

## In Memory of Professor Boris L. Astaurov

Soviet and world biology have suffered a heavy loss: one of the greatest Soviet biologists, a geneticist, professor, member of the USSR Academy of Sciences, Boris L. Astaurov died on 21st June, 1974 at the age of 69.

An excellent life is over, a life of a scientist and citizen, fully given to mankind, to the search for truth in science, to service for the sake of his Motherland.

B. L. Astaurov was born in 1904 in Moscow, in a family of physicians, representatives of progressive Russian democratic intellectuals. B. L. Astaurov's mother received her medical training at the Sorbonne (Paris), his father graduated from Kazan University. The family influenced deeply the development of B. L. Astaurov's personality: it was here that he absorbed the principles of democracy, of selfless love for his Motherland, intolerance of any falsehood, sense of high responsibility. He carried all these qualities through his whole life.

Having graduated from the Biological Division of the Physico-Mathematical Faculty of the Moscow University in 1927, B. L. Astaurov specialized in genetics at a laboratory headed by professor S. S. Chetverikov at the Institute of Experimental Biology the director of which was Professor N. K. Koltsov. It is under the influence of these remarkable scientists that the circle of B. L. Astaurov's scientific interests was formed, and the spirit of free scientific creation, fine friendship and faithfulness to the science which reigned in the collectives headed by Koltsov and Chetverikov, remained for ever indelible principles of his behaviour.

The basis of B. L. Astaurov's scientific activity was the study of fundamental problems of genetics and biology. In his most sophisticated experiments, first in the world, he carried out the complete thermal parthenogenesis and androgenesis in *Bombyx*, thus demonstrating the possibility of controlling the sex formation in animals.

By means of experimental model of sex control, B. L. Astaurov carried out a series of studies of principal generally biological importance. In his works on radiation androgenesis he formulated the principle of nuclear nature of biological effects of radiation and, having accomplished the intraspecies (1936—1940) and, especially, interspecies (1956) androgenesis, gave faultless evidences of the decisive role of the nuclear structures in morphogenesis and in



the processes of evolutionary divergence of the organism. Further experiments led B. L. Astaurov to the problems of experimental polyploidy in animals.

In a series of sophisticated experiments he solved splendidly the problem of obtaining the normally reproducing tetraploid form of *Bombyx*. On the basis of *B. mori* × *B. mandarina* crossing, he obtained a naturally (bisexually) reproducing interspecies tetraploid hybrid — an amphidiploid catering for all the requirements of a new species. Thus, for the first time in the world B. L. Astaurov obtained, on the basis of hybridization and experimental polyploidy, a new, previously absent in nature, tetraploid animal species, like earlier G. D. Karpechenko solved a similar task on plants.

The successful accomplishment of experimental creation of a new zoological species, together with the analysis of numeral bibliographic data, led B. L. Astaurov to a fundamental biological concept of parthenogenetic origin of bisexually reproducing natural polyploids in animals, and of the role of remote hybridization in this process.

All these studies situated on the crossroads of modern biology gave quite unequivocal answers to

the questions put by them, and opened new trends in theoretical genetics, developmental biology and in the practice of sex control. That is why the above mentioned works of B. L. Astaurov which became classical, put him forward as one of the greatest modern biologists. Having accepted the ideas and the best traditions of Koltsov's biological school, B. L. Astaurov developed them creatively, filled them with new factual and ideal contents.

B. L. Astaurov has great merits in the organization of science. After his unanimous election as the first President of the All-Union Society of Geneticists and Selectionists, he carried out an immense work in the organization and consolidation of this society, in the preparation and conducting of the II<sup>nd</sup> Congress of the All-Union Society. All this work was being carried out by him simultaneously with heading the

Institute of Developmental Biology of the Academy of Sciences of the USSR, whose organizer and director he remained up to the end of his life.

B. L. Astaurov was a member of several foreign scientific societies, institutes, and shortly before his death he was elected as an acting member of the Academy of Sciences of Finland.

In B. L. Astaurov, the Soviet biology lost one of its greatest and most honest men. But there remain his deeds — new scientific trends, a collective of his disciples and colleagues, the N. I. Vavilov All-Union Society of Geneticists and Selectionists, the Institute of Developmental Biology organized by him. All these are the best monument of prematurely deceased Boris L. Astaurov.

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