

those of the Old red of Captain Brickenden, accepted by Lyell and Mantell, nor those of the Rev. Dr. Duncan, examined and described by Dr. Buckland, have the slightest resemblance to the tracks of any living Reptile, while the bones of the Devonian from Caithness, referred to *Trionyx* by Cuvier, and those of the same formation referred to the same genus by Kutorga, are really Fishes, and those of the Triassic period, described by Cuvier, are Reptiles of another order. The first genuine Testudinata known among the extinct representatives of the class of Reptiles, in past ages, belong to the oolitic series.

It is self-evident, that the geologist who has neither the means nor the inclination to test critically how far any identification of fossils may be relied upon, must, at every step, be led to the strangest conclusions. What would be the direct inference, with respect to the plan of creation, to be drawn from the presence of unmistakable Turtles in the oldest fossiliferous rocks? Of course, the conclusion would be that there is no kind of progressive order in the successive appearance of Vertebrates upon the surface of our earth, since the presence of the highest Reptiles would appear coeval with that of the oldest Fishes. But let it be understood that all the supposed cases of the occurrence of Reptiles prior to the Jura which have been quoted from time to time, cannot be relied upon, and are evidently mistakes, the whole question at once changes its aspect, and we see again an intelligible plan in the order in which organized beings have successively made their appearance upon this globe.

The following diagram, made, so far as it has been in my power, with the same critical method with which I have scrutinized the case of Turtles, may give a more definite idea, not only of the time of the first appearance of Testudinata, but of their relations to their predecessors, their contemporaries, and their successors upon the earth.¹ It shows conclusively, that the four great branches of the animal kingdom have had simultaneously representatives from the very beginning of the existence of organized beings. It shows further, that the law which obtains in the gradation and successive appearance of the Radiata, Mollusca, and Articulata is not the same as that of the Vertebrata. For while the classes of the first three branches appear all at the same time in the lowest fossiliferous rocks, with the sole exception of Insects, there is a decided gradation among the classes of Vertebrata. Among Radiata, we find simultaneously in the lowest rocks, Polypi and Echinoderms. The absence of remains of Acalephs in the oldest rocks is no objection to this assertion, when we remember how soft and

¹ In order to appreciate fully the meaning of this table, it would be well, while considering it in detail, to read section 7 of the first chapter, page 23, and

also sections 21-28, from page 93 to 123, where many points are considered, which here are represented graphically. Comp. also Chap. 3, p. 181-187.