RUSSIAN STUDIES ON SOIL PROFILES

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The soil profile as it reveals itself in a vertical cut of a virgin soil with the characteristic build and constitution of the layers, known as horizons, is the alpha and omega of the Russian system of soil studies.

The specificity of the soil profile, its morphologic features and characters, its uniqueness for any particular climatic zone, and hence its uniform geographic distribution served as the basis, upon which the founders of the Russian school of soil science—Dokuchaev, Sibirtzhev, and their followers—have developed and built the concept of the soil as an independent natural body. A logical outcome of this concept was the development of soil science as an independent branch of science in the family tree of the natural sciences.

Soil science recognizes the soil as a distinct organism with definite morphologic and constitutional (physiological) features, with specific physical properties, chemical composition, and biological make-up. It is the soil body as found in nature, its anatomy and physiology, its behavior towards the forces which are responsible for its creation that concern soil science. The principles underlying the elucidation of the natural sciences are applicable also to soil science. For the study of soils the fundamental sciences—chemistry, physics, and biology—provide methods and guiding, basic laws.

Until the advent of the Russian school of soil science, the object studied by soil investigators was the mass of the soil body, the soil material. Most, if not all, of the accumulated knowledge about the soil was obtained from observations, analyses, and experiments with the soil material; and the underlying motive of soil studies was the desire to learn how to increase the productivity of the soil.

A deeper insight into the riddles of the soil was made possible only after the science got on its own feet and began to apply the scientific methods of study and the principles of the fundamental sciences.