Open-Door Scientific Research

— Achievements of a scientific research institute

SINCE the start of the Great Proletarian Cultural Revolution in 1966, the workers, cadres and researchers of the Institute of Genetics of the Chinese Academy of Sciences have under the leadership of the Party taken class struggle as the key link, continually criticized the revisionist line in scientific research and persisted in the principle that scientific research should serve proletarian politics, serve the workers, peasants and soldiers and be integrated with productive labour. By carrying out open-door scientific research, they have completed a series of research projects, some of which are up to advanced world standards.

This institute specializes in the study of the laws governing heredity and variation of living things and their application. Its research projects are closely linked with industrial and agricultural production, national defence construction and medicine. But, prior to the Great Cultural Revolution, owing to the influence of Liu Shao-chi's revisionist line, its scientific research was divorced from proletarian politics, from production and from the workers and peasants. And only a few of their research items contributed to socialist construction.

During the Great Cultural Revolution, the cadres, workers and researchers criticized revisionism and the bourgeoisie and began to carry out open-door scientific research. They have since often gone to factories, villages, pastoral areas and hospitals to do research together with the workers and peasants, thereby closely combining their theoretical study with production. At the same time, workers, poor and lower-middle peasants with practical experience have been invited to their institute to take part in scientific discussion and research.

To speed up scientific research and the popularization and application of the achievements made in research, the institute has often organized co-operation teams made up of research and production units and schools to jointly solve major problems in research and production.

In a socialist country like ours, scientific research is a tool in the service of the dictatorship of the proletariat. It must serve proletarian politics and the workers, peasants and soldiers and it must be integrated with productive labour. Proceeding from its selfish class interests, the bourgeoisie always tries to negate the class nature of scientific research in an attempt to make scientific research serve bourgeois politics. Herein lies the fundamental difference between Chairman Mao's proletarian revolutionary line in scientific research and the counter-revolutionary revisionist line in scientific research pushed by Liu Shao-chi and Lin Piao.

Under the pernicious influence of the revisionist line, researchers of this institute before 1966 seldom took into consideration the needs of production while studying animal genetics. This situation has been changed after the start of the Cultural Revolution. In 1973, some researchers succeeded in the transplantation of fertilized rabbit ova. The Party committee of the institute immediately suggested that this experience be applied to livestock breeding. The scientists went to pastoral areas and worked together with the herdsmen to carry out experiments on the transplantation of fertilized sheep ova. In spring 1974, three hybrid lambs were obtained by this method. In autumn that same year, they transplanted the fertilized ova of a kind of sheep of high economic value into another breed which is lower in economic value. In the spring of 1975, 18 lambs were born. Comprehensive tests prove that the hereditary characteristics of the fur of this new breed of sheep were stable. This success filled a gap in the science of livestock breeding in China. Now this technique has been mastered by many poor and lower-middle herdsmen and animal husbandry technicians.

The institute began breeding hybrid sorghum in 1958. After several years of painstaking efforts, a number of varieties with strong resistance to adverse natural conditions were selected and bred and their yield was generally 30-40 per cent and some even 100 per cent higher than that of local varieties — the highest yield being 15 tons per hectare. But some problems in seed production remained to be solved if these varieties were to be popularized. Instead of confining themselves to their institutes' premises, the geneticists who have raised their political and ideological consciousness during the Great Cultural Revolution went among the peasants to carry on their study. Through joint efforts, this technique was soon successfully applied in production.

At present, hybrid sorghum is grown over big areas in China. In many places, per-hectare yield in a large area has reached 7.5 tons. In the course of cultivating and popularizing hybrid sorghum, the researchers have developed the theories on hybrid vigour and male-sterility of plants. Keeping the needs of production in mind, they are now studying the male-sterility in wheat, rice and other crops.

Members of the Institute of Genetics make it a point that scientific research is integrated with production. This, they maintain, is not only necessitated by

China's socialist revolution and socialist construction but also the necessary way to develop genetics. The history of the development of the natural sciences fully proves that **"from the very beginning the origin and development of the sciences has been determined by production."** The broad masses of workers, peasants and soldiers have a wealth of practical experience, which has profound scientific contents and is the most precious and richest source of the theories of natural sciences.

