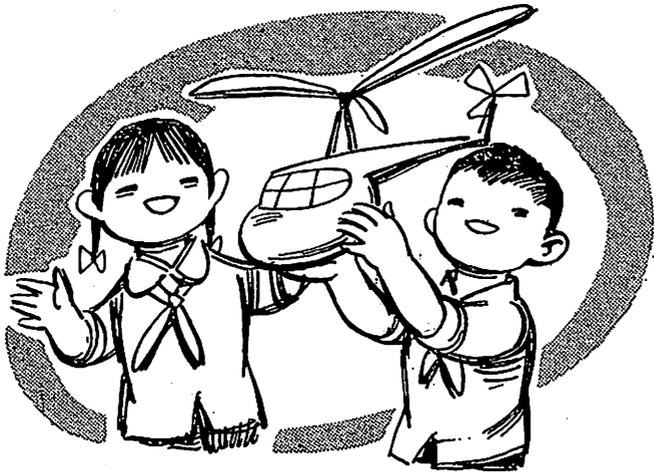
China Reconstructs is an illustrated magazine of general coverage on how China builds socialism. It carries articles and features on China's politics, economy, education, health, science, literature, art, women, history, geography and her relations with other countries. There are columns such as Cultural Notes, Sports, Children and Stamps.

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Distributed by **GUOZI SHUDIAN** (China Publications Center), Peking, China

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Science Day in a Primary School

BASIC science is again being emphasized in China's schools after being nearly absent during the years of the "gang of four's" influence. A recent event in Shanghai's Changsha Road Primary School shows the children's enthusiastic response.

The day is not a holiday in the school but it seems like it. Colored flags fly in the wind above the school gate. Slogans and posters cover the walls. The loudspeaker is playing songs the children love. A large classroom has been converted into an exhibit of scientific models and equipment made by the children, among them helicopters, catapulted and string-guided planes, a destroyer and its escort, field glasses, periscopes, electric mosquito-traps, transistor radios.

The school's 700 pupils, mostly Little Red Guards, are assembled on the playground and balconies. Suddenly a girl's voice announces, "The meeting to strive for the modernization of science and technology is about to begin!" All eyes turn to the platform by the school gate where a thirteen-year-old girl is standing.

"Today," she says, "we have invited two scientists, one from Shanghai's Astronomical Observatory and the other from the Science Society to come to talk to us." Thunderous applause, then quiet.

The talks are fascinating. The children are carried into the universe, now into the worlds of electronic computers, shipyards, oil fields and waste-treatment stations. Only when a speaker asks them to study basic scientific knowledge hard so they can help China catch up with the advanced world standards in science and technology, do they realize they are still standing on the playground of their school.

Then come student performances. First, a recitation by nine pupils of the graduating class. To music, each in a different costume walks to the front of the stage and proclaims what he would like to do in life. One with a telescope in his hand declares he wants to conquer the universe and learn its secrets. One with a knapsack and a geologist's hammer declares he would like to go to every corner of China to find more oil and minerals. Another dressed as peasant with a bundle of wheat in his hand says he will try to breed a strain of wheat that will produce grains bigger than soybeans. A girl with a book under her arm says she will study foreign languages and do her part to promote friendship and cultural relations between China and the other countries.

Then there are scientific demonstrations. All eyes are drawn to model planes and helicopters circling overhead. A model torpedo-boat nearly two meters long is brought to the platform. A boy points to a box in his hand and says, "This is a remote-control operator. As I push the buttons, the boat performs." He touches a button, a torpedo is launched and explodes. Loud cheers. The boat then shoots a machine-gun and launches smoke bombs. The boat is the result of a dozen children's hard work for six months with the help of their teachers and technicians from a nearby radio factory. They often worked into the night and slept in the school.

As the three-hour meeting draws to a close rockets shoot up into the sky. The parachutes they scatter look like white clouds floating in the air.



The Yenshou Post Office Does It Themselves

HUI WEN



The cordless toll exchange.

YENSHOU county in a remote mountain district of Heilungkiang province in China's northeast is known throughout the country as a pioneer in modernizing postal-telecommunications through its own efforts.

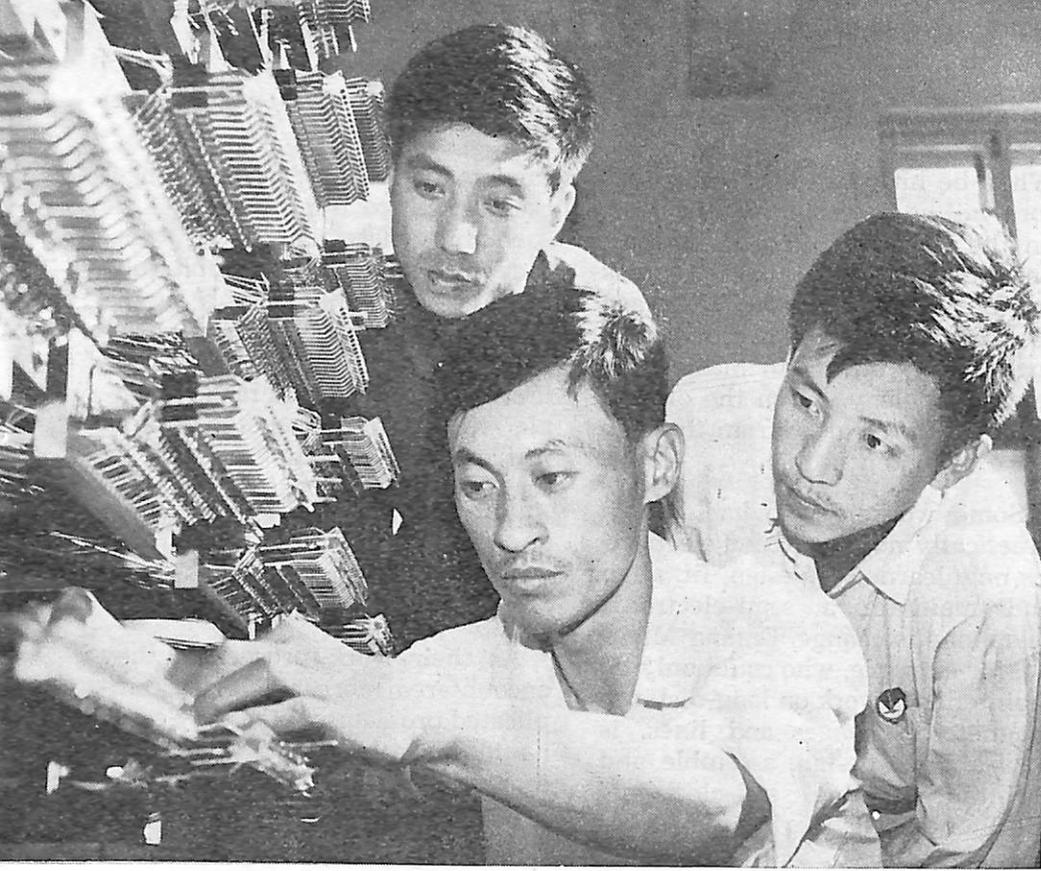
When mailing a parcel, for instance, the sender only need place it on the scale and the postage is calculated automatically. He can buy his stamps from a vending

