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No. 11, 1965

- Communist China -

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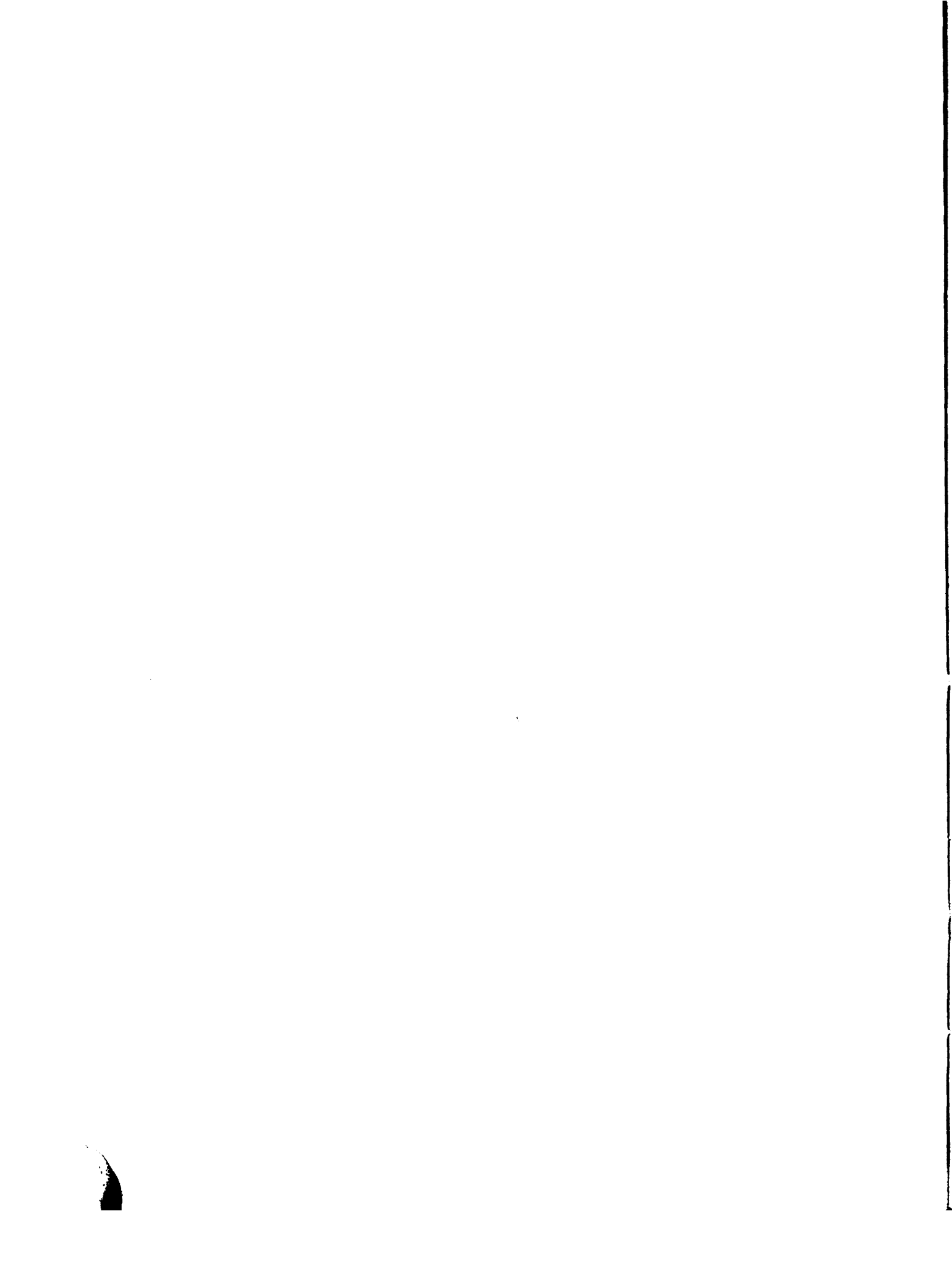
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This serial publication contains translations of articles from the Chinese-language periodical Hung-ch'i (Red Flag), No. 11, 1965. Complete bibliographic information accompanies each article. This completes the translation of Hung-ch'i No 11.

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ADOPT THE PROLETARIAN WORLD OUTLOOK TO CREATE
OUR NEW WORLD

Following is a translation of an editorial in the Chinese-language periodical, Hung-ch'i (Red Flag), Peiping, No 11, 1 October 1965, pages 1-3.

The 16 years' existence of the great CPR has witnessed the establishment of proletarian dictatorship in China. These years have also been a great 16 years in which the Chinese people, under the leadership of the CCP headed by Comrade Mao Tse-tung, having scored the victory of their great revolution, have ever more extensively, intensively, and continuously adopted the proletarian world outlook to reform the old world and create a new one. New things are created by the proletariat in the course of criticizing old things, and a new world is created through criticizing the old one. The weapon of criticism itself represents the proletarian world outlook.

Comrade Mao Tse-tung said" We must "adopt the proletarian world outlook as the instrument for studying a nation's destiny." (note 1) Precisely guided by such a world outlook, the CCP has carried out a thorough criticism, awakened the people's consciousness, and scored the successes in the democratic revolution and socialist revolution, thus fundamentally changing the features of China's society.

In history, when the feudal system was overthrown by the bourgeoisie through revolutionary means, the progressive elements of the bourgeoisie had made a great deal of criticisms against feudalism. It is precisely pointed out by Engels. "They do not recognize outside authority in any category. Religion, outlook on nature, society, and systems of the state are unanimously subject to merciless criticism; all these must stand before the trial of rationalization to defend the reasons for their own existence or to abandon their own existence." (note 2) Naturally, there is no comparison between the revolutionary spirit of the proletariat and the bourgeoisie. The grasping of political

power by the bourgeoisie shows the ending of revolution, however, the gaining of political power by the proletariat means only the beginning of revolution and creation of a new social system as well. Therefore, only by means of holding higher the banner of criticism and thoroughly divorcing itself from the various kinds of rotten ideas, conceptions, habits, and traditions by the proletariat, can a brand new social system be established and cemented. Following the further development of socialist revolution and socialist construction, it is absolutely necessary to further intensify such ideological criticisms.

Guided by Mao Tse-tung's thinking and the Marxist-Leninist line of the party, the Chinese people have achieved tremendous results in socialist revolution and socialist construction. The old social system has been basically eliminated in China. Great changes have taken place in the people's spiritual appearance. However, we must realize that there still exists class struggle, a struggle which sometimes becomes very sharp.

The various kinds of old ideas and conceptions reflecting the old systems are not reconciled to withdrawal from the arena by themselves. Many persons are, to various degrees, imbued with the ghostly spirit of feudal and capitalist ideology, and semicolonial and semifeudal traditions as well as inertia of the old society.

The issue at the present moment is: under the conditions of a powerful proletarian dictatorship, the old ideas, which are not generally exposed, have always attempted to fight for survival and to disseminate their influence under the cloak of names and slogans of socialism and Marxism-Leninism.

As everybody knows, a new ideology may take on an old form just like an old ideology may well be presented in a new form, but most of us seem not to be alert enough about this. Old ideology at times takes on a complete new face and infiltrates into the new things, gradually intruding into people's minds, changing the color of the new things, and paving the way for the restoration of the old system. Under such circumstances, it is necessary to pay grave attention. Old thinking, concepts, habits, traditions, and so on are extremely obstinate and so our struggle against them must be protracted one. Those that are criticized today may emerge again after a period of time; so the struggle may repeat itself accordingly. The developments in revolution and construction depend upon the firm grasp of the proletarian world outlook by the revolutionaries, as well as their grasp of the proletariat consciousness and constant criticism and self-criticism, their ability to discern the old ideology presented in varied forms and to try to wipe it out, and

their uncompromising wiping out of everything which is not in the interest of the people and socialism.

The most important objective of the socialist education movement presently being carried out in the cities and the countryside in China is to achieve a profound criticism and self-criticism of this sort of thinking. This is a great ideological revolution of the proletariat and this movement of ideological revolution is effecting further changes in the fields of our operations.

Marx has said: "When theory takes hold of the masses, it becomes a material force." (note 3) Comrade Mao Tse-tung has also said: "People's social footing determines their thinking. The correct thinking of the advanced class, once grasped by the masses, becomes the material force which transforms society and the world." Facts have proven this. In the course of our revolution and construction, anyone who dares to break the shackles of old thinking and old traditions and handle their problems in the light of their proletarian world outlook and with the aid of the power of observation derived from Mao Tse-tung's thinking, can make discoveries, inventions, creations, and progress.

The staff members and workers of the Ta Ching oilfield have made remarkable achievements because they have been able to employ Mao Tse-tung's thinking, study new things, bravely break away from their blind obedience to the old authorities, bring forward new concepts and new theories, and they always dare to revolutionize and create. The Tachai Production Brigade has repeatedly conducted socialist education among the masses of its members, criticizing the old concept of the small producers and thus enabling its members to apply the spirit of self-reliance, hard work, hard struggle, and their desire to change the whole world.

Of course, to handle everything with a proletarian world outlook and criticism does not mean that we want to negate everything and denigrate heritage. Marxist criticism itself is inherited.

The heritage of Marxism is the heritage of criticism. As Lenin has said: "Marxist theory has absorbed and transformed all the valuable elements of the past 2,000 years of the thinking and cultural development of mankind." (note 5) Comrade Mao Tse-tung likens Marxist absorption and transformation of the thinking and culture of mankind in the past few thousands of years to the digestion of food in the human body. The human body takes in the food "through the process of chewing in the mouth and the movement of the stomach mixes the food particles with saliva, pepsin, and intestinal fluids, separates the nutritious parts from the waste, and absorbs the nutrition and excretes the waste." (note 6)

While the new social system negates the old, it digests what it inherits from the old society. The socialist system can give the most thorough criticism on the heritage from the old society, keep all the valuable parts intact, and strive to make something new from the old. As we criticize the old we create the new. Without criticizing the old we shall not be able to create the new. Without creating the new we cannot thoroughly criticize the old. The purpose of all our criticism is to establish a proletarian world outlook and expand and consolidate the front of proletarian thinking. In the long run all criticism will be conducted with a view to being constructive.

The criticism of old thinking and concepts must be correctly carried out, must be democratic criticism, and must make full use of explanation. Through debate the truth will continue to come out and will broaden continuously. To create a new world for us with a proletarian world outlook, we must raise aloft the banners of Marxism-Leninism and Mao Tse-tung's thinking, carry on the ideological revolution in a more thorough manner, and continue to criticize the bourgeois world outlook. This is our fundamental ideological work.

Let us study dialectical materialism and historical materialism under the great banner of Mao Tse-tung's thinking and go forward to strive to create a great, socialist, and communist new world.

Notes:

1. "On the People's Democratic Dictatorship," p. 1476, vol. 4, Selected Works of Mao Tse-tung, 1960 ed., People's Publishing House, Peking.
2. "Anti-Duhring," pp. 13-14, 1956 ed., People's Publishing House, Peking.
3. "Preface to Hegel's Method of Philosophical Criticism," and "Complete Volume of Works by Marx and Engels," p. 460, vol. 1, 1956 ed., People's Publishing House, Peking.
4. "Where Does People's Correct Thinking Come From?," p. 1, 1964 ed., People's Publishing House, Peking.
5. "On Proletarian Culture," "Complete Works of Lenin," p. 283, vol. 31, People's Publishing House, Peking.
6. "On New Democracy," p. 700, vol. 2, Selected Works of Mao Tse-tung, 1952 ed., People's Publishing House, Peking.

LET THE SPIRIT OF TACHAI BLOSSOM AND BEAR FRUIT THROUGHOUT
OUR LAND

Following is a translation of an article by T'ao Lu-chia in the Chinese-language periodical, Hung-ch'i (Red Flag), Peiping, No 11, 1 October 1965, pages 4-14.

A preliminary summing-up of the movement for learning from Tachai in Shansi's Rural Areas

Since the Shansi Provincial Committee of the Chinese Communist Party in March 1963 put forward the slogan for learning from Tachai and for "one to lead two," two and a half years have elapsed.

How has the movement developed in the province's rural areas and what are the experiences that deserve to be summed up?

In the practice of the movement over the course of two and a half years, the biggest result is that in areas of different types throughout the province advanced models of stable and high yields like Tachai have appeared in farm production, that particularly there are successful experiences for learning from Tachai, setting up pace-setters, having one lead two, and making the whole area Red yielding good results within the scope of a hsien, and that, in other words, a means has been found for popularizing advanced experiences from one specific spot to the whole area.

Today, it can be confidently expected that on the basis of the socialist education movement, as long as we conscientiously persevere in the movement for learning from Tachai and for one to lead two, a great change will certainly take place in the outlook of the province's countryside in the not too long future.

How the Slogan for Learning from Tachai and One to
Lead Two Was Advanced

Tachai is an advanced model which was first discovered more than a decade ago, and has since been cultivated, by the Hsiyang Hsien Party Committee and the Chinchung [Central Shansi] District Party Committee. As early as 1959, the Chinchung District Party Committee -- with a view to extending the advanced experiences of the Tachai Party branch in its work throughout the administrative district -- convened an on-the-spot conference in Tachai. In 1962, in order to promote Tachai's experiences in developing production and consolidating the collective economy, the District Committee again issued a call for learning from Tachai to all rural areas of the administrative district.

Tachai's experiences first drew the serious attention of the CCP Provincial Committee as early as 1960. In February of that year, the Provincial Committee handed down to Party organizations at all levels in the province a directive to learn from Ch'en Yung-k'uei, an exemplary Party branch secretary, and called on all basic-level cadres, Party branch secretaries first of all, in the province's countryside to start a movement for learning from Comrade Ch'en Yung-k'uei, who took the lead in taking part in collective productive labor and improving production and work. This appeal, however, did not arouse universal and serious attention from comrades in various areas. And it was not until Comrade Ch'en Yung-k'uei gave a vivid and systematic account of Tachai's experiences at the provincial conference of representatives of advanced groups in farm production in March 1963 that it gave people the deepest impression and once more engaged the close attention of the Provincial Party Committee.

Natural conditions in Tachai were very bad, but since the Party Branch realized cooperativization in the winter of 1952, it has consistently persevered in the policy of self-reliance and particularly since 1958 has consistently been holding high the red banner of the general line. This is the reason why its collective economy has been growing steadily all the time.

In 1962, it fulfilled ahead of schedule the "ten-year land cultivation plan" devised in the fall of 1953, with the per mow output of grain gradually increasing from 237 catties in 1952 to 774 catties.

This made people see the concrete path for attaining stable and high output and a living example of building a new socialist countryside.

There is also one point in Tachai's experiences which particularly attracts people's serious attention: its promotion of the communist style.

Beginning in 1959, it helped Chingkou Production Brigade to its south to catch up with and overtake itself in the fields of politics, economy, production technology, and business management. By 1962, Chingkou's per now output rose from slightly more than 270 catties in 1959 to 505 catties and it became an advanced unit of the province.

At first, some commune members in Tachai were against helping Chingkou. Comrade Ch'en Yung-k'uei and the Party branch then educated them, saying: "We must love the collective not only of our own but also of others and we must love even more the big collective of socialism. Only this is genuine collectivism." "A production brigade doesn't count much. The State is like a big sea while we ourselves are like a drop of water.

"However advanced Tachai is and no matter how much surplus grain it sells, it cannot build socialism. If all production brigades in the whole province and in the whole nation are better run than Tachai, do we have to fear that our country will not be rich enough and do we have to fear the disturbances that may be created by imperialism and revisionism?

"Therefore, we sincerely hope that all fraternal brigades will be able to catch up with and overtake Tachai, and the sooner the better."

They added: "To help others is to help ourselves."

This was indeed what had happened. The commune members of Chingkou brigade displayed higher and higher revolutionary zeal with every passing day, and their revolutionary zeal, in turn, became a force driving the people of Tachai to be more advanced.

