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TRANSLATIONS FROM HUNG-CH·I (RED FLAG)

No 1, 1965

- Communist China -

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This serial publication contains translations of articles from the Chinese-language periodical Hung-ch'i (Red Flag), No. 1, 1965. Complete bibliographic information accompanies each article.

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SELF-RELIANCE IS MAGIC WAND

Following is the translation of an article by Ch'en Yung-kuei (7115 3057 6311) in the Chinese-language periodical Hung-ch'i (Red Flag) Peiping, No. 1, 6 January 1965, pp. 20-24.

Our Ta-chai Brigade is located at the foot of Hu-t'ou Mountain in the Tai-hang Mountains. The brigade has 83 families with a population of 360. It is in Ta-chai Commune, Hsi-yang hsien, Shansi Province.

Ta-chai village is only 10 li from the hsien city, but in pre-liberation days it was not known to people living only 20-30 li away. The reason was that the village was small and poverty-stricken. At that time, 70 percent of the 60 families in the village made a living by working as farm laborers and field hands and by begging for food. With the exception of landlords coming to collect the rents and government officials coming to press for delivery of taxes, few people visited Ta-chai.

Now, things have changed. Everybody knows Ta-chai village. This is due to nothing but the correct leadership of Chairman Mao and the fact that we have obeyed Chairman Mao, adhered to the line of self-reliance, and changed heaven and earth.

When the agricultural cooperative was first established in 1953, our brigade was very poor. We had neither money nor livestock. With 7,000 yuan borrowed from the State bank, we bought 18 head of draft cattle. We had a rich harvest that year. The following year we repaid the loan. With a view to further demonstrating the superiority of the collective economy, the Party branch drew up a plan for transforming the hills and gullies and drastically changing the appearance of Ta-chai.

This brought up some problems.

Landlords and rich peasants outside the commune said: "Man follows the road and river the waterway. Man will not fight a river and a chicken will not fight a dog. How can man dare to fight the dragon king!"

It is not strange that the landlords and rich peasants said this. Their road and ours were different, and they sang one song and we sang another. At that time, even some of the members of our commune lacked confidence. They said: "Our land has nothing but high mountains and dry gullies. How can we fight heaven?"

These commune members under-estimated collective strength and took a small peasant's view of the collective economy.

Those who lost sight of the collective strength dared not fight heaven. Time and again we moved commune members to hold discussions. During these discussions, the poor peasants and lower-middle peasants took the most firm stand. In pre-liberation days, they had not a single tile nor brick and had no ground to stand on. They alone were willing to transform the hills and gullies and change poverty into wealth. They said: "The hills and gullies are dead but man is living. Some day they will be transformed. The point is that in doing so, we must spend some working days. We have earth, stone, and manpower. We will work for five years if we cannot complete it in three years and we will work for ten years if we cannot complete it in five years. If we cannot complete it during our lifetime, our children will complete it." Beginning in the winter of 1953, we worked for 10 years in succession without asking for state loans or free supplies. Using our bare hands, picks, arms, and carrying poles, we transformed 7 gullies and 8 ridges in the brigade area. According to our rough estimates, in 10 years we quarried 130,000 cubic meters of stone and built 180 stone dikes totalling 15 li in length. The amount of earth work was beyond estimate. By 1962 we had built over 200 mou of gully land capable of high yield and built dikes on 600 mou of ridge and slope land and transformed the land into level terraced fields. The average yield of grain per mou was considerably raised as compared to 1953.

The 10 years from 1953 to 1962 were years of hard struggle. In these 10 years we overcame numerous difficulties and suffered many setbacks. Our labor put into land capital construction over the 10 years amounted to 110,000 man days, averaging 120 man days for each laborer. How did we solve the difficulties arising from a shortage of manpower? Mainly by utilizing the slack winter season. It was cold, the ground was frozen, and snow fell in the winter. When we built embankments and transported materials, we often had to sweep the road and the snow accumulated on the work sites and battle against the cold weather. Comrade Chia Chint's'ai, the stone-mason and former branch secretary, used to eat frozen rice and worked to the death on the work site. He played a leading role. As we had no artisans, we mobilized all the semi-skilled blacksmiths, carpenters, and stone-masons in our brigade. As we had no money to buy new spades and picks, we ourselves repaired the spades and picks that became blunt. As we had no vehicles for transporting earth, we ourselves made hand carts. We quarried stone and made our own lime. Local materials were used and all means were exhausted to cut down investments. To save lime, we used small cobbles to fill up the cracks; the works were durable and less money was used. Meanwhile, as we were not experienced in building so

many projects of this size, we also sustained some losses. For instance, we sustained losses on two occasions when we built 42 embankments at Lang-wo-chang. The embankments were built in 1955 but were destroyed by mountain torrents in 1956. The main cause was that the embankment foundation was shallow and the stones used were small in size. We rebuilt the embankments in 1957 but again they were destroyed by mountain torrents in 1958. Although we had deepened the embankment foundation and used large stones, they were still unable to resist mountain torrents. Why? We studied the matter on many occasions but could not find the cause. Later, our thoughts turned to this question: why were the caves we lived in still in good order after so many years and why were the arch stone bridges strong enough to resist great pressure? Because they were arched. Acting on this principle, we changed to the arch design when building the embankments for the third time, and raised the height of the embankments to hold back the flood water and reduce its impact. Eventually we were successful.

Our work had one defect, that is, insufficient attention was paid to planting trees and afforestation while building the embankments and terraced land. This was one of the important causes of the flood in 1963. This left a deep impression on our minds after we suffered from the flood. In the spring of 1964, we began to remedy this defect by planting 20,000 saplings and sowing tree seeds on 300 mou of bare hills.

The crops did very well in July 1963. Their luxuriant growth and green color were pleasing to the eye. Unexpectedly, "Providence" stared in anger. For seven days and nights it rained from 2 to 8 August. The rainfall reached more than 600 mm. How could the denuded Hu-t'ou Mountain stand such a heavy rain! The flood, like a wild beast, swept over the land; houses and caves collapsed. Of the 200 mou of gully land that was built up over 10 years, 130 mou was washed away. Forty-one mou of land still had beds left, but the crops were submerged. The greater part of the 600 mou of slope and ridge land was so damaged that borders and embankments were washed away in several places. The foundation of some land shifted and cracked and the crops fell into them. Seventy percent of the 100 rooms and 100 caves collapsed and caved in. People were homeless and the livestock was deprived of shelter. Even the old ones had never experienced such calamities before.

At that point, our class enemy voiced their opinion. They said: "Ten years of hard labor is washed away, and the red banner of Ta-chai falls on the ground."

The class enemy gloated over our misfortune. Commune members had gloomy and sad faces. They were like soldiers whose morale had sunk after defeat in battle. It was a time in which the ideological and political work of the Party branch was a matter of great importance. If the ideological work fell behind and morale was not bolstered, we could not expect to win.

The first thing we did after the calamities was to bolster the morale. During the drought in 1920, scores of persons starved to death in our village. My family of five had no way of making a living. My father was compelled to sell my mother, elder sister, and younger brother. He then hanged himself from a tree in our graveyard. We suffered calamities in 1963 but there was not a single life lost and no one fled from famine. We found quarters for those whose homes had collapsed. We provided grain for those who had no food. When they compared the calamities in the new society with those in the old society, commune members saw the merit of collective strength, overcame their pessimistic feelings, and started crop-saving and famile relief activities in no time.

Although commune members were no longer so pessimistic and disappointed, some people still doubted whether our own strength was enough to overcome calamities of such magnitude. At that time, people's views were not identical. Some said: "Such calamities can never be overcome." Others said: "No stop-gap measures can cope with such calamities. Without state relief, nothing can be done."

Could we beat the calamities? How? Our Party branch and the administrative committee repeatedly took up this question. We looked back at what we had achieved in transforming the mountains and harnessing the rivers during the past ten years, recalled what had happened after the calamities, and turned our eyes from Ta-chai to other calamity-stricken areas in China. After we had gone over the experiences again and again, we said: "As long as we preserve the forests, we do not have to worry about firewood." Which piece of land was not built with a spade, bit by bit? Which house was not built with bricks and tiles, bit by bit? You cannot expect to win all battles and lose none. There is no such ever-victorious general in the world. Finally, we found ten great advantages in relying on our own efforts in resisting calamities and raised a "three no" watchword: no relief fund, no relief grain, and no relief supplies.

The "three no" watchword was fully approved by poor peasants and lower-middle peasants when it was discussed at a meeting of commune members. They said: "Let us repeat three times the efforts we made to fight Lang-wo-chang, and certainly we will triumph over 'Providence!'"

Encouraged by the "three no" spirit, we declined all relief funds, medical expenses, winter garments, and other supplies allocated by the State. Our commune members whipped up our efforts. Crops that had fallen were set straight and damaged houses were repaired. After two months of hard work, we gathered a harvest and 560 mou of land which had a solid foundation gave a normal rich yield. Commune members said after discussion: "We will not only decline the three aids but will fulfill the State procurement targets!"

Our commune members displayed a still greater vigor after the provincial committee had popularized our spirit -- relying on our own efforts for beating the natural calamities. In less than five months

from the time of the calamities to the end of the year, over 100 men and women laborers of our brigade fulfilled the tasks of autumn harvesting, autumn plowing, and autumn sowing in addition to repairing 35 rooms and 27 caves which were ready to collapse. Forty tiled rooms and 20 stone caves were built. From these living facts, we saw the power of the collective economy, thought in bigger terms, and took a longer view.

When drawing up our 1964 production plan at the beginning of the year, we came forward with this bold watchword: "reduction of land but no reduction of yield."

"Reduction of land and no reduction of yield" was a very high target. Could we put it into reality? We had contradictions and struggle at the time.

The first contradiction was that the soil on 23 percent of the land was destroyed. The second was that production of grain fell off, crop stalks decreased, and manure was short. The third contradiction was that people lacked living quarters and livestock lacked shelter. These contradictions in reality were only one contradiction between manpower and tasks. Manpower was already short, and it was now required to restore land and build houses. One hand cannot cover both ears to keep out the wind.

How were these contradictions to be resolved? Chairman Mao often taught us that we must grasp the principal contradiction. Land was the source of grain, and without restoring the land, nothing else could be done. However, if we did not build houses, members who had no living quarters could not concentrate their energy on land restoration. After studying the problem, the Party branch decided to restore land on the one hand and continue to build houses on the other. House building was to be begun by restoring the land, and land restoration was to be brought about by house building. After New Year's day, our brigade concentrated its main force on land restoration. Rain was excessive in the autumn and snow was heavy in the winter of 1963. The ground was frozen and covered with snow and the cold was piercing, but commune members never stopped work for a single day. Difficulties were afraid of heroes. Plots of land were soon restored. Some projects which were expected to take several months were completed in several days. Simultaneously with the restoration of land, new houses were built. Commune members moved into their new living quarters and displayed a still greater vigor in restoring the land. By the time of spring plowing in 1964, 80 mou of land had been restored and 200 mou had been repaired and set in order.