machine. The recipient of a parcel gives his notice to a clerk, who pushes a few buttons and hands over the parcel in a matter of seconds.

In the eastern room on the second floor of the new telephone building of the Yenshou County Postal-Telecommunications Office is a 200-line semi-electronic exchange using coil spring relay which provides direct dialing in the

county town. In the western room on the same floor is an 8-position cordless toll exchange through which the operator can connect a long-distance call by simply pressing a few buttons.

Formerly Yenshou county, like most rural areas, had been using old-fashioned hand-cranked generator or magneto telephone sets and manual connections. Only one call could be made between the



Sun Chun-yu (front) inspecting the 600-line semi-electronic telephone exchange the staff made themselves.

county center and any of its 15 communes at one time.

In the past few years the county has made great efforts to automate the telephone system, then convert it to carrier circuits so that several calls can be made simultaneously on the same line. It has also improved telegraph equipment and now has facsimile telegraph service to Harbin, the provincial capital, eliminating the need to code Chinese characters for transmission and then decode them. Newspapers, magazines and mail formerly delivered by bicycle or on foot now go by motorcycle.

Why Remain Behind?

In 1969 Sun Chun-yu, a Yenshou county telephone operator, whose father before him had also been switchboard operator, attended a postal-telecommunications conference. There he learned that Chairman Mao had said that these services were 20 years behind times, and that China must catch up.

Sun Chun-yu was very upset. My father worked all his life at a hand-cranked magneto exchange, he thought. I certainly should not have to spend my life doing the same.

He made a bold proposal to the leaders of his office: They must not simply depend on the government to allocate new equipment. They should modernize by making it themselves. His office agreed and set up a technical innovation group, headed by his chief.

There was no precedent for a post office transforming its own equipment. At first some were afraid it couldn't be done. They got into heated discussion. One thing they talked about was the vastness of the problem of equipment for the country as a whole. The state had only been able to allocate their office three long-dis-



tance exchanges in more than 10 years and the town itself was still using a magneto exchange from before liberation. At this rate it would take years to modernize all China's 2,000-some counties.

Then they discussed how their backwardness affected socialist construction. Cadres and rural commune members used to say they broke out into a sweat every time they made a phone call, it was so nerve-racking. The sound over the hand-cranked phones was too faint. The connection was broken too often. When telephone conferences of all the communes were held through the switchboard they could not hear clearly. As radio rediffusion broadcasts went over the



The dial-phone system saves time on the commune.

same line as the telephone, nobody could use the phone at broadcast times. These things were a nuisance and hampered county work.

The discussion convinced the staff that they ought to try to modernize by themselves. The whole staff was mobilized to make technical reforms step by step.

Technical Tie-ups

Sun Chun-yu was the only one in his office who had graduated from a postal-telecommunications school. Two others had finished technical middle school, but were not up to understanding complicated electric circuits, to say nothing of electronic equipment. Sun Chun-yu himself,

though he had some theoretical knowledge, was only equipped to make minor improvements. To design and make a set of modern telecommunications equipment with at least 100,000 electronic devices and elements, several thousand printed circuits and hundreds of kilometers of lead lines seemed an almost insurmountable task.

The office assigned one third of its staff to the project. They studied and worked hard. Sun read far into the night on problems encountered in their experiments. He made it a point to learn from people with practical experience. Once while staying at a hostel in Harbin, he learned from two old workers who happened to be his roommates how to install storage batteries and protect the floor under them with acid seal paint. When he came to making printed circuits he went to learn from printers.

With his mind on the circuits he was designing, he sometimes walked past his own home after work.

When he hit on an idea in bed before falling asleep he would turn on the light and draw the circuit on the wall if nothing else was handy. Influenced by his hard working example, the others also made great efforts to master the new technology. Soon the office's technical force grew from three to more than ten people.

Some workers who had known practically nothing about electronics now learned to design, fit, align and maintain a semi-electronic telephone exchange. Chiang Mienho, for example, who could only do maintenance work on long-distance magneto exchanges and lines, is now able to design, assemble and maintain 100-line semi-electronic telephone exchanges by himself.

Home-made Is Good

The meeting room and grounds around the office became the workshops, and the staff made many of their own tools, instruments and machine tools. While building a

carrier system they needed a new oscillograph to test it. Instead of spending 2,000 yuan to buy one, they bought an oscillograph tube for five yuan and made a simple one themselves. When setting up a common battery exchange they used an old meter and made a simple transistor parameter testing instrument without spending a cent. Having no constant-temperature oven for testing purposes, they made do with an iron safe fitted with some electrical devices instead.

