

# New light on the Lysenko era

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Previously unpublished material shows how Trofim Lysenko both deceived and won the support of Stalin, and destroyed genetics in the Soviet Union.

TROFIM Denisovich Lysenko's life and work have been much analysed and discussed in the world's literature. It is well-known that his activities were among the factors leading to the breakdown of biological, agricultural and, to some extent, medical science in the Soviet Union. They contributed to the transformation of Russia from a country that exported grain and other agricultural products to the whole world into an importer of grain, butter and meat. So the study of the life and activity of Lysenko may illuminate the flaws which, even now, cripple Soviet agriculture — and Soviet science.

Another reason for returning to the history of lysenkoism is that much has so far been unclear and even mysterious<sup>1</sup>. In particular, there is much to be learned from the relationship between Lysenko and Vavilov in 1930–35 and Lysenko and Stalin in 1947–48.

The question of whether Lysenko's earliest works were independent and original contributions to science has often been asked<sup>2,3</sup>. It is generally accepted that they were original and pioneering in character. More recently, Roll-Hansen pointed out how widely this idea is held by remarking<sup>4</sup> that "some of his [Lysenko's] physiological work was highly praised even by his strongest critics among the geneticists". So how independent of previous researchers was Lysenko in his early work?

Lysenko published two articles of little significance as early as 1923, when working at a small plant-breeding station in the town of Belaya Tserkov' in the Ukraine<sup>5</sup>. In 1925, while still at Belaya Tserkov', Lysenko graduated by correspondence from the Kiev Agricultural Institute, but, once he had received his agronomist's diploma, he unexpectedly left for the Caucasus (Azerbaijan), where he found a job as a junior specialist on the selection of legumes, at an experimental station in the town of Gandzha (now Kirovobad). The director of the station, the well-known Russian agronomist N. F. Derevitsky, set Lysenko a problem: to try to acclimatize beans for Azerbaijan as a green-manure crop. In the autumn of 1925, Lysenko for the first time sowed peas as a winter crop. Thanks to the mild winter of 1925–26, they yielded a good vegetative mass. This result was promising. The work should have been repeated on a wider scale, to determine appropriate dates for autumn sowing, to choose the best cultures, to

work out the agrotechnical details and to settle on the most appropriate varieties. But at this point, an event occurred that drew Lysenko away from this work and directed his activity into a very different field.

To understand this event, it is important that, from the point at which Soviet power was established in Russia, Lenin and, after him, Stalin did everything possible to train cadres of a new intelligentsia, intended to replace the specialists trained under the tsarist regime. Since the new leaders adhered to the class approach and considered that the so-called "bourgeois specialists" were for the most part hidden enemies of the new order, there was a drive to train persons of worker or peasant origin (the so-called "red intelligentsia"). All paths were opened to members of these classes; special attention was paid to bringing them forward.

Trofim Lysenko satisfied the new criteria perfectly. He had been born in 1898 into a peasant family, and was late in learning to read and write; only at thirteen did he enter a two-form village school. Afterwards, he attended the Poltava Lower Horticultural School for rather more than two years. Only in 1917 did he enter the Uman' Horticultural School, where he was a student for about four years.

The course of Lysenko's studies was far from normal. Between 1917 and 1920, Uman' was in the battle zone between warring armies and changed hands several

times between the Whites, the Greens (Ukrainian peasant insurgents) and the Reds. Taking advantage of his peasant origin, Lysenko then enrolled at the Kiev Agricultural Institute, although he studied there externally and, as a result, was not able to attend regular higher education courses. But the circumstance that he graduated not from a bourgeois, but from a Soviet, higher-education institution ensured that he continued to benefit from all the advantages guaranteed by the Soviet leadership to persons of peasant origin.

So it is hardly surprising that when, in 1927, the well-known Moscow journalist V. Fedorovich visited the Gandzha experimental station, he was presented to the budding agronomist Lysenko. In his article in *Pravda* on 7 August 1927, Fedorovich lauded Lysenko's first experiment with the peas as a substantial discovery, and announced that Lysenko (whom he hailed as a "barefoot professor") had made an outstanding discovery that would allow the peasants of Azerbaijan to avoid all future difficulties due to shortage of fodder. (As it happens, green-manure crops are not cultivated on any scale in Azerbaijan.)

Lysenko's first work thus remained unfinished; no publications other than Fedorovich's article mentioned it. But Lysenko himself considered that the matter had been dealt with and switched to new work. Quick as lightning, he "solved" another problem, namely the



Lysenko, newly appointed president of the Soviet Academy of Agricultural Sciences, surrounded by colleagues at Odessa.

effect of low temperature on plants.