It was the season of spring plowing and sowing. Under the original plan, 50 mou of land had not yet been restored and some 300 mou had not yet been repaired and set in order. What should we do? Again, acting on Chairman Mao's instructions, we grasped the principal contradiction and attacked it first. We concentrated the men and women laborers of our brigade and divided them into three groups: one group charged with the shock task of repairing and setting the land in order; one group charged with the

shock task of sowing; and one group charged with the task of transporting manure. The greater the pressure of work, the greater the efforts of the commune members. During the busy season of spring plowing, 50 mou were restored and over 300 mou were repaired and set in order -- in addition to fulfilling the sowing tasks according to plan.

Efforts alone were not enough; we must analyze what we had done. Although spring plowing and sowing had been finished and seeds had been sown, it was not easy to realize the "reduction of land but no reduction of yield" target when no water conservancy facilities and farm machinery were available. In order to insure the realization of this target, we introduced "management of single plants." That is to say, in loosening the soil, weeding, and applying additional manure, we were to check the plants one by one; less manure was to be applied to the strong plants and more was applied to the weak plants. It was a very good method. In 1964, all the crops did well in the same way, whether they grew on big plots or on small plots and whether they grew in the field or at the land border. A bumper harvest was gathered as never before. The "reduction of land but no reduction of yield" target was satisfactorily made a reality. After the autumn harvest, we, not forgetting the State, overfulfilled the State target of grain procurement. In that year, the quantity of grain sold, the quantity of grain kept on hand, and the amount of grain ration for commune members were the highest in our history.

How is it that Ta-chai, afflicted with such great natural calamities in 1963, could have such a bumper harvest in 1964?

First, it was due to the fact that Ta-chai adhered to the policy of self-reliance proposed by Chairman Mao. Of all things, self-reliance is the best. In doing anything, if one chooses to rely on others, he will ask help from the State and will not work hard. The more help he receives from the State, the more he is disinclined to work. In the future, he will "sit at home eating away his resources." If we had not adopted the "three no" watchword during 1963 when we were afflicted with such great calamities, our commune members would not have worked so hard. In that year, the 128 men and women laborers in our brigade had more than 34,000 man days, averaging 270 man days for each laborer. The increase in attendance was accompanied by a rise in efficiency. In one year, in addition to tending the crops, we restored 130 mou of gully land and repaired and set in order over 500 mou of slope and ridge land. Before the calamities, our land was new and our houses were in a dilapidated condition. After the calamities, we built 72 rooms and 36 stone caves. Ta-chai had never had such good living quarters before. In one year we accomplished good things which had not been done for thousands of years. Chairman Mao said that bad things can be turned into good things, and bad things may lead to good results. How true it is!

Second, Ta-chai received aid from the State and fraternal communes and brigades. Over the years, the State gave us much aid in the forms of chemical fertilizers, processing machinery, electric power, coal, and

transportation. Fraternal communes and brigades gave us much help in the forms of draft cattle, tree seeds, saplings, timber, and stone work. More important still, the Party and Government as well as the whole nation gave us much spiritual aid and encouragement. Leading comrades of the Central Government, provinces, districts, hsien, and communes gave us much concrete guidance and help. Over 80,000 persons from various parts of the country offered their experiences to us, and the heroic 8th Company and the Red 1st Company came to us to pass their experiences on to us. This spiritual aid and encouragement were even greater than the material aid and were inexhaustible.

We deeply realize that what we have achieved is still a long way from the demands of the Party and the State and from the hopes of the whole nation. Our work still has many defects. Compared with some advanced units in our province, we have fallen behind. In the study of Chairman Mao's works, we are behind Nan-liu; in the development of diversified undertakings, such as forestry, stock-breeding, and side occupations, we are behind Hsi-kou and Yang-t'an. Other fraternal communes and brigades in our country are definitely worthy of our learning. After the Party issued the call for learning from Ta-chai, cadres and commune members, I in particular, became self-complacent and showed rashness in doing certain things. We made decisions ourselves without consulting others. Sometimes we spoke in a manner that offended other people. We were fond of praise and displeased to hear criticism. After studies, we have realized that our style was dangerous. From now on we will bear in mind Chairman Mao's teachings: "modesty makes one progress and conceit keeps one backward" and will endeavor to overcome these shortcomings. Meanwhile, we will appropriately increase the proportions of winter wheat, millet, and beans on the basis of high yield. In short, we will take our success as the first step in a 10,000-li march, and will better study Mao Tse-tung's thinking, learn from the People's Liberation Army and Ta-ching, learn the advanced experiences of all localities, and strive for still greater successes to show our gratitude to the Party, Government, and the whole nation who have given us such great care.

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CSO: 3530-D



"ONE INTO TWO" AND DYNAMIC THOUGHT

Following is the translation of an article by P'an Yu-kuo (3382 2589 0948), Political Commissar of an unspecified Army unit, reprinted from Kwang-hsi Jih-pao, 12 December 1964, as published in the Chinese-language periodical Hung-ch'i (Red Flag), Peiping, No. 1, 6 January 1965, pp. 25-27.]

Materialist dialectics tells us that everything is "one divides into two." "One divides into two" is the basic law governing the development of things. Therefore, no matter what kind of work we do, we must learn to apply the viewpoint of "one divides into two." I am a political commissar of a company. Through conducting dynamic ideological education in the company, I have deeply felt that only by continuously learning to apply the viewpoint of "one divides into two" can one grasp the dynamic thought and solve ideological problems. I am going to tell below some of my crude understanding.

Our company was rated as a "four-good" company in 1963. The conferring of this honor by the Party and a higher level greatly inspired the cadres and fighters. After training began in 1964, everybody worked even more energetically in various kinds of work tasks. The joyful spirit unleashed during the New Year and the Spring Festival was really like a pot of blazing charcoal burning merrily. One day, as I read Chairman Mao's On the Correct Handling of Contradictions among the People, I came to the following passage: "We must learn to take an all-round view, seeing not only the positive side of things, but also the negative side. Under specific conditions, a bad thing can lead to good results and a good thing to bad results." This made me a bit more sober. I considered whether or not there were also problems in our company, and learned to apply the viewpoint of "one divides into two" in analyzing the ideological conditions of the fighters in the company. How could the dynamic thought be grasped? We carried out our work in three ways -- to pay attention to things in the beginning, to exchange views, and to think hard.

In order to pay attention to the beginning of things, one must go deep into the squads and platoons to share the work of the fighters or to chat with them, and pay attention to finding the general ideological trend from the words and deeds of each individual.

In order to exchange views, the committee members of the Party branch must discuss the various kinds of ideological expression of the moment from various angles, i.e., from both the positive side and the negative side. It is thus easy to set out all problems with thoroughness.

The purpose of thinking hard is to discover the principal problem from among the problems set before us. It is especially necessary to learn the ability of seeing through phenomena to get at the essence in accordance with Mao Tse-tung's thought and the spirit of the guidelines and policies of the Party Central Committee and of the directives of the Military Committee and higher authorities.

Let me give an example as illustration.

Before the Spring Festival of 1964, I attended the "meeting of heroes" of the armed force units in Canton on behalf of the company. On my return, I went to the squad for an inspection. The fighters warmly surrounded me and asked all sorts of questions. Fighter Li Yu-ch'un of the 7th Squad asked: "Commissar, is our company rated as a pace-setter?" I said: "No, for if our company is also rated as a pace-setter, the standard of a four-good company is too low. We must make greater exertions." Hearing my reply, he said casually: "If we cannot be rated as a pace-setter of the armed force units of Canton, it would do for us to be rated as a pace-setter of the regiment." His remark gave me deep thought. I began to notice that some fighters in our company were arrogant and complacent. If this were allowed to develop, it could lead to bad results.

I discussed the matter with the company commander, and contended this was the beginning of something. Therefore, an enlarged meeting of the Party branch committee was convened to exchange views. Many problems existing in the company were set before the meeting. Apart from arrogance and complacency, there were also the phenomena of weakness in organization and discipline, procrastination in work style, and dread of hardship and tiresome work. There were also individuals who thought of quitting the army. But what was the universal thought which affected the central task most? Views differed in this regard. At that point, I organized my men to study again the Party's directive on opposition to arrogance and complacency. They viewed the principal problem of the moment in the company in the spirit of this directive, and discovered that we were blinded by honor, thus developing the thought of blind complacency and conservatism.

The principal problem was thus discovered. However, the feeling of arrogance and complacency found reflection in the person of a fighter. Was there such a feeling in the person of our cadres? They analyzed things, and found that not only was there such a feeling, but also that the feeling

was rather serious. On one occasion, for example, the battalion criticized us for making slow progress in excavation work. A platoon commander suggested that urgent action be taken to improve things, but the deputy company commander said: "There is no need to hurry, for we must sit tight in the boat in order to fish." I myself also noticed that when I had spoken in the past, I always played up the achievements and glossed over the shortcomings. This kind of self-complacency on the part of the cadres naturally would transfer the fighters. Obviously, the cadres must first overcome their arrogance and self-complacency. With the matter better understood, all cadres conducted self-examination at the meeting.

The application of the viewpoint of "one divides into two" to grasp dynamic thought seeks merely to analyze the different aspects of a contradiction and to understand the contradiction. The more important thing, however, is to make use of the viewpoint of "one divides into two" to solve ideological problems, thus achieving the object of promoting proletarian ideas and destroying bourgeois ideas, of remolding our way of thinking, of heightening our consciousness, and of strengthening our revolutionary fighting spirit. In this aspect, our method is to study Chairman Mao's works, to heighten our understanding, to arouse the masses, to make a success of work, to commend the advanced, and to organize "comparison, learning, overtaking, and assistance" so as to turn bad deeds into good deeds and to transform the negative into the positive.

How should we study Chairman Mao's works in order to heighten our understanding? We should study with specific problems in mind, link our study with reality, and study again and again. The thinking marked by arrogance and self-complacency on the part of our company was resolved after "studying for three times" Chairman Mao's two articles entitled: "Opening Speech to the 8th National Congress of the Chinese Communist Party" and "Study and the Situation." Prior to this study, some fighters thought that the thinking of our company was not marked by arrogance and self-complacency, or that some people were guilty of arrogance and self-complacency without themselves knowing it. Some people thought for example that "we should take pride in our ability to undergo hard tests." Some people even said: "Without ability, a person has nothing to be proud of, and you can not make him feel proud."

After study was conducted for the first time, we knew that our thinking was really marked by arrogance and self-complacency, and that there were "burdens" on our backs. After study was conducted for the second time, we became even more sober-minded and had sharper eyes. We discovered not only our personal ideological burdens, but also the great and small "burdens" in the company, and manifestations and sprouts of arrogance and self-complacency were unearthed from various corners. At the same time, we also compared our company with the fraternal companies, and discovered that our achievements were inferior to theirs in all fields during this period. We learned that if the stumbling-block in the form of arrogance and self-complacency was not removed, we would not be able to march forward in big strides. After study was conducted for the third

time, we used the class viewpoint to analyze the essence of the problem and further learned that thinking based on arrogance and self-complacency gave expression to bourgeois individualism. With such thinking, we would fail to see the leadership of the Party and the strength of the masses, become conservative, and make no further progress.