Comrade Ch'en Yung-k'uei has put it aptly: "An advanced brigade will cease to advance if all the brigades around it lag behind it. This is because there is nobody to overtake you!" He added: "An advanced unit must be able to lead one or two backward units around it. If others are advanced, we will become even more advanced."

From here we derive the following enlightenment: We cannot convince others without setting examples. But if only examples are set and the backward units are not led to catch up with and overtake the advanced, then the advanced units cannot be consolidated and raised to a higher level.

Therefore, at the conference of representatives of advanced groups in farm production, we summed up Tachai's experiences, regarded Tachai as a banner on the agricultural front throughout the province, and proposed the slogan for learning from it. We also summed up the experience of Tachai in leading Chingkou and advanced the slogan for one to lead two. We called on all advanced units to learn from Tachai and to have one lead two. Of course, it would be better still if one could lead three or even four. In short, we must galvanize into action all brigades around ourselves and create a mass movement for comparing with, learning from, catching up with and overtaking the advanced and helping those lagging behind.

In August 1963, Tachai brigade was attacked by an exceptionally serious flood. Seventy percent of its houses and huts were destroyed, its farm crops were devastated, and 23 percent of its cultivated land had its topsoil washed away.

After the disaster, however, it advanced the slogan "3-No"; it would not request relief funds, relief grain and relief material from the State. After the autumn harvest that year, it fulfilled the State's grain requisitioning task -- not a catty less.

The firmness of grass is tested by strong wind. Facts have time and again proved that Tachai is a blade of firm grass of socialism. In November of that year the Provincial Party Committee again issued a notification calling on Party organizations at all levels in the province to learn the heroic bearing of the Tachai people in defying difficulties and daring in revolution, their unbreakable will of self-reliance and arduous struggle, and their noble style of having the country and the whole situation at heart.

Meanwhile, we again systematically and comprehensively summed up Tachai's experiences in persevering in the three great revolutionary movement of class struggle, production struggle and scientific experiment over the past decade and more. Thus, Tachai became a more convincing banner and a new upsurge was also whipped up in the movement for learning from Tachai throughout the province.

How Tachai's Road Was Travelled

In learning from Tachai, one must take a look at its history and see how its road had been travelled. History is most convincing. Only with an historical understanding of its experiences can we understand its essence.

Before liberation the whole village of Tachai had 75 households and 800 mu of land. Fifty percent of the cultivated land was owned by the four households of landlords and rich peasants. Poor and lower-middle peasants represented 78 percent of the total number of households in the entire village; yet they owned only 20 percent of the cultivated land.

After liberation, land reform was thoroughly carried out here. The masses were fully mobilized and the foundation of the Party was very firm. The socialist revolution was also properly carried out. In the various periods of mutual-aid teams, primary cooperatives, higher cooperatives, and communes, they had never relaxed their fight against capitalist influences.

When the primary cooperative was first set up, the class enemy laughed at them, either saying that it was impossible to run it well or instigating them with these words: "Every family has 15 persons, and every person has his own idea. How can you run it well?" "An agricultural cooperative cannot support so many cadres!"

But the sabotages of the class enemy only hardened the revolutionary determination of the Tachai cadres like Ch'en Yung-k'uei and Chia Chin-ts'ai. Having made up their minds to rely on the poor and lower-middle peasants and persistently taking the lead in taking part in collective productive labor, they were firm in becoming "regular laborers" to serve the masses. Instead of being lords supported by the masses, they toiled diligently and run the cooperative with more and more satisfactory results and in the revolutionary spirit of paupers.

The enemy again repeatedly resorted to soft tactics in a bid to buy off the cadres. But the cadres of Tachai were not softened up; on the contrary they criticized every trick played by the enemy in the presence of the masses and exposed his conspiracies, thus further heightening the class awareness of both the cadres and the masses.

There was violent struggle on the occasion of the big debate on unified purchasing and unified marketing of grain in the winter of 1953 and again on the occasion of the big debate on the two roads [socialist and capitalist roads] in the countryside in the winter of 1957. In these struggles of decisive significance, the Party branch was good as grasping exemplary events and mobilizing the masses. It criticized the idea of spontaneous capitalism entertained by a small number of well-to-do middle peasants, repulsed the attack of the class enemy, and adhered to the socialist direction.

In 1958 particularly, the people of Tachai, under the guidance of the red banner of the Party's general line, greatly liberated their thoughts and achieved a spectacular rise in output. The per mow output of grain jumped from 349 catties in 1957 to 543. Since then, the red banner of the general line has been held higher and higher, the revolutionary zeal of the commune members has been soaring all the time, and no foul wind and evil atmosphere can prevail in Tachai.

At the same time, in production struggle and scientific experiments there are new discoveries and new inventions every year. In the words of Comrade Ch'en Yung-k'uei, "there must be new ways for collective production every year before it will be possible to change ideas, techniques, land, and output." It is exactly in such a way that they have been able consistently to maintain the situation of uninterrupted big leap forward and run their collective economy on an increasingly firm basis.

In 1964, the per mow output of grain exceeded 800 catties, and a large number of houses and huts have been built since the natural calamity of 1963. In Tachai, anyone who speaks ill of the general line, the great leap forward and the people's communes will immediately and strongly be rebuked by the broad masses and even by teen youths and children.

To be sure, on its road of advance Tachai has yet to tap a vast amount of potential power in the fields of agriculture, forestry, animal husbandry or sideline occupations. In particular, the development of forestry and animal husbandry has been relatively slow, and this is the reason why it has not been possible to give full play to the roles of agriculture, forestry, animal husbandry and sideline occupations in promoting and complementing one another. The people of Tachia have now recognized that the best method for overcoming and preventing the growth of conceit and complacency is to learn humbly from the strong points of fraternal brigades both in their province and in other provinces and to advance promptly now fighting tasks by taking into account the shortcomings in their work and the potentialities of production. Now, with confidence increased a hundredth fold, they are striving for the realization of the ten-year long-range plan for all-round development of agriculture, forestry, animal husbandry and sideline occupations and for building a new socialist countryside.

The practice of prolonged revolutionary struggle shows that the Tachai Party branch is truly a strong fighting fortress which has stood tests. Today, the vast majority of the 19 Party members are able to maintain close ties with the masses and to play the exemplary and leading role in all fields of work. The seven branch committee members, Comrade Ch'en Yung-k'uei included, are staunch backbone elements who have been

tested by prolonged struggle and are fully supported by the masses. In the course of the socialist education movement started recently, the broad masses have unanimously expressed the opinion that they [these functionaries] are working for socialism wholeheartedly and planning for the masses, the collective and the State all the time, that they have consistently relied on poor and lower-middle peasants and drawn a clear line of distinction between the enemy and ourselves, they they have consistently taken the lead in participating in collective productive labor and are all labor experts, and that they are impartial and selfless.

In Tachai, the poor and lower-middle peasants have since the land reform had a strong desire to change their outlook of poverty and blankness. They want to work and to make revolution. Led by the Party branch, they have constituted a formidable class force. And the activists of this force, closely rallied around the leadership nucleus of the Party, make up a militant socialist shock brigade. These are 70 heroes to whom Comrade Ch'en Yung-k'uei has referred.

In the prolonged struggle for revolution and construction in Tachai, the presence of such a good leadership nucleus and also the presence of such a conscious class force provide the guarantee for making world-shaking change.

In the three major revolutionary movements - class struggle, the struggle for production and scientific experimentation, the Tachai Party branch has all along attached immense importance to work on man. Particularly in recent years, after they studied the PLA's "four firsts," their political work has become even more active. Instead of merely relying on a small number of Party members in doing political work, they have relied on one and all in doing political work at all times and in all places. They are very conscientious in reading Chairman Mao's works, listening to Chairman Mao's directive, and doing things in accordance with Chairman Mao's instructions; they are also able, promptly and regularly, to use living people, living deeds and living ideas to carry out a living education for the cadres, Party members, and the masses.

From their experiences of political work, the following three points deserve to be emphatically pointed out:

1. They have all along devoted serious attention to the build-up of the Party branch and made very exacting demands on all Party members, particularly Party cadres. They have regularly carried out criticism and self-criticism within the Party, paying particular attention to combating selfish ideas. They require each and every Party member to take the exemplary and leading role in study, labor and in all other fields of

work; every Party member is required to maintain close connections with several households of commune members and to do regular ideological and political work. They require every Party branch committee member to be a most outstanding element among Party members, capable of doing not only political work but also productive labor. Comrade Ch'en Yung-k'uei is one such good red-expert example.

2. Since cooperativization they have consistently adhered to the system of cadres' participation in collective productive labor. Moreover, they have consistently carried out ideological and political work in the course of labor. Comrade Ch'en Yung-k'uei has said well, "To make a success of ideological and political work, we must see man, and to see man we must go to the fields to labor." "Divorced from the collective labor, cadres would be separated from the masses by a layer of skin. Their eyes do not see and their noses do not smell." "The heavier the rainstorm, or at a critical juncture of an unforeseen disaster, the greater will be the need for cadres to go to the fields, to the most difficult front line. For this will be the opportunity which will be used by freaks and monsters to make trouble. It is also at such a time that the degree of consciousness of each commune member can be most clearly seen." He also said: "Cadres' participation in collective productive labor is like a red thread linking class struggle, production struggle and scientific experiment."

3. In accordance with Comrade Mao Tse-tung's teaching that "the education of peasants is a grave problem," they have led step by step the peasants to revolutionize themselves, from caring for their personal interests only to warmly loving the collective, from loving their own collective only to warmly loving the collectives of others, from warmly loving the collectives to warmly loving the State, and from being patriotic to being internationalist.

For instance, the Party branch devoted more than ten years to carrying out, patiently and repeatedly, socialist and communist ideological education for commune member Chao Hsiao-ho, who was of poor peasant origin, with the result that he was transformed from a rather selfish man to one who had a noble style and who did everything to benefit others and not himself. In 1964, Comrade Chao Hsiao-ho gloriously laid down his life for the collective cause. His revolutionary spirit has become an example for all commune members to emulate.

Comrade Ch'en Yung-k'uei has put it well, "Man can be changed. People with backwardthinking can be changed for the better, while those who have progressive thinking may also turn bad. Within the ranks of our people, we can only adopt the method of patient persuasion and education

for those who have backward thinking and help them to become advanced. As for people with advanced thinking, we must intensify education for them and enable them to become still more advanced."

It is exactly because they have been able to deal with people with such a dialectical viewpoint that they have carried out political work with greater depth.

As political work has been firmly grasped and done well, the consciousness of the broad masses of commune members has been rising and their work zeal soaring year after year. Year after year, too, increasingly good results have been obtained from production and construction.

The great achievements in production and construction have, in turn, helped to promote the consciousness of the commune members. Such has been the recurrent process for the turning of matter into spirit and vice versa in Tachai over the past decade and more. It is in such a way, too, that the revolutionary spirit of the Tachai people has been steadily growing.

What, then, is the revolutionary spirit of the Tachai people? We may sum it up as a red thread with five essential points.

The red thread is the putting in command of the thought of Mao Tse-tung and the general line.

The five essential points are: having the far-reaching ideals of socialism and communism; having a clear distinction between love and hate and the firm stand of being loyal to the Party; having the dogged will of self-reliance and hard work; having the revolutionary zeal of changing heaven and earth in a bold and realistic way, and having the noble style of warm love for the State and the collective.

"Have a red heart for the revolution; use two ironclad hands to change the world." One cannot arrive at a profound understanding of this mentally of the Tachai people if one merely makes a cursory tour of Tachai without studying how Tachai's road has been travelled and without studying how the Tachai Party branch does its political work. Without mastering the Tachai people's revolutionary spirit, one certainly cannot learn from Tachai properly.

As practice of two and a half years proves, the movement for learning from Tachai is not merely a movement for production revolution, it is, in fact, a socialist education movement. Only on the foundation of the socialist education movement can we popularize Tachai's advanced experiences with good and fast results.

In Learning from Tachai, It is Necessary to Criticize
the Metaphysical Viewpoints

Since 1963, nearly 200 thousand cadres at hsien, commune and team levels and commune members in the province have been organized to visit Tachai in order to learn from it. This has played a very significant role in popularizing Tachai's experiences. This is because, by means of on-the-spot visits, people can obtain perceptual knowledge which will facilitate their search for gaps that exist between themselves and Tachai and will make it easier to convince and mobilize the broad masses of cadres and commune members to launch the movement for learning from Tachai.

But as practice over the past two and a half years shows, some hsien, communes and teams have achieved excellent results in learning from Tachai, yet some others have achieved bad results. Why? Facts prove that we cannot learn from Tachai well without criticizing the metaphysical viewpoint.

There are in the main two kinds of manifestation of the metaphysical viewpoint which impedes our learning from Tachai. One is refusal to recognize the universal significance of Tachai's experience on the excuse that the conditions in one's own area are different. The other is lack of a strong ambition, being willing to lag behind, and not being daring to emulate Tachai's revolutionary spirit.

People who seek excuse in different conditions, after having visited Tachai would say either that Tachai's conditions are particular or that the conditions in their own area are particular, always feeling that Tachai's experiences are not applicable to their own area.

The so-called particular conditions mean none other than conditions of geography, climate, planting of farm crops, etc. It should be admitted that these conditions vary in areas of different types. Here, recognition of differences in conditions is recognition of the particularities of contradictions.

Comrade Mao Tse-tung said: "Without studying the particularities of contradictions, we cannot determine the particular nature of one thing which is distinct from that of other things and we cannot discover the particular cause or particular basis for the development of movement of things." (Selected Works of Mao Tse-tung, People's Publishing House, 1952, 2nd edition, p. 297)

Therefore, to ignore these different conditions and to mechanically copy Tachai's specific experiences in production struggle is to invite

setback. However, this is only one aspect of the problem. Another aspect, and the main aspect, is that in areas of different types, aside from different particular conditions, there are similar universal conditions. In learning from Tachai, we must learn from it things of universal significance in the three great revolutionary movements of class struggle, production struggle and scientific experiment.

They [people who seek excuse in different conditions] do not understand the meaning of Comrade Mao Tse-tung when he said in the article "On Contradiction": "As particular things are connected with universal things and as each thing itself contains not only the particularity of contradiction but also the universality of contradiction, universality resides in particularity" (Ibid, p. 306), and "Without knowing the universality of contradiction, we cannot discover the universal cause or universal basis for the development of movement of things." (Ibid, p. 297)

In their mind's eye, Tachai's experiences are none other than those concrete experiences that concern the control of mountains and gullies, the building of terraced fields, and the erection of dams. They fail to see the Tachai people's revolutionary spirit which has the most universal significance. Even in regard to the production struggle, a great part of Tachai's experiences are of universal significance. In the process of farming, for instance, a whole set of methods of tilling and fertilizing land were adopted, such as increasing the thickness of the active soil layer, strengthening the granulated structure of the soil, increasing soil fertility continuously, and building stable- and high-yield fields, that is, the widely acclaimed "Tachai fields."

Those who seek excuse in particular conditions are also blind to these things of universal significance. In short, they see only the trees but not the wood. This is an empiricist viewpoint as well as a metaphysical viewpoint. The ideological substance of this kind of viewpoint is conceit and complacency and indifference to progress.

The attitude and viewpoint adopted by the cadres of Hsikoy Production Brigade of Chinsheng Commune led by Comrade Li Shun-ta are entirely different. In the spring of 1964 they visited Tachai. Before the visit, cadres, Party members, and commune members were organized to study the relevant directives of the Party Central Committee and Comrade Mao Tse-tung, examine the ideas of blind complacency and indifference to progress, and refute the views that "production has reached its peak" and "conditions are unfavorable."

After the visit, a large-scale discussion was held and the ideological revolutionization of the cadres and commune members was promoted. There was put forward the slogan "Learn from Tachai for revolutionary

spirit, overtake Tachai for grain output." The result: the per mow output of grain in 1964 reached 600 catties, eliminating the situation in which the per mow output did not exceed 450 catties since 1956.

