

more remarkable. Cuvier divides all animals into vertebrate and invertebrate ; the invertebrates consisting, according to his arrangement, of three great divisions,—mollusca, articulata, and radiata ; and the vertebrates, of four great classes,—the mammals, the birds, the reptiles, and the fishes. From the lowest zone at which organic remains occur, up till the higher beds of the Lower Silurian system, all the animal remains yet found belong to the invertebrate divisions. The numerous tables of stone which compose the leaves of this first and earliest of the geologic volumes correspond in their contents with that concluding volume of Cuvier's great work in which he deals with the mollusca, articulata, and radiata ; with, however, this difference, that the three great divisions, instead of occurring in a continuous series, are ranged, like the terrestrial herbs and trees, in parallel columns. The chain of animal being on its first appearance is, if I may so express myself, a threefold chain ;—a fact nicely correspondent with the further fact, that we cannot in the present creation range *serially*, as either higher or lower in the scale, at least two of these divisions,—the mollusca and articulata. In one of the higher beds of the Upper Silurian system,—a bed which borders on the base of the Old Red Sandstone,—the vertebrates make their earliest appearance in their fourth or ichthyic class ; and we find ourselves in that volume of the geologic record which corresponds to Cuvier's volume on the fishes. In the many-folded pages of the Old Red Sandstone, till we reach the highest and last, there occur the remains of no other vertebrates than those of this fourth class ; but in its uppermost deposits there appear traces of the third or rep-

which their earliest known remains occur, the probable period of their first appearance in creation ; while the double line of text below exhibits the complete correspondence which obtains between their occurrence in nature and the Cuvierian arrangement. The line representative of the radiata ought perhaps to have been elevated a little higher than either of its two neighbours.