From the autumn of 1926 to the spring of 1927, several of Lysenko's trainees collected data on the germination, development and fruiting of cereals (wheat, rye, oats and barley) and cotton. In Russia at that time, the same problem was being studied by Vavilov's collaborators N. A. Maximov and G. S. Zaitsev<sup>6</sup>. Lysenko's data were presented in long monotonous tables which he furnished with primitive commentaries. They were published in 1928 as a booklet titled *Proceedings of the Gandzha Experimental Station*<sup>7</sup>. Instead of working out his results statistically and presenting the data in summarized form, he devoted 110 of the 169 pages in the book to tables with raw data.

Lysenko finally set out his nine-point conclusion, which can be reduced to the single observation that, for the initial phases of plant development to be completed, definite quantities of heat are required. The method he used was close, even in its detail, to that developed by the talented Russian physiologist G. S. Zaitsev<sup>6</sup> who studied the effects of various environmental factors, not simply temperature, on the phases of development of cotton.

It is relevant and important that, in January 1929, Lysenko attended the First All-Union Congress on Genetics, plant breeding, seed growing and pedigree stock rearing in Leningrad. There he announced that, on the basis of his work, he could recommend the cold treatment of winter-wheat germinants so that it would be possible to sow winter instead of spring wheat. But in the discussion, his proposal that cold germination (he called it 'vernalization') should be put into practice immediately was criticized by Maximov.

Despite the criticisms and the fact that his method had not been tested scientifically, Lysenko managed, in the summer of the same year, to organize a noisy press campaign in favour of his 'vernalization'<sup>8,10</sup>. The agricultural bosses were captivated by the novelty<sup>10</sup> and, in the winter, the official Party organ *Sel'skokhozyaistvennaya Gazeta (Agricultural Gazette)* launched a discussion of Lysenko's ideas. At that stage an article by the outstanding Soviet scientist N. M. Tulaikov stated<sup>11</sup>:

At the beginning of 1927 [at the inception of Lysenko's work on vernalization] at the experimental station at Gandzha, I happened to have a number of discussions with Lysenko ... who was working on the application to various plants of the region of the laws established by Professor G.S. Zaitsev on the sums of the temperatures necessary for the various phases of development of cotton.

Tulaikov wrote that by then, Lysenko had "already outlined ... a certain rule", but the reference to the fact that Lysenko knew Zaitsev's results is quite definite.



Lysenko offers herbarium samples as proof of his claimed transformation of wheat into rye (1948).

Indeed, Lysenko himself, in a book published in 1928, mentioned Zaitsev at three crucial points, comparing Zaitsev's results with his own and acknowledging that they were similar (see ref. 7, pages 16, 136, 142). But all references of this kind afterwards disappeared from Lysenko's works, and he began to insist on his own unconditional priority in the matter. Apparently the chief reason for this behaviour was that, in January 1929, while travelling from Central Asia to Leningrad to the First All-Union Congress on Genetics and Plant Breeding at which Lysenko first put forward his hypothesis, Zaitsev became ill and died in Moscow without reaching Leningrad. Thereafter, Lysenko decided never to mention his precursor again.

The sources of Lysenko's first work have been forgotten with time. In 1937, N. M. Tulaikov, the only living witness of Lysenko's use of Zaitsev's work, was accused of hostile activity. (The charges were given by Lysenko himself in an article published in *Sotsialisticheskoe zemledelie (Socialist agriculture)* on 4 April 1934; a week later, his close collaborator V. N. Stoletov published in *Pravda* an enormous article accusing Tulaikov of wrecking.) Soon afterwards, Tulaikov was shot.

M. A. Popovsky in the Soviet Union<sup>12</sup> and D. Joravsky in the West<sup>13</sup> were the first to point out that N. Vavilov was Lysenko's scientific patron. The most authoritative Western biography of Vavilov supports this view<sup>14</sup>. Popovsky cited extracts from Vavilov's statements proposing Lysenko for membership of the Ukrainian Academy of Sciences, for the Lenin Prize and as a corresponding member of the USSR Academy of Sciences.

But Medvedev<sup>15</sup> categorically denies that Vavilov was the one who mainly advanced Lysenko in scientific circles, saying that, as an important administrator, Vavilov might have signed the documents in support of Lysenko without having read

them. But the facts unearthed by Popovsky contradict that. Moreover, I have been able to find many previously unknown statements of Vavilov that confirm that it was Vavilov who played the chief role in Lysenko's scientific advancement<sup>1</sup>.

Why did Vavilov succumb to this fatal blindness and not recognize Lysenko as a dangerous upstart from the outset? Popovsky takes the view that the explanation lies in the social conditions of the times, and specifically in the demand of the Party of Bolsheviks that people "from the furrow and the bench" should be advanced in all spheres of society, science included. As Vavilov sincerely accepted the revolution, putting himself at its service, he would have acknowledged this "social imperative" and would have seen Lysenko as an obvious candidate to be "promoted from the people".

