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Fundamentals of Soil Science

2.2. Soils as Organized Bodies

... Soil bodies are large, and there is a need for a smaller unit of soil that can be the object of scientific study. The **pedon** (Figure 1) is the unit. A soil pedon is the smallest volume that can be called a soil and is roughly polygonal in shape. The lower limit is the somewhat unclear boundary between soil and nonsoil or the approximate depth of root penetration. Lateral dimensions are large enough to represent any horizon. The area of a pedon ranges from 1 to 10 square meters, depending on the variability of the soil. ... A soil body is composed of many pedons; therefore, a soil body is called a **polypedon** (Figure 1). ... The landscape as a whole can be viewed as being composed of many

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different soil bodies or polypedon.

... The rapid accumulation of knowledge about soils during the nineteenth century created a need for a concept of soil that accommodates the new facts. A revolutionary way of looking at soil was developed about 1870 in Russia by Dokuchaev. As he traveled about, he observed many different kinds of soils and observed that a given soil was found repeatedly in a given situation. Dokuchaev saw that each kind of soil had a unique morphology resulting from a unique combination of climate, living matter (plants and animals), earth parent material, topography, and age of the land. ... Soil properties gradually change over distance in accordance with changes in slope (topography), parent material, vegetation, climate, or age of land surface.

References

Foth, H. D. 1978. Fundamentals of Soil Science. John Wiley & Sons, New York, USA

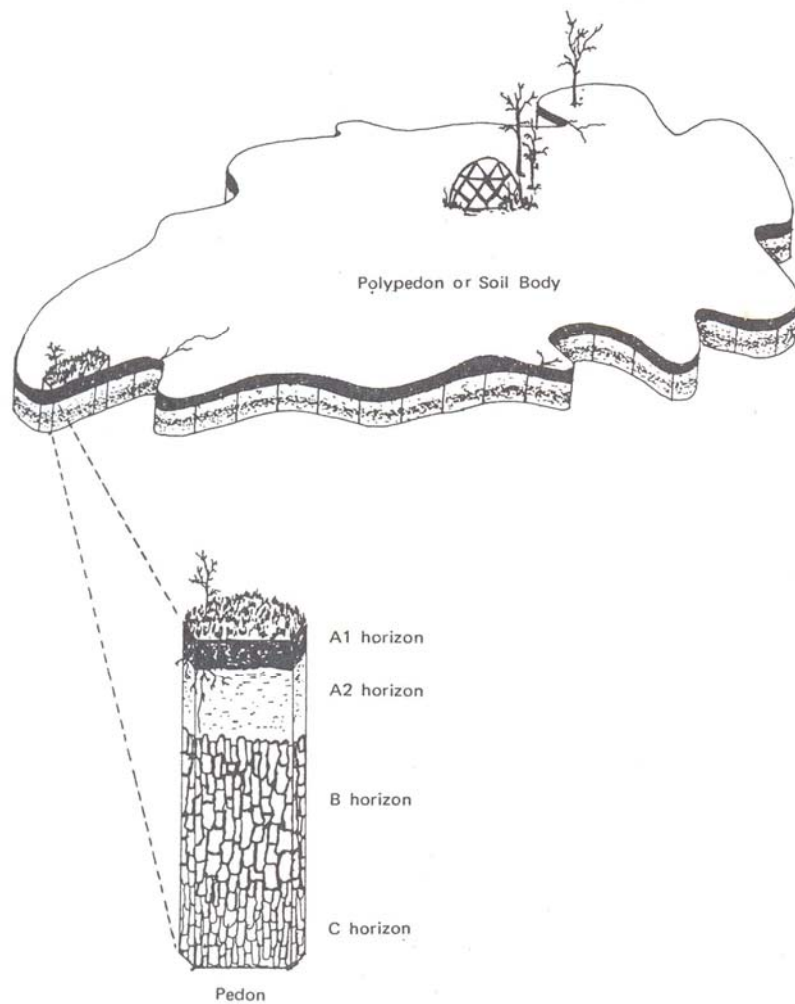


Figure 1 The pedon and its relation to the polypedon (Source: Foth, 1978)

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