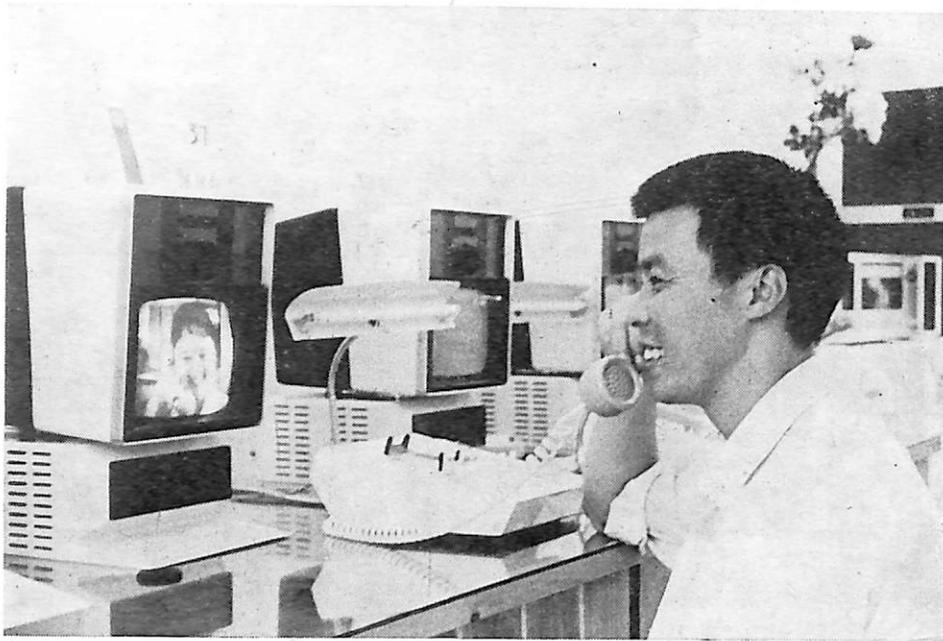
As their work proceeded, they encountered more and more complicated problems which they could no longer solve with their crude tools and methods. Formerly they made their holes with hand drills and files. Later a worker made a drilling machine, which raised efficiency by dozens of times. It used to take them half an hour to etch a circuit by hand. Later they learned to use a jet of air to agitate the acid so that it etched faster. This raised efficiency by 100 times.

Thus, self-reliantly, the workers at the Yenshou county postal-telecommunications office have been building modern equipment since 1969. In the first year they set up carrier equipment for broadcasting which enabled the communes to use the telephone during broadcast time. In 1972 they made China's first 400-line transistor common battery exchange, enabling the county town to get rid of its hand-cranked phones. In 1974 they trial-produced a 100-line semi-electronic telephone exchange of reed relay type which laid the basis for an automatic telephone system. In 1975 they made a 600-line semi-electronic telephone exchange using coil spring relay, code-controlled automatic parcel retrieval equipment and two 4-channel carrier terminals. In 1976 they made three 100-line coil spring relay-type semi-electronic automatic telephone switching systems, each with its own power supply, and twenty 3-channel carrier terminals. In 1977 they made the 8-position cordless toll exchange equipment and four new direct current switchboards.

Rural post offices all over China are being urged to self-reliantly modernize like the Yenshou office.

Mail and newspapers delivered in the field.





Video-telephone developed at Nan-king Telecommunications College.

needs. Chairman Mao and Premier Chou were always much concerned about modernizing China's postal-telecommunications work. In 1956 Chairman Mao issued an instruction on the use of modern technology and on establishing microwave and cable trunk links. In 1958, the year of the big leap forward, workers in the field embarked on a technical revolution. In the next three years they designed and built 12-channel carrier equipment, a longitudinal-lateral telephone exchange, a high-power shortwave single-sideband transmitter-receiver and 16-channel carrier telegraph and telephone

Modernizing Postal-Telecommunications

YU HSUAN

EFFORTS TO modernize China's postal and telecommunications work are gradually ending her backwardness in this field.

