

V. Safonov

LAND  
*in*  
BLOOM

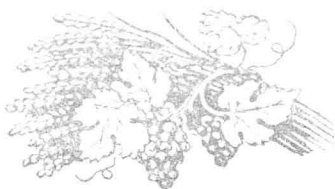
STALIN PRIZE

1949



V. S A F O N O V

*LAND  
IN BLOOM*



FOREIGN LANGUAGES PUBLISHING HOUSE

M o s c o w 1 9 5 1

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## A GREAT BATTLE



The books of the classics of science seem to us to bear an air of majestic calm. Their serenity is deceptive, however. They were intended for battle, and it was in fierce conflict that they won their right to live. All of them rose in rebellion against what in their time was regarded as incontrovertible knowledge. And to this knowledge, that was armed with the power of long tradition, they opposed their rebellious controversial and unprecedented arguments.

Ptolemy's epicycles in astronomy, phlogiston in physics and the theory of the invariability of species in biology have long been abandoned, however. We scarcely remember the names of those against whom Galileo, Lomonosov and Pasteur conducted their controversies, of those whom Timiryazev ruthlessly fought all his life. Assertions, daring for their novelty, have become obvious truths. And when we read one of the victor-books we now scarcely hear the storm that once raged in it.

Today these books loom before us like a mountain landscape, lit up with a steady, unfading light.

We are accustomed to look upon them with respectful wonder.

In some ways these books are like the paintings by old masters. It is well known that the colours on canvases that

have survived generations of men darken and acquire a special, elusive tint. Artists call this imprint of centuries the patina of time.

The works of the great scientists of the past are also, as it were, covered by the patina of time. Even the epoch in science in which they lived and worked appears to us to be tinted by an unusual colour. In our childhood, did not the year in which indomitable Copernicus compelled the Earth to vacate the "shrine" of the world in favour of the Sun seem to us to be an exceptional year; and that day on which that book with the long and clumsy title: *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*, came off the press and was completely sold out by the evening, seem a different day from all others? And the decade 1859-69 that followed it! Thousands of people of the most diverse professions, beardless youths, mature adults who had been trained by Belinsky's passionate essays, and old folks who still remember the living Derzhavin, thousands of Russians, were the first in the world to take up a slender, simply written, book, evidently intended for popular consumption, entitled *Reflexes of the Brain*, and a few years later opened another book, that was so unlike an ordinary textbook, entitled *The Principles of Chemistry*, and on both occasions had felt a little giddy, as it were. It seemed as though the skull had become transparent and that it was possible to see the "grey matter" of the cerebral hemispheres through it, and nature's greatest mystery—the psychical work of the brain—had become revealed. The harmonious, majestic Law enunciated in *The Principles of Chemistry*, more universal than the laws governing the motion of stars and planets, embraced the entire universe, the bricks of which it is built—chemical elements, matter itself. . . . The name on the title page

of *Reflexes* was Sechenov; the name of the author of *The Principles* was Mendeleev.

How much water has flowed away since then! In the West the man who wrote *The Origin of Species*, Charles Darwin, was still alive, but a period of dull stagnation was already approaching.

It was then that the pigmies, "a horde of specialists, all sorts of 'ists' and 'ologists,'" as Kliment Arkadievich Timiryazev angrily called them, crept out of all the cracks and crevices of western science. It was then that, overrunning science, they proclaimed that "our age is not an age of great tasks," and they denounced "every one who tried to rise above the common level and scan a wider horizon" as a dreamer and fantast.\*

This happened at the time when capitalist society itself was entering its decline and beginning to emit the smell of decay like that of a rotten field in which the crop has been kept standing too long.

It was in that gloomy period that the idea arose that it is necessary to turn to the distant past to see the fabulous giants of science, for no such giants exist now, nor could any arise, it was claimed.

I knew a certain university lecturer. He had not lived in those countries, the epigonal science of which Timiryazev had condemned. Amazing events were taking place under that lecturer's eyes; in his country the science of living nature was, with unexampled daring, raising and solving problems which had been regarded as insoluble and even impossible, like attempting to square the circle.

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\* K. A. Timiryazev, "Darwin as a Type of Scientist." An address delivered in 1878.

But this man kept repeating:

"Present-day biology is a Mont Blanc, no, an Everest of irrefutable facts and conclusions that have been tested and retested a thousand times. The times have passed when somebody could come along and lightly stir up with his walking stick, like an anthill, all that had been obtained before him. Our task is to peer diligently into the microscope, number bristles and draw variational curves. A new Darwin is inconceivable. We will be satisfied if we add our pinch of sand to Everest."

