Obituary

Boris Aleksandrovich Keller
1874-1945

Academician Boris Aleksandrovich Keller, one of the most outstanding Russian plant ecologists, director of the Moscow Botanical Gardens of the Academy of Sciences, and president of the Turkmen Branch of the same Academy, died in Moscow on 25 October 1945.

B. A. Keller was born on 28 August 1874 in St. Petersburg but spent his childhood in the Volga region, mostly in Volsk and Saratov. He was educated in Moscow and Kazan Universities and after his graduation in 1902 became assistant in botany at Kazan University and docent in 1910.

This period of his life was devoted to the geobotanical research of the Central and Lower Volga regions, resulting in several publications, the most important of which is *Semi-desert regions* (1907), written in collaboration with a soil scientist, N. Dimo. In this work he gave one of the best classifications of the Russian steppes and made use of his method of "ecological series" in the study of plant associations in connection with their environment; he introduced also a new concept of "semiarid regions" and was first to make an ecologophysiological study of the vegetation of the steppes, deserts, and semideserts.

In 1906 he took part in the expedition of the Immigration Department to the Semipalatinsk region and later published an extensive two-volume work, *Botanico-geographical explorations of the Zaisan region of the Semipalatinsk Province* (1912). In 1909 and 1910 he explored the Altai region, incorporating the results of this expedition in another large work, *In the valleys and mountains of the Altai* (1914).

His reputation as a botanist and explorer now established, he was appointed professor of botany at Voronezh Agricultural Institute in 1913, which position he held for almost 18 years. During this period he founded an agricultural experiment station and created a highly efficient school of Russian agronomists, thus contributing greatly to the development of agriculture in his country. Although his schedule was heavy, he was able to publish some excellent books on the vegetation of the Lower Volga region, including *On the problem of the classification of the Russian steppes* (1916), in which he gave a masterful analysis of the types of steppe vegetation, and the two-volume *Vegetative world of the Russian steppes, semi-deserts and deserts* (1923–26). He also edited a large collective work, *Steppes of the Central Chernozem region* (1931). In all these works Keller made an all-round study of the vegetation, emphasizing its ecological aspect. His classification of the steppes differs from others in that it is based chiefly on botanical characteristics and not on the properties of substrata. He established the actual types of the steppe vegetation and explained the general laws of the distribution of plants throughout the world.

It was only logical that finally he turned to the study of ecological morphology and physiology of xerophytes and halophytes, especially their water regime. In his research on the relation of plant to drought and salification, as, for instance, his "Vegetation of the saline soils of the U.S.S.R." (1940) and other papers, he revealed the physiological nature of this adaptation and gave the picture of the evolution of these ecological forms.

Being an ardent and convinced adept in Darwin's theory of evolution, he applied his methods to his own studies. But in all his works he considered the problem of evolution as an ecologophysiological one and tried to explain many aspects of it on the basis of the way in which plants obtain nourishment and their relation to the environment. This is a new approach to the problem of evolution, because other students of evolution usually applied the morphological method, and Keller supplemented his theoretical studies by experimental work on the living plants in the Moscow Botanical Garden.

In 1931 Keller was elected a member of the Academy of Sciences and of the Lenin Agricultural Academy. In the same year he was appointed director of the Institute of Botany of the Academy of Sciences, one of the most important positions in the botanical field in the Soviet Union, and director of the Soil Institute. In 1936 he was in charge of an agricultural expedition into the Altai region and later edited a large collective work, *Agriculture of the mining region of the Altai* (1940). In 1937 he was given his last assignment—the reorganization of the Botanical Gardens of the Academy of Sciences at Moscow, where he tried to put in practice his ideas on ecology and evolution of plants.

By his death Russia lost one of its most distinguished botanists and a pioneer in the study of plant communities whose constant aim was to combine theoretical studies with the practical and economic needs of his country. Russian agriculture owes him as much as botany, for he not only created a school of Russian agronomists but also published many papers on various problems of agricultural research.

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