

THE EVOLUTION OF THE WORLD

mined by the system of Copernicus (1543); Galilei, Kepler, and other great astronomers, mathematically determined its distance from the sun, the laws of its motion, and so forth. Kant and Laplace indicated, in their cosmogony, the way in which the earth had been developed from the parent sun. But the later history of the earth, the formation of its crust, the origin of its seas and continents, its mountains and deserts, was rarely made the subject of serious scientific research in the eighteenth century, and in the first two decades of the nineteenth. As a rule, men were satisfied with unreliable conjectures or with the traditional story of creation; once more the Mosaic legend barred the way to an independent investigation.

In 1822 an important work appeared, which followed the same method in the scientific investigation of the history of the earth that had already proved the most fertile—the *ontological* method, or the principle of "actualism." It consists in a careful study and manipulation of *actual* phenomena with a view to the elucidation of the analogous historical processes of the past. The Society of Science at Göttingen had offered a prize in 1818 for "the most searching and comprehensive inquiry into the changes in the earth's crust which are historically demonstrable, and the application which may be made of a knowledge of them in the investigation of the terrestrial revolutions which lie beyond the range of history." This prize was obtained by Karl Hoff, of Gotha, for his distinguished work, *History of the Natural Changes in the Crust of the Earth in the Light of Tradition* (1822-34). Sir Charles Lyell then applied this *ontological* or *actualistic* method with great success to the whole province of geology; his *Principles of Geology* (1830) laid the firm foundation on which