The logic is tempting, but the proposition only partly explains Vavilov's motives. A more likely explanation lies in the nature of the field in which he worked. In 1925, he had become director of the Institute of Applied Botany and New Crops (later the All-Union Institute of Plant Industry) and had begun to assemble a collection of seeds of wild and cultivated plants from all over the world. The motives for collecting this "gene-bank of world flora" were not exclusively scientific; Vavilov intended to make extensive use of the seeds collected so as to increase the rate at which new varieties of cultivatable crops were introduced. This would be done by the transfer of valuable genes to strains extant in the Soviet Union. Not himself an expert on plant breeding and without much experience of fieldwork, Vavilov could only hope the plan was feasible.

In practice, Vavilov and his colleagues encountered problems that were not easily soluble. The physiological requirements of the seeds collected from elsewhere were different from those of the local varieties. They germinated,

sprouted, flowered and fruited in different ways, and many would not germinate at all in the Russian climate. Crossing the "foreign" with the local varieties proved a practical impossibility in most cases. And then, suddenly, there appeared a man who confidently declared that he could solve a far more complex problem — the conversion of winter into spring crops by vernalization (cold treatment).

Lysenko was then working at the Gandzha station, a part of Vavilov's institute, so that it is not surprising that the director soon learned of his work. This apparently explains why Lysenko, whom nobody had heard of, suddenly received the prestigious invitation to take part in the First All-Union Congress on Genetics and Plant Breeding that Vavilov himself had organized. Vavilov was apparently convinced that if the complex transformation of winter to spring crops were feasible, the problem of synchronizing germination and flowering of other plants might be easily solved.

This interpretation is confirmed, in particular, by the fact that, several days before the meeting, Vavilov gave an interview to the Leningrad newspaper *Smena* in which he spoke highly of the idea of transformation<sup>16</sup>. It was also especially important for Lysenko's later career that Vavilov put the utmost value on the experiment for the vernalization of winter wheat, calling Lysenko an outstanding scientist at several sessions in 1930 and 1931 of the Presidium of the Academy of Agricultural Sciences and of the Collegium of the State Commissariat for Agriculture of the Soviet Union<sup>17</sup>. Thus in September, 1931, at a meeting of the State Commissariat for Agriculture, Vavilov said:

Of especial interest ... is the work of Lysenko, who has actually managed in practice to change late-ripening into early-ripening strains and to convert winter into spring varieties. The facts which he has established are indisputable and are of considerable interest ... Lysenko's experiments show that, with special pre-sowing treatment, late Mediterranean varieties of wheat may be converted into early varieties in our conditions. Many of these varieties surpass our ordinary varieties in quality and productivity ... Rapid organizational collective persistent work is required in order to realize the most interesting facts established by Lysenko<sup>18</sup>.

My case is further strengthened by the fact that Vavilov, delighted at the possibility of synchronizing the flowering of different plants, gave instructions for the reserve of wheat at the Institute of Plant Industry to be vernalized and sown near Leningrad and Odessa. (From 1929, Lysenko worked at the Odessa Institute of Genetics and Plant Breeding.) A proportion of the plants of the varieties that did not normally yield ears in the Odessa region gave ripe ears. Lysenko promptly exag-

gerated this result and presented it as proof that all varieties could then be sown in regions that were abnormal for them. This categorical conclusion greatly delighted Vavilov who, taking it literally, on many occasions hailed the method of vernalization. For example, in 1934, in a paper at a conference on planning genetic-selection work, Vavilov said:

Perhaps in no other division of plant physiology have there been such profound advances as in this field ... In this respect, we consider the work of T. D. Lysenko to be outstanding.

The relatively simple procedure of vernalization and the possibility of its broad application are opening up broad horizons. Investigations of a world-wide range of wheat and other crops under the action of vernalization have revealed facts of exceptional significance. The world-wide range of wheat varieties has been entirely transformed by this simple procedure<sup>19</sup>.

But there had been no *complete* alteration of the worldwide range. What had happened was entirely different — the general acceptance of Lysenko's inflated estimation of his own work. Even in 1935, after five years of trials of vernalization by scientific institutions, scattered over different regions of the vast Soviet Union (vernalization was tested on 35 varieties of wheat), the head of the trials, Academician P. N. Konstantinov, came to this conclusion:

On average, over the years, what we have observed is that there is here a decrease and there an increase due to vernalization, but on the average, over five years, vernalization has given almost no increment of yield<sup>20</sup>.

Vavilov nevertheless continued to place a high value on Lysenko's work. For example, on 17 June 1935, at a meeting of the Presidium of the Academy of Agricultural Sciences, Vavilov said<sup>21</sup>, "Lysenko is a careful and highly talented researcher. His experiments are irreproachable". Similarly in 1935, he took part in two meetings in the Kremlin at which Stalin was present and put an overwhelmingly high value on Lysenko's contribution to science and agricultural production<sup>22</sup>.

