for their explanation. Cuvier points out four active causes as the natural forces, or mechanical agents, which were constantly but slowly at work in changing the earth's surface: first, *rain*, which washes down the steep mountain slopes and heaps up débris at their foot; secondly, *flowing waters*, which carry away this débris and deposit it as mud in stagnant waters; thirdly, the *sea*, whose breakers gnaw at the steep sea coasts, and throw up "dunes" on the flat sea margins; finally and fourthly, *volcanoes*, which break through and heave up the strata of the earth's hardened crust, and pile up and scatter about the products of their eruptions. Whilst Cuvier recognizes the constant slow transformation of the present surface of the earth by these four mighty causes, he asserts at the same time that they would not have sufficed to effect the revolutions of the remote ages, and that the anatomical structure of the earth's surface cannot be explained by the necessary action of those mechanical agents: the great and marvellous revolutions of the whole earth's surface must, according to him, have been rather the effects of very peculiar causes, completely unknown to us; the usual thread of development was broken by them, and the course of nature altered.

These views Cuvier explained in a special work "On the Revolutions of the Earth's Surface, and the Changes which they have wrought in the Animal World." They were maintained, and generally accepted for a long time, and became the greatest obstacle to the development of a natural history of the creation. For if such all-destructive revolutions had actually occurred, of course a continuity of the development of species, a connecting thread in the organic history of the earth, could not be admitted at all, and we