On the basis of our heightened recognition, we were resolved to overcome the feeling of arrogance and self-complacency. For example, the 7th Squad of the 3rd Platoon considered itself to be "the No. 1 seed" for popularizing Kuo Hsing-fu's teaching method in the whole regiment, and looked down upon its own "apprentice" -- the 2nd Squad. After study was conducted for the third time, they went of their own accord to the 2nd Squad to seek experience, and learned humbly from the 2nd Squad. At the same time, they also humbly learned from the civil police team the action of lying down.

How should the masses be aroused to create conditions for turning arrogance into humility? The principal key lies in fully arousing the masses and making each person self-consciously study Chairman Mao's works and participate in ideological revolution. When ideological education was carried out, the company often encountered the contradiction of having a tight program but little time. Some people thought that to conduct ideological education during intense training was like picking up sesame seed after dropping a melon. We contended that time was dominated by man, and, provided all of us made greater use of our brains and arranged work well, it is possible "to mend the net without hindering fishing." Although training and work might be temporarily affected, once the ideological problems of the fighters were resolved and their consciousness was heightened, it was possible to lay down a solid foundation for all kinds of work and to translate spirit into matter. Facts show that after the thinking based upon arrogance and self-complacency was opposed, the achievements of our company in training made marked advancement by scoring excellent results in ball-firing during the second practice.

For the sake of consolidating and promoting the progress of our comrades in the ideological field, we also pay attention to commending the advanced and organizing "compare, learn, overtake, and help" activities. By means of blackboard news, wall posters, and megaphones, we have publicized the advanced deeds of Comrade T'ang Huo-ch'un, a five-good fighter, an "A" grade marksman and expert grenade thrower, who learned humbly and trained himself the hard way. We have also publicized the 7th Squad who have discarded their "burdens" and marched forward in big strides. Everybody thus feels that it is glorious to learn humbly but shameful to be arrogant and complacent. Through organizing the "compare, learn, overtake, and help" campaign, the "one helps one" campaign, and the "red pair" campaign, a surging tide has quickly developed.

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CSO: 3530-D

TO SEEK THE DIFFERENCES OR THE SIMILARITIES?

Following is the translation of an article by Han Hsin-liang (7281 1823 0081), Shanghai Iron and Steel Works No. 3, reprinted from Chieh-fang Jih-pao, 18 December 1964, as published in the Chinese-language periodical Hung-ch'i (Red Flag), Peiping, No. 1, 6 January 1965, pp. 27-30.

Comrade Yang Hsien-chen misrepresents the content of revolutionary dialectics as "combining two into one," and wants us to apply revolutionary dialectics with the method of "seeking the identity and preserving the difference." He says: "Dialectics is the study of how opposites are identical (united). The identity is sought and the difference is preserved." He also says: "Dialectics seeks to study how opposites can become identical, and this identity seeks a point in common."

Is this viewpoint of Comrade Yang Hsien-chen's correct? Absolutely not. Chairman Mao has this to say: "There is only one truth, and he who has discovered truth depends not on subjective exaggeration, but on objective practice. Only the revolutionary practice of millions of people is the yardstick for testing truth." ("On New Democracy") By setting the "dialectics" preached by Comrade Yang Hsien-chen in contrast with the practice of revolutionary struggle by the masses, we can clearly see that what he peddles is a completely bourgeois reactionary theory. We can never be deceived by him.

I will now refute here Comrade Yang Hsien-chen's theory of "seeking the identity and preserving the difference" on the basis of some experience gained from launching the "compare, learn, overtake, and help" campaign in our factory.

I am a worker in the open-hearth furnace workshop of the Shanghai Iron and Steel Works No. 3. During the past few years, by continuously making technical innovations and launching socialist labor emulations, the output of the two open-hearth furnaces in our workshop has been greatly raised. However, during the enthusiastic emulations in which we tried to

out-do each other, the output of the open-hearth furnaces constantly showed a difference in production. At one time, for example, although furnace No. 1 was newer than furnace No. 2, it consumed more raw and semi-processed materials and took a longer time to refine steel than the latter. Our No. 1 furnace was obviously backward in production. What should be done? Should we learn humbly from and catch up with the advanced, solve the production problems in good time, and overtake the No. 2 furnace? Or should we cover up the contradiction and uphold the status quo in accordance with Comrade Yang Hsien-chen's method of "seeking the identity and preserving the difference?" The comrades of our No. 1 furnace firmly adopted the former attitude and method. Had we carried out our work in accordance with Comrade Yang Hsien-chen's viewpoint of "seeking the identity and preserving the difference," we would not have taken the trouble to find out in what way we were inferior to other people, and we would obliterate and cover up the contradiction, thus preserving our "difference" with the No. 2 furnace in production. Thus we would develop the thought of six of one and half-a-dozen of the other, closely adhere to the old rules, uphold the status quo, and forever remain backward. Therefore, we persisted in viewing problems with the viewpoint of "one divides into two," acknowledged the gap, exposed the contradiction, and analyzed the cause of the contradiction. At the same time, we believed that given effort, the contradiction of the advanced and the backward could be transformed, and that the only correct way to change the backward aspect was to close the gap by mastering the advanced experience of the No. 2 furnace.

By making careful observations and asking for advice, we discovered that the comrades of the No. 2 furnace had great revolutionary zeal and controlled the use of gas in a better way. We studied their revolutionary spirit and advanced experience. After experimenting with more than 300 loads, we found the method of "making use of gas at different stages," and learned to use different quantities of gas at "the three stages of material feeding, smelting, and refining." After this method was adopted, the elder No. 1 furnace not only equalled but surpassed the No. 2 furnace. It also consumed less raw and semi-processed materials and took less time to refine steel than the No. 2 furnace.

When the comrades of furnace No. 2 were aware of the situation, they promptly studied our experience. With our assistance, they quickly mastered the method of "making use of gases at different stages." Following this, we also learned about furnace maintenance from the comrades of the No. 2 furnace. We thus helped and learned from each other and tried to out-do each other, and the level of production of the two open-hearth furnaces was greatly raised. A comparison of the general achievements made by the two open-hearth furnaces in 1962 and 1963 showed that the annual output was increased by 14 percent, the rate of qualified standard steel ingots was raised by 1.77 percent, the average furnace classification was raised by 16 percent, the average refining time for each load was shortened by 16 minutes, and the amount of coal consumed and the amount of iron needed for making one ton of steel were also conspicuously reduced.

It is very obvious that the ability of the two open-hearth furnaces in our workshop to score these achievements in production is principally due to our continuously discovering the gaps and analyzing and solving the contradiction through the Party education. It is never the result of our obliterating the contradiction to look for the so-called "point in common." A gap is a contradiction. In the "compare, learn, overtake, and help" campaign, we must first find the gap, i.e., the difference between the units or the individuals, before we can self-consciously find an opponent in work, an example to learn from, a target to overtake, and measures for rendering assistance. Thus, the contradiction can be solved correctly, and a transformation more favorable to the revolution can be promoted.

As a matter of fact, in the process of production, between different units or individuals, there is always the contradiction of the advanced and the backward. For example, the output may be high or low, the quality may be good or poor, and the quantity of raw and semi-processed materials consumed may be greater or less. The important thing is the attitude adopted by us. If we are guided by the dialectics of "one divides into two," we would discover in what way we are inferior to other people and why we are backward. We would discover in what way other people are advanced and what are the causes. After that, we would adopt measures to close the gap, and in this way the backward can become the advanced, and the advanced even more advanced. If we work in accordance with Comrade Yang Hsien-chen's viewpoint and "preserve" all points of difference, then the contradictions of high output and low output, of good quality and poor quality, of greater, faster, better, and more economical results and lesser, slower, poorer, and more expensive results, and of the advanced and the backward, which are in objective existence, would be covered up and reconciled. As a result, the backward can only remain backward forever, and the advanced will regress to the backward, thus impeding the development of production.

The existence of a gap in production achievements is often due to the existence of a gap in thought, in revolutionary zeal, in work method, or of a gap in technical level. Only by making comparisons can we progress from the gap in production achievements, gradually and perceptively discover the merits of other people and our own shortcomings in various fields, remedy our shortcomings with the merits of other people, consistently forge ahead, and go on to develop our own merits.

Apart from conducting "compare, learn, overtake, and help" activities between furnace crews in the factory, we have also challenged other fraternal factories in the municipality to labor emulations in comparing with the advanced, looking for gaps, trying to out-do each other, and learning from and helping each other, and we have solved many problems in production in this way.

For example, our plant and Shanghai Iron and Steel Works No. 1 constantly inform each other, for purposes of comparison how the various targets were met. Once it had been discovered that a factory was backward

in a specific target, the personnel concerned were promptly organized to learn from the other factory. The open-hearth furnace workshops of our two factories are equipped and staffed more or less in the same way, but in the concrete course of production, gaps constantly showed. On one occasion, when we compared various targets with the Shanghai Iron and Steel Works No. 1, we discovered that there were more technical accidents in steel casting in our factory than theirs. The head of the workshop led a group of persons to the Shanghai Iron and Steel Works No. 1 to study and found that the reason they had fewer technical accidents in steel casting was that they had a stronger sense of responsibility, that they had established a sound system of responsibility for various stations of work, and that their labor was rationally organized. We studied their advanced ideas and experiences and improved our own work, and there was a marked decrease in the number of technical accidents in steel casting. In 1963, the comrades of our open-hearth furnace workshop went alone to study at the Shanghai Iron and Steel Works No. 1 more than 40 times. The comrades of Shanghai Iron and Steel Works No. 1 also constantly came to our factory to see and study and to pass on their experience. Now, it has become an established custom for us to communicate with the fraternal factories and to learn from the advanced.

There is no end to advancement, and it is necessary to forge ahead again and again. In the case of some experience, what is advanced at one time in a particular place may not necessarily be advanced at another time in another place. In order to overcome arrogance and self-complacency and to catch up with the advanced level at home and abroad, we must also learn from the advanced units in other places.