Only in 1936–37 did Vavilov realize what sort of a person his protégé really was. He began an active campaign against Lysenko, but by then it was too late. The

"people's scientist" had become Stalin's pet, had acquired enormous power and had begun the methodical annihilation of his scientific opponents. Lysenko had declared war not for the life but for the death of genetics, and of the study of plant hormones and other biological disciplines based on the principles of genetics. He was preaching the doctrine of the inheritability of acquired characteristics. Lysenko even launched an attack on Vavilov himself. As early as 1935, in Stalin's presence, he publicly named Vavilov as an enemy of his own "science". These attacks ended in tragedy; on 6 August 1940, Vavilov was arrested and in 1943 he died of exhaustion in Saratov prison.

The Second World War led to the destruction of agriculture in much of the European territory of the USSR, with the result that the ineffective system of collectivized agriculture could not cope with the ever-increasing difficulties. Worse, in 1946, the Soviet Union suffered enormous crop-failures across all its agricultural zones — Russia in Europe, the Ukraine, Siberia and Kazakhstan. The famine of 1947 is still remembered in the Soviet Union.

Because practically all the major leaders of agriculture had been arrested in the late 1930s, Lysenko became the autocratic 'boss' in biology and agronomy in the Soviet Union. In famine conditions, the government and Party required from him scientific projects that would allow immediate relief from the problems of food and fodder shortage.

But Lysenko was unable to propose anything realistic, and his former promises to produce a sharp increase in yield by vernalization, summer planting of potatoes, intra-strain crossing, changing the selection criteria and the rapid introduction of new varieties were ineffectual. So too were his promises to introduce, in between one and two years, new varieties of wheat for the Ukraine and Siberia, to introduce new strains of cotton, to destroy insect predators by "pasturing" poultry in the fields (the poultry were supposed to peck up the grubs and caterpillars of the insects) and other similar proposals.

Lysenko had also harmed his own cause



Lysenko (right) with party general secretary Nikita Khrushchev and M. Suslov (left) at an experimental farm in 1955.

by his resolute repudiation of plant hormones, and his reputation was undermined when the Dane Vent and the Soviet physiologist N. G. Kholodny were honoured for their discovery.

At the personal level, Lysenko suffered much unpleasantness as a result of his brother's decision to go over to the Nazis and then to defect to the West. In the Soviet Union, the relatives of those who left the country were considered traitors. (There was a special article in the Criminal Code to that effect.)

Lysenko's relationship with the authorities was also affected, immediately after the war, by the degree to which Western society was shocked by the fate of N. I. Vavilov, G. D. Karpechenko, N. V. Timoféeff-Ressovsky and other outstanding scientists whom Lysenko and lysenkoists had publicly attacked and who had then mysteriously disappeared. At that time, British and American leaders, in particular Churchill, made repeated personal appeals to Stalin asking what had happened to Vavilov (Yurii Zhdanov, personal communication, 22 December 1987). Stalin knew, of course, that this outstanding Soviet scientist had been arrested precisely because he had opposed Lysenko. Finally, it is also relevant that, in 1947-48, the major Soviet biologists who were still alive openly declared themselves against Lysenko's new ideas, particularly his assertion that he had found serious errors in the work of Darwin. According to Lysenko, there is no intra-species struggle in nature, but mutual cooperation between plants of a single species.

Lysenko's dethronement was further assisted by Yurii Zhdanov, head of the Science Section of the Central Committee of the Party and son of the influential Secretary of the Central Committee of the Party, A. A. Zhdanov. The younger Zhdanov was openly sympathetic to the geneticists, expressing his scepticism about Lysenko. Among the many letters from geneticists, plant breeders and agronomists, criticizing Lysenko that reached the Central Committee was a long manuscript by Vladimir Efroimson which set out in concise form the details of Lysenko's scientific and organizational errors.

The post-war change of attitude towards Lysenko was reflected in the following events:

■ In 1945, A. R. Zhebrak who, after the arrest of Vavilov and the other plant geneticists, had become the most important specialist in this field, and who also worked in the office of the Party Central Committee apparatus, published an article called "Soviet biology" in the journal *Science*<sup>23</sup>. This amounted to a careful criticism of Lysenko. That there should be an article had been suggested to Zhebrak by the then Politburo member A. N. Voznesenskii, but Zhebrak obtained permission for

the project from another member of the Politburo of the Central Committee of the All-Union Communist Party (Bolsheviks), A. S. Sherbakov, head of the Sovinformburo (A. R. Zhebrak, personal communication).

