

The reforms of Linnæus, in all parts of natural history, appear as if they were mainly dictated by a love of elegance, symmetry, clearness, and definiteness; but the improvement of the ichthyological system by Artedi seems to have been a step in the progress to a natural arrangement. His genera,⁹ which are forty-five in number, are so well constituted, that they have almost all been preserved; and the subdivisions which the constantly-increasing number of species has compelled his successors to introduce, have very rarely been such that they have led to the transposition of his genera.

In its bases, however, Artedi's was an artificial system. His characters were positive and decisive, founded in general upon the number of rays of the membrane of the gills, of which he was the first to mark the importance;—upon the relative position of the fins, upon their number, upon the part of the mouth where the teeth are found, upon the conformation of the scales. Yet, in some cases, he has recourse to the interior anatomy.

Linnæus himself at first did not venture to deviate from the footsteps of a friend, who, in this science, had been his master. But in 1758, in the tenth edition of the *Systema Naturæ*, he chose to depend upon himself, and devised a new ichthyological method. He divided some genera, united others, gave to the species trivial names and characteristic phrases, and added many species to those of Artedi. Yet his innovations are for the most part disapproved of by Cuvier; as his transferring the *chondropterygian* fishes of Artedi to the class of reptiles, under the title of *Amphibia nantes*; and his rejecting the distinction of *acanthopterygian* and *malacopterygian*, which, as we have seen, had prevailed from the time of Willoughby, and introducing in its stead a distribution founded on the presence or absence of the ventral fins, and on their situation with regard to the pectoral fins. "Nothing," says Cuvier, "more breaks the true connexions of genera than these orders of *apodes*, *jugulares*, *thoracici*, and *abdominales*."

Thus Linnæus, though acknowledging the value and importance of natural orders, was not happy in his attempts to construct a system which should lead to them. In his detection of good characters for an artificial system he was more fortunate. He was always attentive to number, as a character; and he had the very great merit¹⁰ of introducing into the classification the number of rays of the fins of each species. This mark is one of great importance and use. And this, as well as

⁹ Cuvier, p. 71.

¹⁰ p. 74.