Since the second half of 1963, our factory has organized groups of management personnel, workers, and technical personnel, led by leading cadres, to learn experience from An-shan, Chungking, Peking, Ta-yeh and Tang-shan. The head of our open-hearth furnace workshop also led eight persons, including the shift leaders, the furnace masters, the furnace maintenance technicians, the steel-casting foremen and the heads of technical groups, to learn advanced experience from Chungking Iron and Steel Works. At that time, our factory was experimenting with the making of a kind of heavily pressed thin plate for the enamelware industry. The demand for this kind of steel is very high, and the content of ferrous oxide in the slag cannot be higher than 14 percent. We tried to make this kind of steel a number of times, but the content of ferrous oxide in the slag was always higher than the standard set. As a consequence, many molds cracked when pressed and had to be discarded. We went to the Chungking Iron and Steel Works to study with this problem in mind, and adopted the method of setting men against men and generals against generals to work with the shifts. Whenever we found anything which was more advanced than ours, whether it was the system of management, a method of operation, or the innovation of a small tool, we treated it like treasure and made a record of it. What was especially important was that we noticed that the comrades of Chungking Iron and Steel Works were able to make good steel although the temperature there was higher than that of Shanghai, and some

concrete conditions were inferior to Shanghai. This kind of revolutionary spirit and revolutionary zeal impressed us very much. After our return to the factory, we seriously studied their advanced ideas and absorbed their advanced experience. The content of ferrous oxide in the slag registered a marked decline and amounted to between 10 and 12 percent, thus attaining the advanced level. Formerly, the life-span of a top-hole only lasted for 4 or 5 loads of steel. This was also quickly raised to between 20 and 22 loads, and to 25 loads maximum.

By way of these activities, we have not only tasted "sweetness" from the "compare, learn, overtake, and help" campaign, but also learned that only by guiding our thought and action with the viewpoint of "one divides into two" can we forever uphold the modest attitude, aim high, and promote the continued development of production. If we adopt Comrade Yang Hsien-chen's viewpoint and look only for "points in common" by "seeking the identity and preserving the difference," then as soon as we have achieved something, we would sit in the well to look at the sky, become short-sighted, and fail to see the advanced factors of other people. When we were backward, we would not look at backwardness in the face, analyze the cause of backwardness, and humbly learn from and catch up with the advanced. As a result, we would inevitably become conservative, and thus obstruct the development of production.

In the course of launching the "compare, learn, overtake, and help" campaign, we have clearly seen that the revolutionary dialectics of "one divides into two" is a fundamental method for bringing revolutionary zeal into play, for raising the level of production, and for implementing the Party's general line of building socialism. Comrade Yang Hsien-chen advocates the "combining two into one," and the obliteration and hiding of contradiction. He wants us to find only "the point in common" to the two opposites and "preserve" the difference. What is all this? Are we not openly urged to eliminate the "compare, learn, overtake, and help" campaign and do something that runs counter to the Party's general line of building socialism? There is not the slightest hint of revolutionary dialectics in it!

The theory of "seeking the identity and preserving the difference" which Comrade Yang Hsien-chen energetically preaches is in every respect a metaphysical viewpoint which seeks to obliterate contradiction, to eliminate struggle, and to reject revolution. We must draw a clear line of demarcation between us and this kind of fallacy -- not only in class struggle but also in the struggle for production, in scientific experiments, and in all kinds of work.

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WORKERS FIRMLY OPPOSE THEORY OF "CLASS COOPERATION"

[Following is the translation of an article by Miao Lung-chiang (4924 7893 3068), reprinted from Chieh-fang Jih-pao, 27 December 1964, as published in the Chinese-language periodical Hung-ch'i (Red Flag), Peiping, No. 1, 6 January 1965, pp. 30-32.]

Comrade Yang Hsien-chen's theory of "combining two into one" is a fallacy for publicizing "class cooperation." In order to provide "class cooperation" with a "theoretical" basis, he has openly claimed: "The capitalists have the means of production but no labor power, while the workers have labor power but no means of production. Therefore, the means of production has linked the bourgeoisie with the proletariat." Comrade Yang Hsien-chen's statement has completely obliterated the relationship of exploitation and the exploited between the bourgeoisie and the working class and described the relationship between the two opposing classes as a relationship of "mutual aid and cooperation." I cannot help but feel enraged after reading it.

Before liberation, we workers were cruelly oppressed and exploited by the capitalists. I went to work when I was a child, 11 years old. At that time the workers worked from early in the morning until late at night. They worked for as long as 12 hours a day and the wages for a working child amounted to less than three silver dollars. This was not enough to feed oneself with three congee meals a day. We regularly patronized the pawnshops, pawning our cotton-padded coat in summer and unlined garments in winter. Our families constantly lived on borrowed money and rice, and sometimes we had to work with an empty belly. The capitalists squandered their money in feasts and led lustful lives. These were the days which Comrade Yang Hsien-chen describes as the days in which "the bourgeoisie and the proletariat are linked together." I shall never forget the miserable life I led in those days.

After giving the matter careful thought, I feel that in saying that the means of production "links the bourgeoisie and the proletariat

together," Comrade Yang Hsien-chen more or less talks like the capitalists before liberation. At that time, when we workers rose in struggle, the capitalists often said: "All of us must make a success of the factory and keep it going. The factory feeds both the factory owners and the workers. The collapse of the factory will mean that all of us will have nothing to eat." Do not these words of the capitalists also mean to say that "the means of production (i.e., the factory according to the capitalists) links the bourgeoisie and the proletariat together?" Were they not aimed at telling us that there were "common interests" for the capitalists and the workers, and that we workers must give up our struggle and inseparably "link ourselves" with them forever? Although Comrade Yang Hsien-chen's statement wears a "theoretical" mantle, it means to say the same thing as the capitalists. There, the line of demarcation between exploitation and the exploited is made very vague, and class struggle disappears altogether.

We all know that the capitalists merely tried to deceive people when they said that "with the capital preserved, all can be fed." Under the capitalist system, the capitalists wanted "to preserve their factories" only for the purposes of exploiting the workers and making big money, and not just for the purpose of "feeding everybody." We workers were exploited by the capitalists to the utmost. We were under-fed and were often dismissed. The printing press of the Chunghua Book Store was such an example before the liberation. At that time, out of the fear that the workers might go on strike, the capitalists often dismissed workers and divided the workers into permanent workers and casual workers to undermine the solidarity of the working ranks. They fanned dissension among the workers by telling the permanent workers not to mix with the casual workers, and the casual workers that "as long as the factory is in operation, their meals are assured." However, the livelihood of neither the permanent workers nor the casual workers was safeguarded. The capitalists often dismissed them at random in accordance with their own interests and requirements. Is not Comrade Yang Hsien-chen's statement just made for the purpose of defending the capitalists?

What is more infuriating to people is that, as we all know, the capitalists do no labor although they have power for labor. They depend on the means of production in their possession to force the workers to sell their labor power, and squeeze surplus value from them. However, Comrade Yang Hsien-chen says that "the capitalists have no labor power," and must therefore hire workers. Is it not true that he makes an open apology for the capitalists to cover up their cruel exploitation of the workers for the purpose of making a higher margin of profit?

Now, let us concretely analyze once again why this "theory" of Comrade Yang Hsien-chen's is preposterous.

According to Comrade Yang Hsien-chen, because "the capitalists have the means of production but no labor power while the workers have labor power but no means of production," "therefore, the means of production has linked the bourgeoisie with the proletariat." This means to say that the

capitalists and workers give what they have for what they have not, with one side contributing machinery and the other side contributing manpower. Both sides reap benefits when they are united and both sides suffer when they are divided. This viewpoint is also a concrete illustration of Comrade Yang Hsien-chen's viewpoint of "combining two into one." I would like to ask Comrade Yang Hsien-chen two questions.

First, Comrade Yang Hsien-chen says: "The capitalists have the means of production but no labor power, while the workers have labor power but no means of production." Under the capitalist system, the workers really own nothing except labor power. However, we want to ask: Why is it that the workers have no means of production while the capitalists "possess" means of production? Everyone knows that labor creates the human world, and that the means of production is created by the workers. The means of production in the hands of the bourgeoisie is, in the final analysis, robbed from the hands of the laboring people.

Marx once said that the historical origin of capital was for the purpose of directly exploiting the workers. Capital in the world is a dirty thing with blood dripping from every pore from head to heels. This is a fact. Many of our workers and their ancestors were poor peasants by origin. Some of them were poverty-stricken handicraftsmen. As victims of oppression and exploitation, they lost all means of production, and had no alternative but to sell their lives to the capitalists. Theirs were painful experiences soaked with tears and blood. However, Comrade Yang Hsien-chen fundamentally makes no mention of the fact that the laboring people have no alternative but to sell their labor power to the capitalists because they have been robbed of their means of production nor does he say anything about the fact that it is by exploiting the laboring people that the capitalists have gained possession of their means of production. By describing things in this way, if Comrade Yang Hsien-chen does not try to cover up the cruel exploitation of the working class by the bourgeoisie and class contradiction, and to benumb the class consciousness of the working class, what is his point?

Secondly, Comrade Yang Hsien-chen holds that because "the capitalists have the means of production but no labor power," they therefore want to "join forces" with the workers. We want to ask: what makes the capitalists hire the workers? Everyone knows that the capitalists open factories and hire workers, not because they want to develop the functions of the means of production and to increase the wealth of society, but because they want to exploit the workers and make money. The bourgeoisie seek only profit. If money could not be made, no matter how much means of production they might have, they would just put them to one side, and would not be willing "to join forces with the working class." Before the liberation, many capitalists hired workers when business was brisk and good profits could be made. When business was slack, they laid off the workers, especially the old workers who took a strong stand in the struggle. They not only accumulated capital and gained the possession of the means of

production through plundering, but also made use of the means of production to exploit the workers and to increase their personal wealth.

Comrade Yang Hsien-chen says that the means of production "links the bourgeoisie and the proletariat together," but he fundamentally makes no mention of the fact that this so-called "link" is the relationship of exploitation and the exploited and the relationship of oppression and the oppressed. Although we workers were exploited and oppressed to the utmost in the past, Comrade Yang Hsien-chen loosely uses the word "link" to obliterate the class struggle, and describes the relationship of the capitalists and workers as if it is a relationship based upon complete "equality" and "mutual aid and cooperation." Moreover, Comrade Yang Hsien-chen talks only about what he calls the "link," but makes no mention whatsoever about the transformation of opposites and the need to eliminate the bourgeoisie and exploitation, as if the workers are destined "to combine" forever with the capitalists. How preposterous this is! How can we workers help from feeling enraged after reading it!

This fallacy of Comrade Yang Hsien-chen's and Chou Ku-ch'eng's theory of "the opposition and coordination of the landlords and the tenants" are birds of the same feather. Chou Ku-ch'eng has this to say: The rich must "recruit the poor to carry out production for them," and the poor must "work for the rich to make a living;" "the two poles of the rich and the poor can thus be combined." One says that the peasants and the landlords are "combined from two into one," while the other says that the workers and the capitalists are "combined from two into one." In publicizing "class cooperation," Comrade Yang Hsien-chen's "theory" and Chou Ku-ch'eng's "theory" are really "combined" together.