■ Steps were taken to set up a new Institute of Genetics and Cytology within the framework of the Soviet Academy of Sciences, as an alternative to Lysenko's institute. The new president of the Academy, Sergei Vavilov, brother of the Nikolai Vavilov who had perished in Stalin's torture chambers and who had been elected president of the academy on 17 July 1945, helped<sup>24</sup> in this project. The project progressed quite a long way — it was approved by the Central Committee, the appropriate documents were forwarded to the Soviet government, the recruitment of staff began and a source of funds was opened up.

■ Some of the new members elected to the Soviet Academy of Sciences in 1946 were mostly people who had openly expressed their disagreement with Lysenko. There was even a geneticist among them. Furthermore, in 1946, Stalin prizes were awarded to two specialists who were well-known for their negative views of Lysenko: V. S. Nemchinov, for his work *Agricultural Statistics*, and V. I. Edel'shtein for his textbook *Vegetable Growing*.

■ On 9 February 1947, at a plenary session of the Central Committee devoted to agriculture, Lysenko's taboo on hybrid maize was revoked, his proposal to replace winter by spring wheat in the Ukraine was reassessed as "incorrect" and it was noted that there were no good varieties of winter wheat for Siberia (although Lysenko had been trumpeting that such varieties had either been created already, or else were in the process of being created by him personally).

■ According to Zhores Medvedev<sup>2</sup>, A. A. Zhdanov went to the Organizing Bureau of the Central Committee with a proposal that the leadership of the Academy of Agricultural Sciences should be strengthened. This, in bureaucratic language, was a proposal to find someone to replace Lysenko as president of Lenin's Academy of Agricultural Sciences.

■ In 1947 and 1948, scientific conferences at Moscow University were attended by enormous audiences (up to 1,000 people at the last of them) at which Lysenko's views on the reform of darwinism were subjected to searching criticism.

■ The final chord of the whole anti-Lysenko symphony was a speech by Yurii Zhdanov, head of the Division of Science of the Central Committee, at a seminar of district committee and provincial committee lecturers in Moscow. Zhdanov's lecture was almost entirely devoted to criticism of Lysenko<sup>27</sup>. Zhdanov said that Lysenko "to a great extent is struggling

against shadows of the past", and that, based on his

very narrow-minded conceptions, he definitely delayed the usage of new hybrid corn in our country. I consider that in this example we have new theoretical narrow-mindedness overgrowing into definite material detriment. And we are compelled to consider critically one or another new supposition proposed by a school of Lysenko.

Zhdanov spoke about the failures of

... the attempts by Lysenko to 'hunt out' new plant varieties for 2 or 3 years, as well as his promise to select for Siberia winter wheat which will be resistant to frost and which will not differ in their stability from domestic varieties.

Zhdanov characterized Lysenko's claims as "undesirable accusations" which brought harm to Soviet agriculture. One of the most important requirements of the lecture was the denial of Lysenko's favourite thesis: the wish to divide the Soviet scientists into bourgeois and socialist specialists.

It is wrong to think [Zhdanov said] that there is a struggle between two bourgeois schools, one of which represents Soviet views and another bourgeois Darwinism. I think that such a contradiction should be rejected, because discussion takes place between the scientific schools, both of which belong to Soviet science, and neither of these schools can one call as bourgeois.

The final sentence of this lecture was as follows:

It is necessary to liquidate the attempts to establish the monopoly in one or another division of science, because every monopoly leads to stagnation... Trofim Denisovich tried to do many things, and we say to him: Trofim Denisovich, you also did not do many important things. Moreover, you close your eyes on the whole set of new forms and methods of the reorganization of nature.

Such lectures were then of exceptional significance, for they brought to the attention of those responsible for the current Party line the latest resolutions of the leadership, as well as providing ideological directions for the immediate future. Zhdanov's sharp criticism was taken as clear evidence of the inevitable and imminent downfall of Lysenko<sup>25</sup>.

Immediately after this lecture, Lysenko decided on a desperate step. Once again, he showed that he was by no means a coward and was an excellent psychologist. Lysenko wrote to Stalin and to the senior Zhdanov saying that he was willing to give up the presidency of the Academy of Agricultural Sciences, not because there were fatal errors in his work, but because all his life geneticists and other opponents of his science ("Michurinist science") had prevented his proposals from being put into practice, had slandered him and were now thriving to such an extent that they had even persuaded Yurii Zhdanov to support them.

Lysenko plainly planned his reply to

Zhdanov's criticism carefully. He wasted few words on the principal offender, Yurii Zhdanov. The chief emphasis in his letter is his undisguised request to be allowed to deal with those who held dissenting views. That was completely in Stalin's style.

Lysenko's letter embodies a double distortion of the truth. He represents himself as an unfortunate little lamb against whom the reactionary geneticist-wolves are sharpening their fangs. (This, of course, was a blatant lie; the geneticists were still reeling from the arrest of many of their leaders, the death of N. K. Kol'tsov and, after the 1936 and 1939 discussions, the general weakening of their position.) But Lysenko also sought to convey the impression that, because of this situation, it was difficult for him to "press forward" with the application of his proposals.

