

earthquakes breaks open the top of a mountain and issues thence in great volume, hurling forth much earth mingled with sulphur or bitumen. These mountains may continue to burn for a long time, until all the sulphur or bitumen is consumed. Descartes thought that the subterranean fires might be kindled by the spirits inflaming the exhalations, or by the fall of masses of rock and the consequent sparks produced by their friction or percussion.

Still more memorable than the cosmological speculations of Descartes were those of the philosopher Leibnitz (1646-1716), whose capacious mind embraced every department of human knowledge, and whose acute and original genius threw new light into each. Among the subjects that engaged his thoughts was the problem of the origin and early history of our globe, regarding which he propounded views that have been accepted by the physicists of our own day. A summary of these opinions was first promulgated by him in a communication to the *Acta Eruditorum* of Leipzig, published in 1693, but the fuller statement contained in his remarkable treatise, the *Protogaea*, did not appear till 1749, thirty-three years after his death. Like Descartes, he believed that our planet was once a smooth incandescent molten globe, which has ever since been cooling, contracting and becoming rugose on the surface. When the temperature of the outer parts had sufficiently fallen, a glassy and slaggy crust began to form on the outside, portions of which he supposed to be recognisable in the primitive crystalline rocks, such as granite and gneiss. Out of the vaporous atmosphere, as the whole planet cooled, the water