People who have no strong ambitions and are willing to lag behind, after having visited Tachai, would always feel that there are very wide gaps between Tachai and their own areas. "Tachai is really very good, but we cannot emulate it." Such is their conclusion.

They believe that Tachai's experiences cannot be applied in their own area. They do not admit that things under certain conditions will change and will turn into their very opposites. In other words, they do not admit that under certain conditions backward collective economic units can turn into advanced collective economic units. Nor do they admit that the conditions for turning a backward unit into an advanced one are mainly to be sought from within the collective economy, and that we cannot purely rely on such external conditions as State assistance. They do not understand the meaning of Comrade Mao Tse-tung when he said in the article "On Contradiction": "The basic cause for the development of things lies not with their external conditions but with their internal connections," (Selected Works of Mao Tse-tung, Vol. 1, pp. 289-290), and "The external cause is the condition of change while the internal cause is the basis of change. The external cause plays its role through the internal cause." (Ibid, 291)

As a result, they cannot see the incontestable power of the thought of Mao Tse-tung in the living example of a new socialist countryside - Tachai. They cannot see the incomparable superiority of the socialist collective economy, the matchless creative power of the awakened masses. They cannot understand why the people of Tachai have such sky-rocketing revolutionary zeal and why Tachai, by relying on its own efforts, has been able to introduce such world-shaking changes. It can thus be seen that this kind of viewpoint is the viewpoint of the laggard and the metaphysical viewpoint. It is also a right-wing conservative viewpoint devoid of revolutionary spirit.

An example may be cited here. In P'inglu hsien of Yenpei Administrative District, there is a Hsiao Chuangwo Production Brigade. In the four years before 1963, it had received from the State a total of 100 thousand catties of grain and more than 20 thousand yuan in loans, and it also owed the State agricultural taxes for one year. In the spring of 1964, cadres of this brigade, after visiting Tachai, used Tachai's revolutionary spirit to mobilize the masses and refute pessimistic views. They set lofty goals, aroused the revolutionary zeal, and engaged on a large scale capital construction in the fields and technical reform of agriculture.

As expected, a big leap forward was realized in 1964. Its gross output of grain rose by 73 percent. For the first time 41 thousand catties of surplus grain was sold. It paid back the State 2,400 yuan in loan, together with the agricultural taxes which had been in arrear for one year.

Put the Study of the Revolutionary Spirit of the Tachai
People in First Place

Only when there are Tachai people will there be Tachai fields and new rural areas of the Tachai-type. Such is the common conclusion arrived at in many places in the movement for learning from Tachai. That is also to say, to follow Tachai's example in building stable- and high-yield fields and construct a new socialist countryside, it is necessary to put the study of the revolutionary spirit of the Tachai people in the first position. Only thus will it be possible to achieve the anticipated results in the course of the concrete practice of learning from Tachai. Only thus will it be possible to create and develop one's own experiences in production and construction.

The course in which Yu hsien has learned from Tachai provides a very convincing example.

In response to the call of the Chinchung District Party Committee, the Yu hsien Party committee in 1962 set in motion a movement for learning from Tachai in the entire hsien. In that year, as attention from top to bottom was paid only to studying Tachai's concrete experiences in harnessing mountains and rivers, not much was achieved. In 1963, in accordance with the directive of the CCP Provincial Committee, they emphasized the need to learn Tachai's spirit first. It was only then that rapid changes took place. Starting with summing up Yu hsien's historical experiences and lessons, they compared Tachai's historical experiences with Yu hsien's. They came to the conclusion that the reason why Tachai's experiences were precious was that the people of Tachai were able to defy difficulties and change heaven and earth by self-reliance and hard work and in the spirit of thoroughgoing and uninterrupted revolution.

Tachai, too, had had its twists and turns and its setbacks, but it was not cowed by difficulties, nor did it lose its bearings. Instead it continued to learn its lessons from its failures and continued to hold high the red banner of the general line while marching ahead in broad strides.

In the two years of 1956 and 1958, Yu hsien also launched a mass movement for the control of mountains and rivers, but it did not succeed.

It was because the people there failed to sum up experiences and lessons in time, nor did they draw a distinction between right and wrong, with the result that they lacked revolutionary firmness in the face of difficulties and lost their bearings. Thus they recognized that Tachai was a living example of thorough implementation of the general line and that whether or not we must learn from Tachai was a big question of whether or not we dare to hold higher the red banner of the general line.

Having found out this basic experience and lesson, the Yu hsien Party committee felt enlightened. So it regrouped its forces. In succession it organized the hsien, commune and team cadres and commune members, totalling more than 8 thousand persons, to visit Tachai and learn from it. At the same time, from the higher to the lower levels, an ideological revolution was undertaken on a big scale in coordination with the socialist education movement which was initially started. Leading cadres at hsien and commune levels were the first to leave their offices and take the lead in going to the rural areas for fixed periods of stay and to help the production brigades carry out the ideological revolution.

Taking Tachai as the example, the various production brigades examined themselves in the mirror, found out the gaps, and launched among themselves the "five-compare" activities -- comparing their revolutionary spirit, their reliance on poor and lower-middle peasants, their cadres' participation in labor, their self-reliance and their contributions to the State. The process of developing the "five-compare" activities was, in fact, the process of a lively socialist education.

After repeated examinations and comparisons, some basic-level cadres said: "Ideologically, we were asleep all these years. We weren't clear about our direction of advance. As to how we should build our countryside, we lacked an example and also a plan. Now, learning from Tachai has provided us with a guiding light and filled us with zeal."

Cadres of Paitsang Production Brigade, which was called Yu hsien's "Tachai," summed up their experience of learning from Tachai into five sentences: We have gone through a revolution (the ideological revolution with class struggle as the key); we have struck a root (relying on poor and lower-middle peasants and striking the root of the class line); we have rid ourselves of one thought (the thought of developing spontaneous capitalism, but in the meantime the thought of common prosperity was established); we have obtained a scripture (the true story of Tachai); and we have possessed a telescope (having the concept of the State and the far-reaching ideals of socialism and communism).

Some basic-level cadres lacking in revolutionary spirit were still passive in learning from Tachai, though they had been educated. They even stood in the way of the movement for learning from Tachai. The commune members rose to denounce them and it was necessary to make the essential organizational readjustments.

In this way, one wave rose higher than the other in the movement of learning from Tachai in Yu hsien, and it truly became the most extensive mass movement and achieved distinguished results. In the short period of two and a half years since 1963, the 550 thousand mow of cultivated land in the hsien was universally readjusted, with nearly 40 percent of the cultivated land basically turned into fields of the Tachai-type. In the two years of 1963 and 1964 the hsien's gross grain putput rose by 45 percent. This year, the hsien's wheat output is doubled compared with that of last year. It should be particularly mentioned that in harnessing mountains and water and carrying out capital construction in the fields, Yu hsien has created and developed a great deal of new concrete experience. The quality and magnitude of some engineering works have even surpassed those of Tachai's.

Having One Lead Two Is a Good Method for Popularizing Tachai's Experiences

A slogan, when it is first put forward, is invariably more or less abstract. However, once it is accepted by the broad masses and turned into action, its content will gradually be concretized and enriched. This is exactly the case with the slogan for learning from Tachai and having one lead two.

After two and a half years of practice, we have realized that the movement for learning from Tachai and having one lead two, concretely speaking, is a movement for comparing with, learning from, catching up with and overtaking the advanced and helping those lagging behind, a movement for "learning from Tachai, setting up standard-bearers, having one lead two, and making the whole area Red." Here what is meant by having one lead two is that one is the specific spot and two is the whole area. The method of having one lead two is the method of work which Comrade Mao Tse-tung taught us long ago, the method of breaking through one point and pushing the whole situation ahead. Breaking through one point means setting up standard-bearers for learning from Tachai. Pushing the whole situation ahead means using the method of having one lead two to launch the lass movement for comparing with, learning from, catching up with and overtaking the advanced and helping the backward in an entire area. Thus it will be possible to make the whole area Red. A group of more advanced hsien -- Yu hsien Ch'uwo, and T'aiku - have all formed the leap forward

situation in which the backward is trying to catch up with the advanced and the advanced is trying to become still more advanced. This is the best proof.

On the question of setting up standard-bearers, in the past some places relied only on external forces in cultivating standard-bearers, and even if some achievements were made, they were like flash in the pan and basically could not be popularized. Since the movement for learning from Tachai was set off, many hsien and communes have accepted their previous lessons and placed great emphasis on cultivating standard-bearers in Tachai's spirit of self-reliance, on letting a specific spot to lead the whole area, on having the whole area promote the spot, on combining the spot with the whole area, and on common development.

Beginning in 1963, the Yu hsien Party committee, adopting the method of scattering nets and setting up points in the pattern of plum blossoms, cultivated standard-bearers for learning from Tachai by separate groups and separate stages. This method was described as "erecting ladders" for backward brigades. In that year, the hsien Party committee selected 21 production brigades in five areas of different types, where leading cadres at the hsien level personally stayed. Leading cadres of various communes also set up 77 points. The 12 points set up by the hsien Party committee were all very successful, their grain output rising by over 30 percent. Most of the points set up by the communes were also successful. This enabled leading cadres at the hsien and commune levels to obtain first-hand experience in learning from Tachai.

In the following year, production brigades which were standard-bearers increased to 109. This year, the third year, they have further increased to 189. Each standard-bearer generally leads three to five teams around it, thereby forming a network for the popularization of advanced experiences.

In this way, the 531 production brigades were linked up in a "net" like a chess board. This is also generally true of Ch'uwo and T'aiku hsien.

The formation of a network for popularization of advanced experiences with an advanced brigade as the center is an important development of the activities of having one lead two. The network for popularization of advanced experiences is not a first-level administrative organization but a mass organization which combines leading cadres, labor models, and technicians. Advanced experiences to be popularized include those in political work, production techniques, and business management, but the main emphasis is on political work.

Within the scope of the network, the advanced brigade often sends men to other brigades to impart experiences, while the average and backward brigades also often send men to the advanced brigade to study. In some places, within one network or between networks, efforts are joined to run demonstration fields to explore the experience of high yields in large fields. In other places, between one network and another or between one hsien and another, the method of exchanging people to study or to impart a certain advanced experience is adopted. Within one production brigade or one production team, the PLA's experience of "one helps one and a pair of Reds" are studied and the movement for cadres to learn from Ch'en Yung-k'uei and commune members to learn from the Tachai people launched. In this way, the movement for learning from Tachai and for one to lead two has been given a solid mass and organizational foundation.

How can we solve the contradiction between the spot and the area in the course of the movement for learning from Tachai and for one to lead two? The Yu hsien Party committee has furnished excellent experiences. In this hsien, regularly 200-300 cadres at hsien and commune level go separately to all networks for popularization of advanced experiences in the hsien. While staying there, they also visit the whole area and organize in a concrete way the mass movement for comparing with, learning from and overtaking the advanced and helping those lagging behind.

At the same time, the hsien Party committee has specially assigned a group of cadres to form a mobile investigation team, which, under the personal guidance of the responsible comrades of the hsien Party committee, organizes mutual checks between brigades, networks, and communes. Through such checks, problems are promptly discovered and solved and good experiences are also spread in good time.

The contradictions between the spot and the area include the contradiction between the advanced and the backward. The best means of resolving this contradiction is to develop, through the method of having one lead two, the mass movement for comparing with, learning from and overtaking the advanced and helping those lagging behind. Here the word "overtaking" has a particularly vital significance. The fact that the backward dares to overtake the advanced precisely reflects the spirit of the general line of going all out and aiming high. The fact that the backward dares to overtake the advanced is a pressure on the latter; it is a motive power propelling the advanced to be more advanced.

Today, there are many examples of the backward overtaking the advanced. The No. 1 production team led by Comrade Chao San-hu in Lipieh Production Brigade, P'ingt'ing hsien, is a good example of daring to overtake Tachai. Comrade Chao San-hu has put it well: "In learning from

Tachai, one is not a good student if he merely follows the footprints of Comrade Ch'en Yung-k'uei. We must have the courage to be adventurers."

As they creatively learned from Tachai, their per mow output of grain in 1964 rose from 157 catties in 1960 to 630 catties. It took four years to complete a journey which took Tachai ten years. More than that, but in 1964 the per mow output of millet in this brigade reached 696 catties, thus surpassing that of Tachai. This year, Tachai has learned from their experience in growing millet.

Do we dare to select backward brigades as objects for cultivation into standard-bearers? The answer of many comrades to this question is often in the negative. Nevertheless, as practice proves, if only work is done properly, a backward brigade not only is capable of fast becoming a standard-bearer in learning from Tachai, but, after having become advanced, it can exert a greater influence and a stronger convincing power for the whole area. Kaots'un Commune in Ch'uwo hsien is a case in point. Before 1962, Kaots'un was the most backward commune with the lowest output in the hsien. In 1962 the commune selected successively two production brigades to be trained to be standard-bearers, but the attempt failed. In the winter of this year, a secretary of the hsien Party committee came to this commune to stay. Together with the commune cadres, he chose Huch'i Production Brigade, the largest and the most backward brigade in the commune, to be trained into a standard-bearer in learning from Tachai, which is in an outside area, and from Yangt'an Production Brigade in its own hsien. He stayed there for one year, and as it turned out, the brigade became an advanced one. This was a shock to the whole commune.

In 1964, the ten production brigades of the commune on their own initiative formed three networks for the popularization of advanced experiences, learning from Huch'i, Yangt'an and Tachai. In that year, the per mow output of cotton in the commune rose from slightly more than 30 catties in 1961 to 105 catties, while the per mow output of wheat jumped from slightly more than 800 catties in 1961 to 261 catties.

Throwing away the cap of backwardness, it became an advanced commune of the province. In that year also, the per mow output of grain and cotton also surpassed that of Yangt'an production brigade. This is another example of the student surpassing the teacher.

More and more facts prove that a success of the movement for learning from Tachai, setting up standard-bearers, having one lead two, and making the whole area Red will make it possible to change more rapidly the backward outlook of farm production in large fields. In 1962, the Ch'uwo hsien Party committee put forward the slogan for catching up with the 1962 level

of Yangt'an in per mow output of grain within three to five years. As the result of practice shows, this target was reached and surpassed not in three to five years but in only two years. Particularly in 1965, the per mow output of the nearly 300 thousand mow of wheat in the hsien amounted to 320 catties, an increase of 113 percent over 1962. Of the 15 communes in the hsien, 14 achieved a per mow output of over 300 catties. The one commune with the lowest output also achieved a per mow output of 292 catties. Of the 213 production brigades in the hsien, only one achieved a per mow output which was less than 200 catties. In this way, in a more or less balanced manner Yangt'an's advanced production level became the hsien's production level.

Of course, balances are only relative, while imbalances are absolute. At any time and in any place there are three kinds of state, i.e., the advanced, the middling, and the backward. This year, the per mow output of wheat in the whole of Ch'uwo hsien has caught up with that of Yangt'an in 1964, but this year Yangt'an has again boosted its per mow output of wheat to more than 400 catties, while some production brigades have overtaken Yangt'an and achieved a per mow output of over 500 catties.

This is to say that on the basis of relative balances in the whole hsien, new imbalances again appear. On a new and higher level, the three kinds of state, i.e., the advanced, middling and the backward, will also be different from what they were before. This requires us to be good -- in the light of new conditions -- at further developing the movement for comparing with, learning from and overtaking the advanced and helping the backward, the movement for learning from Tachai, setting up standard-bearers, having one lead two, and making the whole area Red, and to solve the new contradictions between the advanced and the backward. By such a recurrent process from imbalances to relative balances and again to imbalances, it is possible to raise agricultural production to new and higher levels.

