Stalinism perverts science:

THE CASE OF LYSENKO

by MARTIN ZARROP

THE GROWING crisis of world Stalinism is inextricably linked with the political and economic upheavals that are shaking imperialism.

The theories of 'de-Stalinization' and the 'self-liberalization' of the Soviet bureaucracy, so beloved by the revisionists after Stalin's death, are revealed as completely bankrupt by the events of 1968 and subsequent developments.

The Czech Communist Party has been purged from top to bottom and the attack on intellectuals within the Soviet Union itself gathers momentum.

Fearful of the developments taking place within the working class on an international scale, the Soviet bureaucracy lashes out viciously against those who criticize it.

There is to be no room for any development in art, literature or science independent of the needs of the counter-revolutionary caste in the Kremlin.

Last year, a two-day conference was held in Moscow and attended by more than 1,000 Soviet intellectuals.

At its closing session, Mr Pyotr Demichev, the Communist Party Central Committee secretary in charge of cultural affairs, spelt out their tasks in the period around the 100th anniversary of Lenin's birth.

He called for an 'uncompromising struggle' against bourgeois ideology, i.e. against any attack on Stalinism.

Previously, Sergei Mikhailov, First Secretary of the Moscow writers' organization, had expressed 'sorrow' that Solzhenitsyn had refused to acknowledge his role as 'special correspondent for various foreign agencies and organizations' and condemned 'tolerance toward the intolerable'.

The threat is hardly veiled and will not be lost on those who remember the purges of the 1930s and 1940s and their impact on both culture and science.

The impact of Stalinism on scientific research was revealed most sharply in the field of genetics during the Lysenko period.

This took the form of a struggle between Michurinism and neo-Mendelism as two rival theoretical systems.

The struggle came to a head in 1948 when the Central Committee of the CPSU raised Michurinism to the status of an official 'state' theory, whose main proponent was T. D. Lysenko, President of the Lenin Academy of Agricultural Sciences.

Neo-Mendelism encomposses genetic theory as is generally accepted today.

It is an extension of the work of Mendel in the light of subsequent research.

The isolation of a single gene, recently carried out in the United States, is the final proof that the hereditary units postulated by Mendel do exist.

Each kind of gene may exist in a number of different forms, called alleles, and these account, for example, for the difference between tallness and shortness in Mendel's pea plants.

The genes are arranged in a line within the **chromosomes** situated in each cell.

The laws of heredity are therefore laws concerning the distribution of different genes from one generation to the next and the mechanism of cell-division and reproduction is now fairly well understood.

On this basis, we can begin to understand the visible variation of organisms (for instance variation in human skin-colour).

These variations can be separated into two components —those which are due to differences in the genes and **modifications** which are due to differences in environment (e.g. suntan) or differences in activity (e.g. muscular development).

Modifications therefore affect the individual body and its organs and **not** the reproductive cells.

Variations in the hereditary constitution are due to **mutations.**

Mutations may involve a change in quality of a single gene or even a whole set of chromosomes.

This accounts for the difference between a natural blonde and a natural brunette (even though intensive sun-bathing may **modify** the blonde to become as dark as the brunette).

Research has shown that modifications are not inherited. In particular, the black skin of Negroes is not due to the accumulated effects of sun-tanning over many generations.

However, this does not mean that environment plays no role in heredity.

The role is not direct and mechanical, as Lysenko and his followers insisted, but takes place in the evolutionary process, through natural selection.

Thus Negroes are dark-skinned because selection will favour mutations corresponding to the 'dark skin' gene.

Black pigment prevents the undue amount of ultra-violet in the tropical sunlight from penetrating the skin and damaging the underlying tissue.

In other words, evolution is adaptive.

In this way, heredity and evolution tie up together—neo-Mendelism interlocks with neo-Darwinism.

The science of genetics is based on a mass of experimental evidence, carefully extracted from nature.

In contrast to this, Michurinism had no such foundation. This theory takes its name from Michurin (1855-1935), a Russian plant-breeder and horticulturalist, but as a theory was mainly elaborated by Lysenko and the philosopher I. I. Prezent.

In essence, they followed in the footsteps of Lamarck in asserting that modifications are inherited to a slight degree in each generation, and that they can accumulate and become fixed in the course of generations so as to produce evolutionary change.

New conditions of environment, applied at certain critical phases of the organism's life-history, were supposed to produce a Lamarckian effect.

This would correspond to the 'sun tan' theory for Negroes.

Virtually no experimental evidence was forthcoming in defence of Lysenko's theories.

Certain effects, claimed to have been produced by Lysenko and his followers, did not appear when the experiments were repeated by scientists in the west.

