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Marbut's 1935 Atlas of the Soils of the United States

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From the inception of the national soil survey in the USA in 1899 until the 1930s, the official soil classifications were based primarily on geology. This changed in the 1930s, due in large part to efforts by Curtis Marbut that started in the 1920s. Marbut's ideas culminated in his 1935 atlas titled "Soils of the United States". The atlas included national soil maps for the USA at three different scales. The first, and most general, was a black and white map of the USA showing Pedalfers (soils high in Al and Fe) and Pedocals (soils with carbonates in the profile), with the boundary between them running north-south roughly at the mid-point of the country. No cartographic scale was given for this map. The second map was a full color map of soil great groups at 1:8,000,000. This was a very similar scale to previous national-level soil maps made for the USA, which were at 1:7,000,000. The third set of maps were at a scale of 1:2,500,000 and mapped the entire USA on 12 full color sheets. The 1:2,500,000 scale maps probably represent the most detailed national soil maps available for the USA before GIS-based maps became widely available. Marbut's 1935 atlas is a breakthrough work in the USA for several reasons. It represented the culmination of a paradigm change in the USA, when soils ceased to be seen as a relatively simple result of geologic weathering and began to be seen as independent natural bodies resulting from multiple factors. It also represented the adoption of Russian concepts from the Dokuchaev school by leading American soil scientists. The 1935 atlas and the classification system it promoted had a major influence on the 1938 soil classification system of the USA national soil survey program, a system that would be used for the next 27 years. Charles Kellogg, a longtime head of the US National Cooperative Soil Survey and coauthor of the 1938 classification system, considered Marbut to be the world's leading soil expert at the time of his death and the 1935 soil atlas to be Marbut's most important work.