The self-pitying tone of the letter is deliberate. His self-abnegation was calculated to demonstrate his humility and his readiness to carry out instructions unquestioningly. This, he would have known, would have been the safest way of obtaining *carte blanche* to deal with potential and declared enemies.

Significantly, Lysenko did not conceal his intention of dealing with those with dissenting views. That is the relevance of the concatenation of two of his complaints. First, he said, he had been "accused more than once" of having applied "administrative blocks" in the interests of the "Michurinist direction to which [he] subscribe(d)" to the "other, contrary, direction". But then, he continued, "for reasons outside [his] control, this, unfortunately, was far from being the case".

Lysenko's suggestion was that he was not in a position to launch a pogrom against his opponents. His calculation was that the leaders of the Central Committee, Stalin and Zhdanov, who had a propensity for crushing their opponents, would not fail him. He was seeking their agreement for a pogrom in genetics. He understood quite well how to approach Stalin and Zhdanov senior.

Although Yurii Zhdanov's lecture created a considerable stir, it led to no real unpleasantness for Lysenko. But, equally, there was no immediate response to his letter to Stalin and Andrei Zhdanov. So Lysenko resolved on a second course of action. Through the Minister of Agriculture of the USSR, I. A. Benediktov, he obtained a transcript of Yurii Zhdanov's speech. On 11 May 1948, he returned it to Benediktov, attaching yet another note which ended with him suggesting that he should resign as President of the Academy of Agricultural Sciences<sup>25</sup>.

Lysenko began by saying that the transcript had been "somewhat toned down" compared with what he had heard, and continued:

## Lysenko's appeal to Josef Stalin

To the Chairman of the Council of Ministers of the Union of SSR, Comrade Josef Vissarionovich STALIN "To the Secretary of the Central Committee of the VKPV, Comrade Andrei Aleksandrovich ZHDANOV"  
from Academician T. D. Lysenko

It has become very difficult for me to go on working, both as President of the Lenin All-Union Academy of Agricultural Sciences and even as a scientist. Therefore, I have decided to turn to you for help. A most abnormal situation has arisen in agrobiological science.

That there has been, in this science, and still continues a struggle between the old metaphysical line and the new Michurinist line is well-known; that I consider normal.

At present, for obvious reasons, the Weissmanists and neo-Darwinists have adopted a new strategem. Without changing anything in their science, they have proclaimed themselves to be supporters of Michurin and have accused us, who subscribe to Michurinist science and who are developing it, of having restricted and perverted that science. It is also obvious why all this pressure from the Weissmanists and neo-Darwinists is aimed first and foremost at me personally.

*Under these conditions, it is extremely difficult for me, as head of the Academy, to go on working.*

Up to a point, all this has seemed to me normal and understandable. The test of the validity of the objectives and methods of scientific work in our country is the degree to which they assist socialist agricultural practice. This was the principle from which I, as head, drew the strength to develop Michurinist science and to assist practice as much as possible. This was also the best means of combatting metaphysical arguments in biology.

In spite of the lack of scientific objectivity and, often, the downright slanders to which the opponents of the Michurinist persuasion have resorted, and although it has been difficult for me, drawing inspiration from collective and state-farm practice, I have found the strength in myself to resist the pressure and to go on improving my work in theory and practice.

*But now a situation has arisen which has really made me lose heart.* On 10 April this year, the head of the Science Division of the Propaganda Section of the Central Committee of the All-Union Communist Party (bolsheviks), Comrade Yurii Andreevich Zhdanov, delivered a lecture at a seminar of Party provincial committee lecturers on the subject "Debatable questions in contemporary Darwinism".

In this lecture, the lecturer poured out against me personally, by name, the false accusations of my anti-Michurinist

opponents. It is clear to me that the allegations put forward by this lecturer — the Head of the Science Division of the Propaganda Section of the Central Committee of the All-Union Communist Party (bolsheviks) — were accepted as the truth by the large audience of Party regional committee lecturers. So the falsehoods perpetrated by the anti-Michurinist and neo-Darwinists will have even greater effect in the provinces, both among scientific workers and among agronomists and leaders of agricultural practice. And for the scientists whom I lead, the road to the practical application of their results will be beset with great difficulties. This has come as a great shock to me; it is difficult for me to endure it.

*Thus I am turning to you with a request which is very important for me: if you think it appropriate, give me your help in this matter, which seems to me to be of no small importance for our work in agricultural and biological science.*

It is untrue to say that I cannot take criticism. This is so far from the truth that, in the present case, I will not discuss it in detail. I have always submitted all my work, both theoretical and practical, to criticism; from that, I have learned to draw what is useful for the cause, for science. All my scientific life has been conducted under criticism, which has been a good thing.

