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William Smith's 1815 Delineation of the Strata of England and Wales with Part of Scotland: ... Varieties of Soil According to the Variations in the Substrata

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The map produced by William Smith in 1815 is recognized as the first geological map of Britain, but it also represents a benchmark in cartography for the Earth sciences. Shortly prior to Smith producing this map, topographic maps were revolutionized by the confluence of two key innovations. Namely, newly invented devices that could determine location very accurately by measuring angles at fractions of seconds combined with the wide-spread use of printing presses that could mass produce copies resulted in readily available maps in Europe. Although not the originally intended purpose, those maps became useful base maps on which to add thematic information. The coloring of those maps became very popular as a form of recreational education, like how we use coloring books today. For the Earth scientists, they could paint their observations onto positionally accurate topographic maps, reducing the amount of positional survey work needed. William Smith's 1815 geology and soil map of England was built on printings of John Cary's 1812 topographic map. The geological attributes were added by hand, using watercolors. Following the agrogeology concepts of the time, the title claims that by mapping the geologic strata, the varieties of soil are also shown. The new opportunity to leverage the proper map scaling in topographic maps as a locational reference to map other Earth science attributes set the stage for other revolutions. In the same year that Smith's map was published, Stanisław Staszic produced a geology map of Eastern Europe using the same approach. Dokuchaev shortly thereafter produced his famous 1883 "Schematic Map of the Chernozem Zone of European Russia", which was also drawn onto a pre-existing topographic map.