

THE RIDDLE OF THE UNIVERSE

ture that we were introduced to these fossil animals by Cuvier. In his famous work on the fossil bones of the four-footed vertebrates he gave (1812) the first correct description and true interpretation of many of these fossil remains. He showed, too, that a series of very different animal populations have succeeded each other in the various stages of the earth's history. Since Cuvier held firmly to Linné's idea of the absolute permanency of species, he thought their origin could only be explained by the supposition that a series of great cataclysms and new creations had marked the history of the globe; he imagined that all living creatures were destroyed at the commencement of each of these terrestrial revolutions, and an entirely new population was created at its close. Although this "catastrophic theory" of Cuvier's led to the most absurd consequences, and was nothing more than a bald faith in miracles, it obtained almost universal recognition, and reigned triumphant until the coming of Darwin.

It is easy to understand that these prevalent ideas of the absolute unchangeability and supernatural creation of organic species could not satisfy the more penetrating thinkers. We find several eminent minds already, in the second half of the last century, busy with the attempt to find a natural explanation of the "problem of creation." Pre-eminent among them was the great German poet and philosopher, Wolfgang Goethe, who, by his long and assiduous study of morphology, obtained, more than a hundred years ago, a clear insight into the intimate connection of all organic forms, and a firm conviction of a common natural origin. In his famed *Metamorphosis of Plants* (1790) he derived all the different species of plants from one primitive type, and all their different organs from one primitive