The lecturer had never sent for me, and had never spoken to me personally, although the whole criticism of his lecture was basically aimed at me. I was refused a ticket for the lecture and I listened to it carefully, not in the auditorium, but in another room, on an extension-speaker in the office of Comrade Mitin, the Deputy President of the All-Union Society for the Propagation of Political and Scientific Knowledge.

The essence of the lecture, in my understanding, may be judged even from the very fragmentary notes I made of the concluding part of the lecture. These I enclose separately.

I have been accused more than once of putting — in the interests of the Michurinist persuasion in science to which I subscribe — administrative impediments in the way of the other opposite persuasion. But in fact, for reasons outside my control, this, unfortunately, is far from being the case. The constraints that have been imposed have been on the persuasion

which I support, the Michurinist persuasion.

I do not believe it is an overstatement if I say that personally, as a scientific worker and not as president of the Academy of Agricultural Sciences, I have by my own scientific and practical work given no little assistance to the growth and development of Michurinist science.

*The principal sorrow and difficulty of my work as president stems from an obligation placed on me which I am profoundly convinced is incorrect* — to ensure the development of different persuasions in science. (It is not a matter of different branches of science, but specifically of different persuasions.)

For me, this obligation cannot be undertaken. But I have not been able to block the opposing view, first because such questions in science are not solved by administrative means and, second, because the neo-Darwinist defence has been so strong that I could not have blocked it.

In reality, I have not been the president of the Academy of Agricultural Sciences, but the lone defender and head of the Michurinist persuasion, which is still in a clear minority in higher scientific circles.

The difficulty has been that, as president of the Academy, I have had to present the scientific and practical work of the representatives of the Michurinist persuasion (a clear minority in the Academy) as the work of the entire Academy. *But the anti-Michurinists have not spent their time on creative work as much as on random attacks and calumnies.*

I can assist the development of the most diverse branches of agricultural science, but only within the context of the Michurinist persuasion, that which acknowledges the transformation of living nature arising from the conditions of life and which acknowledges the inheritance of acquired characteristics.

Long ago I accepted and I now subscribe to and am developing Vil'ям's studies on agriculture and Michurin's studies on the development of organisms. Both these studies belong to a single persuasion.

I should be happy if you could find it possible to provide me with the opportunity of working only in this field. Here I sense is my strength and I would be able to make a useful contribution to our Soviet science, to the Ministry of Agriculture and to our Collective-and-State farm experience in its different fields.

*Forgive my clumsy style. It is due largely to my current situation.*

ACADEMICIAN T. D. LYSENKO  
President of the Lenin All-Union  
Academy of Agricultural Sciences  
17 April, 1948

...the lecturer presents as from him personally the old calumnies of the anti Michurinists-Morganists-neo-Darwinists.

This criticism was made in secret from me, so that I would not be able to object and refute it either verbally or in print.

In the corrected transcript, no references are made to the titles of my works, nor to the pages from which the quotations are taken. Hence the reader cannot compare what the lecturer said on each question with what I said. I have already stated more than once that, in these conditions, into which I have been thrust, it is impossible for me to work as President of the Lenin All-Union Academy of Agricultural Sciences.

For the good of agricultural science and its application I seek to raise the question of my release from the post of President and to be given the opportunity of carrying out scientific work. I should then be able to accomplish considerably more to the benefit both of our agriculture and for the development of biological science of the Michurinist persuasion in various branches,

including the training of scientific workers.

The tone of this letter is quite different, from which one may cautiously conclude that, by then, Lysenko had some information of Stalin's reaction to his first letter, and that he wished to speed up events. His categorical accusation of Yurii Zhdanov as incompetent and even unscrupulous is a sign of that.

There were good reasons for hurrying events. The Academy of Agricultural Sciences needed to fill several vacancies left by those of its members who had perished in prisons and labour-camps as well as those who had simply died naturally. These were to be the first elections in the history of the Academy of Agricultural Sciences, and many of Lysenko's scientific opponents had been nominated unopposed. If they were elected, Lysenko would certainly lose control over the Academy of Agricultural Sciences.

Two years earlier, Stalin had summoned Lysenko and given him a little bag containing the seeds of an unusual branchy-eared wheat, asking him to consider whether the wheat could be improved. The burst of attention paid to this wheat in the Soviet Union, and Stalin's own sudden interest in it, were typical of that time. Once again, there gleamed the prospect of solving the complex and urgent problem of supplying the population with food simply and cheaply — by introducing just one miracle-variety.

