containing the imbedded fossils rises above sea-level and becomes dry land.

Agricola, the mineralogist, also made a number of useful observations about springs, earthquakes, active and extinct volcanoes, volcanic rocks, the action of running water, and atmospheric movements.

Giordano Bruno, who was burnt at Rome in 1600 for heresy, was a natural philosopher of considerable insight. A reprint of his ideas appeared quite recently (*Boll. Soc. Natur. Napoli*, 1895). Bruno described the earth as a spherical body, on whose surface the depths of the oceans were greater than the height of the mountains; the mountains were no higher in proportion to the size of the earth than the wrinkles on the skin of a dried apple. Bruno also denied that there had ever been a universal Deluge, but brought forward evidences of frequent alteration in the distribution of land and sea. He also directed attention to the position of volcanoes in the immediate proximity of the sea, and from that he argued that thermal and volcanic phenomena might be due to some interaction between surface waters and the interior of the earth. Bruno's ideas were not understood by his contemporaries and were neglected.

No writer was more appreciated in his time than the accomplished Jesuit, Athanasius Kircher.[1] His famous work, *Mundus subterraneus*, begins with the consideration of the centre of gravity of the earth, and the form and constitution of sun, moon, and earth. Book III. is devoted to hydrography, another book (*Pyrologus*) treats of the earth's interior, volcanoes, and winds. Kircher's idea is that there are innumerable subterranean centres of conflagration (*pyrophylacia*), which are connected with active volcanoes; similarly that there are special water cavities in the earth (*hydrophylacia*), which are fed from the sea and are connected by branches

[1] Athanasius Kircher was born 2nd May 1602, at Geisa, near Eisenach, and died 1680, in Rome; was educated in the Jesuit College of Fulda, and took orders in 1618 at Paderborn. He was an accomplished linguist, and travelled through Sicily, Malta, and the Lipari Islands, visiting Etna, Stromboli, and Vesuvius. He was made a Professor in Würzburg in 1630, but on the approach of the Swedes in 1633, took flight to Avignon, and afterwards accepted the post of teacher of Mathematics in the Collegium Romanum in Rome. There he founded a valuable natural history collection, which was afterwards described by Bonanni in 1709 under the name of Museum Kircherianum, and is still kept up in Rome.