He was a contemporary of Pavlov, Michurin and Williams—giants who were second to none in the entire history of natural science. But it seemed as though he was blindfolded. Only in the distant past did he see the creators of "Everest."

But at the time he said this, the "irrefutable" in science was already being refuted. In the incorruptible, powerful light of the new knowledge the smug theories that were being taught in the universities, the dogmas which claimed to be as incontrovertible as the multiplication tables, were proved to be crude fallacies, biased interpretations of preconceivedly chosen facts. Everybody saw that the "conclusions that have been tested a thousand times" were often only jugglery borrowed from bourgeois idealistic biology.

It was not particulars of second-rate importance that were swept away. The battle raged around the very fundamentals of biology. We know that the struggle that the new waged against the old, the living against the dead, materialism against idealism, had raged before, throughout the entire history of biology; but never had it been waged so uncompromisingly and with such triumph for the new; and never had practice of such wide range intervened in controversies about theory.

It was as if the fetters that had bound the ancient science of life had been broken. The profound and exact understanding of living phenomena took the place of lifeless dogmas, reservations and biased interpretations. And so irrefutable was the proof of the effective power of this understanding that all the best representatives of biology, irrespective of the opinions they had formerly held, became convinced that the old views could be adhered to no longer.

This is what happened under our eyes. We are proudly conscious of the fact that it could have happened in no other country but ours.

A revolution in the world-wide development of biology has been brought about. We are witnesses of it.

. . . The storm will subside and the new knowledge will then stand out, cast in beautiful and perfect mould. It will appear majestically calm; and the patina of time will also cover the struggle and victory of those fearless innovators, the scientists of our day.

We, the Soviet people of the Stalin epoch, have seen how, in one of the biggest ideological battles fought in the history of natural science, a science of unprecedented might was born, and how this might endows man with fabulous power over nature. And all the obstacles that only yesterday had been proclaimed fatally insurmountable, fall before it.

It is the science of life which teaches man how to transform the surrounding world and to re-create living nature. It is Soviet, Michurin agrobiology. Its features are unexampled. It is the science of the people.

It is about this science that we shall speak here.



## THE BATTLEFIELD. GREEN LAND



### THE INHABITANTS OF GREEN LAND

We live in Green Land.

This is an immensely vast land. Its inhabitants are constantly around us.

We trample upon them on badly-swept paths. We disdainfully throw them out together with stale crusts covered with greenish, lacelike mould. We admire them at the florists.

Without them we could not exist. They provide our food. They give us pleasure. What city dweller does not hasten to spend a summer's day on the soft, silky grass amidst the rustle of leaves that sounds like the soft lapping of the waves on the seashore? Who has not enjoyed the charm of "mushroom excursions" in the autumn woods? And there are few who have not brought home a bunch of blue cornflowers, or of violet bluebells: they make the most crowded home brighter, cleaner and more cheerful.

And yet, most of us treat the inhabitants of Green Land, the plant world, with supreme contempt.

"They don't live, they vegetate," we say contemptuously of people who eat, drink, sleep, work lazily, read only for pastime, imperceptibly grow old and never see anything beyond their noses.



To us plants seem to be feelingless, powerless and motionless—almost lifeless.

Absent-mindedly, we pluck a leaf and crush it between our fingers. That is all it amounts to: a sticky mess. Can it contain anything of particular importance, or interest?

Those who think like that do not realize that although they meet with millions of plants, they do not really know them. Such people merely roam on the borders of Green Land. They do not know how vast this world is. They have no idea that it is wilful and strong and not uncomplaining and weak; that it is inhabited by tribes more wonderful than those fabulous peoples described by the geographers of the Middle Ages; that there are whole "continents" in this world that have been less explored than the wilds of Africa; and that it contains the most profound and mysterious riddles concerning everything that lives on Earth.

## LIVING DUST

Nobody has as yet counted the exact number of inhabitants of Green Land.

In various reference books and textbooks on botany hundreds of thousands of plant species are described.

In the depths of Green Land are hidden extensive invisible regions. We live in clouds of extremely minute living creatures. Bacteria, microscopic fungi and their spores fill the air we breathe. Every drop of river water near big cities carries with it several thousand microorganisms. Even the smell of the earth, the dank smell that everybody is familiar with, comes from the fact that every pinch of it is inhabited by millions of soil bacteria.

Without suspecting it, we ourselves carry in our bodies an incalculable number of alien lodgers.