In publicizing this kind of "class cooperation" fallacy, Comrade Yang Hsien-chen wants but to make us workers forget the class exploitation and class oppression which we suffered in the past and forsake the class struggle. Educated by the Party, however, the working class of China knows that it can never be "combined from two into one" with the bourgeoisie either in the past or the present. If we had done this in the past, the working class could never have freed itself from the status of the exploited and the oppressed and win victory in the revolutionary struggle. If we do this now, we would run the risk of losing the fruit of the revolutionary victory. We workers know very well that quite a number of bourgeois elements still refuse to remold themselves today. They constantly spread dissension among the workers and disseminate decadent bourgeois ideas to corrode the workers. By saying that "we now share mess halls and labor with the workers, and what we lack is only a red pass," some people also vainly hope to combine themselves with the workers "from two into one." Some bourgeois elements also join forces with other exploiting elements in society to carry out activities against socialism and for the development of capitalism in the vain hope of restoring capitalism. If our working class gives credence to Comrade Yang Hsien-chen's theory of "combining two into one," no longer persists in work for the education and remolding of

the bourgeois elements, no longer heightens our revolutionary vigilance, and no longer carries out the struggle for "the promotion of proletarian ideas and the destruction of bourgeois ideas," the poisonous ideas of the bourgeoisie will be allowed to run wild and the bourgeois elements will be allowed to usurp the leadership. Does this not mean then that there is a danger for the bourgeoisie to "combine" us with the past? We can never allow this to happen. We certainly must take heed of Chairman Mao's words, firmly oppose the "class cooperation" fallacy, and carry the socialist revolution to the end.

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ON SCIENTIFIC EXPERIMENT

Following is the translation of an article by Kung Yu-chih (7895 5148 0037) in the Chinese-language periodical Hung-ch'i (Red Flag), Peiping, No. 1, 6 January 1965, pages 33-45.

Comrade Mao Tse-tung has pointed out that: "Class struggle, production struggle, and scientific experiment are three great revolutionary movements for building a socialist big power." (Press Communique of the 4th Session, 2nd National People's Congress, Jen-min Jih-pao, 4 December 1963)

What is scientific experiment? What role does it play in men's reasoning process? How is it related to the production struggle? How is it related to class struggle? What significance does it have for the great work of socialist construction? This article proposes to make some preliminary studies on these questions.

I. SCIENTIFIC EXPERIMENT AS VIEWED FROM MARXIST EPISTEMOLOGY (See Note)

(Note): Scientific experiment in this article refers to experiment in the natural sciences. Generally speaking, methods of scientific experiment in the study of natural phenomena are not completely suitable for the study of social phenomena. Marx said: "In the analysis of economic state, one can neither use a microscope nor a chemical reagent. One must use the power of abstraction in place of both," (Preface to the First Edition, Capital, Vol. 1). It is also impossible to proceed as in experiments in natural science, that is to strictly control the social process under study, to "isolate" it from complex social relations, and to "carry out the experiment under conditions which insure that the process is carried on in a pure form," (Preface to the First Edition, Capital, Vol. 1). However, if scientific experiment is understood in its broad sense, then in the process of knowing and transforming society, one may make a typical experiment on a small scale, gain experience from it and learn its laws, examine man's policy, plan, and program, and in accordance with the results of reasoning obtained from this typical experiment, guide the practice of

class struggle and society's political and cultural activities on a larger scale. In my opinion, this methodology of a typical experiment also comes under the category of scientific experiment. Under the socialist system, the proletariat is the leading force of the nation. This has opened up wide possibilities for man's conscious knowledge of the objective laws and the ability to transform society in accordance with them. Under such conditions, the use of scientific methods in a typical experiment in guiding man's struggle for knowing and transforming society thus has an important meaning as it could not have had at any time previously.

Scientific Experiment Is a Form of Social Practice

The Marxist considers that social practice is the foundation of man's reasoning. Social practice assumes many forms. The basic forms of social practice are production struggle and struggle among men which is governed by certain social relations constituted in production and which, in a society where class is present, is class struggle. Scientific experiment is a special form of social practice which is derived from the production struggle and serves it. The development of production practice to a certain stage makes it necessary on the one hand to study the natural world more deeply and more systematically, and on the other hand, provides the material and technical means which make such study possible. Under such conditions, scientific experiment, which serves specialized studies of the natural world, arises and develops.

Comrade Mao Tse-tung said: "Man's correct thought can come only from social practice, from the three kinds of practice which are society's production struggle, class struggle, and scientific experiment." (Origin of Man's Correct Thought, People's Publishing House, 1964 edition, p. 1) "Having grasped the knowledge of the world's laws, it is necessary to use them for the practice of transforming the world, to the practice of production, to the practice of revolutionary class struggle and national struggle, and to the practice of scientific experiment." ("On Practice," Selected Works of Mao Tse-tung, Vol. 1, People's Publishing House, 2nd edition of 1952, p. 281) "Man's knowledge has proved to be correct only when in the process of social practice (in the process of material production, in the process of class struggle, and in the process of scientific experiment), he has obtained the results which he anticipated in his mind." ("On Practice," Selected Works of Mao Tse-tung, Vol. 1, People's Publishing House, 2nd edition of 1952, p. 273)

As human life first began, following the development of production, natural science germinated. Ancient natural science was founded on the production practice and experiences of the ancient man and on his perceptual observations of the natural world. In those days, there was no real, systematic scientific experiment. (See Note) Scientific experiment began

approximately in the 16th or the 17th century as derived from production practice and had a comparatively systematic and relatively independent development. The historical background of this was the rapid development of early capitalist production in Europe. It was marked by the extensive use of all kinds of special experimental instruments and by the formation of systematic methodology of experimental research. Stating that the vigorous development of natural science in modern times should be attributed to production, Engels pointed out that the immense development of industry "not only provided abundant data for observation, but was itself given experimental instruments entirely different from those of the past, thus making the manufacture of new instruments a possibility. It may be said that that was the first time when there might be real systematic experimental science." (Dialectics of Nature, People's Publishing House, 1955 edition, p. 150)

(Note): Of course, scientific experiment first began to germinate in ancient times. In order to know natural phenomena, the ancients made certain observations and comparisons consciously and through the making of special arrangements. That can be considered to be forerunner of scientific experiment. Our country's Mo Ching (1075-1122) contains interesting records about experiments on light, which were scientific experiments in this sense. (See Hung Chen-huan, "The Mo Ching Theory of Eight Rules on Light," K'e-hs'ieh Shih-chi K'ian, No. 4, Science Publishing House. This article analyzes many experiments recorded in Mo Ching about image, image through a needle hole, and images in a plain, concave, and a convex mirror.) In ancient production practice, in order to renovate and improve production methods and invent and create techniques, man consciously made explorations and experiments of all kinds. Many of these had the nature of scientific experiment. For instance, in metallurgical production, there was a so-called metal testing method for testing in advance how much metal could be extracted from certain mineral ores. That method was actually a small-scale smelting process in itself and was the forerunner of chemical analysis in later days. Then, however, experimental activities were subordinated to the production process and had not yet been derived from that process.

The production of systematic scientific experiment is the starting point of modern natural science. Since ancient natural science could depend only on comparatively crude experiences and direct observations of the sense organs in production practice, only some simple and comparatively superficial knowledge of natural phenomena could be obtained. As for the understanding of the substance and laws of the natural world, although many ingenious views were advanced, they were quite speculative and imaginary. Modern natural science is different. Since it has scientific experiment as the foundation of its reasoning which becomes increasingly well developed following the high degree of development of production,

its knowledge of the natural world is much more detailed and profound. Engels pointed out that, between ancient natural science and modern natural science, there is one "essential difference," which is: "whereas it was an intuitive genius with the Greeks, it is with us the fruits of strictly scientific research which are founded on experiment and which therefore have a much more specific and much clearer form." (Dialectics of Nature, People's Publishing House, 1955 edition, p. 13)

Role of Scientific Experiment in the Process of Reasoning

How did the introduction of scientific experiment bring about such a qualitative flying leap in the development of natural science?

Judging from the process of development of man's reasoning from perception to reason, the characteristics and roles of scientific experiment are as follows:

a. In scientific experiment, man uses all kinds of experimental instruments capable of increasing and improving the power of his sense organs, thus greatly enriching his perceptual knowledge.

Perception is the beginning of man's knowledge of the outside world. Phenomena in the objective outside world can be reflected in man's brain only through his physical sense organs such as the eyes, the ears, the nose, the tongue, and the body. Man is born with perceptual knowledge. But the perceptive power of man's physical sense organs is limited. For instance, the eye, which is the most important sense organ, responds only to one section of electromagnetic waves in the outside world, namely, to what are called visible light waves. Other electro-magnetic waves cannot cause a visual sensation in man, nor can the eye see or discern things which are too far away or which are too small. In that case, do the limits to sense organs restrict man's knowledge of the outside world? No, they do not. The reason is that, unlike the animal, man does not communicate with the natural world only by means of his natural ability. In his struggle for transforming the natural world, man creates all kinds of tools for arming his limbs, sense organs, and brain and for transforming and developing his power of action and power of reasoning. Just as some tools which are used as extensions or expansions of man's hands have overcome the limits to the natural ability of the human hand, other tools used as extensions or expansions of man's sense organs have overcome the limits to the natural ability of these organs. Through the use of various kinds of experimental tools which have become increasingly well developed (such as optical telescopes, microscopes, radio telescopes, and electronic microscopes), many natural phenomena and processes which man formerly could not perceive have gradually become phenomena or processes which he can understand. In this way, by scientific experiment, the area of man's perceptual knowledge has been greatly broadened and enriched.

Experimental tools not only expand man's power of perception, but can also improve it so that the perceptual knowledge he acquires is more objective, detailed, and accurate. Man's perception is usually influenced by some subjective factors. (See Note) Through the use of experimental tools, objective processes which operate on one another may be introduced for comparison purposes, and this can, on many occasions, eliminate the influences of subjective factors and make the knowledge more objective and more truthful. Also, man's perception is usually comparatively crude, and the results of his perception usually determine only the nature of things. Through the use of experimental instruments for measurement, he can obtain more detailed knowledge which also determines the quantity of things. In this way, the use of instruments in scientific experiment helps man discard the false and preserve the truth in his perceptual knowledge, to turn his crude knowledge into refined knowledge, and to proceed from quality determination to quantity determination. This has immense significance for the deepening of knowledge.

(Note): For instance, man's eyes respond more sensitively toward changes in the intensity of a weak light than toward changes in the intensity of a strong light. Man's perception may also have some personal characteristics and differences. Under abnormal physiological conditions (such as the loss of gravity in cosmic flights), he may develop some erroneous hallucinations.

b. In scientific experiment, man strictly controls and purposefully changes the objects and processes under study, so as to acquire knowledge about their laws.

Marx said: "A physicist either makes observations where the natural process asserts itself in the most exact form and is the least subjective to interference, or, if possible, makes experiments under conditions where it is insured that the process is carried out in a pure form." (Preface to the First Edition, Capital, Vol. 1, People's Publishing House, 1963 edition, p. 2. The translation has been revised by the quoter.)