Interest in branching wheat had flared up even before the Second World War, when the news was carried all over the country that a simple woman working on a collective farm in Central Asia, Muslima Begieva, had obtained a wondrous harvest by sowing branching wheat. But after the war, according to Begieva herself, things had gone wrong, and the wheat had stopped branching. However, to make up for this, in Georgia, Stalin's own birthplace, the seeds of this wheat had, it was said, been renewed and improved.

The moment at which Lysenko received from Stalin's own hands the packet of seeds of branched wheat is crucial for the understanding of Lysenko's personality. When Lysenko heard Stalin's wish that branched wheat should be improved, he ought to have refused the request; he already knew perfectly well that this was an impossible task. Stalin, naturally, did not know what a real expert on wheat, as Lysenko always made himself out to be, would have known — that interest in branching forms went back more than a century, both in Russia and abroad.

The Russian scientists N. Shcheglov (1828), M. Spafariev (1837) and many others had described this wheat in detail and had shown that it could not be used to increase the yield per unit area, because its plants would develop normally only if they were sown further apart. So great an authority on wheat as Professor A.M. Bazhanov wrote in 1856 that, "multi-eared wheat, like a pampered child, requires, in addition to rich soil, well-spaced sowing. It cannot endure even slight frost and suffers more than other simple kinds from smut and rust. Although each individual ear yields more grains, compared to the ears of simple grains, when one considers the total yield of all the ears for a known area of land, it is always found that multi-ear wheat has no advantage over the ordinary kinds"<sup>26</sup>.

Lysenko, of course, most probably did not know this. He was not conspicuous for his erudition, and had failed to read not only earlier but even much later works. Nor had he paid attention to a number of publications by the pupils of Vavilov during the 1930s. But nevertheless, there are data to show that Lysenko knew quite well that the advantages of branched wheat

were purely superficial.

First, the journal *Yarovizatsiya* (*Vernalization*), which Lysenko himself edited, had published in 1940 an article on the properties of branching forms<sup>27</sup>. Second, in 1938 the newspaper *Sotsialisticheskoe zemledelie* (*Socialist Agriculture*) had published a photograph of Denis Lysenko, Trofim's father, holding ears of branching wheat in his hand. The caption made it quite clear that the two Lysenkos, father and son, had set their sights on this wheat, and had studied its properties, but understood that nothing useful would come out of it.

Yet when Stalin approached Lysenko, his affairs were in such a bad state that he had nowhere else to turn, and he decided to resort to bluff. So as not to have to refuse straight out to carry out the task, he promised Stalin that he would start working on branched wheat. When the earth began to shake under his feet, he turned to direct deception and informed Stalin that the seeds he had been handed two years earlier had been improved so much that, in the coming year, the production of grain would be increased fivefold.

This promise gave Stalin grounds for putting an end to Lysenko's downfall. Only recently I have learned that, in May 1948, Stalin urgently summoned the whole staff of the Politburo of the Central Committee and in very sharp form criticized the organizers of Yurii Zhdanov's lecture (D. T. Shepilov, basically) and Zhdanov himself (Y. A. Zhdanov, personal communication, 24 December 1987). Stalin repeated again and again one phrase: "Who dared to offend such a good person!" (D. T. Shepilov, personal communication, 8 January 1988). In July, 1948, the innovator was summoned to an audience with Stalin, during which Lysenko persuaded the leader that the work with branched wheat was almost concluded, and that it remained only to produce more stocks of the variety before distributing it into the boundless fields of

Russia. Lysenko sought and obtained permission to name the new varieties "Stalin branching".

At the same time, Lysenko also won Stalin's consent for the final administrative elimination of all his critics, for a final ban on genetics in the USSR and for the cancellation of the elections in the Academy of Agricultural Sciences. Instead of the elections, Stalin simply co-opted 35 new members to the academy, most of them supporters of Lysenko. The appointments were announced in *Pravda* on 28 July 1948.

Among the new members were S. N. Muromtsev, an officer of the KGB (NKVD) who had previously been head of the special prison for arrested scientists. He took his job so seriously that he personally took part in the beating of two professors, Zdrodovsky and Zilber. Two days later saw the beginning of the August 1948 session of the academy, which destroyed genetics in the Soviet Union.

A week later, *Pravda* published a letter from Yurii Zhdanov to Stalin renouncing his earlier position and saying his errors were due to political immaturity and a tendency to substitute "scientific objectivity" for "Party principledness", which was a great sin. Yurii Zhdanov wrote<sup>28</sup>:

Lenin stated more than once that a recognition of the necessity of this or that phenomenon conceals in itself the danger of falling into objectivism. To a certain measure, I too did not avoid this danger.

Immediately after the session, about 3,000 scientists were dismissed from work. Russian genetics, which had produced splendid research recognized by the entire world, ceased to exist. Darkness fell on biological sciences in the Soviet Union. Nobody at that time could know how long that night would last — or whether he would survive until dawn. □

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