Concluding Remarks

Premier Chou, in his report on the work of the Government delivered at the First Session of the Third National People's Congress, cited Tachai as a banner on the nationwide agricultural front. Now in all parts of the country higher and higher waves are being whipped up for learning from, catching up with and overtaking Tachai. This is a very favorable situation indeed. This situation drives the people of Shansi to exert greater efforts to develop the movement for learning from Tachai and to pay greater attention to studying the advanced experiences of fraternal provinces and cities. Otherwise, conceit and complacency and indifference to progress will surely cause them to drop out from the ranks of the advanced.

In his report on the work of the Government, Premier Chou also pointed out, "All our organs and the broad masses of cadres must learn from the thoroughgoing revolutionary spirit and style of work of the PLA, the Tach'ing [Gilfield], and Tachai, and make themselves march forward in broad strides on the road of revolutionization." ("Principal Documents of the First Session of the Third National People's Congress of the People's Republic of China," People's Publishing House, 1965 edition, p. 26)

From the practice of the last two and a half years, we have very deeply realized this point. Where the revolutionization of organs is properly achieved, there the movement for learning from Tachai is properly developed. In Yu hsien, hsien-level departments in the systems of industry, communications, finance and trade, culture and education, and health -- precisely because they have learned from Tachai and revolutionized their organs properly -- have been able, under the unified leadership of the hsien Party committee, to combine their efforts to serve the movement for learning from Tachai through their own operations and have made their contributions.

In the past, many agricultural capital construction projects financed by the State in Yu hsien were not successfully carried out. Since 1963, after having studied Tachai's spirit, all levels in the hsien have joined their efforts to carry out agricultural capital construction projects with good and fast results by persevering in the policy of self-reliance and without requesting financial assistance from the State.

Some people believe that since all rural basic-level units follow the policy of self-reliance, there is nothing for the State to do to help agriculture. This is wrong. As the experience of Yu hsien proves, departments in the fields of industry, communications, finance and trade, culture and education and health have a great deal to do in helping to develop the movement for learning from Tachai on the agricultural front and to gear their thinking and work to the policy of taking agriculture as the foundation.

Tachai is a living example of developing agricultural production with stable and high yields and of building a new socialist countryside. At present, the various areas of the nation have their own Tachais and have a great variety of methods for popularizing Tachai's experiences. "When the mountain rain is about to come, wind blows over the land, and thousands upon thousands of Tachais will spread throughout the land." We must hold still higher the great red banner of the thought of Mao Tse-tung, go ahead in full steam, travel our own road, and let Tachai's spirit blossom and bear fruit throughout the land!

THE THOUGHT OF MAO TSE-TUNG IS SHARP WEAPON IN STUDYING NATURAL SCIENCE

[Following is a translation of an article by T'ang Ao-ch'ing in the Chinese-language periodical, Hung-ch'i (Red Flag), Peiping, No 11, 1 October 1965, pages 15-21.]

I study pure chemistry in a university. In many years of scientific research work, I gradually learned to apply Marxist-Leninist material dialectics and Comrade Mao Tse-tung's philosophical thought. In this, I underwent a process from unawareness to comparative awareness. This process has been a process of transforming my conception of the world and my methodology, as well as a process of raising my professional standard. In this process, I realized that the thought of Mao Tse-tung is a sharp weapon not only in studying social science, but also in studying natural science.

Study of Material Dialectics, Liberation from Fetters of Idealism and Metaphysics

In doing research work on the structure of matters, one is faced with the microscopic world, which one cannot see with one's eyes or touch with one's hands. It was always a realm where idealism and metaphysics were more active. Here, once theoretical research is separated from the guidance of the materialist conception of the world and methodology, one will go astray or end up in a blind alley. If a natural science worker consciously applies material dialectics to the guidance of scientific research work and consciously studies Comrade Mao Tse-tung's philosophical thought, he will be able to speed up the progress of work, reduce or eliminate unnecessary waste of effort, and obtain better fruits of research. The more conscious such application, the greater the accomplishments. From my more than ten years' practice of scientific research, I have come to appreciate this point increasingly.

In the past, I did not pay attention to studying philosophical theories. I never seriously read a single philosophical work. I always

thought that there was not much connection between philosophy and natural science. In 1951, I first read Comrade Mao Tse-tung's On Practice. Later, I read his On Contradiction. Because I was reading them for the first time, and because I failed to connect them with my problems in academic thinking and studying methods, they did not impress me deeply.

In 1952, there was unfolded in the nation criticism of the American quantum chemist Pauling's "Resonance Theory." I, too, took part in the criticism. This "Resonance Theory" had hitherto been considered correct and had been applied extensively to scientific research; so why was it wrong? Where was it wrong? My study of these questions made me study anew and repeatedly On Practice and On Contradiction. Then I realized the idealistic substance of the "Resonance Theory." This theory substituted subjective supposition for things which were objectively present, and it negated the qualitative laws of molecular structure. The method of calculation adopted by this theory was a prevalent method in quantum mechanics. So it appeared on the surface to be very scientific and strict, and it was very "convenient" to apply. Actually, however, it was basically in contravention of the laws of development of objective matters; it was pragmatic. In 1952, I composed a thesis, Eliminate Idealism in Theories on Chemical Structure, which analyzed the idealist substance of Pauling's "Resonance Theory"—mesomerism. As a result of this activity of study and criticism, I received a vivid, eye-opening education in material dialectics. I realized that, in order to solve problems in scientific research, my subjective views must agree with objective reality; supposition and imagination alone were not sufficient. At the same time, I began to realize how important it was for a natural science worker to study material dialectics. In addition, I realized that my own conception of the world and methodology were not in accord with dialectical materialism in many places.

The main shortcomings present in my former research work were as follows. In handling the relationship between theory and experiment, I belittled the latter. All my topics for scientific research came from foreign literature; I failed to pay attention to the needs of domestic construction. Sometimes, in order to prove a theory, I one-sidedly and superficially analyzed individual experimental conditions. I did not know that theories could be derived through summation only on the basis of abundant perceptual data. Sometimes, after obtaining some theoretical things, I considered that a great success had been achieved. I was crazy about arriving at conclusions through inference and about publishing theses. I paid no attention to the application of theories or to their being taken back into the midst of practice for testing and development. Sometimes, I even subjectively exaggerated the importance of individual theories and widened the applicability of specific theories. Owing to such bourgeois influences of idealism and metaphysics, though I did some

research work, I failed to grasp the most important questions, and the progress of my work was comparatively slow. Since I learned to apply Comrade Mao Tse-tung's philosophical thought to the guidance of scientific research, my scientific research work has entered into a brand new stage. The pace of my work has been quickened, and its fruits have been more conspicuous.

Concrete Analysis, Grasping of Key Link,
Solution of Puzzles in Science

In 1954, I carried out research work on the internal revolution of molecules. The internal revolution of molecules is a form of motion inside the molecules. It is closely connected with molecular structure and with many important properties of molecules. Such as the elasticity of rubber and the structure of proteins cannot be given integral explanations except on the basis of the theory of internal revolution. For instance, rubber can be elongated and undergo changes in shape because of the effect of the internal revolution of molecules. The greater the freedom of internal revolution, the greater the capacity for elongation, and vice versa.

Many chemists abroad had done research work on internal revolution, but the results were not quite ideal. A well-known American quantum chemist, Pitzer, proposed a formula, which was based on figures from some experiments on simple molecules. It failed to provide a theoretical answer to the question of what the internal cause of such a phenomenon was; nor did it reveal the laws of internal revolution. The formula was applicable only to the explanation of the internal revolution of some simple types of molecules. It was not a formula with general guiding significance or wider applicability. For more than 20 years, many foreign scientists studying molecular structure tried to solve the problem. The American quantum chemist Pauling, too, did some work of this kind. He merely analyzed eight figures and exaggerated the importance of the axis of rotation which actually was not the main factor. He failed to grasp the decisive factor which is the energy change due to motion and inertia in the process of internal revolution. The conclusion he drew was therefore subjective and one-sided.

When we began this same research work, we studied and applied the viewpoint of Comrade Mao Tse-tung's On Contradiction. First, we concretely analyzed the internal revolution of molecules as a special process of contradictory motion. Next, we concentrated attention on grasping the main contradiction of the motion which is the internal revolution of molecules. In this way, the problem was solved smoothly. The internal revolution of a molecule is the regular rotation of one radical group of the molecules

relative to another radical group and around a certain axis (the chemical key). A radical group is a charged system. Different radical groups produce restrictive effects on each other. In the process of internal rotation, when the relative position of radical groups changes, the energy of the inter-action will change correspondingly. And such contradictory motions of radical groups are decided by energy changes of motion and inertia. Hence, understanding the laws of energy changes due to motion and inertia in the process of internal revolution becomes the key to understanding internal revolution. After grasping this main contradiction, we went farther and discovered the main cause of such energy change. We found that the change was caused by the mutual restriction between the two radical groups at the poles of the internally revolving molecule, when these occupied different positions. Thus, one year later, we eventually put forward for the first time a theoretical formula with which the laws of energy changes of motions of internal revolution of many complex molecules could be calculated. This formula is the "Formula for the Potential Energy Function." With one quantitative relationship, it expresses the degree of freedom of internal revolution of molecules. From this quantitative relationship, some important properties of matters can be further deduced. This fruit of research was published in 1955 arousing a great deal of interest at home and abroad. The formula has since been adopted by some treatises and text-books.

Later, following development of experimental techniques concerning ultra-red ray and micro-waves, figures from experiments on internal revolution increased gradually in foreign literature. To make our work really based on very abundant experimental data, we further tested the theory in question. We made the formula for the function even more accurate, and used it in analyzing and forecasting over 80 figures relating to the internal revolution of molecules. Deductions from the theory and the values obtained from experiments were almost completely in agreement. Next, we carried out a process for eliminating the false while preserving the true, getting rid of the crude while extracting the refined, and remolding from the surface to the interior. In this way, we made the formula even simpler and further increased its general guiding significance. We published this fruit of the research anew in 1962, when it once more aroused international attention.

In the work, we applied Comrade Mao Tse-tung's philosophical thought, concretely analyzed concrete matters, and grasped the main contradictions. As a result, we were able to find correct ways for solving problems in such a complex natural phenomenon as the internal revolution of molecules, thus further developing the theory on internal revolution.

Proceeding from the Needs of Revolution in Selecting
Topics, Testing and Developing Theories in Practice

In 1956, I learned from the state plan for science that theoretical research on higher molecules and catalysis was urgently needed. The leadership, too, wanted people to conduct such research. Accordingly, I made up my mind to take part in the research on higher molecule physical chemistry. Though this did not signify a change of profession for me, yet the objects of the research and the tasks were different from what I had been working on--the structure of matters. In order to meet the needs of the development of our country's higher molecule industry and science, I made up my mind to set aside for the time being my research on problems in the structure of matters, and to concentrate my main energy on exploring this new realm, with which I was very unfamiliar.

For six or seven years, mainly by means of statistical theorization, we studied one part of higher molecule physical chemistry--higher molecule mechanics. We rather fully explored the mechanical laws of the four basic types of reactions of higher molecules--condensation, polymerization, cross linkage, and pyrolysis. Among other things, we did some original work, which has been considered as having wider practical significance and theoretical significance. This was a revolution of my thought on research and of my research direction. It was a revolution whereby I seriously implemented Comrade Mao Tse-tung's philosophical thought and gradually became a new-type scientific research worker.

In selecting topics for scientific research, we paid attention to proceeding from the actual needs of our country's production. At the same time, we made suitable arrangements for topics which directly served current production and topics for research on basic theories which would be important in the long run. In this way, we firmly based theoretical work on the practice of the three great revolutions. In doing our theoretical work on the mechanics of the condensation reaction of higher molecules and on the cross linkage of higher molecules, we paid attention to connecting the work closely with reality. We paid attention to speeding up experimental work, tried to obtain correct experimental figures ourselves, and gradually built experimental bases of our own. Many of the figures now used in researches on the mechanics of higher molecules were derived by ourselves.

In research on natural science, we did not exclude foreign figures in an unprincipled manner. We still had to learn the scientific achievements of other countries critically. In order, however, to seize the initiative in the study of science, we must obtain first-hand scientific data ourselves. We must then add to them the figures from foreign literature which had been judged and considered to be correct. After this, we

would be able to do theoretical processing work. We should not depend solely on foreign countries for the supply of "raw materials" for theories--experimental figures.

In our research on the mechanics of higher molecules, we rather consciously adhered to Comrade Mao Tse-tung's thought about the "two flying leaps" in the process of cognition. In our research work, we did not rest content with theoretical explorations. We continuously took the derived theories back into the midst of practice for application and for testing and further development. Comrade Mao Tse-tung said, "There is only one kind of true theory in the world, the theory that is drawn from objective reality and then in turn verified by it; nothing else can be called theory in our sense." (Rectify the Party's Style in Work, Selected Works of Mao Tse-tung, Vol. 3, People's Publishing House, 2nd edition of 1953, p. 819) Experience has shown that the knowledge acquired from practice the first or the second time still cannot constitute the flying leap from "the kingdom of necessity" to the "kingdom of freedom." Such knowledge must be taken back into the midst of practice to be verified. Only when anticipated results are achieved can it be considered that we have really mastered the objective laws and really won freedom.

In our development of the theory of jellification of higher molecules into the theory of solidification, we underwent a repeated process of practice, cognition, more practice, and so forth. Studying the mechanics of higher molecules, we began by working on the theory of jellification (jelly being the waste product resulting from the production of synthetic materials), and by studying the question of the jellification point in the industrial production of higher molecule materials (the jellification point being the conditions under which jelly began to be produced). We discovered the answers to the questions of under what conditions jelly would be produced, and under what conditions it would not be produced. Next, we took the theory of jellification into the midst of practice. We then discovered that the jellification point was related to the synthetic formula for the higher molecule materials. We also discovered a jellification point was related to the synthetic formula for the higher molecule materials. We also discovered a jellification region and learned within what scope jelly would be produced, and within what scope it would not be produced. In this way, we could be somewhat anticipatory in drawing up formulas. Later, through experiment and factory processes, we further discovered how much of the materials would jellify and how much would not jellify when a specific degree of reaction had been reached with regard to a specific formula. After many repetitions of the process from material to spirit and from spirit to material, another flying leap took place in our knowledge. The original theory of jellification was developed into the theory of solidification of higher molecules.

Generally speaking, at this stage, because a correct direction was followed in our research on the statistical theory on the mechanics of higher molecules, because the guiding thought was clear, and because attention was paid to closely combining theory with practice, the fruits of the research were more ripe than before. Though our research has not yet entered the most important realm in the study of higher molecules--relationship between structure and properties, yet our research on the theory of solidification has made a breach in the road leading to the solution of the problem of relationship between structure and properties. After we have theoretically made clear the relationship between structure and properties, we will enjoy even greater freedom in synthesizing and transforming higher molecules.

Brave in Making Criticism, Daring to Innovate and Embark
Upon a Path of Our Own

Around 1958, the realm for my scientific research was expanded, and my work was done more penetratingly and systematically than before. At the time, an outstanding question was facing me--the question of how I should deal with the fruits of scientific research of foreign countries, and whether I would dare to smash the foreign frameworks and open up a way of our own.

In old China, the prolonged reactionary rule of imperialism, feudalism, and bureaucratic capitalism resulted in marked backwardness of science. At the time, many natural scientists had an inferiority complex. They held blind faith in Europe and American, while they lacked confidence in themselves. I, too, had this inferiority complex. Politically, I had long drawn a clear line of separation from US imperialism and discredited any blind faith. But this did not mean that I had also discredited my blind faith in American science. My understanding of this question did not become clear till Comrade Mao Tse-tung issued the great appeal to liberate the mind and discredit blind faiths. A question of spiritual conditions was involved here. If one thought all the time that the level of the foreign countries was very high, felt all the time that one would not be able to catch up with them, and thus was willing in one's mind to remain inferior, then one would never be able to surpass them. For this reason, in dealing with the scientific accomplishments of foreign countries, we must not hold any blind faith in them. We must divide one into two, make concrete analysis, absorb the fine things in them, and reject their impurities. We must try to seize the initiative and smash the framework. We must dare to open up a way of our own. If we were to run behind the foreign countries blindly, we would never be able to catch up with the international level. A question of strategy and tactics was also involved here. Strategically, we must believe firmly that we would

be able to catch up with and surpass the international level of science and technology before long. Tactically, we must exert some hard and solid effort of criticism, absorption, creation, and invention. We must not be afraid of difficulty or afraid to stumble and fall. We must promote Yu Kung's spirit of moving mountains.

