

different confirmatory experiments and reasonings. In the first place, the observation that the temperature of the earth's crust continually increases towards the centre is in favour of this supposition. The deeper we descend, the greater the warmth of the ground, and in such proportion, that with every 100 feet the temperature increases about one degree. At a depth of six miles, therefore, a heat of 1500° would be attained, sufficient to keep most of the firm substances of our earth's crust in a molten, fiery fluid state. This depth, however, is only the 286th part of the whole diameter of the earth (1717 miles). We further know that springs which rise out of a considerable depth possess a very high temperature, and sometimes even throw water up to the surface in a boiling state. Lastly, very important proofs are furnished by volcanic phenomena, the eruption of fiery fluid masses of stone bursting through certain parts of the earth's crust. The glowing heat of the streams of lava, upon issuing from the interior of the earth, shows a temperature of 2000° and more. All these phenomena lead us with great certainty to the important assumption that the firm crust of the earth forms only quite a small fraction, not nearly the one-thousandth part of the whole diameter of the terrestrial globe, and that the rest is still for the most part in a molten or fiery fluid state.

Now if, starting with this assumption, we reflect on the ancient history of the development of the globe, we are logically carried back a step further, namely, to the assumption that at an earlier date the whole earth was a fiery fluid body, and that the formation of a thin, stiffened crust on the surface was only a later process. Only gradually, by radiating its intrinsic heat into the cold space of the