to truly thoracic ventral fins (with the pelvic bones directly attached to the clavicles) in the series _Ophiocephalus, Anabas, Osphromenurus_ and _Tetragonurus, Centrolophus, Stromateus_ respectively, and in order to attain precise diagnoses it becomes necessary to regard each of these two groups as of primary, i.e., sub-ordinal, rank, and to neglect the character of the attachment of the pelvic bones in defining them.

The first and second of these sub-orders have the names Percosoces and Labyrinthici respectively. For the third I propose the name Zenopharyngii, whilst the fourth, comprising fishes with the skeleton in great part cartilaginous, may be termed Malacichthyes. Of these groups only the Percosoces is represented in the fresh waters of Mexico and Central America.

The sub-order Acanthopterygii, as understood by Boulenger, is defined by a single character, viz., the direct attachment of the pelvic bones to the pectoral arch. When the systematic portion of the present work was commenced, more than two years ago, the sub-order was accepted by me; but I now think that the fact has to be recognized that the pelvic bones have become directly attached to the clavicles in several groups and that a large group defined by this character alone is unnatural.

It has been mentioned above that each of two natural groups, Zenopharyngii and Labyrinthici, includes forms with the pelvic bones remote from the clavicles and others in which they have acquired a direct attachment to the clavicles. In a third group, the Berycoids, the two conditions are also found, _Polymixia_ exemplifying the first and _Trachichthys_ the second. It seems pretty certain that the Cytidae and the Percoid fishes have evolved independently from the Berycoids, and we cannot lay much stress on the fact that the pelvic bones are directly attached to the clavicles in the two first-named groups as indicating any special relationship between them.

Enough has been said to show that the Acanthopterygii should be split up into several sub-orders; two of these are represented in the fresh waters of Mexico and Central America, viz. Percomorphi and Heterosomata, the latter including the single family Pleuronectidae.


In discussing the distribution of fresh-water fishes we need not take notice of marine fishes (_Centropomus, Pomadasis, Mugil_, &c.) which ascend rivers for considerable distances, either in search of food or for breeding-purposes, nor need we consider fishes which descend the rivers to breed in the sea (e.g. _Anguilla_). Fresh-water species of marine genera (e.g. _Chirostoma humboldtianum_) and fresh-water genera of marine families (e.g. _Xenatherina_) have little importance. True