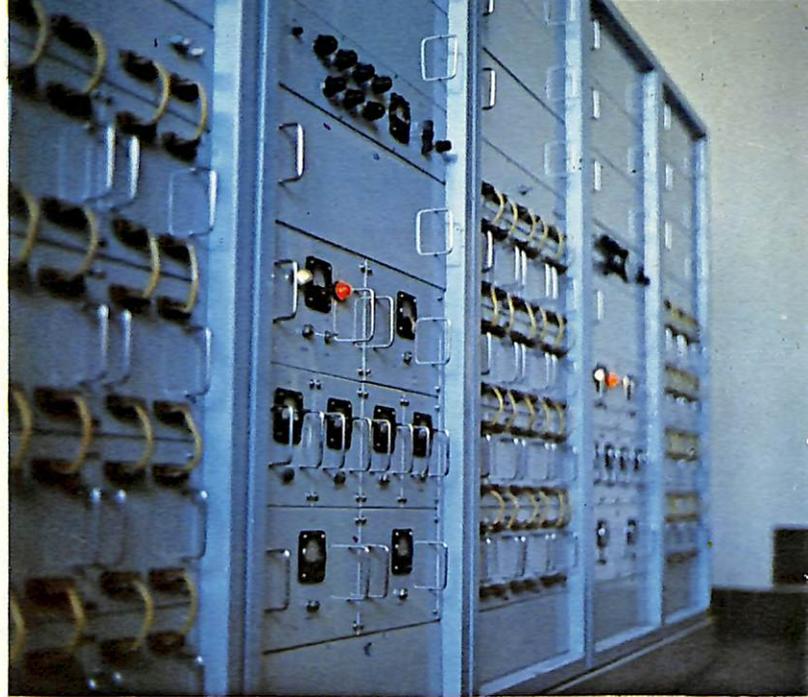
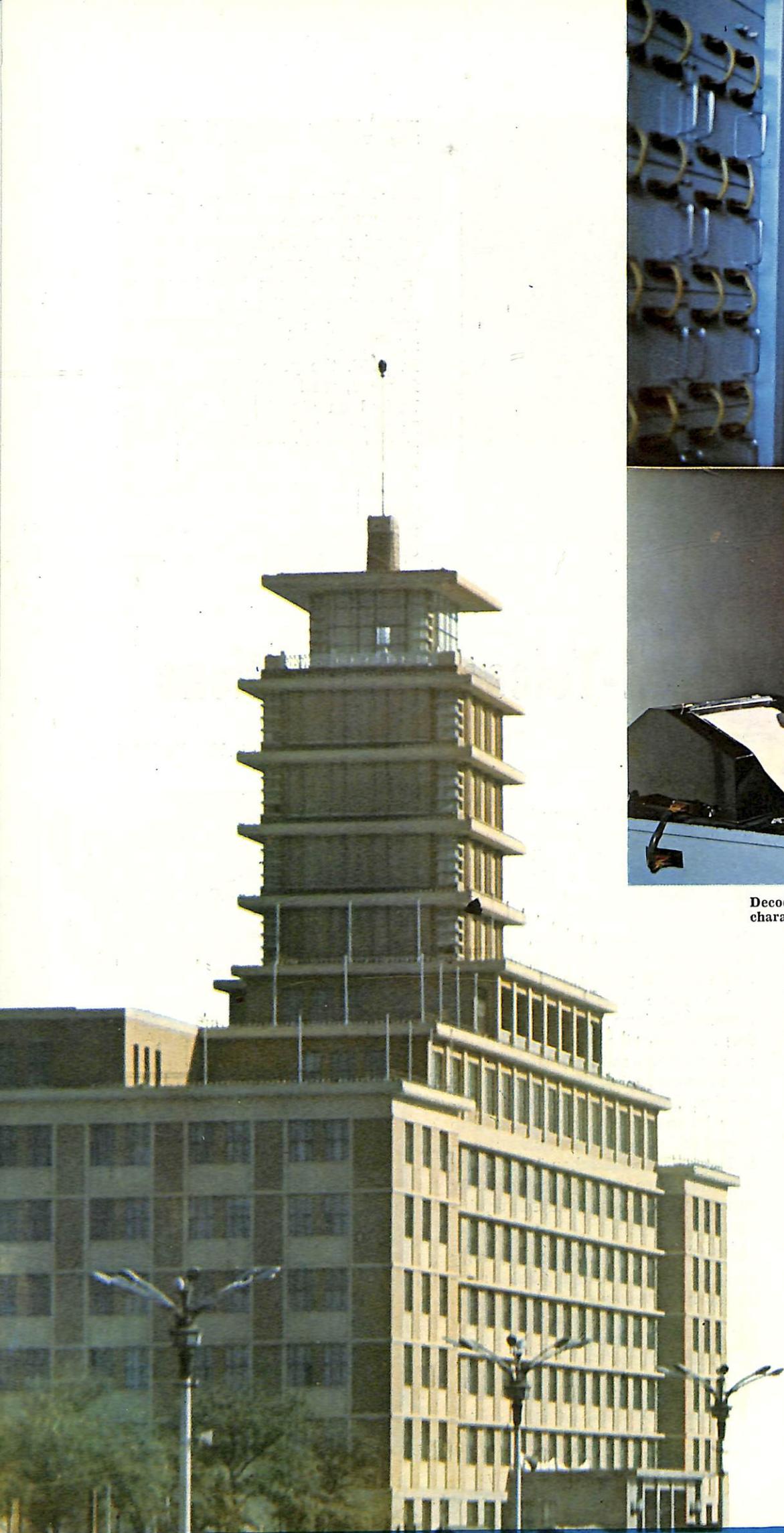
Semi-colonial, semi-feudal China had no complete postal or telecommunications systems. There was little equipment and the greater part of this was old. Furthermore, it was concentrated mainly along the coast and in a handful of other cities. Shanghai, which was comparatively well-equipped, had about half the nation's telephone sets, but when one went into the exchanges all one could see was outdated equipment, all made abroad. In remote mountain regions, a peasant had to walk dozens of kilometers to mail a letter. In Sinkiang, Chinghai and Tibet service was next to nothing. Communication between the Ari plateau in western Tibet and Lhasa the regional capital depended on camel caravan so mail was delivered about once a year. There was no telecommunications equipment industry, no research and no school training people specially for this field.

Over the past 28 years China has set up a communications network throughout her vast territory, with Peking as the center. By 1977 the total number of post offices was 15.7 times the 1949 figure, and 67 times in the rural areas. Ninety-six percent of the rural communes and over 70 percent of their brigades have telephones. China's communications have developed from open-wire transmission to more modern methods such as the medium-capacity coaxial cable carrier, from shortwave to microwave transmission, from simple to complex communication technology. Manual labor and heavy handling are being replaced by machines and automated equipment.

Starting from producing only simple parts, China has self-reliantly developed her industry in this field to where it can supply 90 percent of the postal and telecommunications equipment she

Checking equipment at a carrier-current relay station of the Hami Postal-Telecommunications Office in Sinkiang.





Decoding a telegram from Chinese characters and the main equipment for it.

The Peking long-distance telephone office.

cables. After that China no longer needed to depend on importing these from abroad.

In 1960 they mustered all efforts and built equipment for microwave transmission and 60-channel and 600-channel cable carrier equipment, despite the fact that the Soviet Union's withdrawal of its specialists and breaking of its contracts hampered China's technical development. During the cultural revolution they began work on setting up a modern nationwide medium-capacity coaxial cable carrier and microwave network. In six years they engaged in three campaigns: research and development of equipment, project construction and putting the lines into service.

A 1,800-channel coaxial cable carrier trunk line linking Peking with Shanghai and Hangchow was completed in 1976. As a result direct dialing of some long-distance telephone calls, and also high-speed transmission of telegrams, transmission of word and picture facsimiles, including entire newspaper pages, and digital communication are being done.