In other words, in accordance with the requirements of his research and with the possibilities in terms of material and technical conditions, man eliminates all kinds of accidental, external factors and interferences, so that the "original features" of the process under study may be exposed more clearly and the selected factors in the process with which he is concerned may be "isolated" and "extracted." Again, in accordance with the requirements of his research, he controls and makes arrangements for the introduction or elimination of the factors under study and for their changes and combinations, so that he may observe and compare the effect of these different conditions on the process. Man may divide the process under study into different stages, or choose specific stages and links for careful examination. Man may repeatedly study and test a process

under similar conditions, thus obtaining reliable results. He also may, for the purpose of facilitating his research, select appropriate typical data and processes and appropriately reduce the scale of the processes and shorten their cycles, so that the research work may be carried out more smoothly.

In this way, compared with his simple observation of the natural process or the production process, man is more on the initiative in the process of experiment. Such a position not only enables him to obtain abundant new perceptual data under conditions where the natural process is artificially disturbed, and to observe and record the process under study more strictly, integrally, and systematically, but also helps him to subject the complex phenomenon or process to analysis and integration, to understand deeply the roles of the individual factors, and to reveal the necessary connections among them, which are connections between causes and effects.

In discussing Bacon, the "Father of Experimental Science," Marx said that from Bacon's viewpoint, "science is experimental science, and science consists in the treatment of perceptual data with rational methods. Inference, analysis, comparison, observation, and experiment are the principal conditions of rational methods." ("A Sacred Family," Complete Works of Marx and Engels, Vol. 2, People's Publishing House, p. 163.) Indeed, scientific experiment provides not only raw materials but also semi-finished products to the thought processing factory which is the human brain. It can be said that scientific experiment is a "simplification" of the natural process, a rational activity of abstraction, analysis, and integration realized in practice, and a rational activity of helping man, in practice, to realize abstraction, analysis, and integration in his brain in accordance with the requirements of his thought processing. Engels said that experiment is a combination of analysis and integration. (Dialectics of Nature, p. 185) It is on the foundation of scientific experiment that man's knowledge takes the flying leap for perceptual knowledge to rational knowledge.

In scientific experiment, man not only strictly controls and "simplifies" the natural process under study, but also employs various kinds of material means for creating many processes which do not exist or do not often exist in the world under natural conditions, and for causing many inter-actions which do not exist or do not often exist (such as the reaction of atomic nuclei which are not naturally radioactive). Following man's continuous breakthroughs in the direction of new frontiers in his study of natural phenomena, it is increasingly required that all kinds of special conditions (such as ultra high temperature, ultra low temperature, ultra high pressure, and ultra purity) be created for scientific experiment. The creation of new experimental conditions, instruments, and equipment has become an important aspect of progress in scientific experiment.

c. Scientific experiment is not blind practice nor confined to the collection and systematization of perceptual data. It is closely connected with the research on scientific theories.

On the one hand, scientific experiment provides all kinds of new experimental facts, figures, and data, thus constituting the foundation for the production of scientific conceptions and scientific suppositions. On the other hand, it regards certain scientific conceptions and scientific suppositions as its prerequisite. One proposes, designs, and carries out in accordance with certain scientific conceptions and scientific suppositions, with the intent of examining them. For instance, the scientific experiment of Michelson and Mo-ley (5459 7191) on the travel of light was designed and carried out for testing the scientific hypothesis on ether as the medium for the transmission of light. It led to negative results and thus became the starting point for such a new scientific conception as the theory of relativity. Such a position and such connections of scientific experiment are the characteristics which make the experiment scientific.

Scientific conceptions and scientific suppositions which are the prerequisites of scientific experiment do not come out of thin air, of course. They come from previous observations, experiences, and experiments, from existing scientific knowledge and a critical analysis of such knowledge. These scientific conceptions and suppositions are further tested in scientific experiment. As a result of the experiment, some suppositions are eliminated, while the others are proved and developed, thus generating new conceptions and suppositions.

Some natural scientists with the viewpoint that only theory is important do not realize that all knowledge originates from practice, or that scientific experiment is the foundation of scientific theory. They greatly exaggerate the significance of theory, regard experiment as only an appendix to theoretical research, are unwilling to do difficult experimental work, and make their living entirely with books and documents. They are fundamentally wrong. Some natural scientists with the empirical viewpoint, on the other hand, do not realize the necessity of combining scientific experiment with scientific theory, or realize the guiding role of scientific theory in relation to scientific experiment. They are also incorrect. Physicist Vavilov said some very apt words about the connection between scientific experiment and scientific theory. He said: "All conclusions in physics come from experiment and are tested by experiment. So the method of experiment is completely unavoidable in physics and the existence of theoretical physics in an isolated state is inconceivable. However, experiments which really can be used as scientific results are also worthless if they are not connected with certain theoretical premises and principles." "The method of experiment is valid only if it is closely

connected with theoretical research." ("Physics," Complete Works of Vavilov, Vol. 3, Russian editors, p. 154)

In terms of epistemology and the method of science, such are roughly the general characteristics of scientific experiment. To be sure, because the objects under study, the purposes of researches, and the conditions of researches differ, concrete conditions are vastly different in making different scientific experiments concerning the use of experimental instruments, the control of experimental conditions, and the association with theoretical research.

In short, in scientific experiment, man derives abundant perceptual data which he cannot easily derive or cannot derive at all under normal natural conditions or conditions of production, carries out a great deal of rational processing work which is difficult to do under normal conditions, acquires many methods for testing knowledge which are difficult to acquire under normal conditions, and realizes the unity between perception and reason and between practice and theory. The development of scientific experiment greatly expands the practical foundation of man's activity of knowing the natural world, and greatly promotes the tremendous progress in man's cognition of the natural world.

From Scientific Experiment to Production Practice

Knowledge of the natural world serves the purpose of transforming the natural world in accordance with the needs of human society. Inasmuch as scientific experiment artificially controls and changes the natural process, it comes under the category of practical activities for transforming the world. After all, however, scientific experiment is not a large-scale material production activity which really changes the natural world. The direct fruits of scientific experiment are mainly spiritual products, i.e., knowledge of natural laws, not material products. Scientific experiment is a special kind of preparation for and an exploration in material production activity, and a spiritual production activity which serves the material production activity. The application to production practice of the knowledge of the natural world gained from scientific experiment can continuously advance the improvement and revolutionization of production techniques and increase man's ability to transform the natural world.

The production techniques of hand operations in ancient times were improved and perfected step by step, mainly on the foundation of an accumulation of experiences in production practice. Things have changed enormously since modern natural science began to develop. The development of modern production techniques no longer depends solely on experience in production practice. It depends also on science which becomes increasingly well developed on the foundation of experiment, and on a combination of practical experiences and scientific experiment.

Discussing the development of modern natural science, Engels said: "Britain's social revolution was the result of the combination of science with practice." ("Conditions in Britain in the 18th Century," Complete Works of Marx and Engels, Vol. 1, People's Publishing House, p. 667.) Engels was referring above all to the industrial revolution. In the industrial revolution which began in the middle of the 18th century, the effect of science on the development of production techniques had already been clearly demonstrated, and the process whereby techniques were gradually shifted to the foundation of science was already developing at an increased speed. In those days, "extensive application of scientific principles was the driving force for progress." ("Conditions in Britain in the 18th Century," Complete Works of Marx and Engels, Vol. 1, People's Publishing House, pp. 671-672.) "Conscious application of natural science took the place of the conventions of experience." (Capital, Vol. 1, p. 410.) A trend of technical progress was formed. When the 19th Century began, not only were the production techniques of the traditional industrial departments constantly changed as a result of the conscious application of scientific principles, but a series of new industrial departments, such as the electrical industry and chemical industries, began rapid development. These new industrial departments were different from the traditional industrial departments which came from the development of handicrafts, and they were developed mainly on the foundation of fruits provided by scientific experiment. The trend of technical progress further extended itself into the agricultural realm and advanced the modernization of agricultural techniques. "The most antiquated and most irrational operations were replaced by the conscious scientific application of technology." (Capital, Vol. 1, p. 544) Since the beginning of the 20th Century, especially since World War II, natural science has made immense progress and production techniques have witnessed a new revolution. The characteristic of modern techniques is that they are the products of scientific development. Scientific progress provides techniques with a brand new motive power, brand new materials, and brand new production tools and industrial methods. A series of new departments in contemporary industry, such as the nuclear industry, the electronics and automation industry, the organic chemical synthesis industry, and the rare metals and special alloys industries, and a series of new techniques in contemporary agriculture, such as high-efficiency chemical fertilizers and chemicals for controlling insects and plant diseases and for promoting the growth of crops, and new seed fostering methods are all applications of the results of scientific experiment. Scientific experiment preceded and made preparations for all of them. It can be said that modern science has become an extremely important factor for guiding and advancing the continuous development from day to day and from month to month in modern agricultural, industrial, and national defense techniques.

The development of scientific experiment is founded on production practice. It is decided by the needs of production practice and by the material and technical means provided by the development of production.

The scale and speed of its development are governed by the state of development of the productive forces. The development of science must be attributed first of all to the development of production. This is a basic viewpoint of Marxist historical materialism and is opposed to the viewpoint of historical idealism. At the same time, Marxism takes due account of the huge active effect of the development of scientific experiment in advancing the development of production and the technical revolution, and this is due to the fact that Marxist materialism is dialectical materialism and not mechanical materialism. Marx pointed out that the characteristic of large-scale production lies in the "merger of exceedingly great natural forces and natural science into the production process," (Capital, Vol. 1, p. 411) and that "the degree of development of science and its technical application" (Capital, Vol. 1, p. 11) is an important factor determining labor productivity. The scientific knowledge of nature's laws which man gains from scientific experiment is a social productive force produced "in the form of knowledge." (Marx: A Critique of Political Economy, (draft), 1857-1858, p. 358) Modern production tools and technical means (which are important indications of the level of development of the productive forces) are the "materializations" of such scientific knowledge, i.e., material things derived by conversion from such a spiritual thing as scientific knowledge. The development of production tools shows "the extent to which scientific experiment has become a direct productive force." (Marx: A Critique of Political Economy (draft), 1857-1858, p. 358.)

The exploration of nature's laws in scientific experiment is a process of reasoning. The application of such laws in production techniques also contains a process of reasoning. The latter is a continuation of the former, and it too, has to rely on scientific experiment.

Scientific experiment which is intended to study the application of production techniques may be divided into several different types in accordance with different conditions of the researches. In the scientific experiment made under the "purified" conditions of the laboratory, what man studies is actually a simplified and reduced process of production or an imitated process. The knowledge he gains from such experiment cannot as a rule be applied immediately to large-scale, complex production practice. For this reason, a further process of making the knowledge concrete must take place and it is necessary to make a scientific experiment of another type, which is usually called a productive experiment or intermediate experiment. A productive experiment is an enlarged scientific experiment, which is carried out under more nearly concrete production conditions and sometimes directly under concrete production conditions. It is only through a series of scientific experiments of different types that man may acquire the correct knowledge needed for smooth production practice.