As the scientist C. D. Darlington wrote in 1947: 'The evidence as a whole shows that Lysenko is making use of three classical precautions needed for the "success" of experiments designed to prove the inheritance of environmental effects: namely, beginning with mixed stock, omitting to use proper controls, and repudiating statistical tests.'

In other words, Michurinism was based on a small number of breeding experiments in which no precautions were taken to isolate the system under study from external contingencies and whose results could, for the most part, be explained by neo-Mendelism.

Yet, following the session of the Lenin Academy of Agricultural Sciences which took place from July 31 to August 7, 1948, neo-Mendelism was proscribed and Lysenko's fantasies given full reign.

Of course, this bureaucratic nonsense had nothing to do with the policies of the Soviet leadership in the first years after the October Revolution of 1917.

Scientific research in all fields received a tremendous boost in this period. Under the guidance of the Bolshevik Party, the development of the Communist International as the weapon for the extension of the proletarian revolution to the advanced capitalist countries went hand in hand with the enormous task of shaking the Soviet Union free from centuries of economic and cultural backwardness.

There were many Soviet scientists who threw themselves wholeheartedly into this work, inspired by the perspectives opened up by the Revolution.

Others came from Europe and the United States to make important contributions to the strengthening of the young workers' state.

Arising out of the overall perspectives, funds had to be allocated to develop the practical applications of various lines of scientific research. However, it was completely alien to the party of Lenin to reduce Marxism to a set of formulae by disregarding scientific fact in the interests of some illusory aim.

In 1925, Trotsky had this to say:

'There is a difference in the degree of foresight and precision achieved in the various sciences.

'But it is through foresight —passive in some instances, as in astronomy, active, as in chemistry and chemical engineering—that science is able to verify itself and justify its social purpose.

'An individual scientist may not at all be concerned with the practical application of his research. The wider his scope, the bolder his flight, the greater his freedom in his mental operations from practical daily necessity, the better.

'But science is not a function of individual scientists; it is a social function.

'The social evaluation of science, its historical evaluation is determined by its capacity to increase man's power and arm him with the power to foresee events and conquer nature.'

Such 'boldness of flight' was encouraged not least of all in genetics, with its implications for agriculture and the breeding of livestock. Most of this work was guided by the theories of neo-Mendelism.

Within the Bolshevik Party, the Stalinist faction, least of all, had the power to foresee events.

The year 1928 saw the launching of the 'Third Period' internationally and the forced collectivization of agriculture within the USSR. The effect in the countryside was catastrophic. Between 1930 and 1932, the total harvest of grain fell from 835 million hundredweight to under 700 million, sugar production fell by half and over half the livestock was destroyed.

Stalinism spelt disaster for the international proletariat. Its passing over to the camp of the counter-revolution now meant the liquidation of all opposition, both real and imaginary, in all layers of Soviet society.

From 1932 Mendelian genetics came under attack.

Chetverikov, Ferry, Ephroimson, Levitky and Agol were among the neo-Mendelians who were either sent to labour camps or just disappeared in the first two years.

In 1936, the Medico-Genetical Institute, world famous for its research in human genetics, was attacked for placing 'heredity' before 'environment' and was dissolved.

Its founder and director, Solomon Levi, made a 'confession' of scientific guilt and then vanished.

The 7th International Congress of Genetics, scheduled to be held in Moscow in 1937, was called off, despite the fact that many geneticists had submitted papers attacking the Nazi race theories. The meeting was called off after the Stalinists had considered allowing it to proceed, provided that all papers on evolution and human genetics were omitted!

This was the period of the rise of Lysenko to prominence.

In 1935 he published a book, in conjunction with the philosopher Prezent, attacking classical genetics and in 1936 was the main spokesman for Michurinism at the first of a number of special conferences staged to discredit neo-Mendelism.

At this conference, Lysenko was in a minority and consequently the published report was heavily expurgated and within a few months was banned.

In the period of the Moscow Trials, the attack was intensified and in 1939 a second conference was convened at which the Mendelians were publicly denounced and the Michurinists emerged 'victorious'.

Lysenko had already been elected to the post of President of the Lenin Academy of Agricultural Sciences, a post previously held by N. I. Vavilov. Vavilov, an internationally famous geneticist, was denounced in 1938 for (among other things) 'showing a suspicious friendliness to genetical ideas emanating from fascist Germany' and died in Siberia in 1942.

Lysenko was a creature of the bureaucracy.

His theory of the inheritance of acquired characteristics—if scientifically correct — would have provided the basis for enormous improvements in cereals and animals.

The devastation of agriculture after 1929 called for a 'miracle'.

The Stalinists therefore embraced Lysenko with open arms, with or without scientific evidence.