In 1959, while studying the theory on cross linkage of higher molecules, we came across the question of how we should treat Charlesby's theory on cross linkage. Cross linkage means the combination of two higher molecules under the influence of certain external factors (such as light radiation), resulting in changes in the original properties of the higher molecules. It is very important for improving the properties of higher molecule synthetic materials. Charlesby is a famous British radiation chemist. In 1954, he published successively two theses on the theory of radiation cross linkage, in which he put forward a formula for the relationship between the degree of cross linkage and solubility. Later, when we applied Charlesby's theory in experiment, we felt it to be very awkward. We found that it could not explain many phenomena. Thus caused us to examine the theory anew. We discovered that the basic defect of the theory was that it studied the question of theory of cross linkage from an isolated and still viewpoint. It contravened the dialectics of the development of objective matters. We criticized the idealist and metaphysical viewpoint reflected by Charlesby's theory, and wrote an article in which we published the theoretical fruits of our research. Up to now, our criticism of Charlesby's theory is still basically correct.

But the contradictions of matters are quite complex. It is far from being easy to make factual analysis which is exactly correct. Omission to apply material dialectics at any link may lead to new error.

More than a year after the publication of our article, we discovered from experiments that the jelly after a condensation reaction and that after a cross linkage reaction showed no essential difference. But we had opined that the jellification points in the two cases were different. Pursuing the matter, we discovered that, in our original research, we were confused about a conception in physics. We at the time saw only the common properties of the higher molecules and the small molecules and neglected their respective special properties. We regarded the solubility of the higher molecules and that of the smaller molecules as one and the same thing. We regarded a big piece of jelly as an accumulation of small pieces. As a result, we failed to discover the substance of the cross linkage reaction of the higher molecules. Accordingly, after realizing the mistake, we readjusted the physical molds of higher molecules and gave them strict theoretical treatment. Eventually, in 1962, we derived a conclusion which is now considered as valid and integral. In this way, we have further advanced the theory on cross linkage.

It is now clear that, if we had held blind faith in Charlesby's authority and had not dared to touch it, or if, after touching it, we had not dared to touch it again because we had made a mistake, the new theoretical fruit could not have been produced. Because we firmly believed in Comrade Mao Tse-tung's teachings and wanted to become fearless thorough materialists, we dared to correct the mistakes of others, remedy their shortcomings, and push work to a higher stage. The incident also showed that I was not conscious enough in allying Comrade Mao Tse-tung's philosophical thought to scientific research, that I had not applied it skillfully enough, and that I had departed from material dialectics in some places, resulting in some unnecessary waste of effort. The mistake I made taught me a lesson. I learned that I must study Comrade Mao Tse-tung's philosophical thought better and must be painstaking and serious in scientific research work.

The world is infinite. Changing motions of the objective natural world will never end. We scientific workers will never come to a stop in our practical exploration of truth. If we understand this, we will never feel content in conducting scientific research, but will advance continuously, discover on our own initiative the unknown truth of the objective world, and open up a way of our own in research on pure chemistry.

Invent Something, Create Something

In 1963, after our university's class for discussing the structure of matters had opened, I concentrated my main energy on doing the work of this class. The class was to succeed in two years in improving its members politically and in laying a sound professional foundation, so that scientific research might be unfolded. The overwhelming majority of the regular members of this class were associate professors and lecturers. Some comrades were already providing guidance to research students. In view of this and in order to lay a sound foundation for scientific research, we first of all spent a year or so in studying the group theory--a mathematical tool very effective for the research on symmetrical matters; in studying the basic theories on atomic structure and nuclear structure which are related to molecular structure; and in studying such modern experimental methods as the ultra red ray spectrum and magnetic resonance for the research on the structure of matters. We did not enter into the stage of scientific research till 1964. In the research work at this stage, we paid attention more consciously to studying and applying Comrade Mao Tse-tung's philosophical thought, and achieved successes.

First, topics had to be selected. Should we select old topics with which we were all familiar, or should we select topics with which we were unfamiliar but which were needed the most urgently by the state?

Should we work separately or work together in an organized manner? In consideration of the needs of the national plan for science, we decided to concentrate forces for studying the question of theory on the configurational field. This theory is one of the three major theories on molecular structure. It was developed in the world in the past decade or so, and has become an important theoretical basis for modern inorganic chemistry. Our country's research on the theory on the configurational field had been quite weak. Even so, the theory proved important for our country's current research on the principle of stimulated emission of light and explanation of the inherent relationship between structure and properties in mesh linkage chemistry and elemental organic chemistry and of the mechanism of catalysis. In this realm, I was a stranger, like everybody else. Besides, people in other countries had done a great deal of work already, and it would be difficult for us to catch up. Some comrades evinced some fear of difficulty when they thought of scaling this new peak of science. They considered it very difficult to achieve anything further. In view of such thought, we organized everybody to study Comrade's Mao Tse-tung's teaching: "Mankind always has to sum up experiences continuously, discover something, invent something, create something, and make some progress." This raised our spirit. Some comrades said: We must contribute our share toward the development of science in our country. So we must have the ambition of engaging ourselves in "popular items." We should not engage ourselves in "strange items" for the sake of personal fame and profit. We should not aim merely at the publication of one or two articles. Such understanding was correct. What about the question of familiarity? I thought that I should not lead others to carry out a project merely because I was familiar with the project. I should dare to venture into any field if this was needed by the state. I should dare to carry out revolution and to create. I must not be scared by a few thick foreign treatises. I must not embark upon a path merely because it was easy and because I was familiar with it. Besides, familiarity or unfamiliarity was a relative term. Provided I dared to practice, my venture would succeed. Then, unfamiliar things would become familiar things. If I chose all the time to do easy and familiar work, how would I succeed in training cadres till their skills could pass tough tests?

Having realized the above, we made up our minds. Forces were organized and concentrated, and a battle to storm the fortress was started.

Bourgeois scientists usually worked on isolated projects in studying the theory on the configurational field. They failed to make observations and conduct researches on the basis of the mutual effect and connection between the projects. They failed to discover the inherent connection between them. As a result, they never succeeded in making clear the

relationship between molecular structure on the one hand and atomic structure and nuclear structure on the other. Our procedure differed completely from theirs. After mastering the latest fruits of research on the theory of the configurational field, we concentrated forces for studying the inherent connection between the several parts in the structure of a matter. In other words, we began by studying the relationship between molecular structure on the one hand and atomic structure and nuclear structure on the other. After some effort, we eventually overcame the difficulties and soon made clear the relationship between atomic structure and the theory on the weak field of the configurational field, thus building a bridge between the two and greatly simplifying methods of calculation. At the same time, we made clear the relationship between the theory on the weak field and that on the strong field of the configurational field, and standardized the low symmetry calculation methods. These three fruits of research enriched and developed the theory on the configurational field.

This battle to storm the fortress did not proceed smoothly all the time. Comrade Mao Tse-tung's philosophical thought opportunely and continuously filled us with strength in advancing. In 1964, when we began the research project on the theory of the strong field, we wasted some unnecessary effort. We had no idea as to how we should proceed with the project. After repeated study, a plan was drawn up. At the time, everybody found the plan satisfactory. Executing the plan, we worked out a lot of calculations. The results showed that the plan contained error. The reason for the error was that we regarded as a basis the "group" which actually did not exist. Because of this, the results of the actual calculations differed from those anticipated. Everybody felt sorry and felt that several months' effort had been wasted. Later, we organized everybody to study On Practice, which proved to be very inspiring. We realized further that usually correct knowledge could not be acquired from practice the first time, and that there were cases when work plans and programs had to be revised, supplemented, or even completely overthrown in the process of practice. After a general summing up of experiences, correct understanding was achieved. Accordingly, the project was launched anew. The "group" which actually did not exist was negated, and a new plan was drawn up. This plan overcame the subjective and one-sided character of the original plan. The idea of the theory on the strong field in the theory on the configurational field was further developed. A theory on the configurational field in a mixed form of combination was put forward, and this added new content to the theory on the configurational field.

In this way, taking about only a year, we completed the process from scanty knowledge of the theory on the configurational field to relatively thorough mastery of this theory. At first lagging behind the

international level, we succeeded in catching up with it and even surpassing it. This laid a sound foundation for future research work on the theory on the configurational field.

This battle to storm a fortress made us realize deeply that Comrade Mao Tse-tung's philosophical thought must be regarded as the guide for research work on natural science. Specifically, attention must be paid to the following. (1) The purpose must be clear in the selection of topics. Topics selected must be closely connected with reality and serve socialist revolution and socialist construction. (2) A revolutionary academic style of being brave in making criticism, daring to innovate and tackle difficult problems, and being fearless of setbacks must be established. The thorough revolutionary spirit must be combined with a serious scientific attitude. (3) Concerning organization, a large force which has received strict basic training must be concentrated for fighting battles of annihilation in a prepared manner. (4) The fruits of scientific research must be taken back into the midst of practice and further popularized and improved upon. (5) The Party's policy of "letting a hundred flowers blossom together and diverse schools of thought contend" must be implemented. Free discussions must be unfolded fully. Full play must be given to collective intelligence.

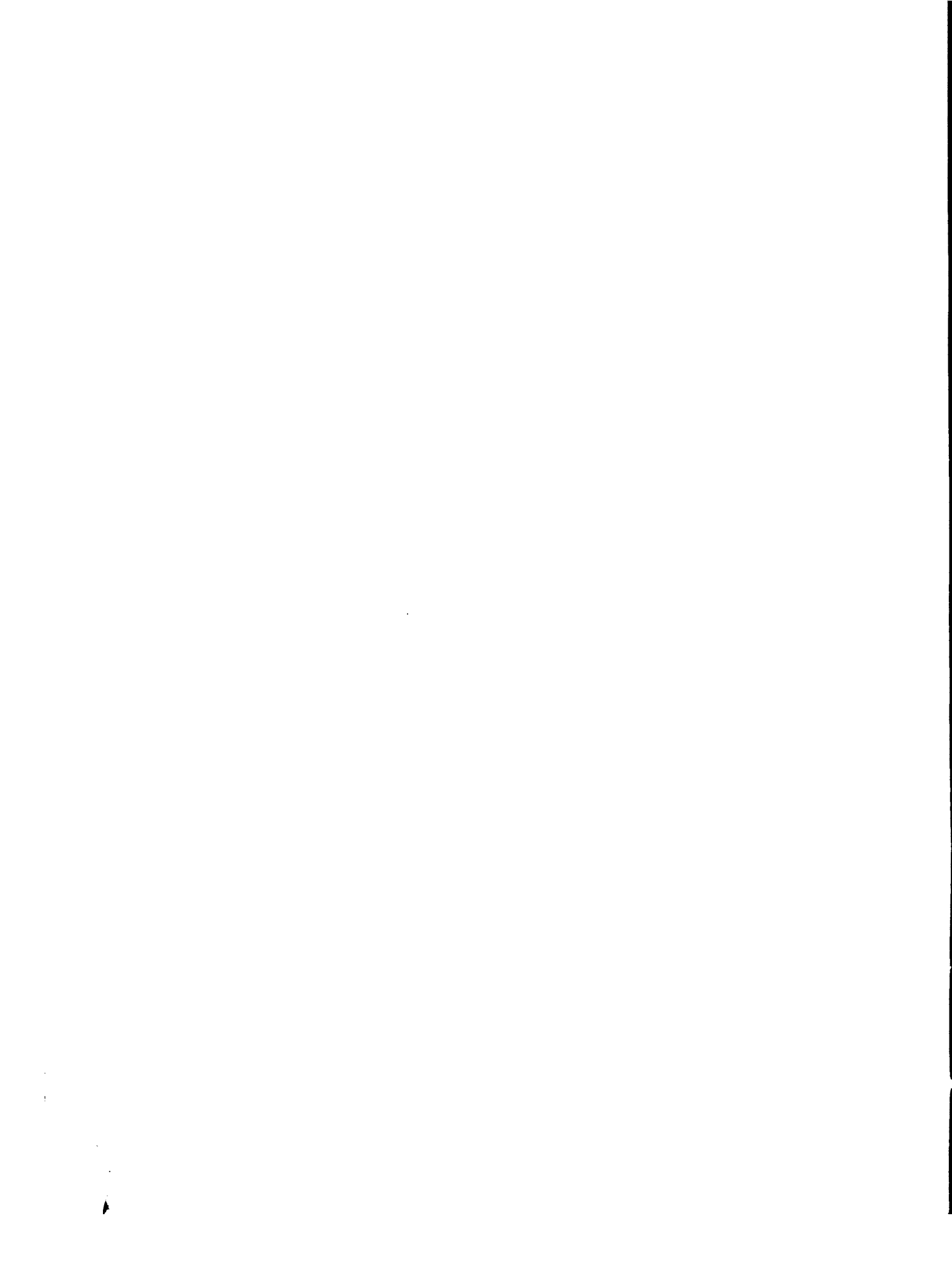
In our battle for storming the fortress, we basically did the above. As a result, we not only obtained comparatively high-standard fruits of scientific research, but also succeeded in training cadres. Those comrades who had been lacking in confidence acquired the courage to scale the peaks of science. Those who had not quite dared to touch major difficult problems were led to the front in the battle for storming the fortress, and they began to have confidence.

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From a review of the course which I followed in becoming reformed and growing up politically and professionally, I deeply appreciate the utter importance of studying Comrade Mao Tse-tung's works and acting according to his instructions.

Almost 20 years have elapsed since 1946, when I first read Comrade Mao Tse-tung's On New Democracy. During the intervening period, I studied all the works in the four volumes of Selected Works of Mao Tse-tung, and repeatedly studied such famous works as On Practice, On Contradiction, On Correct Handling of Contradictions Among the People, and the three reports on rectification. Though I am rather busy with my work at present, I set some time aside each week for keeping up the studies. Study of Comrade Mao Tse-tung's works has produced an important guiding effect on my political

stand, ideological refinement, academic thought, academic style, and study method. It has been a source of strength enabling me to improve continuously in matters of politics and profession. I must continue to study Comrade Mao Tse-tung's works hard, appreciate and apply the thought of Mao Tse-tung, continuously reform myself, and do more scientific work.



NOTES ON EXPERIMENTAL WORK IN METHOD OF OVERALL PLANNING

Following is a translation of an article by Hua Lo-keng in the Chinese-language periodical, Hung-ch'i (Red Flag), Peiping, No 11, 1 October 1965, pages 22-28.

The tide of the great socialist revolution and construction is surging in the fatherland, and the Party's general line of "building socialism by going all out and aiming high to achieve greater, faster, better and more economical results" calls for the mobilization of every person. The mathematicians cannot, of course, keep out of it, nor should they adhere to established rules and find pleasure in fettering themselves with old and foreign ideas. How then can the mathematicians make use of the branch of science called mathematics to serve the building of socialism in a better way?

Mathematics is the science for studying "numbers" and "symbols." There are numbers everywhere, and no place is without symbols. To determine the vastness of the universe, the infinitesimal of the particle and the speed of a rocket, and to deal with ordinary matters of life, we cannot go without mathematics. Theoretically speaking, this is correct. However, as far as some mathematicians are concerned, when they really try to make themselves useful, they encounter problems. There are astronomers to handle mathematics dealing with the vastness of the universe. There are physicists to handle mathematics dealing with the infinitesimal of the particle. The dynamicists can handle mathematics for determining the speed of a rocket better than us. As to mathematics for dealing with ordinary matters of life, it makes us blush to say that we are not familiar with it and are unable to make calculation fast enough. Moreover, we are unwilling to do and are scornful of such work. What is to be done?

