

evidence, though they were undoubtedly led to their results by that instinctive appreciation of the true relations among organized beings, which, in the history of science, is so often found to precede the practical demonstration and establishment of final results. Certainly, it is an unquestionable fact, that correct views are frequently propounded upon subjects of natural science, the proof of which, in the first imperfect state of our knowledge, is still wanting. In the case before us, we shall see how the practice of naturalists has generally led them to results which have not been, till now, susceptible of demonstration; but I hold that the possibility of thus accounting in the end for views instinctively adopted, and so often generally accepted, is in itself satisfactory evidence that the principles which furnish the final demonstration are true to nature.

It might seem superfluous here to show that the class of Reptiles belongs to the type of Vertebrates, did it not afford an opportunity of showing that the definition of the great branches of the animal kingdom given above is correct. It has been stated¹ that these primary divisions did not rest upon peculiar structures, upon a distinct combination of given systems of organs, but exclusively upon a plan of structure. To show that Reptiles are Vertebrates, it may be sufficient, in practice, to exhibit their solid internal frame; but that this cannot be considered as the essential characteristic of a vertebrated animal is amply proved by the fact that *Amphioxus* no more has a skeleton, properly speaking, than the *Myxinoidea* and *Petromyzontes*; yet no one doubts that their true position is among Vertebrates. Again, in *Testudinata*, the largest part of the skeleton is truly external, their bony box being only covered by comparatively thin scales or a naked skin. There is, indeed, no class in which a greater diversity of structure is exhibited than among Reptiles; for, without mentioning the *Batrachians*, which constitute a class by themselves, what extraordinary difference is there not between Snakes, Lizards, and Turtles! To show that notwithstanding this variety of structure, these animals actually belong to the branch of Vertebrata, is the object I have in view; and if it can be shown that so diversified a class belongs to that type, according to our understanding of the term branch, we shall have the required proof that our definition is true to nature. Now I have stated that branches are founded upon different plans of structure. What is, then, that plan in Vertebrates which unites *Amphioxus*, *Cyclostomes*, *Sharks*, *Skates*, *Bony Fishes*, *Ichthyoids*, *Salamanders*, *Toads*, *Frogs*, *Snakes*, *Lizards*, *Crocodiles*, *Turtles*, *Birds*, *Whales*, *Marsupials*, our common *Quadrupeds*, *Bats*, *Monkeys*, and *Man*, which includes them all in one and the same group, and shows that group to be natural?

The body of all Vertebrates represents a double tube, one above the other, separated by a longitudinal axis, and varying in amplitude and in form at dif-

¹ See Part I., Chap. 2, Sect. 1, p. 141-144.