

ties which it may present, and of the reasonings, labors, cautions, and varied resources, by means of which its solution is sought, when a great philosophical naturalist girds himself to the task. We see here, most instructively, how different the endeavor to frame such a natural system, is from the procedure of an artificial system, which carries imperatively through the whole of a class of organized beings, a system of marks either arbitrary, or conformable to natural affinities in a partial degree. And we have not often the advantage of having the reasons for a systematic arrangement so clearly and fully indicated, as is done here, and in the descriptions of the separate orders.

This arrangement Cuvier adhered to in all its main points, both in the second edition of the *Règne Animal*, published in 1821, and in his *Histoire Naturelle des Poissons*, of which the first volume was published in 1828, but which unfortunately was not completed at the time of his death. It may be supposed, therefore, to be in accordance with those views of zoological philosophy, which it was the business of his life to form and to apply; and in a work like the present, where, upon so large a question of natural history, we must be directed in a great measure by the analogy of the history of science, and by the judgments which seem most to have the character of wisdom, we appear to be justified in taking Cuvier's ichthyological system as the nearest approach which has yet been made to a natural method in that department.

The true natural method is only one: artificial methods, and even good ones, there may be many, as we have seen in botany; and each of these may have its advantages for some particular use. On some methods of this kind, on which naturalists themselves have hardly yet had time to form a stable and distinct opinion, it is not our office to decide. But judging, as I have already said, from the general analogy of the natural sciences, I find it difficult to conceive that the ichthyological method of M. Agassiz, recently propounded with an especial reference to fossil fishes, can be otherwise than an artificial method. It is founded entirely on one part of the animal, its scaly covering, and even on a single scale. It does not conform to that which almost all systematic ichthyologists hitherto have considered as a permanent natural distinction of a high order; the distinction of bony and cartilaginous fishes; for it is stated that each order contains examples of both.¹⁵ I do not know what general anatomical or physiological

¹⁵ Dr. Buckland's *Bridgewater Treatise*, p. 270.