Really, "the road is like the blue sky and only I fail to find the way out." It seems that this is an old, big and difficult problem. However, the words of Comrade Mao Tse-tung have shed light deep in my mind. He said: "If you want to know the taste of a pear, you must change

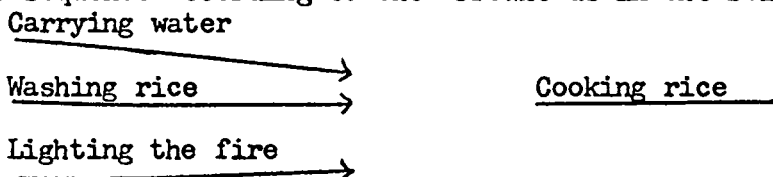
the pear by eating it yourself." ("On Practice," Selected Works of Mao Tse-tung, Vol. I, People's Publishing House, 2nd edition, 1952, p. 276) Right! We must make a bite at reality and find a way to make mathematics serve socialist construction.

Where to begin? Rice is eaten a mouthful at a time. As the broad masses of the mathematicians create, explore and try other methods, some of us first experimented with popularizing the method of overall planning. Beginning in last year, we have spent about half a year of time to conduct experiments in the spheres of civil engineering, machine maintenance and manufacture, metallurgy, chemical engineering, communications, railway, scientific research and quite a number of other projects.

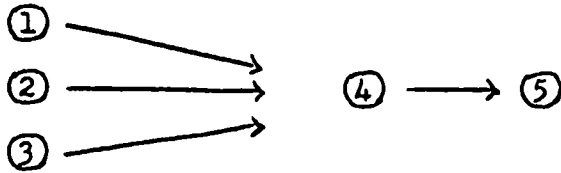
After making a bite at reality, the situation changed in a big way and we no longer just gave lip service to linking theory with reality, but began to look for concrete ways for mathematicians to link theory with reality. There are of course experts for the vastness of the universe, the infinitesimal of the particle, the speed of a rocket and the ordinary matters of life, but the mathematicians have also room to flex their muscles. The latter can become capable assistants to the former and play some specific roles which they are capable of playing.

One of the methods of overall planning we have in mind is the method of finding the principal line of contradiction in an industrial system (or capital construction or scientific research) with a greater number of links and more complicated arrangements. For the convenience of our readers, let us devote some space to illustrate this method.

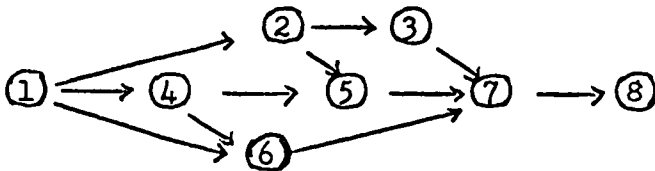
Every task is indicated with an arrow (\longrightarrow). The various tasks come in regular sequence. For example: the task cooking rice, must set after the tasks carrying water, washing rice, and lighting the fire, in regular sequence according to the arrowheads in the following diagram:



This diagram shows that it is necessary to carry water, wash rice and light the fire before rice cooking can begin. Numbers are allotted to the head and end of each arrow. Among them, ① \longrightarrow ④ indicates carrying water, ② \longrightarrow ④ washing rice, ③ \longrightarrow ④ lighting the fire and ④ \longrightarrow ⑤ cooking rice. Hence the following diagram:

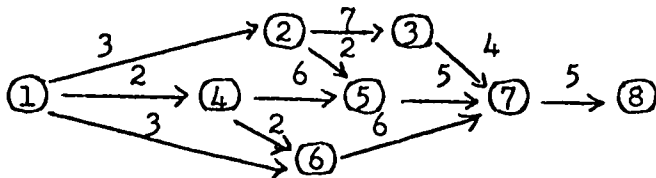


In a project with numerous tasks, a diagram of interrelated arrowheads can also be drawn in this way:

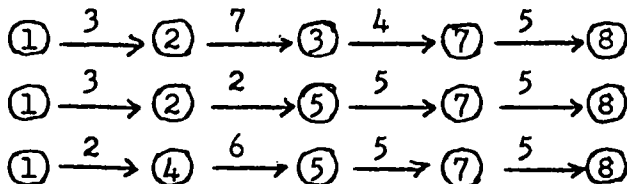


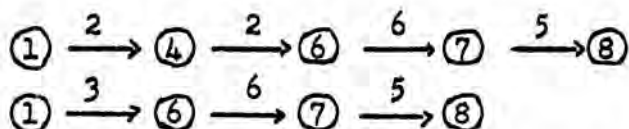
In this diagram there are in all 11 tasks which are interconnected. The diagram shows: task $1 \rightarrow 2$ must be accomplished before the two tasks, $2 \rightarrow 3$ and $2 \rightarrow 5$, can be carried out; task $1 \rightarrow 4$ must be accomplished before the two tasks, $4 \rightarrow 5$ and $4 \rightarrow 6$ can be carried out; the two tasks, $1 \rightarrow 6$ and $4 \rightarrow 6$, must be accomplished before the task $6 \rightarrow 7$ can be carried out; and so on and so forth, until the last task, $7 \rightarrow 8$, is accomplished and the whole project is then considered as completed.

The time needed to accomplish each task is written above the arrow. For example, since task $1 \rightarrow 2$ needs three days to accomplish, we write: $1 \xrightarrow{3} 2$. In this way, the number of days is given above each arrow, and the diagram of arrowheads becomes:

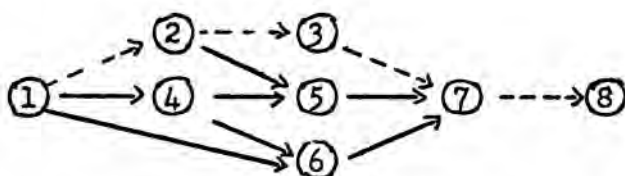


How many days are then needed to complete the whole project? We can see that from the first point (1) to the last point (8), there are in all five lines that run in the direction of the arrowheads:





Adding together the number of days on each line, the sums derived are respectively 19 days, 15 days, 18 days, 15 days and 14 days in proper sequence. The first line needs the greatest number of days and takes 19 days to accomplish. This is to say, regardless of how many days the other lines can be cut, if the number of days cannot be cut on this line, the whole project must still need 19 days to complete. We call this line the principal line of contradiction. It is generally marked with red color in actual operation, and is now indicated with dotted lines.



These are the things we introduce as the theory of the method of overall planning.

The advantages of this method are:

(1) The standing of the principal line of contradiction in the whole project is clearly seen. When there is one day of delay on the principal line of contradiction, the whole project is bound to be delayed by one day. If the number of days is cut by one, the whole project is also completed one day ahead of schedule. With this diagram in their hands, the leaders will find it convenient to grasp the principal contradiction and to make overall planning with all things considered.

(2) Additional shifts and hours which are unnecessary can be avoided. Sometimes, in order to finish certain task, it is necessary to put in additional shifts and hours, but after this task is completed, it is necessary to wait for the completion of other tasks, and this causes loafing. With the arrowhead diagram in hand, this defect can be avoided. Apart from this, some manpower and material supplies can also be released from the non-principal lines of contradiction in support of the principal line of contradiction, thus making rational use of manpower and material supplies.

(3) To be sure, objective conditions are not constant. For example, because of the subjective efforts of the workers on the principal line of contradiction, or because the rate of progress is speeded by

technical revolution, should difficulties which are hard to foresee emerge at a certain link of a non-principal line of contradiction, the transformation of the principal line of contradiction would arise, and what was originally a non-principal line of contradiction would become the principal line of contradiction. By gradually revising the arrowhead diagram with the development of production, the feasibility of such transformation would be foreseen, and measures might be adopted at an early date to avoid affecting the progress of the whole project.

(4) With the fulcrum of technical innovation and technical revolution clearly understood, it is easy to apply force on the blade. The project which is most time consuming on the principal line of contradiction is where we should carry out technical revolution in the first instance. As a matter of fact, this is also the origin of focal scientific research projects.

(5) In applying this method on planning work, it is most important to see that this method is used when planning begins. This will yield more advantages. For example, on the premise of insuring the quality of a certain engineering project which calls for higher speed, we can design a plan which makes most economical use of manpower under the condition that maximum speed is assured. Again, if the highest work efficiency is called for, we can design a plan which makes the most proper use of manpower to yield maximum result in the shortest time.

(6) The adoption of the method of overall planning can avoid unnecessary haste in work, carry out production on an even keel, and is consequently advantageous to guaranteeing and improving the quality of products.

(7) The arrowhead diagram can also be used to make a technical summation. With the diagram. By referring to it in the future, the rate of progress will be gradually speeded up in similar engineering projects.

In short, the application of the method of overall planning, can greatly improve efficiency in work.

As a matter of fact, this is actually the case. Although our exploratory work in the use of mathematics to serve socialist construction is merely at the beginning stage--at present, it is still "a method" with "some experiments" carried out in "not too long a time"--yet because of the leadership of the Party and the effort and support of the masses, according to what we have found out in more than ten experiments, the result has been obvious and encouraging.

There are many exciting cases in point.

For example, through adopting the method of overall planning in the capital construction project of a certain middle school, the period of work was shortened to 122 days. After making a penetrating analysis, this was cut further to 103 days. Through adopting technical innovations, it has now been cut to 86 days.

Due to the adoption of the method of overall planning, the time a refractory matter factory must stop work for the maintenance and repairs of certain machines was cut from the original 48 hours to 24 hours. When this was actually carried out, due to the efforts of the workers and other rational arrangements, only 17 hours were actually used. By stopping work one day less, about ten thousand yuan worth of refractory matter can be produced for the State.

There are too many cases for enumeration. Due to the adoption of the method of overall planning, the time saved amounts to between 20 and 30 percent in quite a number of cases, and even to 50 percent in some cases.

To be honest, although I have spent half of my life in mathematics, yet in my present participation in conducting experiments with the method of overall planning, when I see the usefulness of mathematics and the prospects of making extensive use of it to serve production and construction, and think of the possibility for future mathematicians to create, unearth and transplant even more methods for serving production and construction, and of the application of the method of overall planning spreading from the "spot" to the "area" and from the factories at the lower level to the companies or departments at the higher level, I really feel very excited. It is a pity that I am still unable to express systematically what I have seen and heard and felt. However, the return of the swallows heralds the advent of spring and a bumper harvest everywhere.

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The most fundamental harvest in work this time is my deep comprehension of the need to integrate theory with reality.

This method of overall planning is very simple in principle. Once it is integrated with practical work, its role as the bridge between the mathematical theoreticians and the production workers becomes manifest.

My experiments with the method of overall planning in the past few months has brought basic changes to my recognition. When I first

took up the work at the initial stage, I thought that the method of overall planning was a purely theoretical thing with some hypotheses added. But after working together with the practical workers on the spot for some time, the situation was entirely different. The method was imbued with life and vitality. For example, the "breaking" of the items of a work task is very simple in principle and seems to be abstract to the extreme. However, its contents grow rich once it is put in the concrete. The excavation of a tunnel from one direction is a work task. But if the tunnel is excavated from both ends in order to speed up the progress of work, this task is divided into two tasks, and the project can be completed in half the time. In a capital construction project, the excavation of foundation pits, the erection of mold boards and the injection of cement concrete are three continuous work procedures. But if each procedure is divided from one into two and intersected with another--that is, beginning to erect mold boards when some of the foundation pits have been excavated and to inject cement concrete as soon as some mold boards are erected--the period of work can be cut short. The capital construction project of a certain steel mill was divided from one into two in this way. Work was intersected, and the project which was originally scheduled to be completed in 30 days took only 11 days to finish. At that time, people were willing to discuss not only the method of overall planning but also various mathematical problems with me. Because of this, I feel that mathematical theory is not only vital but also of great use.

Abstraction is the characteristic of mathematics. The abstract application of science is wide in sphere, but if it is not applied in reality, it will become an "empty framework." We mathematicians constantly say that mathematics is of great use, but were unable to make use of it in the past. How sad we were! This course of steeling has really made me see the abstract role of mathematics. The same set of mathematical methods is applicable to some items which seem to have not the remotest relations with each other--for example, coke making, bridge building, book printing, assemblage of motor vehicles, construction of big buildings and extraction of antibiotics. Their operational processes can all be indicated with arrowhead diagrams. Their principal lines of contradiction can be determined by analysis in the same way, and the techniques of "paralleling" and "intersection" can likewise be utilized to arrange manpower and to shorten the period of work.

Experiments in the method of overall planning have also made me recognize the advantages of integrating theory with reality to teaching work.

In teaching reform, the leaders advocate that the things taught must be less but finer, but they have no idea what must be cut and what must not. They are aware theoretically that quite a number of things ought to be cut away, but they have misgivings when they go into action. They fear that once the axe falls the useful things would also be cut away. This is quite possible because we have not integrated ourselves with production reality, and as a consequence, our tendency is to keep the theories which are attractive in form but to cut away the things which are not good in appearance and not easy to explain. For example, when I taught calculus before liberation, I omitted the most useful "numerical integration" and taught many "ingenious" ways for finding the original function. What caused such a phenomenon? In one word, lack of practice.

When we work on the method of overall planning this time, other comrades have provided us with quite a number of mathematical problems, thus making it possible for us to affirm some constantly used sections in mathematics according to actual needs. We are convinced that as we gradually enlarge the sphere and penetrate deeper into work and as the number of participants gradually increases, it is entirely possible to select the most important, the most commonly used and the most useful things from the different branches of mathematics. This will bring teaching reform to a higher level.

Teaching work should be closely integrated with the reality of present-day production. The need of the reality of production should be a constant indispensable to teaching. As far as I myself am concerned, as I have spent "half of my fighting life" around theory, I must rectify my mistakes and soak myself longer in reality. I must study in a down-to-earth manner materialistic dialectics in practical work and scientific practice.

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In order to implement the principle of integrating theory with reality, it is also necessary to understand correctly the relationship between elevation and popularization.

When Comrade Mao Tse-tung discussed literary and art work, he said: "There is no sharp dividing line between popularization and elevation....The people need popularization to start with and then elevation and further elevation." "Talks at the Yen-an Forum on Art and Literature," Selected Works of Mao Tse-tung, Vol. III, People's Publishing House, 2nd edition, 1953, p. 864) This is also the case with mathematical work.

Mathematicians can solve mathematical problems in two different ways.

One way is for us to deal with the question and to give the inquirer the answer without telling him anything about the method used to find the solution. The other way is for us to give him not only the answer but also to teach him the method. If the former method is used, the inquirer will have to approach us again for advice when he comes across a similar problem next time. If the latter method is used, the inquirer will not come to us again for the answer to a similar question because the method is known to him. If he comes again, the nature of the problem must have changed and become more difficult. Which way is better? We should adopt the latter one, and hand out without reserve everything we know--the wider the sphere the better. Although the knowledge is no longer monopolized by us, yet because it is known to more people, it can serve the people within a wider sphere, and it is also easier for us to improve it. What is pleasing is that after this is done, those who come to look for us have not decreased but increased--to such an extent that we cannot handle all of them.

As far as I myself am concerned, I often tended to have a great regard for elevation but to slight popularization in the past, thinking that it was difficult to elevate knowledge but easy to popularize it. After coming into contact with reality, I feel that both elevation and popularization are necessary. At the same time I have discovered that while it is difficult to elevate knowledge it is also not easy to popularize it. In the course of elevating knowledge, I have failed hundreds and thousands of times, each time emerging with a bruised nose and swollen face. I have gone through some rough road. But in my attempt to popularize knowledge, I have also discovered that it is difficult for me to give a popular version of the thing which is well known to me. I may have something which I consider to be popular, but once it is read to the masses, they are still unable to understand it. It is a common thing for me to change my draft speech for more than ten times. It is of course embarrassing for a speaker if he cannot make his audience understand what he says. But when he is understood by many people, there are also more people who are capable of stating their views, and once there are mistakes, such mistakes will be known to all. If the speaker has not the correct viewpoint, he will feel that this is a troublesome and disgraceful matter. But in substance, this is a very good thing. With more views made known, there are more chances for him to improve his work, to correct his own mistakes and to absorb nourishment.