A 960-channel microwave relay network constructed in recent years now embraces more than 20 provinces, municipalities and autonomous regions. Through this system color and black-and-white television programs are transmitted from Peking to the major cities in these areas.

CHINA has telecommunications links with most of the countries and regions of the world, and via communication satellite and deep-sea coaxial carrier cable has direct telegraph, telephone and picture facsimile links with many countries.

Because it is difficult to transmit Chinese characters by telegraph directly, each character has a code number, which is transmitted and decoded on receipt. Now a machine has been made which automatically

decodes the numbers for 10,000 Chinese characters, enough for almost any message, and prints them out. It is now in use in some big city post offices.

Another new method, the facsimile telegram, does away completely with the need for translation and is particularly useful in a multinational country with many systems of writing like China. China-made facsimile equipment is now in use in many areas to transmit news photos, documents and other information. Every banner (county) and league (prefecture) in China's vast multinational Inner Mongolia Autonomous Region now has facsimile facilities.

With the use of electronics, parcel retrieval, newspaper sorting and distribution and stamp-vending are now being mechanized or automated in many post offices.

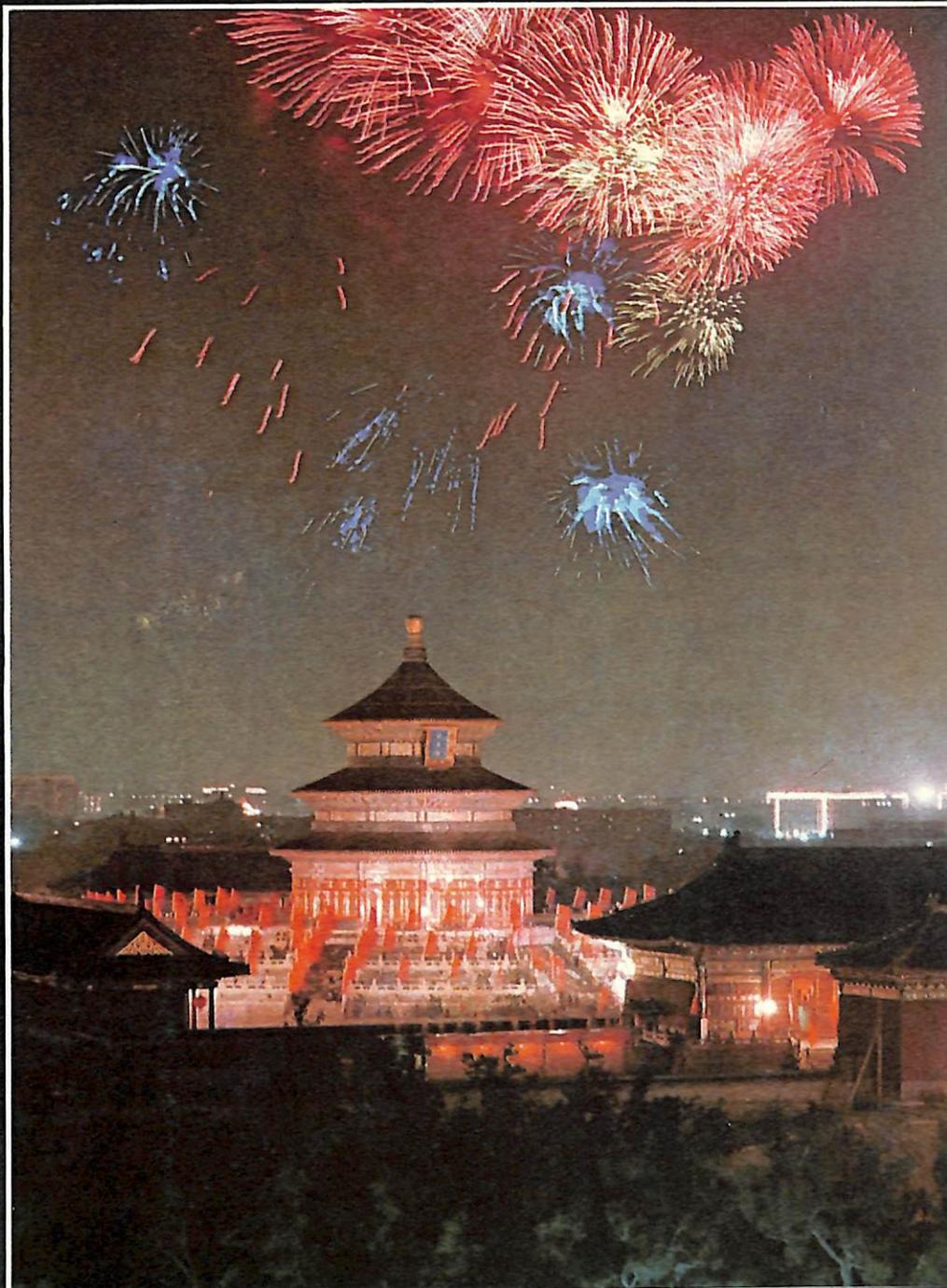
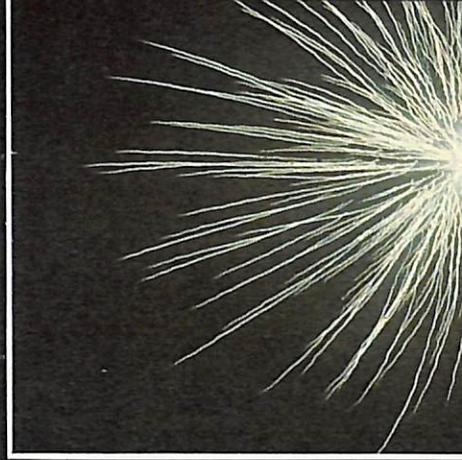
Rural post offices are also catching up, renovating old equipment and inventing new as part of the movement to learn from the Taching oil field. Yenshou county in Heilungkiang province leads the way. Making technical improve-

