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[First Geological Map of America] A Map of North America shewing the Places where the Metals, Minerals, Fossiles and Medicinal Waters are to be found . . . .

Stock#: 89688
Map Maker: Cole

Date: 1756
Place: London
Color: Uncolored
Condition: VG
Size: 12.5 x 10.5 inches

Price: SOLD

Description:

Very Rare English Edition of "The Earliest Geological Map of America" - Roy Porter

Rare English edition of Jean-Étienne Guettard and Philippe Buache's important map of North America (*Carte Mineralogique ou l'on voit la Nature des Terreins du Canada et du Louisane*), generally regarded as the first geological map of the continent and also published in 1756. This is the first English-language geological map of North America.

Cole's map appeared in the December 1756 edition of the *Literary Magazine*, a short-lived British periodical published by Dr. Samuel Johnson from 1756 to 1758. Like the Buache/Guettard map, it includes 39 symbols to show the locations of rocks, minerals, springs, and fossils between the Atlantic and the Rocky Mountains. It also shows three different geological strata (discussed further below), although they are unnamed on the map.

Among the other curious features on the map, the map is one of the earliest English depictions of the Sea of the West (Western Sea), a mythical inland sea stretching from the Pacific Ocean to the Rocky Mountains.

<u>The oldest geological map of North America</u>

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Historians of science define the key criterion of a geological map as one which extrapolates the position of strata (rock types, or "earths" in this work) without having seen them at surface. This is in contrast to maps of resource distribution, which may show the positions of certain quarries or outcrops, but make no inference as to what lies between them. While earlier maps of North America do the latter, as in Lewis Evan's maps of 1749, 1751, and 1755, they make no claims to extrapolate the positions of rocks not seen at the surface. As such, Guettard and Buache's map, here copied by Cole is considered the oldest geological map of North America.

Cole's edition of the map shows, but does not name, the three rocky types that Guettard hypothesized. The darkest shading, just off the eastern coast of the continent is meant to represent a "sandy belt," the light grey coastal shading a "marly belt" and the unshaded interior of the continent a "schist-like metallic band." These are meant to cover, in order: sands, marls and sandstones from the continental shelf; limestones with no metal other than iron from coastal areas; and finally shales, slates, sandstones, schists, granites, etc. in inland areas poor in fossils but rich in metallic deposits and hot springs. While we now know that such strata are unlikely to represent cogenetic groupings, one could imagine where Guettard got this idea. His only resources for the offshore areas were Caribbean islands rich in sand and marl. Along the North American coast, limestones are very common, and fossils are abundant though ore deposits rare. Inland, orogenies and other processes have resulted in highly variable rock types, abundant ore deposits, and hot springs. In addition, the samples which Guettard worked with were limited and generally conformed to the above groupings when classed according to location. As this data seemed to match Guettard's theory of rock formation (discussed in the next paragraph) he extrapolated these bands to large areas in a way we now know to be incorrect.

This map includes representations of the theory of "Neptunism," now attributed to Abraham Werner, which seeks to explain the deposition of different rock types through a shrinking ocean. In this theory, a global ocean with a heterogeneous seafloor precipitated certain rocks at different stages. The differences in the three main periods of rocks deposited correspond to changing conditions of the ocean, which is taking to influence a wide variety of factors, such as the crystallinity of rocks or their fossil contents. Attributing this map to a version of that theory, the "metallic belt" would be from the primary (first) period, and represent the oldest rocks deposited during calm seas. The "marly belt" would represent a transitional (second) period, in which some of the properties of both the primary and the floetz (third) period are preserved. Floetz refers to the conditions of the modern oceans, responsible for the "sandy belt" and deposited in chaotic modern oceans.

In addition to the three bands of lithologies, the map shows the locations of 39 different types of rocks, ores, and geological processes. These reflect some key resources of the period, such as copper-bearing

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rocks, as well as more general observations, such as the location of hot springs.

Rarity

The map is extremely rare on the market. This is the second time we have offered the map for sale (previously offered in 2010), but we are unable to trace any other dealer or auction records for the map.

Both the Cole and the Buache/Guettard maps are rare, but the Cole English edition is significantly rarer due to the limited distribution of the *Literary Magazine*.

Detailed Condition:
Scant staining.