

Johann Friedrich Blumenbach, “A Casual Word about Basalt” (1790)

Abstract

Johann Friedrich Blumenbach's (1752–1840) short texts identify him as a Volcanist within the context of the Basalt Controversy. Whereas the Neptunists maintained that the earth's rock layers had been formed by water through the sedimentation process, the so-called Volcanists (or Plutonists) believed that fire had shaped the earth. The Neptunists' theory was informed by the biblical story of the flood. In the second half of the eighteenth century, representatives of the two camps engaged in a fierce debate about the forces that were mainly responsible for creating the earth. The rock basalt became the literal touchstone of the debate. Whereas the Volcanists/Plutonists claimed that basalt was formed by the erosion of volcanic magma, the Neptunists argued that it was formed by sedimentation from water.

In attempting to explain the origin of basalt, the two groups argued about the geological formation of rock; at the same time, however, they also negotiated theories for interpreting the world. Like a burning glass, the basalt dispute showed how mineralogy and geology changed at the end of the 18th century. Although the diluvial thesis was abandoned in the nineteenth century, the Volcanists were by no means considered the winners of the debate, since there was no empirical evidence.

Source

A Casual Word about Basalt.

For the time being, there is not likely to be a definitive outcome of the debate that has recently raged over the question of how basalt is created.^[1] It has become clear to me in the meantime that in this investigation one should never lose sight of the cosmogonic data that was discussed in the previous section, for when basalt came into existence in the fire, this was most probably by the hypothetical *general conflagration* of the earth. It is therefore likely older than the later transformation of our planet; and all of this basalt was thus created at the same time, and it (at least for the most part) flowed out into the water directly, without air being introduced, and hardened.

It should thus surprise no one that some differences become apparent when basalt (of such unfathomable age and created in this way) is compared with lava that pours forth into the air from a burning volcano, just as it is no surprise that there is a difference between amber and fresh resin, for one presumably was created in a violent revolution of the earth under very unique conditions. Rather it should be appreciated that, these circumstances notwithstanding, there are so many instances of concurrence between so many basalt mountains, and those few volcanoes that we know of in Europe, just as between some basalt and lava formations. For whoever has had the chance to examine extensive collections of the two will surely recognize the remarkable similarity between the rougher, dense lava and the typical basalt, just as he is sure to notice the differences between the quite bubbly basalt and the typical characteristics of fresh lava in both appearance and composition. Hence, in my possession are several very dense [chunks] of *true* lava from Vesuvius, and very bubbly *true* basalt from our Dransberg;^[2] and among the generous gifts that Baron [Georg Thomas] von Asch so tirelessly bestows upon the Academic Museum [in Göttingen] is the collection of so-called volcanic products, which the famous and educated traveler, Mr. [Jacob] Reineggs brought back from [Mount] Ararat and Erzurum; some of these, on the other hand, display as

much similarity with some basalts as with some lava, for example, the glassy pieces, which in consideration of their appearance have been placed in the very middle, between the so-called Icelandic agate and the volcanic glass “drops” from Kamchatka, which were likewise gifts from Baron von Asch.

As little as one might expect, as claimed above, that a definitive explanation to the question of how basalt is formed will emerge any time soon, it is nevertheless natural in such an uncertain case for one to analyze the *pro* and *contra* for each of the sides; in this way, I have thus far come to view the evidence as weighing in favor of the formation of basalt during a conflagration in a total metamorphosis of our Earth. I could be mistaken; in which case I am at least (as the great Edm[und] Halley once said in regard to a similar cosmogonic matter) in very good company.[3]

NOTES

[1] Here, too, Cicero's words ring true: “Sequimur probabilia nec ultra id quam quod verisimile occurrit progredi possumus.” And how desirable it would be that some of those proponents of the one or another opinion would heed the clause which directly follows: “et refellere sine pertinacia et refelli sine iracundia parati sumus.” [“We, on the other hand, who pursue only probabilities, and who cannot go beyond that which seems really likely, can confute others without obstinacy, and are prepared to be confuted ourselves without resentment.” *Cicero's Tusculan Disputations also, Treatises on the Nature of the Gods, and on the Commonwealth* (Hamburg: tredition, 2012).]

[2] A low mountain (about 1400 feet) in southern Lower Saxony.

[3] “ – wherein, if I err,” Halley said – “I shall find myself in very good Company.” –

Source: Johann Friedrich Blumenbach, “Beyläufig ein Wort über den Basalt,” in *Beyträge zur Naturgeschichte*, vol. 1, Göttingen 1790, pp. 19–23. Available online at:

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