

level of the sea, and consequently only about $\frac{1}{6800}$ th of the Earth's radius. The crystalline masses that have been erupted from active volcanoes, and are generally similar to the rocks on the upper surface, have come from depths which, although not accurately determined, must certainly be sixty times greater than those to which human labor has been enabled to penetrate. We are able to give in numbers the depth of the shaft where the strata of coal, after penetrating a certain way, rise again at a distance that admits of being accurately defined by measurements. These dips show that the carboniferous strata, together with the fossil organic remains which they contain, must lie, as, for instance, in Belgium, more than five or six thousand feet* below the present level

non possumus; adeo ut quadringentas aut [quod rarissime] quingentas orgyas in quibusdam metallis descendisse, stupendus omnibus videatur conatus." — Gubelmi Gilberti, Colcestrensis, *de Magnete Physiologia nova*. Lond., 1600, p. 40.)

The absolute depth of the mines in the Saxon Erzgebirge, near Freiburg, are: in the Thurmhofer mines, 1944 feet; in the Honenbirker mines, 1827 feet; the relative depths are only 677 and 277 feet, if, in order to calculate the elevation of the mine's mouth above the level of the sea, we regard the elevation of Freiburg as determined by Reich's recent observations to be 1269 feet. The absolute depth of the celebrated mine of Joachimsthal, in Bohemia (Verkreuzung des Jung Hauer Zechen-und Andreasganges), is full 2120 feet; so that, as Von Dechen's measurements show that its surface is about 2388 feet above the level of the sea, it follows that the excavations have not as yet reached that point. In the Harz, the Samson mine at Andreasberg has an absolute depth of 2197 feet. In what was formerly Spanish America, I know of no mine deeper than the Valenciana, near Guanaxuato (Mexico), where I found the absolute depth of the Planes de San Bernardo to be 1686 feet; but these planes are 5960 feet above the level of the sea. If we compare the depth of the old Kuttenger mine (a depth greater than the height of our Brocken, and only 200 feet less than that of Vesuvius) with the loftiest structures that the hands of man have erected (with the Pyramid of Cheops and with the Cathedral of Strasburg), we find that they stand in the ratio of eight to one. In this note I have collected all the certain information I could find regarding the greatest absolute and relative depths of mines and borings. In descending eastward from Jerusalem toward the Dead Sea, a view presents itself to the eye, which, according to our present hypsometrical knowledge of the surface of our planet, is unrivaled in any country; as we approach the open ravine through which the Jordan takes its course, we tread, with the open sky above us, on rocks which, according to the barometric measurements of Berton and Russegger, are 1385 feet below the level of the Mediterranean. (Humboldt, *Asie Centrale*, th. ii., p. 323.)

* Basin-shaped curved strata, which dip and reappear at measurable distances, although their deepest portions are beyond the reach of the miner, afford sensible evidence of the nature of the earth's crust at great depths below its surface. Testimony of this kind possesses, consequently, a great geognostic interest. I am indebted to that excellent geog-