I do not mean to say of course that we ought to loosen our grip on elevation work or that such work is not worthy of attention. Elevation is still work of great importance. My idea is that it is necessary to understand correctly the relationship between popularization and elevation,

as Comrade Mao Tse-tung said in his "Talks at the Yen-an Forum on Art and Literature": "Far from being an obstacle to elevation, popularization in our sense affords a basis for our work of elevation on a limited scale at present, and creates the necessary conditions for our work of elevation on a much more extensive scale in the future." (Selected Works of Mao Tse-tung, p. 864)

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In the course of conducting experiments with the method of overall planning, I have also been taught a profound lesson by the masses. I am aware of the great significance of the mass line, and have seen at the same time the activism of the working masses and the intellectuals from among the working people in wholeheartedly contributing every ounce of their strength to socialist construction.

I am most deeply impressed by the fact that when I am with the masses, I always feel the energy which drives me forward and that the working people are very wise. At the time of making use of the method of overall planning, they have created many things on the basis of the characteristics of some engineering projects. For example, they have made creative use of the coordinate of time, the coordinate of labor, double-end "abstract work," the system of single notation, adding notes in circles and not counting the equation of time. This is not all for they have also begun to feel out some ways to deal with continuous production, multiple target production and allocation of manpower.

The mass line is really a treasure. People who personally participate in labor are most familiar with the situation of work. When the stream lined graph is handed over to the masses, they constantly advance ideas for the revision and improvement of it according to their own experiences. After the regulating and planning personnel come in touch with this method and draw arrowhead diagrams on the basis of their business, they often promptly cut the work hours. When such a diagram is handed to the heads of work sections (or work groups) for joint study, because the principal line of contradiction is clearly defined, they submit plans for the work sections under their charge, and the work hours are cut for the second time. When the streamlined graph is handed to the workers, they clearly understand where they stand in the whole project and exert themselves in work, and the work hours are cut for the third time. In this way, for every layer penetrated, we move another step forward. Here is an example: There was an engineering project which took 39 days to finish according to the original plan. After an arrowhead diagram was drawn, this was changed to 30 days. The heads of work sections then discussed the work, and the time was changed to 26 days.

Actually, the project took a little more than 25 days to finish. The project was delayed for some time by units outside the factory which were not covered by overall planning. Had overall planning been extended to cover these units, they estimated that the project would take about 20 days to finish. It is true that once theory is mastered by the masses, it will be translated into material force.

Notwithstanding the very short time expended by me on experimental work, I have acquired a completely new understanding in respect to the method of overall planning. The "empty shelves" are no longer empty but are stocked with 80 or 90 articles. Take for example the book Talks and Additional Talks on the Method of Overall Planning which I wrote. It was revised again and again for more than ten times before it was published. As a result, I am in fact no longer the author of this book but a compiler of mass wisdom. A few days after the publication of this book, at an exchange meeting, I noticed many things not found in this book. Science in the hands of the masses is like the bird returning to the woods and fish in the water.

The application of the method of overall planning has aroused great interest among the workers and cadres and drawn their favorable comments. These comments show how the workers and those comrades engaged in practical work welcome the mathematical theoreticians who have come out of their offices. Although our achievements are very small, yet they also encourage us with highest enthusiasm.

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To be honest, I am still a person who has not passed the hard ideological tests, and is still imbued with many ideas of bourgeois individualism. This time, I owe it entirely to the concrete assistance of the Party organization and other comrades for my not dropping behind the ranks in works.

To be frank, when I left Peking for the site to conduct experimental work for the first time, I was still courageous and full of confidence. On the way, I still remembered Comrade Mao Tse-tung's teaching: Slight the enemy strategically but take him seriously tactically. On my arrival at the site, I found that everything was run on a large scale, and the systems were very complicated. Moreover, I had no knowledge of this nor any understanding of that. I had really not come into contact before even with some elementary engineering knowledge (like the cross sectional drawing). Because of this, I was scared, and like the "dragon-loving Yeh Kung" I became rather timid. Fortunately, the Party organization of the locality carried out some ideological work among us at the right time.

On the one hand, it sent us deep into the site to acquaint us with the situation and the new people and deeds. On the other hand, it gave us encouragement. When I saw other comrades working selflessly, my consideration of "self" gradually faded. Up to moment, I am aware that I am still far away from "selflessness." Yet with each barrier negotiated, I have grown wiser. As I fight with other comrades, because of the things I have seen and heard, I am gradually able to "forget myself."

Such work has also overcome my arrogance and rashness. Comrade Mao Tse-tung taught us: "Open-mindedness brings progress while arrogance makes one backward." For a long time I had mistakenly thought that open-mindedness meant superficial modesty. Because of this, I always tried to show superficial modesty. As a result, I was neither fish, flesh, nor fowl. I insisted on formality and turned modesty into hypocrisy. In my present work, I have come into contact with quite a number of intellectuals coming from among the workers and working people, and learned a great deal of things from them.

Meanwhile, I have come to understand that the so-called hard tests in business which I was able to pass in the past are not without problems. It can only be said that in the sphere of my own specialization, I am a little more proficient than the students and beginners. Before practical work which changes in a thousand and one ways, all the loopholes in business have been exposed. People may ask questions which are not what you are specialized in. For example, I have not studied well such branches of learning as mathematical statistics and theory of probability, but I have come across many problems bearing on statistics. This also makes me understand that reading books without digesting them cannot stand practical tests. To be sure, I can excuse myself by saying that "this is not my line," but seeing that other people are working selflessly to build the fatherland, can I be so hard-hearted as not to think about such problems? Once I think, I discover that I am not hard-baked enough in many aspects of business. I know that I am not hard-baked enough in the aspect of "redness" and am also quite a distance behind the actual need of the fatherland in the aspect of "specialization." I know that a person must be able to pass the hard test of integrating redness with vocational proficiency before he is really hard-baked and can meet the needs of the Party and socialist construction.

On the other hand, my recognition also lags far behind objective reality. When I took up such experimental work, I was always not sure of myself, and feared that other people might say that mathematics was "tasteless" and "shallow." This was essentially a one-sided view which was based upon "measuring the mentality of the new people with the yardstick of old self" and was not in conformity with objective reality. Not long ago, I

attended a symposium with a number of mathematicians and felt that, thanks to the education of the Party, the mathematicians had assumed a new look. Many people have joined the first line of socialist construction. Their personal experiences and the depth of such experiences have opened my eyes. They teach me many things and make me understand that "taste" has its class origin. The pure academic type of "taste" and the bourgeois "taste" of "wasting one's energy in hobbies" are bowing their exit from the historical stage, and the healthy "taste" of serving socialism is making its fragrance felt.

Apart from this, I have also switched a mistaken view which I have brought from the old society in experimental work. In the old society, "people handling the same line of work are opponents" and the scholars slighted each other. Whenever a person took a step forward into a new sphere, he would experience some exclusion, and might even be attacked for no reason at all. But things are entirely different in our new society today. The intellectuals coming from among the working people show no displeasure because we mathematicians show an interest in industrial work. On the contrary, they extend their hands to give us warm welcome. They do not hear at us because of our ignorance of concrete business. On the contrary, they patiently teach us and help us. This makes me understand that under the socialist system, all people in the country have the same goal, and the harder they work, the greater their unity.

An old lady once said something which is very useful to us mathematicians who have come over from the old society. She said: "You may be the last generation of the old Peking opera players." We can now answer the concern of this old lady by saying: "We are determined to become the first generation of new Peking opera players." Let us learn from the Peking opera players and revolutionize the stage for mathematical work.

In short, I am deeply aware of the leading role of the Party in the scientific sphere. I am still far from able to learn well the great and profound thought of Mao Tse-tung. But I have begun to understand and taste its sweetness. I have some desire of conducting study self-consciously and am willing to study it like a primary school pupil. Because of my low awareness, I often followed a zigzag path and make a poor job of work in the past. Fortunately, I am not too old and am willing to give pursuit to and make effort to overtake the advanced comrades. I want to unite with them, learning from and helping each other. I want to rush forward, dash into the wave of revolution, and learn, teach, apply and study mathematics for the revolution.

The ancient people said: "A man who has heard the Way in the morning can die without regret in the evening." No, I want to change this to read: "As soon as the Way is heard, it can be put into application."

I have not achieved much in work and my comprehension is also not profound. My present mood is somewhat like that of a child who is paying his first visit to the seaside. After picking up a shell, he promptly runs toward his mother to show it to her.

A HOSPITAL THAT IS AT THE SERVICE OF PEASANTS

Following is a translation of an article by Hsuan-hung in the Chinese-language periodical, Hung-ch'i (Red Flag), Peiping, No 11, 1 October 1965, pages 29-34.

In Wafang, a small out-of-the way market town in T'aoan hsien, Kirin Province, there is a small hospital which looks "rustic" and has nothing except its signboard to suggest to an outsider that it is a place for providing peasants with medical care. Yet this "rustic" hospital is brimful of revolutionary vitality and remarkably fulfills its tasks of medical treatment and prevention. It also helps the clinics of neighboring communes to handle difficult cases. The peasants of these communes welcome this small hospital. Comrades of this hospital listened to Chairman Mao's words, acted according to Chairman Mao's instructions, overcame numerous difficulties, built the hospital the hard way, broke out confines, sent doctors right to the doors of the peasants, and served the peasants and production with all their hearts. Local peasants said, "The hospital is really opened for us!" This is the Wafang Central Hospital.

The Hospital is Built by Themselves with Industry and Thrift

This hospital is named Wafang (tiled-roof) hospital but is housed in a structure built of earth. Somebody remarked, "It is too humble. Why not build a stiled one?" But comrades of Wafang Hospital viewed the problem in a different light.

In 1961 the higher level decided to remove the hospital from the center of the market town to its southeast corner and to expand it. The place in which the hospital is located was formerly a bush ground with only a dilapidated horse shed used by a horse mating station and with three huts which would collapse any time. The grass around the huts was knee-deep and the place was infested with mosquitoes and flies. It was turned into a marsh in the rainy season, making it difficult for horses

and carts to get through. Before the hospital was built all the hospital personnel had thought: "After removal certainly the State will make investments to build a well-arranged hospital." Thus the structure of the building, the number of rooms, the layout and the hospital facilities were the center of their discourse. The more they talked about the matter the more they got excited. They drew up a plan which envisaged the employment of 35 personnel, the building of a 35-room brick and tile structure and the provision of an all-purpose operating table, etc. Contrary to their expectations their plan was not approved. Several leading cadres of the hospital thought in their minds: "We are told to remove and expand the hospital but our plan is not approved. Can it be said that this rotten hangover is to be used as a hospital!" The more they thought it over the more they became confused and were at a loss to understand where they stood. At the time the hsien committee instructed them to make a serious study of Chairman Mao's article, "Introducing a Cooperative." They organized all comrades in the hospital to study this article over and over again. Heated debate ensued in the hospital as to the type of hospital to be built and how to build it. After study and discussion they unanimously came to the conclusion: "To put up a modern hospital it will be necessary to ask money from the State. We should change the features by ourselves."

Accordingly, intense labor began in the autumn of 1961 to build the hospital.

At the early stage of hospital building the doctors, nurses and administrative personnel were crowded in three mud rooms. The rooms were used both as a registration office and a general office. A small room was partitioned off in the horse shed and used as an OPD. They performed labor on the one hand and gave patients medical treatment on the other.

Each and all had a drive and worked hard to build the hospital. Dr. Li Shu-hsin, a demobilized serviceman and a Communist Party member set an example by his conduct and gave an account of the hardworking revolutionary spirit of the 8th Route Army's medical personnel. This gave a great encouragement to all who expressed their determination to carry on and develop the fine tradition of the 8th Route Army's medical personnel and to hold out despite difficulties. They vied with one another to mix mud for plaster, make earth bricks, carry earth, put up walls, pull down old houses for timber, fill up the pond and clear the stable of dung. The pharmacist Sung Kuo-tung picked labor-consuming jobs. He used to come to work early and go off duty late. He carried 30 piculs of earth more than other a day. People called him "Herculean Sung." The physician Ma Wan-ch'uan, who knew nothing about carpentry, volunteered his service as an assistant to a carpenter and learned the

trade while working. Soon afterwards he could handle some simple carpentry independently. He acted as the commander in putting up the beams of the house and served as the backbone in building construction. People called him "Carpenter Ma." CYL member Shen Tieh-chih was physically weak but had an "unbending" spirit. He undertook the job of building two heated walls for the outpatient clinic. He laid bricks thrice but the wall collapsed each time. Some told him: "This is a job even difficult for a mason. You better give it up." But he did not lose heart and, after studying the matter many times, he eventually succeeded in building the walls. At the same time he learned how to lay furnace bricks, put up heated beds, paper the ceiling and fix the glass panes. He became an all-round man in the course of building the hospital. People called him skilled "Carpenter Shen."

A 14-roomed new house was built after more than two years of hard work but the interior was not decorated. The work must be rushed in order to meet the needs of the outpatient clinic. It was the cold winter and the weather was severely cold, making it difficult to do the job. To pave the floors with bricks, old bricks were dug out from the old house foundation which was frozen hard. The hands of some comrades blistered and the shoulders of others were swollen. After seven days of hard work they dug out more than 7 thousand pieces of bricks and paved the floors of 14 rooms with bricks. The outpatient clinic, the general office, the registration office, the operating room, the dressing room and the ward were built.

Labor had won its fruits and steeled man. All regarded the hospital with their own hands as their home and did everything to take good care of the things belonging to the hospital.

By industry and thrift they solved the problem of therapeutic instruments which were lacking. The hospital had no operating table of the proper type and used as one a gynecological examining table presented by the hsien hospital. The examining table was not long and high enough, so its height was raised by placing 8 pieces of bricks underneath and its length was increased by joining it to an ordinary table. But they found it inconvenient to perform operations on this make-shift table.

Comrades Ma Shu-hang and Wei Tsan-wei determined to make an operating table by themselves. But they could not make up their mind right away as to the pattern of the operating table to be made. One day as they were having a hair-cut in a barber shop they saw how the height of the revolving chairs could be adjusted. This gave them an enlightenment. They used for their reference the drawing of a multiple-purpose operating table, which they borrowed from Shenyang. They then proceeded to work

and eventually made a semi-automatic operating table, which is still in use in the hospital. Further, they used wooden boards to make simple "back supports" and converted old bottles into alcohol lamps and hanging bottles. The urgent needs of surgery were thus met. Minor jobs like plastering, making of instruments for everyday use, repair etc. were done by the comrades and no outsider workers were employed. All the eight years they made, washed and mended all the masks and gowns for medical personnel and the outfits for wards, thereby saving more than 800 yuan for the State. This self-reliant spirit of running the hospital by industry and thrift has been maintained all along.

Forming One with Poor and Lower-Middle Peasants and Remolding Their Thoughts

There are eight young doctors -- four college students and four graduates of intermediate specialized schools -- in Wafang Hospital. When they first came here they were not happy with things here. They thought in their minds: "What can we do in a town which does not look like a town and in a hospital which does not look like a hospital! More than 10 years' time has been spent in vain."

When Wei Tsan-wei graduated from Shenyang Medical College and received an assignment he wanted to stay and work in Shenyang. He thought that working in a major city and a modern hospital and performing operations under the direction of specialists and professors he could one day become a well-known surgeon. Contrary to his expectations he was assigned to Wafang Hospital in T'aoan hsien, Kirin. He was greatly disappointed when he found that the hospital premises and medical facilities were simple and humble beyond his expectations. He believed that if he worked here his youth, ideal, future would burst like a soap bubble. He was sad and restless. He even returned to Shenyang without the knowledge of other people. It was only after he was sternly criticized by his elder brother that he came back to Wafang Hospital. The behavior of his school-mate Li Kuei-shan was not much different from his.