The development from scientific experiment to large-scale production practice through productive experiment is a process whereby man's knowledge is continuously enriched and developed. It is also a process of a flying leap from knowledge of the natural world to the transformation of the natural world. Scientific experiment gradually changes to production practice through this process.

One usually cannot succeed at once in acquiring correct knowledge for the purpose of guiding the production struggle. Comrade Mao Tse-tung says: "Frequently, a failure must be repeated many times before erroneous knowledge can be set right, before conformity can be attained with the laws of the objective process, and consequently before subjective things can be converted into objective things, i.e., the anticipated results obtained in practice." ("On Practice," Selected Works of Mao Tse-tung, Vol. 1, p. 283) In his struggle against the natural world, if man first makes scientific experiments of all types and finds technical solutions through them for all kinds of problems in production and construction, repeatedly tests all kinds of methods, plans, and measures in production techniques, thus judging whether they are correct and perfect, and makes different comparisons to judge the respective advantages and disadvantages of different methods, plans, and measures, he can then consciously realize the inevitable process of repeated failure as much as possible in the preceding, small-scale scientific experiments. Failure need not be feared in scientific experiment. On the contrary, it is precisely by correcting erroneous knowledge and attaining correct knowledge through small-scale experiment and failure, further experiment and further failure, yet further experiment and so forth, before proceeding to guide large-scale production practice, that man can, in production practice, avoid failure to the greatest extent possible and minimize the waste of effort, thus obtaining the anticipated results more smoothly. In this way, men can trade the comparatively cheap failure in scientific experiment for the victory in production practice. The failure and success of scientific experiment is the mother of a greater success in production practice.

II. SCIENTIFIC EXPERIMENT AND SOCIALIST REVOLUTION AND SOCIALIST CONSTRUCTION

New Revolutionary Tasks in the New Stage of the Revolution

In the above, we have briefly examined scientific experiment from the viewpoint of epistemology and of relations with the production struggle. We shall now talk about the relations of scientific experiment with class struggle, and the significance of scientific experiment as one of the three major revolutionary movements for our building of a great socialist power.

Scientific experiment plays different roles under different social systems. It has different meanings in different stages in the development of our country's revolution.

In the old China and during the stage of the new democratic revolution, scientific experiment was not and could not be raised as a great revolutionary movement, to the order of the day of our country's revolutionary struggles. In these days, the productive forces of our country's society were fettered to an extremely serious degree, and science could not develop. Even where it did develop, it could not bring happiness to the people but could only become a means whereby imperialism and the exploiting classes in the country plundered and exploited the people. In those days, many people in society and in the intelligensia separated themselves from the class struggle against imperialism and feudalism, and dreamed of "saving the nation through science." As concluded by Comrade Mao Tse-tung, "During the years, many people dreamed of developing industry, building national defense, bringing happiness to the people, and bringing wealth and power to the country in the semi-colonial, semi-feudal, disunited China. But they were all disillusioned. Many well-meaning educationists, scientists, and students buried themselves in their work or studies and did not bother about politics, telling themselves that their studies could serve the country. But they, too, were dreaming, and they were all disillusioned." Comrade Mao Tse-tung went on: "That was good news. Waking up from such naive dreams was exactly the starting point of China's wealth and power." ("On Coalition Government," Selected Works of Mao Tse-tung, Vol. 3, People's Publishing House, 2nd edition of 1953, p. 1081.) From this disillusionment, people gradually realized that in order to develop science for the purpose of building a rich and powerful country, it was necessary to create the indispensable political conditions for such development first, i.e., to wage an unrelenting revolutionary struggle to overthrow the rule of imperialism and feudalism.

The founding of the Chinese People's Republic and the great victories in the subsequent socialist revolution cleared away the obstacles to the development of our country's productive forces and created the necessary political conditions for our development of science for the purpose of building a rich and powerful country. In this way, at the new revolutionary stage, i.e., the stage of socialist revolution and socialist construction, scientific experiment has been raised to the important order of day in revolutionary struggles.

On the eve of the founding of the People's Republic, Comrade Mao Tse-tung pointed out to the whole Party: "Grave economic construction tasks are lying ahead of us. Some of the things with which we are familiar are about to be set aside. We are being compelled to do things with which we are not familiar." ("On People's Democratic Dictatorship," Selected

Works of Mao Tse-tung, Vol. 4, People's Publishing House, 1960 edition, p. 1485) Science and technology were among the things with which we were not familiar and which the new revolutionary tasks compelled us to study and handle.

As soon as the First 5-Year Plan began, Comrade Mao Tse-tung called upon us many times to study advanced science and technology for the purpose of building our country.

In 1955, when an upsurge of national socialist transformation was pending, Comrade Mao Tse-tung pointed out: "We are now carrying out not only a revolution for changing private ownership to public ownership in the social system, but also a revolution for changing, in respect of techniques, handicraft production to large-scale modern production by means of machines. The two revolutions are combined." (On the Question of Agricultural Cooperation, People's Publishing House, 1955 edition, p. 23)

Early in 1956, Comrade Mao Tse-tung called upon the whole Party to exert efforts to study science and to unite with the intellectuals outside the Party in struggling for rapidly attaining the world's advanced level in science.

After the basic completion of the socialist transformation of the system of ownership of the means of production and the winning of a decisive victory in the socialist revolution on the political and the ideological fronts, the Party central committee and Comrade Mao Tse-tung in 1958 proposed to the whole Party and all the people the general line for socialist construction and the great appeal for technical revolution.

At present, under the new situation where our country's socialist education movement is deepening and a new upsurge of socialist economic construction is coming, Comrade Mao Tse-tung has further proposed that class struggle, production struggle, and scientific experiment are the three great revolutionary movements for building a great socialist power.

It is in this manner that the Party central committee and Comrade Mao Tse-tung have, following the development of the socialist revolution and socialist construction, pointed out to us with increasing emphasis that, at the new revolutionary stage and in face of the new war -- the war against the natural world, and of the arduous task of building a socialist power with modern agriculture, modern industry, and modern national defense, the rapid development of scientific experiment and the gradual realization of the technical revolution are extremely pressing and important revolutionary tasks for us.

Only the victory of socialist revolution makes possible, and it is bound to be followed by, the great development of a technical revolution. This is the law of history. When the production relations and superstructure of the old society strangle the productive forces, the contradictions between them give rise to new revolutionary thoughts and revolutionary movements. At first, a revolutionary public opinion is formed and the revolutionary masses are mobilized and organized. Next, the political power is seized, and production relations are changed on a large scale. This is bound to liberate the productive forces immensely, causing a large-scale technical revolution. The capitalist industrial revolution took place after the victory of the capitalist political and economic revolutions. When capitalist production relations become decadent, they are in a state of acute contradiction with the further development of the productive forces and science and technology. This new contradiction must be settled through a new social revolution -- the socialist revolution. The victory of the socialist political and economic revolutions is sure to lead to a new socialist technical revolution.

Now we want to carry out a great, socialist technical revolution. We are to overtake the advanced capitalist countries in not too long a historical period along the path they have pursued for several decades. That will be a historically unprecedented great leap forward in the development of the productive forces and of science and technology. Comrade Mao Tse-tung says: "Socialism not only liberates the laborer and means of production from the old society, but also emancipates the vast natural world which the old society could not utilize." (Upsurge of Socialism in Chinese Rural Areas, Vol. 2, People's Publishing House, p. 578.) Depending on the superiority of the socialist system, on the correct leadership of the Party central committee and Comrade Mao Tse-tung, and on the infinite creative power of the masses of the people, we shall certainly be able to realize the socialist technical revolution gradually with our own resources, realize a big leap forward in the development of the productive forces, and win a great victory in the new war to conquer and harness the natural world.

Scientific Experiment Is a Great Revolutionary Force to Build a Great Socialist Power

What is the revolutionary significance of scientific experiment in our country's socialist revolution and socialist construction? What new character does our country's revolutionary movement of scientific experiment have today as compared with historical scientific experiment and with that in the capitalist countries?

a. In our country now, scientific experiment has become an important means serving the development of the productive forces and the consolidation of the socialist economic base and superstructure, and the class struggle of the people of our country against domestic and foreign enemies.

The consolidation and development of the socialist economic base requires, in addition to carrying the socialist revolution on the economic front to the end, the solution of two problems. One is the problem of superstructure. It is necessary to strengthen continuously the government of proletarian dictatorship, carry the socialist revolution on the political, the ideological, and the cultural fronts to the end, and suit the political and ideological superstructure to the needs of the socialist economic base. The other is the problem of productive forces. It is necessary to carry out technical revolution, realize the technical reform of the national economy, and gradually shift agriculture, industry, and national defense onto the foundation of modern science and technology. Without the full development of the productive forces on the foundation of modern science and technology, the full consolidation and development of the socialist economic base and superstructure and the transition from socialism to communism will be impossible.

In our country, lasting struggles are present between the proletariat and the bourgeoisie and between the socialist and the capitalist way. The rapid development of scientific experiment and the carrying out of technical revolution for the purpose of laying a comparatively adequate and powerful material foundation for socialism will enable the proletarian side and the socialist side to gain a stronger position in the struggles. Lenin put it well: It is necessary to "shift the national economy, including agriculture, a new technical foundation," before we can "dig up the old roots of capitalism" and "eradicate the foundation of the domestic enemy." (8th Congress of the All-Russia Soviet, Complete Works of Lenin, Vol. 31, People's Publishing House, p. 468)

In the class struggle in the international sphere, imperialism and modern revisionism, which serves the former, always dream of relying on their superior position of some kind in science and technology, and of lording it over us, threatening us, and bullying us. Imperialism cannot scare us. In the struggle against imperialist aggression and menace, the source of our invincible strength lies in the righteousness of our cause, in the unity and consciousness of the broad masses of the people, and in the support of all the people in the world for us. At the same time, we must exert efforts to master the most advanced science and technology and smash the monopoly and superiority of imperialism in this respect. The recent success of our country's nuclear test was a major achievement in strengthening our national defense forces and defending world peace, and was an enormous encouragement to the people of our country and the world. The continuous raising of our level in science and technology can strengthen our forces in defending the socialist motherland, opposing imperialist aggression, securing world peace, and supporting the revolutionary struggles of the people of all countries, and put us in a stronger position. Lenin put it well: It is necessary to provide socialism with an advanced technical foundation "before struggles can be carried out smoothly to free

mankind from capitalist fetters and prevent millions and tens of millions of people from being killed or disabled because British, German, Japanese, or US bandits want to gain a superior position in the partition of the world." ("Congratulatory Letter to the Presidium of the 8th All-Russia Congress of Electricians," Complete Works of Lenin, Vol. 33, People's Publishing House, p. 30)

b. In our country at present, scientific experiment has initially become a mass revolutionary movement in which the broad masses of the laboring people directly participate.