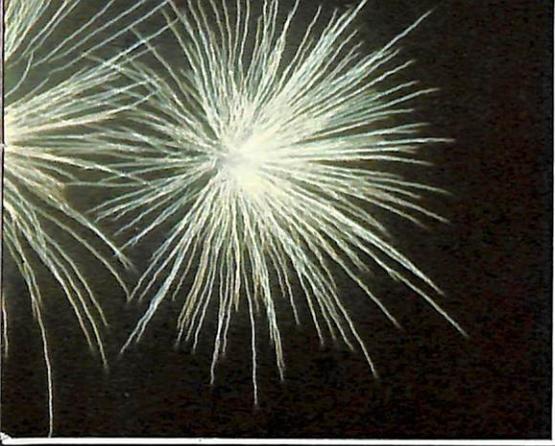
ments over ten years, its workers in this field installed a semi-electronic automatic telephone exchange. Following Yenshou's lead, eight other counties and two cities in Mutanchiang prefecture where it is located have achieved such accomplishments as automating city telephone systems, converting to carrier circuits between the county towns and communes, a semi-automatic long-distance telephone network embracing county towns and the prefecture center, facsimile telegraph service between county towns and cities elsewhere. Many have instituted mail delivery by motorcycle in the countryside. The number of cities and county towns which have automated their telephone systems by making their own equipment has shot up in the last two years.

Since liberation in 1949 China has trained a vast number of technical personnel for this field in colleges, universities and secondary training schools. At the same time, in the movement for mass scientific experimentation, many activists have developed to push forward modernization of China's postal and telecommunications work.

A corner of a microwave control room in Peking through which television programs are transmitted to other parts of the country.







FESTIVAL FIREWORKS



Fireworks made in Liuyang county, Hunan province.

the Southern Sung dynasty, in his book about Hangchow described how children competed in setting off firecrackers, filling the air with continuous sputtering noises. The many fancy shapes included fruit, animals and people.

As manufacturing techniques advanced, people began to concentrate on making the spitting sparks more beautiful and in greater variety. Known as "flowery firecrackers", some emitted strings of colored pearls, some changed colors intermittently, others shot into the sky or circled on the ground.

Later different metallic compounds were added to make fireworks that provided both noise and spectacle. The making of firecrackers and fireworks has greatly developed since the founding of the new China. Annual production has grown 20 times since liberation, while variety has risen from a few score to over 200. Many new kinds have been added. These explode in designs such as birds flying and singing in the forest and waterfalls pouring down from the sky. A new variety, called

"Blooming Flowers After Spring Thunder", shoots up 300 meters, bursts into white flashes in a thunderous storm, and then showers countless sparkling clusters of red, yellow, orange, green and white flowers in the sky. Another, known as "Butterfly Clouds", shoots out dazzling flames and sparks and then "butterflies" in gorgeous colors.

Liuyang county in Hunan province and Tungkuan county in Kwangtung province were the earliest centers of fireworks manufacturing. Nine out of ten families in Liuyang made fireworks in their homes as a side-occupation in the 18th century. Today seven people's communes in the county have fireworks factories employing a total of 10,000 workers. The county also has a research center for developing new varieties. Tungkuan county is famous for the splendid colors and sharp, clear sound of its new varieties. The "Blooming Flowers After Spring Thunder" is one of its products.

A fireworks factory was set up in Peking in 1958. Its output has grown steadily and it now produces more than 16 varieties which brighten festival evenings in the capital.

Chinese Local Products

Firecrackers and Fireworks

FIRECRACKERS set off in street and courtyard give holidays in China a gay and exciting atmosphere found nowhere else.

As early as 1,400 years ago, the Chinese "firecracker" was a burning bamboo stick or branch which, because it is hollow inside and has many joints, produced small explosions. The people used them on the eve of the Spring Festival (new year's day by the traditional lunar calendar) to chase away evil spirits and welcome the new year.

Gunpowder was an early invention in China. Around A.D. 600 the scholar Sun Szu-miao described how to make it with sulphur and saltpeter. This knowledge passed into Europe through the Arabs in the 13th century. Saltpeter was known as "Chinese snow" in Egypt and other Arabian countries and "Chinese salt" in Iran.

The Chinese people began to make firecrackers using gunpowder wrapped in paper in the middle of the 12th century. Chou Mi (A.D. 1232-1298), a scholar in

Discussing new designs.



Lesson 14

Simple and Compound Words

In Chinese a word may be composed of one character, or of two or more. Knowing the meaning of each character and the relations between them is a help to understanding them.

There are two kinds of words, simple and compound. Simple words are those which cannot be broken down as to meaning. They may consist of one character, for example, rén 人 (person), shū 书 (book), mǎi 买 (buy), dà 大 (big) and hǎo 好 (good), or of two or more characters, neither of which means anything by itself. For example, pútao 葡萄 (grape), bōli 玻璃 (glass).

There are several kinds of compound words.

1. *Made with characters each with a meaning of its own, but which together create another meaning.*

a. Characters with the same or similar meanings which are of equal importance. For example, yáchǐ 牙齿 (teeth) is formed by yá 牙 (teeth) and chǐ 齿 (teeth). Péngyou 朋友 (friend) is formed by péng 朋 (an old form of friend) and yǒu 友 (friend). More examples: bāngzhù 帮助 (help), fēngfù 丰富 (rich) and àihù 爱护 (cherish).

b. Two characters which are not of equal importance. One forms the main part and the other modifies or complements it. For example, in diànyǐng 电影 (a motion picture film), yǐng 影 (shadow) is the main part. Diàn 电 (electric), though it is part of the noun, actually modifies yǐng 影.