In growing potatoes in the past, there used to be the question of potato degeneration in some parts of China. During the Great Cultural Revolution, researchers went to the countryside to investigate and study the problem. They collected the rich experience gained in production by the peasants over a long period on how to prevent potato degeneration. After repeated scientific experiments and theoretical analyses made in conjunction with related research departments, they discovered that degeneration had a lot to do with the special characters of the variety and was also determined by environmental factors. Consequently, the breeding of varieties suited to different localities and the introduction of cultivation methods according to the types of potato grown could prevent degeneration. Together with the poor and lower-middle peasants they developed in the course of practice new methods of cultivation and solved the question of potato degeneration.

The integration of scientific research with production is a major avenue to raising the level of research. Chairman Mao has said: **"With us, therefore, the raising of standards is based on popularization, while popularization is guided by the raising of standards."** Engels also said: **"If society has a technical need, that helps science forward more than ten universities."**

While taking part in plant-breeding activities by the masses, the researchers saw how anxious the poor and lower-middle peasants were to find new techniques and new methods for plant-breeding. This was a great stimulus to them. In the spring of 1970, in response to the demands of the poor and lower-middle peasants, they studied the new technique of haploid breeding by pollen culture. In the course of study, they continued to take part in mass scientific experiments and absorbed the positive experience of the masses. In 1971 and 1974, for the first time in the world they succeeded in cultivating wheat and maize plants by pollen culture. With the conventional method, it used to take seven to eight years before a new variety could be released to production, but varieties developed by this new method can be released to production in about three years. New varieties of wheat and rice developed by this new method now being grown on farms can give much higher yields than local ones. This new method will also open up a new vista for studying the theory of genetics.

Chairman Mao has pointed out: **"The majority or the vast majority of the students trained in the old schools and colleges can integrate themselves with the workers, peasants and soldiers, and some have made inventions or innovations; they must, however, be re-educated by the workers, peasants and soldiers under the guidance of the correct line and thoroughly change their old ideology."** By carrying out open-door scientific research, integrating themselves with the workers and peasants and combining research with production, researchers of the institute have made rapid progress in remoulding their world outlook.

In the past, many of the researchers who were influenced by the revisionist line in scientific research had in their minds such ideas of the exploiting classes as "the highest are the wise and the lowest are the stupid." Consequently, they looked down on the workers and peasants. In the process of integrating with the workers and peasants after the adoption of open-door research, they came to see very clearly that it is the workers and peasants who are the main force in scientific research. Whatever achievements they have made are inseparably linked with production and the scientific experiments of the masses.

Prior to the Great Cultural Revolution, many held the belief that "knowledge is private property" and practised "monopoly of techniques." Since the start of the Great Cultural Revolution, they have repudiated the decadent thinking of the bourgeoisie and taken an active part in socialist co-operation. For example, in carrying on research on chromosomes of a small rodent the geneticists discovered this animal's leukemia marker chromosomes, something which had never been observed anywhere in the world. This was helpful, both in theory and practice, to getting an early diagnosis and providing early treatment for this disease.

The comrades who first discovered these chromosomes immediately made a report to the whole team and mobilized all the members to do research on this. Within a month they observed in 87 of their experimental animals some 3,000 mitotic figures, thereby fully proving the existence of this kind of marker chromosome and increasing their understanding of this.

Facts prove that conducting open-door scientific research under the guidance of Marxism-Leninism-Mao Tsetung Thought is an important way to train and bring up a huge proletarian red-and-expert scientific contingent. Open-door research has brought about a flourishing revolutionary situation on the scientific and technological front. This is a sharp contrast to the evils brought on by the revisionist line.

Revolutions are the locomotives of history. The profound changes which have taken place in this research institute since the start of the Great Proletarian Cultural Revolution vividly demonstrate from one aspect what a tremendous significance the Great Cultural Revolution has on consolidating the dictatorship of the proletariat, preventing capitalist restoration and building socialism.