Their behavior was observed and borne in mind by Meng Kuang-li, Secretary to the hospital Party branch. He thought that these young comrades who were brought up in a socialist school could be transformed despite their shortcomings. But how to help them transform themselves? Chairman Mao said, "The ultimate line of demarcation between the revolutionary intellectuals on the one hand and the non-revolutionary and counterrevolutionary intellectuals on the other lies in whether they are willing to, and actually do, become one with the masses of workers and peasants." (May 4 Movement, "Selected Works of Mao Tse-tung, People's Publishing House, 2nd 1952 edition, p. 546) Right! They should get

steeled in the countryside according to Chairman Mao's instructions. Accordingly, Comrade Meng Kuang-li often took them to the masses and let them give poor and lower-middle peasants medical care, eat and live in the houses of the masses, have chats with poor and lower-middle peasants and perform labor together with them. He let them get acquainted with the masses, learn from the masses and transform their thoughts and sentiments.

One morning in the spring of 1963 the wife of poor peasant Kuo Yu-liang of Ch'angshan Brigade suffered from retention and profuse bleeding of placenta. The patient was in critical condition. The production team sent a cart to the hospital to fetch the doctor. Comrade Meng Kuang-li, Wei Tsan-wei and Chang Fa (nurse) answered the call. As soon as they got in the cart it sped away. Wei Tsan-wei objected to the cart running too fast. Being afraid of a fall, he tightly held to the cart board. They were half-way when they saw a man on horseback coming up and shouting: "Hurry up! She is dying!" By the time they arrived the lying-in woman was without consciousness. Injection must be made at once to counter the shock. Wei Tsan-wei was nervous at this critical movement. He failed to have the vein tied for injection and he was so worried that his face was covered with sweat. Chang Fa took over the injector and at the first shot made an intravenous injection. At the time of removing the remnant placenta from the lying-in woman, Wei Tsan-wei got so nervous and his hands shook so much that he failed to remove it clean. Later, it was under the direction of Comrade Meng Kuang-li that he performed the operation and brought the patient out of danger. The mother-in-law of the lying-in woman held Wei Tsan-wei's hands and said in tears: "You are indeed good doctors sent by Chairman Mao!" Also moved to tears Wei told Comrade Meng Kuang-li with emotion: "Secretary Meng, I now sense the real significance of being a people's doctor." Upon hearing the news that the life of the dying woman was saved, neighbors turned up and asked the doctors for medical treatment and physical check-up. They crowded round them and asked this and that affectionately.

After this happened, Wei Tsan-wei wrote in his diary: "My visit to Ch'angshan Brigade gives me a profound education. I object to the cart running too fast. Being afraid of a fall I time and again demand that the cart be slowed down. The thing on my mind is my personal safety. On the other hand, the cart-man continues to urge forward the horse by constant whipping in order to make the greatest speed. What is on the mind of the cart-man is the life of the patient. The two kinds of mood are entirely different from each other, one being egotistic and the other altruistic. In the past I always held that having studied in college for five years I had acquired sufficient theoretical knowledge and mastered technique. Yet even this common disease bewilders me. Not that there is

no room for my ability but that I am selfish and incompetent. Formerly, I knew nothing about the peasants and was not interested in their well-being. Over the past year I have seen with my own eyes the noble qualities of poor and lower-middle peasants—hardworking and being honest and attached to the collective. I now deeply realize that a doctor ought to show concern to the illness of the peasants and understand their suffering. This is my bounden duty."

Having been steeled in the countryside, the young doctors took a new view of themselves. They said, "The countryside is indeed a broad world in which much can be accomplished." They grew fond of Chairman Mao's works and seriously studied them at their leisure hours in the mornings and evenings. Wei Tsan-wei said, "Once I studied Chairman Mao's essays but could not link them to my thought. Now I have a different experience in study. I feel that every word of Chairman Mao's moves one's heart and seems to be addressed to me." Since 1963 they have studied "In Memory of Norman Bethune," "Serve the People," "The Orientation of Youth Movement," "An Analysis of the Classes in Chinese Society," "On Contradiction" and "On Practice" over and over again. Chairman Mao's works changed Wei Tsan-wei as well as other young doctors in the hospital.

One evening Dr. Li Kuei-shan, who had booked a ticket, was about to go out for a good time and see a movie. Unexpectedly a man from No. 2 production team of Yuli Brigade turned up and called for a doctor, saying a woman was having difficult labor and was in critical condition. The doctor on duty was not there at the time. Dr. Li thought: It was not easy to get a chance to go to a movie in this out-of-the-way town. It was the business of the doctor on duty and of the midwife to answer the call, and not quite mine. I better go to movie. But on second thought he recalled to his mind Dr. Norman Bethune. Dr. Bethune's spirit of doing everything for others' benefit and noting for his own was shown in his extreme sense of responsibility in his work and in his extreme warmheartedness towards his comrades and the people. "How can I be warmhearted and responsible to the people if I care nothing for a patient who is in critical condition?" He put the "doctor's bag" on his back and hurried to the house of the patient. Through emergency operation the baby was delivered and mother was brought out of danger. But the baby suffocated and no oxygen was available to revive the baby. He turned it over in his mind and concluded that the only thing to do was to apply artificial breath. At first he hesitated to apply artificial breath because the new-born was dirty. In a flash the great thought expounded by Chairman Mao in his "In Memory of Norman Bethune" came to his mind. He forthwith stooped down and pressed the mouth of the new-born with his lips to help it breathe. This went on for a good half hour and he was wet through with perspiration. The baby was revived. The whole

family shed hot tears as the baby cried. They said, "Thank you for saving mother and son." Li Kuei-shan told them: "You should thank the Party and Chairman Mao. It is Chairman Mao who has taught me to do this."

In their medical practice the young doctors developed the thought and sentiment of "sharing the worry and suffering of the patient."

In November 1963 the wife of demobilized serviceman Hsing Yu-ts'ai of Ch'angshan Brigade had a violent ache in her abdomen. Hsing Yu-ts'ai was about to send her to the hsien hospital for he was afraid that Wafang Hospital would be unable to cure her disease. Dr. Ma Wan-hsiang, who was in a circuit tour there, persuaded him many times before he agreed to send his wife to Wafang Hospital. All the doctors in the hospital held repeated consultations and made a diagnosis of "ectopic pregnancy." Her Fallopian tube was broken and internal hemorrhage was serious, and the patient had had several shocks. It was imperative to perform surgery. But Hsing Yu-ts'ai told the doctors: "Even the lavatory of the army hospital in which I was once hospitalized was better than your hospital. If you perform surgery you must guarantee safety." This gave rise to a debate in the hospital as to whether the patient should be transferred to another hospital or operated on in the present hospital. Some said, "Nobody can guarantee against trouble in an operation and nobody can guarantee safety. Let her go away." Others said, "When we performed the first appendectomy in our hospital the patient had great pain because our technical level was low and our equipment was poor. The masses were angry and threatened to take down our signboard. Our present facilities are not much better than what we had before, and such an operation is fraught with great danger. The patient should be transferred to another hospital right away." But the majority of doctors disagreed with the suggestion, saying: "If we send her away she will surely die on the way. If we treat her here there is a chance of saving her life. We cannot leave one to die." Eventually they unified their thoughts and talked Hsing Yu-ts'ai round. The result was that the operation went on smoothly and the patient was saved. Confronted with this fact Hsing Yu-ts'ai was ashamed and uneasy. He said: "But for your bold and responsible spirit my wife would have died."

This case made them examine their previous thought of transferring to other hospitals cases which it would be possible to save on the spot. They said: "To transfer to other hospitals serious cases which could be saved on the spot may give one an impression that a 'responsible' attitude is assumed towards the patients but actually takes into account only the name of the hospital and personal considerations of the doctors. It means assuming an irresponsible attitude towards the patients and to the work,

picking the easy, shunning the difficult, shoving heavy load on to others and choosing the light ones for ourselves. It means that when anything comes up we think of ourselves first and of others only afterwards." They went on: "While technical equipment is of great importance in performing difficult operations, we shall be able to perform them as long as we take the peace and danger of peasants into consideration and strictly respect science."

Having raised their thought and cognition the medical personnel endeavored to raise their level of medical technique and tried to create conditions for saving very serious cases. Since the operating room was not close enough, they exerted utmost efforts to improve the disinfective measures. Lacking operating table of the proper type they used a wooden table as an operating table. Lacking lighting equipment they used electric torches and oil-lamps for lighting purposes. With such simple facilities they are now able to perform comparatively complicated operations like repair of inguinal of hernia, appendectomy, cesarian section, correction of ectopic pregnancy, ovarian cyst operation, entero-enterostomy, gastroplasty, splenectomy. So far they have performed 247 operations without causing infection and pustulation, and have saved many lives.

Serving the Peasants and Production

Comrades of Wafang Hospital have deeply realized from their work that rural hospitals are at the service of peasants and should suit the convenience of peasants, facilitate production and create conditions for providing peasants with medical care.

Local peasants experienced many difficulties when coming to the hospital, particularly during the busy season of spring plowing, summer hoeing and autumn harvesting. Peasants affected by serious diseases had to be carried by man or cart to the hospital. Production was thus hindered. It frequently happened that owing to pressure of work, long distance, great expense and shortage of time, peasants did not receive proper medical care and minor cases were turned into serious cases.

In such circumstances, they divided the hospital into parts during 1960 and sent six doctors to set up medical treatment centers in Kungho, Pait'atzu and Ch'angming production brigades. This made it more convenient for the peasants to receive medical care at the centers than in the hospital. Going a step further to convenience the masses, the hospital adopted in 1963 a method of assigning doctors to designated areas and delivering medicine to the door. From early 1963 to the end of 1964, the number of visits by patients reached 19,800, 50 percent of the total number of visits registered during the same period. Chang Kuo-ting, a doctor of

the traditional school made a circuit tour the whole year round. In 1963 he answered 3,105 calls. This method was welcomed by the masses who said, "In the past the peasants went to a doctor, now the doctor comes to the peasants who receive medical treatment in their homes. Such a thing never happened in the old days!"

In the spring of 1964 measles broke out among the infants and children in Ch'angshan Brigade during the busy drought-fighting and sowing period. For half a month Dr. Yang Chen worked hard to serve the peasants in the brigade. Sometimes he kept vigil day and night over the patients and carefully treated them. Sometimes he went over several villages in one night and gave circuit treatment to the peasants. The masses advised him to take rest and specially placed a horse at his disposal, considering that he was busy and had no proper time for food and sleep. The concern shown by the masses increased his enthusiasm for serving the sick infants and children. While on a circuit tour one night, he dozed on horseback owing to fatigue and fell from the horse, and his hands were injured. But he persisted in his work. Thanks to his efforts, 108 sick children (26 of them had complications of pneumonia) were saved and soon recovered. The brigade cadres said, "If Dr. Yang were not with us, many children would have probably lost their lives and we would have lagged behind in production. If we sent all the peasants to the hospital the brigade would have to make 75 trips in carts and spent 150 working days. Much land would miss the time of sowing at the important juncture of drought-fighting and sowing. Now we have delivered all the manure and finished all the drought-fighting and sowing jobs. Commune members have a great enthusiasm for production!"

Summing up their work for this period, Comrades of Wafang Hospital came to this conclusion: "Living in the house of peasants and keeping vigil over the patients the doctors served both as doctors and as nurses, kept constant touch with development of diseases, suited the remedy to the disease, raised the percentage of cure and made the patients recover early. This lightened the burden of peasants and facilitated collective production. At the same time, it made the relations closer between the doctors and the masses." Since then they have taken a big step forward on the road to serving peasants and production. A system of "home bed" was widely enforced during the circuit tour made by the doctors. Under the system, serious cases were treated in their homes and were placed under the care of designated doctors until they completely recovered. So far 366 home beds have been set up. Commune members remarked with satisfaction: "It was not easy to call a doctor in the old days. Now the hospital is moved to our home."

The medical care given in this period deepened the affection between the hospital personnel and the masses. Each and all aimed at suiting the convenience of the masses and aiding production.

Li Hsi-feng, a member of Huchu Brigade who suffered from gangrene of intestine, came to the hospital for enterostomy. For this operation transfusion of large amount of blood was imperative. The brigade brought in more than 40 laborers in three carts for taking blood examination. The examination showed that only six of them had the same type of blood as the patient. The whole process of bringing in the laborers for blood examination caused the brigade to hinder production for a whole day. This matter gave the laboratory technician Huo Shu-mei food for thought. She thought in her mind: "Chairman Mao teaches us that we must work in the interests of the people. Yet I sat in the hospital, made telephone calls to the brigade head and called in men to make blood examination. So many commune members made the trip in vain. Production was hindered. Is this not disadvantageous to the masses?" Since then whenever she went out she would bring with her instruments of laboratory tests, examine the types of blood and transfuse blood on the spot when necessary. When a seriously ill person came to the hospital for blood transfusion, she would go to his production team to determine the types of blood and organize those with the same type of blood as the patient's to come to the hospital for blood transfusion. Hsu Hsiu-ying, member of Junghua Brigade bled profusely after labor and needed instant transfusion of blood in the hospital. Huo Shu-mei together with the doctor, braving strong wind of 7-8 grades, walked 20 li to the production team where they examined the types of blood. What they did moved the hearts of the masses.'

In the long course of contact with commune members the medical personnel of Wafang Hospital deeply realized the necessity of improving the environmental hygiene in the rural areas in order to protect the health of commune members. To this end they sent three doctors to Huai-teh brigade to make experiments. The doctors concerned gave medical treatment to patients on the one hand and popularized hygiene knowledge on the other. Whenever they had time they would help the masses improve the environmental hygiene. Commune members said this: "If the doctors who are so busy help us to improve the environmental hygiene, can we stand aside and do nothing?" Accordingly during the slack season and at their leisure hours after work, more and more people joined in the work of hygiene. Ever since the improvement in environmental hygiene, no cases of infection have been reported in this brigade. Quantities of night soil were accumulated each year in coordination with the hygiene measures. Commune members said, "Hygiene keeps man away from trouble and livestock away from diseases. More manure is accumulated and more grain is gathered. It is really a measure for increasing production and prolonging the life of man."

The experiments made in Huaiteh Brigade convinced comrades of the hospital that the hygiene outlook of the countryside could be changed only by arousing the enthusiasm of the masses. Accordingly they aroused the masses to improve the hygiene conditions in other brigades. Further, they trained 74 health workers and provided each team with a health worker. At the same time they trained 32 midwives for various production teams, set up four midwifery stations, and universally introduced new method of delivery. No cases of death due to puerperal fever or neonatorum tetanus were reported these years.

Furthermore they continued to improve the OPD work in order to convenience the masses and serve production. Formerly the OPD of Wafang Hospital opened in the same hours as the city hospital. During the busy farm season, the peasants got up early and the patients came to the hospital before the medical personnel came to work. The masses were dissatisfied with this. Later, according to different seasons and the regularity of visits the medical personnel adopted a method of "giving medical treatment as soon as the patients come." The OPD opened on Sundays and holidays as usual and the medical personnel went to work ahead of the usual time during the busy farm season. This method made it possible for the minor cases and the escorts to the very sick patients to return to their production posts early. Commune members said: "In the past each time we went to a doctor we lost one-day work. Now we receive medical treatment without hindering our work." Upon discovering that the masses were not accustomed to taking medicines at fixed hours, they used the languages familiar to the peasants such as "early morning, noon, afternoon, evening, midnight, cock crowing" as the times for taking medicines. The masses said, "The hospital is really for us and is so thoughtful."

For Wafang Hospital the road to serving peasants and production is becoming wider and wider. But they feel that what they do now is still far from the needs of the masses. They have repeatedly expressed their determination to act accordingly to Chairman Mao's instructions more firmly, to sum up their experiences, to overcome their shortcomings, to continue to forge ahead, to make the hospital work a greater success and to give greater satisfaction to the peasant masses.

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