The word gāngbǐ 钢笔 (pen) is another example. The main part is bǐ 笔 (originally brush, now any kind of writing tool), and gāng 钢 (steel) tells what kind of pen. In the word suōxiǎo 缩小 (shrink), suō 缩 (shrink) is the main part. Xiǎo 小 (small) provides a supplementary explanation. More examples:

qiānbǐ 铅笔 pencil	qiān 铅 lead
	bǐ 笔 pen
diàndēng 电灯 electric light	diàn 电 electric
	dēng 灯 light
diànhuà 电话 telephone	diàn 电 electric
	huà 话 talk

guóqí 国旗 national flag	guó 国 nation
	qí 旗 flag
wēixiào 微笑 smile	wēi 微 small
	xiào 笑 laugh or smile
kuòdà 扩大 enlarge	kuò 扩 expand
	dà 大 large
dǎdǎo 打倒 overthrow	dǎ 打 strike
	dǎo 倒 topple

2. *Formed with a suffix.* Below are some frequently-used suffixes.

a. The suffix zǐ 子. By itself 子 means "offspring" but as a suffix it does not necessarily carry that meaning. This is generally true of suffixes.

Zǐ 子 attached to a noun. For example, zhuōzi 桌子 (table), màozi 帽子 (cap), hái 子 (child), yǐzi 椅子 (chair) and bízi 鼻子 (nose).

Zǐ 子 attached to a verb or adjective makes a compound noun. For example, jiǎnzi 剪子 (shears), diànzi 垫子 (cushion), pàngzi 胖子 (fat person) and āizi 矮子 (short person).

In pronouncing the suffix 子 and the suffix tóu 头 below use a light tone.

b. Tóu 头, which by itself means "head" is frequently a suffix to nouns for block-shaped objects. For example, mùtou 木头 (wood), shítou 石头 (stone).

c. Jiā 家 as a suffix to a noun or verb indicates someone who is a specialist in that field. Zuòjiā 作家 (writer), kēxuéjiā 科学家 (scientist), yīnyuèjiā 音乐家 (musician).

d. Yuán 员 as a suffix after a verb or verb structure indicates someone who does that kind of work. Yǎnyuán 演员 (actor), jiàoyuán 教员 (teacher), shòuhuòyuán 售货员 (salesclerk — literally sell-merchandise person), fúwùyuán 服务员 (service person).

e. Zhě 者 is sometimes used much as 家 and 员 to indicate a profession, as in jìzhě 记者 (reporter). But it can also be used to mean the person who performs the action indicated by the verb, as in zuòzhě 作者 (author), and dúzhě 读者 (reader).

The suffixes jiā, yuán and zhě cannot be exchanged indiscriminately, but must be used according to custom.

一张汇款单

上星期,我收到一张从南京寄来的汇款单 **huikuǎn-dān** (postal money order)。它使我心情 **xīnqíng** (state of mind) 不能平静 **píngjìng** (calm)。为什么呢? 这里有个动人 **dòngren** (moving) 的故事。

两个星期以前,我到南京去开会,顺便 **shùnbìan** (along with) 在当地 **dāngdì** (local) 永新布店 **bùdiàn** (cloth shop) 为我们工厂的一个同事 **tóngshì** (colleague) 买了七尺 **chǐ** (*chi**) 半布 **bù** (cloth)。回厂后,发现 **fāxiàn** (discovered) 布少了一尺。我就给布店写了一封信,很快就接到了他们的来信。他们提 **tí** (raise) 出两点处理 **chǔlǐ** (deal with) 意见 **yìjiàn** (suggestion): 一、如果六尺半布够 **gòu** (enough) 了,他们可以退 **tuì** (refund) 一尺布的钱; 二、如果不够,就把六尺半布寄还 **huán** (return) 他们,由他们换 **huàn** (change) 给七尺半布,并 **bìng** (and) 支付全部 **quánbù** (the whole) 邮寄 **yóuji** (postal) 费用 **fèiyòng** (expenses)。信里还说:“我们接信后,及时 **jíshí** (promptly) 向当天 **dàngtiān** (that day) 中午柜台 **guǐtái** (counter) 的售货员进行查对 **chádù** (check up) 和分析 **fēnxī** (analyze) 原因 **yuányīn** (reason), 发现这个错误是由于售货员粗心 **cūxīn** (careless) 造成的。这给您增加了麻烦 **máfan** (trouble), 向您表示 **biǎoshì** (express) 歉意 **qiànyì** (apology)。我们用这件事向全店职工 **zhígōng** (staff and workers) 进行教育,要求大家加强 **jiǎngqiáng** (strengthen) 责任心 **zérènxīn** (sense of responsibility), 更好地为人民服务。”

我接到这封信时,工厂的那位同事已把布送给他的侄子 **zhízi** (nephew) 了。他说,不必 **búbì** (no need

to) 再麻烦布店。于是,我又写了封信给布店,表示感谢。没过几天,布店汇 **huì** (remit) 来了一元一角六分钱,并说明布是一元一尺,一角六分钱是我给布店写的两封信的邮费。我看着这张汇款单很感动。这个布店的服务态度 **tàidu** (attitude) 真是值得 **zhídé** (worthy of) 夸奖 **kuājiǎng** (praise)。

A Postal Money Order

Last week I received a postal money order mailed from Nanking. It made me so that I could not calm down. Why? Herein lies a moving story.

Two weeks before, I had gone to a meeting in Nanking. On the same trip in the local Yongxin Cloth Shop I bought 7.5 *chi* of cloth for a colleague in our factory. When I returned to the factory I discovered that the cloth was one *chi* short. So I wrote a letter to the cloth shop and soon I received their reply. They gave two suggestions for settling it. First, if 6.5 *chi* of cloth was enough, they could refund the money for 1 *chi* of cloth. Second, if it was not, to send the cloth back to them and they would exchange it for 7.5 *chi* of cloth and pay all the postage. The letter also said, "When we received your letter we promptly checked with the salesclerk who was at the counter that noon and analyzed the reason. We discovered that the mistake was due to the clerk's carelessness. This has caused trouble for you, for which we express our apologies. We used this as a lesson to the whole staff and called on everybody to strengthen their sense of responsibility and to serve the people better."

