present chapter, is not the fact of the existence of an igneous fluid in the world's interior, but only the law which regulates the increase of temperature in proportion as we descend into its depths.

It is generally admitted that the temperature of the earth rises *one degree* for every 110 feet in depth. But these figures are only the *mean* result of a great number of observations; and local circumstances—especially the comparative facility with which the rocks conduct caloric—vary, according to place, this uniform rate of progression. It will be useful, therefore, to dwell upon the different observations which have induced our physicists to adopt the above-named average.

The learned Jesuit, Kircher, who wrote in the middle of the seventeenth century, speaks of the increase of temperature noticeable in the Hungarian mines. The first measurements of the heat of mines were not made, however, until 1740, when Gensanne, in the lead-mines of Giromagny (in the Vosges), discovered an increase of 1° for 61 feet.*

Towards the close of the eighteenth century, Saussure remarked that the Alpine glaciers melted away at their base every season. He attributed this fusion to the natural heat of the earth, and was thus induced to make, in various localities, such experiments as might reveal the law of the progression of temperature in the globe's interior. From his observations in the salt-mines of Bex, he found himself able

In 1797 he travelled in Switzerland and Italy, exploring their volcanic districts; and two years later embarked on a voyage to Equatorial America, where he collected a mass of facts in reference to its natural history, antiquities, inhabitants, and physical phenomena. After a sojourn of five years, Humboldt, and his friend Bonpland, the naturalist, sailed for Cuba; returned to Carthagena; ascended the Amazon river; visited Chili; ascended Chimborazo; traversed Peru, Mexico, and the United States; and returned to Europe in August 1804.

Several years were then spent in scientific research, and in the collation and reduction of his multifarious observations. His appetite for travel kindling anew, he undertook, in his sixty-third year, a journey to Central Asia, at the expense of the Russian emperor. He left Petersburg in May and returned in November 1829, having accomplished in six months a distance of 2320 geographical miles.

His greatest work, "Kosmos: a Physical Description of the World," was written when its author was in his seventy-third year, and remains an extraordinary monument of his genius, patience, learning, and remarkable powers of analysis and combination. Only inferior to this in value are his "Asie Centrale," and his "Voyage aux Regions Equinoctiales du Nouveau Continent."

Humboldt died at Potsdam, on the 6th of May 1859, within a few months of his ninetieth year.]

* Mairan, "Dissertation sur la Glace," Paris, 1749, p. 60.