

Soil Historical Perspectives – Soils and Landscapes- UNI – C.E. Heinzl, Ph.D.

Earliest concepts of soil focused on food production

Yao dynasty (2357 – 2261 BCE) - China, productivity of the soil was used to determine amount of taxes paid.

Aristotle (384-322 BCE) – Greek philosopher- Considered soil in relation to plant growth

Theophrastus (371 BC-287 BCE) - Greek wrote “On the Causes of Plants”

Fan Shengzhi (1st century BCE) – China, wrote on many agricultural topics including “Field Usage, Plowing, Irrigation, Harvesting,”

18th to 19th Century developments

Justus von Liebig (1803-1873) – German Chemist examined fertilizers, soils and plant production

A pedological view of the world did not emerge until the 1800's. The split between edaphology (argi-soils) and pedology (geo-soils) was initiated. Many of the earliest pedologists were trained in geology and physical geography and interested in weathered geologic materials.

Eugene Hilgard (1833-1916) Established concept of soils as natural bodies in USA. Introduced soil forming factors.

Vasili Kokuchaev (1846-1903) Established concept of soils as natural bodies in Russia. Introduced a soil classification system as well as soil forming factors.

Hilgard and Dokuchaev did not know about each other's work. There was little to no interaction between the two until the translations by Glinka and then Marbut. These two scientists came up with the several similar important soil concepts, independently.

Konstantin Glinka (1867-1927) – Dokuchaev student, Translated Russian work into German in 1914.

Milton Whitney (1860-1927) – Started Soil Survey program in the USA in 1899.

Curtis Marbut (1863-1935) – W.M.Davis student, Translated Glinka's work into English in 1927. Became head of the US Soil Survey.

Vera Baltz (1866-1943) – Russian Geologist, specialized in soil science and engineering geology, first Russian female soil scientist. Was imprisoned in 1930 for alleged government dissent, continued to her soil work while serving five years in the Solovki Prison Camp.

Percy Edgar Brown (1885-1937) – Created the first Landform Regions of Iowa as well as many soils maps and books.

Aldo Leopold (1887-1948) – Iowan, Forester, prominent conservationist that taught at the U. of Wisconsin-Madison. Understood and communicated the importance of soil conservation.

Charles Kellogg (1902-1977) – Followed Marbut as head of the USA Soil Survey. Believed soils should be mapped as units of naturally occurring bodies. Responsible for the current format of our soil surveys.

Hans Jenny (1902-1993) – Expanded soil forming factors concepts (C,I,O,R,P,T) originally brought up by Dokuchaev. Emphasized soils as part of the ecosystem.

Guy Smith (1902-1981) – Chief author of Soil Taxonomy. Conducted important loess research.

Robert V. Ruhe (1918-1993) – Trained as a geologist, used pedogenic concepts to reconstruct Quaternary Landscapes.

Johanna Döbereiner (1924-2000) - Czechoslovakian-Brazilian soil scientist and agronomist best known for her contributions to the agricultural sector. Her work laid the basis for the use of environmentally friendly farming methods.

Mary Baltz (1923-2011) – First woman to join the U.S. Soil Conservation Service. Mapped New York soils.

Peter Birkland (1934-2022) - Researched soil geomorphology, applied pedology principles to address landform and landscape evolution. This work had tremendous importance to Quaternary stratigraphic, neotectonic, and paleoclimatic problems.