When I received their letter my colleague in the factory had already sent the cloth to his nephew. He said there was no need to trouble the shop anymore. So I again wrote a letter to the shop to express my thanks. A few days later the shop remitted ¥1.16 and explained that the cloth cost one yuan per *chi* and the one *jiao* and six *fen* was for the postage for the two letters I wrote to the shop.

Looking at this money order, I was deeply moved. The cloth shop's service attitude is really praiseworthy.

*1 *chi* = 1/3 meter = 1.0936 feet

(Continued from p. 39)

king and Shanghai that had tried it. Everyone I met in my travels told me without reserve their ideas for developing the device, their experience and their analysis of the reasons for failure. Soon I felt that I had participated in their experiments from beginning to end. This gave me a deeper understanding of how under our socialist system all achievements are truly collective endeavors.

Back in our factory, every shop cooperated in the task, and the workers and technical personnel pooled their wisdom and efforts. Again I drew strength from the collective. Working far into the night I made dozens of experiments in 20 days and finally found how to make the circuit. Thus, through the joint efforts of the workers and technical personnel the precision ultrasonic flaw detector

came into being. It did not take us ten years, but five months.

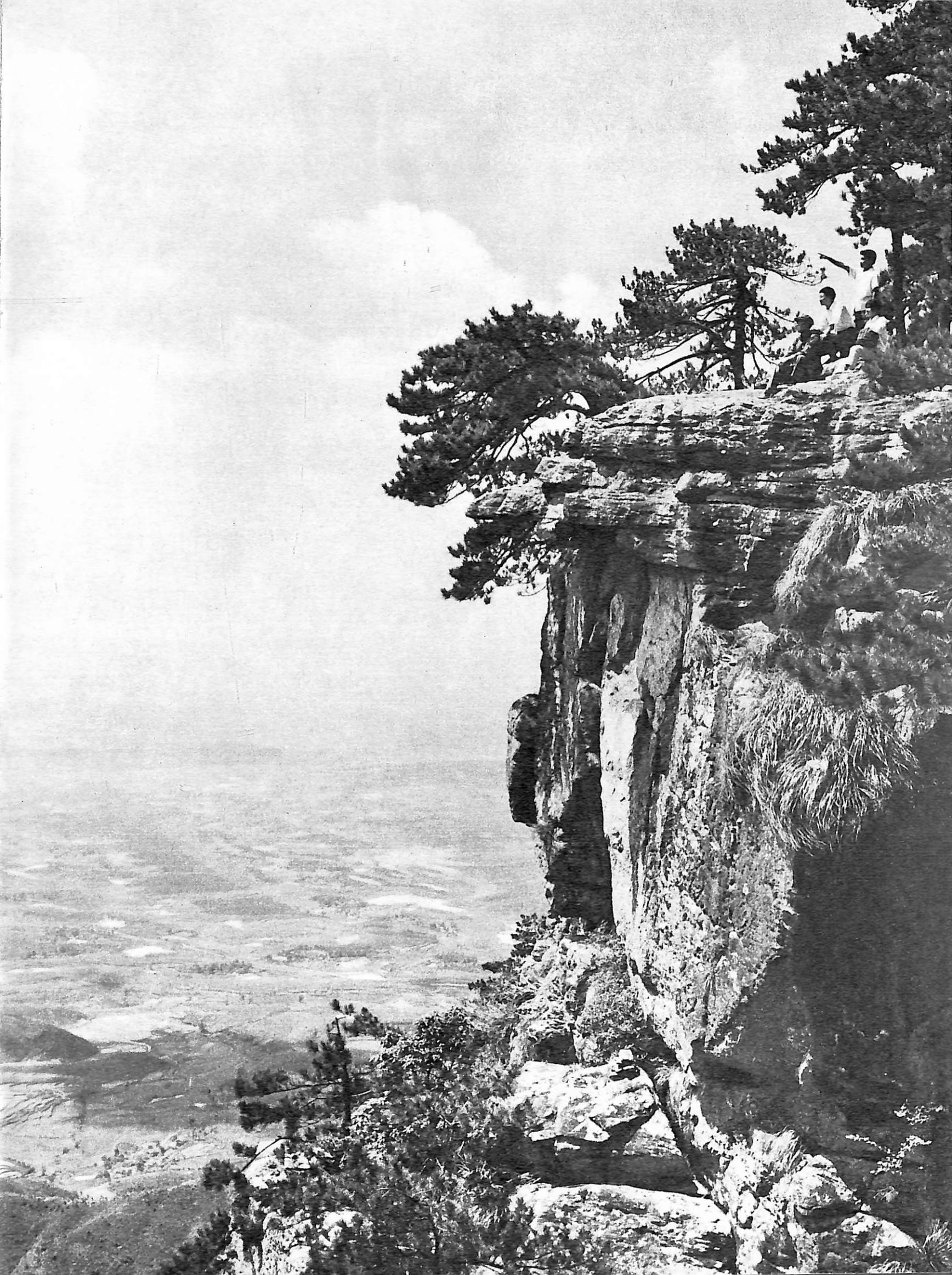
On to Advanced Levels

I have devoted all my efforts in the past few years to catching up with and surpassing world advanced levels and trying to approach the peak of ultrasonic technology. For a long while I did not want the responsibilities of marriage to cut into my work, so not until the year before last, when I was 38, did I get married to a woman I had known some time.

In the last two years I have had opportunities to go on technical study tours abroad and participate in an international technical conference which broadened my vistas and raised my understanding. Chairman Hua's important directives in the recent year on speeding up development of China's science and technology, and the

Communist Party Central Committee's circular on calling a national science conference this year have been a tremendous encouragement. Now I am busy aligning an 80-channel automatic flaw detector. In everything from overall design to specific circuits it is required to reach the technical level of the seventies.

I have often heard my older colleagues say that in old China engineers and inventors had no future. If they wanted to experiment with a new technology, often they had to exhaust all their personal resources, so that sometimes even their families were broken up. I almost find it hard to imagine such a thing because my own experience has been so different. I have gradually seen my dream come true, and today I can play an effective role in building a modern socialist China.





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