The production practice of the laboring masses and their rich experiences and creations in production practice are always the source of science. Under the system of exploitation, however, the active character of the laboring masses in renovating production techniques and making scientific experiments of all kinds is greatly restricted. In trying to master scientific knowledge, the possibility of their obtaining the necessary time and material conditions for making scientific experiments is also severely restricted. The socialist system has radically changed this condition. In our country, our Party enforces a thorough-going mass line in production struggle and scientific experiment. Under the leadership of the Party, the urgent desire to overcome technical backwardness and the immense active capability for doing this, which are latent among the broad masses of the workers and peasants, as well as their inexhaustible wisdom and strength for creating new things, have suddenly erupted. A mass movement of scientific experiment centered around technical innovation and the cultivation of experimental farms has been unfolded extensively with close regard for urgent problems to be solved in production and in conjunction with the scientific resumé of the production experiences of the laboring masses and with the application and popularization of advanced experiences, advanced technical measures, and results of science. Through this movement, many important achievements in science and technology have emerged in a continuous stream. Ni Chih-fu's creation in mechanics and Ch'en Yung-k'ang's creation in agricultural science, which were given high evaluations by domestic and foreign scientists at the recent Peking Scientific Discussion Conference, are outstanding examples. Through this movement, modern science and technology will be further mastered by the broad masses of the workers and peasants, and through their initiative and active character, will play a tremendous role in production. At the same time, scientific experiment will be further enriched and will make better development through uniting with the practical experiences of the broad masses of the workers and peasants. That will result in a general popularization of science which will surely make preparations for the general raising of the standard of science.

Under the system of exploitation, the opposition between classes and that between mental labor and physical labor separate the experts of

science and technology who specialize in scientific experiments, from the broad laboring masses. Under the ideological influence of the exploiting class, the tendency of looking down upon the laboring masses and upon production practice is generally present among them. This condition begins to change under the socialist system. In our country, our Party has put forward the revolutionary directive of letting the intellectuals combine with the masses of the workers and peasants. This directive requires the broad masses of the experts of science and technology not only to definitely set up the viewpoint of whole-heartedly serving the laboring masses, but also to mix as one with the masses of the workers and peasants gradually in class struggle, production struggle, and scientific experiment, to learn seriously the experiences of the masses in production practice, and at the same time to impart their knowledge of modern science and technology to the masses and actively help the masses to apply such knowledge to production practice.

The direct participation by the broad masses of the workers and peasants in scientific experiment, and the combination of experts of science and technology with the laboring masses, are revolutionary changes which are unprecedented and which have huge, far-reaching revolutionary significance. They enable our country's scientific experiment and technical revolution to advance on a scale and at a speed unequalled under any system of exploitation, and to win victories. They also help to promote the advance of our country's revolutionary experts of science and technology in the direction of combining with the masses of the workers and peasants, and the advance of our country's masses of workers and peasants in the direction of a higher level of science and technology. In short, they promote progress in the communist direction of gradually eliminating the differences between mental labor and physical labor.

c. In our country at present, scientific experiment has initially become a revolutionary movement in which the broad masses of the cadres actively take part -- an important means whereby they lead the production struggle and technical revolution.

The new stage in the revolution requires the broad masses of the cadres to lead both the class struggle and production struggle, and to lead both the social revolution and technical revolution. They must therefore acquire the necessary scientific knowledge and directly take part in scientific experiment. Comrade Mao Tse-tung teaches us that we must precede everything by experiment. Working together with the masses, adopting the form of a triple combination of the leadership, the expert, and the masses, taking part in scientific experiment, and leading production struggle through scientific experiment, constitute a leadership method which enables cadres to avoid mistakes to the greatest extent possible and stand in an invincible position. As stated by the notice of the Central Committee of the Chinese Communist Party concerning the extensive popularization of the experience of cultivating experimental farms in all areas

and in all fields in the nation: "The cultivation of experimental farms is a method for thoroughly overcoming bureaucratism and subjectivism. It can get rid of bureaucratic airs and make cadres really go into the midst of the masses to lead them. It can make cadres embark upon the 'red and expert' road and realize unity between politics and techniques." (Collection of Documents To Be Read in Socialist Education Courses, Vol. 3, People's Publishing House, p. 29.) The cultivation of experimental farms is an important way in which cadres take part in scientific experiment. It has great revolutionary significance for raising our standard in leading production struggle and technical revolution.

While Making Scientific Experiments, One Must Never Forget Class Struggle

The three revolutionary movements of class struggle, production struggle, and scientific experiment are closely connected. Production struggle is the most basic practical activity of mankind. Class struggle and scientific experiment serve the production struggle in the final analysis. In the society where class is present, class struggle runs like a thread through all activities of man. For this reason, class struggle is the center of the three major revolutionary movements. It is their soul and commander-in-chief, and is the basic driving force which advances production struggles and scientific experiments.

Scientific experiment can become a great revolutionary movement for the building of socialism only if it regards the politics of the proletariat as its commander-in-chief, is combined with the class struggle and production struggle of the proletariat and the laboring people, and serve them. Otherwise, it cannot become a revolutionary movement.

Some comrades put class struggle aside and speak of the role and importance of science and technology in the building of socialism in isolation. They think that, since the socialist system has been instituted and since the socialist transformation of the system of ownership of the means of production has been basically completed, class struggle no longer exists, and science and technology alone can solve all problems in the building of socialism. Some other scientific and technological workers think that, since scientific experiment is also a great revolutionary movement, they need concentrate only on making scientific experiments and need not concern themselves with politics or show an interest or take part in class struggle and production struggle.

Such a viewpoint is completely wrong. It will cause us to lose our political bearings and lead to dangerous political consequences.

Insofar as it puts class struggle aside and emphasizes the role of science and technology in isolation, such a viewpoint is a repetition in

our times of the old theory of "saving the nation through science," which was opposed to the theory of saving the nation through revolution.

The Party central committee and Comrade Mao Tse-tung have, in accordance with the experiences of our country's proletarian dictatorship and international experiences, profoundly pointed out that, for a very long historical period after the basic completion of the socialist transformation of the system of ownership of means of production, there will be present in the socialist society class, class contradiction, and class struggle, as well as the struggle between the socialist road and the capitalist road, and the possibility of a capitalist resurgence.

The process of building socialism is definitely not a simple process of developing the productive forces and developing science and technology, but it is a process filled with lasting, complex and repeated class struggle.

Class struggle is reflected in all aspects of social life. It is reflected in scientific experiment and within the ranks of science and technology. Does one support socialism and the leadership of the Communist Party or oppose them? Does one insist on letting science and technology serve the needs of proletarian politics and the needs of socialist construction, or refuse to serve such needs, separate oneself from production practice, and develop science for the sake of developing science? Does one whole-heartedly serve the people with one's scientific and technological knowledge, or regard such knowledge as private property and as a means to achieve personal fame and profit? Does one insist on thought remolding and insist on letting intellectuals combine with the masses of the workers and peasants and assume a laboring character, or refuse thought remolding, refuse combination with the masses of the workers and peasants, and become a "spiritual aristocrat" perched proudly high above the laboring masses? Does one exert effort to study Marxism-Leninism and the thought of Mao Tse-tung and use the proletarian conception of the world to guide one's work, or refuse and oppose Marxism and insist on spreading bourgeois idealism and the metaphysical conception of the world? In the work of scientific experiment and within the ranks of science and technology, lasting struggles, sometimes very intense ones, will be waged around such questions.

Lenin once criticized some people for forgetting class struggle, and, "on the basis of a sentimentalist mentality," thinking that a scientific laboratory is "a united group, all members of which carry out activities coordinatedly, harmoniously, and consciously." He said: "That is not right. It is impossible before class has been eliminated." ("To I. I. Ssu-k'e-o-erh-cho-fu-Ssu-ch'ieh-p'an-no-fu," Complete Works of Lenin, Vol. 35, People's Publishing House, p. 561)

Lenin further criticized these people for failing to know that, before the conclusion of proletarian dictatorship, when bourgeois and petty-bourgeois experts are still present, "suspicion, hesitation, conspiracy, revolt, etc., will be present for a long time" within the ranks of science and technology. ("To I. I. Ssu-k'e-o-erh-cho-fu-Ssu-ch'ieh-p'an-no-fu," Complete Works of Lenin, Vol. 35, People's Publishing House, p. 560)

How well Lenin said it! What importance he attached to it! In the society where class is present, the scientific laboratory is definitely not a "separate world of peace" isolated from class struggle, and experts of science and technology cannot be "detached scholars" standing outside of class struggle.

Comrade Mao Tse-tung has repeatedly taught us that we must not neglect politics and forget class struggle because we shift our attention to techniques. He has pointed out that it is imperative to criticize the tendency of not being concerned with politics. He has emphasized that politics is the commander-in-chief and the soul, that ideological work and political work are safeguards for the completion of economic work and technical work, and that, once we slightly slacken ideological work and political work, economic work and technical work are bound to go astray.

Going astray means embarking on the road of the free flowing of bourgeois thought and influence, the revisionist road, and the road to a capitalist resurgence.

In the work of scientific experiment, if class struggle is not grasped, if the proletariat does not assume command politically and ideologically, if no struggle is waged against bourgeois political and ideological influences, and if no struggle is waged against the activities of bourgeois intellectuals who contest leadership with the proletariat, who want to win over the youth from the proletariat, and who corrupt the proletarian ranks, then, the work of scientific experiment will embark on the evil road of capitalism.

Having embarked upon such an evil road, science and technology, even though they may develop to some extent, will not be a tool for the building of socialism. They will only be a tool serving a capitalist resurgence. In this connection, modern revisionism has taught us a lesson. We must solemnly learn and profit by this lesson of experience.

That is why Comrade Mao Tse-tung says: "Class struggle, production struggle, and scientific experiment are three great revolutionary movements for building a great socialist power, are real safeguards for the avoidance of bureaucratism, revisionism, and doctrinarianism by the Communist and for his standing in an ever invincible position, and are reliable

safeguards enabling the proletariat to combine together with the broad laboring masses and practice democratic dictatorship. Without them, the cattle, ghosts, snakes, and gods, who are the landlords, rich peasants, counter-revolutionaries, and bad elements, will all be exposed, while our cadres will hear nothing and see nothing; many of them will even fail to distinguish between the enemy side and our own side, collaborate with the enemy, subject themselves to enemy corruption and invasion, let the enemy carry out work for disintegration, and let him pull people out and fight his way in; and many workers, peasants, and intellectuals will be subjected to the enemy's soft persuasion and hard force and treated in the same manner. In this way, it will not be long, from a few years or between ten and twenty years at the least to several decades at the most, before a nation-wide comeback of counter-revolution will inevitably appear, the Marxist party will surely become a revisionist party or a fascist party, and the color of the whole of China will change." (Re-quoted from "On Khrushchev's Pseudo-Communism and Its Lesson in World History," Hung-ch'i, No. 13, 1964)

It is our task both to develop science and technology at maximum speed and to scale the peak of science and technology, and to carry the class struggle to the end, carry the socialist revolution to the end, insure that capitalism will not come back, and insure that our country will advance continuously on the road of socialism and communism.

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