physoclist with abdominal ventrals (Catosteomi and Percesoces) is, I feel, much in need of revision, and it may be found advisable to break up this group [Catosteomi] into a greater number of sub-orders."

I have paid a good deal of attention to these groups, and am of opinion that they are unnatural and indefinable.

After removal of the Selenichthyes, which I have recently been able to show are related to the Tæniosomi, and of the Hypostomides, the remainder of the Catosteomi, which corresponds to the Hemibranchii of Smith Woodward, is still a heterogeneous assemblage which I find incapable of definition, and includes three well-marked but probably related groups which should, in my opinion, be given sub-ordinal rank. These are: (1) **Thoracostei***, which have on each side a large dermal plate, which in the adult is co-ossified with the coracoid and sutureally united to the clavicle; (2) **Solenichthyes** (nom. nov.), which have a considerable amount of dermal armour but no plates similar to the ectocoracoids of the Thoracostei—the tubiform snout, terminal toothless mouth, pectinate gills, and elongate anterior vertebrae with separate transverse processes further characterize this group; (3) **Lophobranchii**, differing from the Selenichthyes in the lobate gills and normal anterior vertebrae.

The resemblances between the Centriscidae and the Selenostomidae, respectively the most generalized of the Selenichthyes and the Lophobranchii, seem to indicate relationship, but are, no doubt, in great part due to similar modes of life.

A few fishes belonging to the sub-order Lophobranchii are found in the rivers of Mexico and Central America.

Adding the Osphromenidae, which should, in my opinion, be placed with the Anabantidae, and after removing the Scombresocidae to the Haplomi, the Ammodytidae and Champsodontidae to the Percomorphi, and the Chiasmodontidae (**incertae sedis**), the families included by Bouleneger in the Percesoces may be arranged thus:—

I. Pelvic bones remote from the clavicles; a separate spinous dorsal; no suprabranchial organ; no œsophageal sacs  
   *Atherinidae, Mugilidae, Polynemidae, and Sphyraenidae.*

II. A suprabranchial organ  
   *Ophiocephalidae, Anabantidae, and Osphromenidae.*

III. Œsophagus with a pair of lateral muscular sacs, with internal papilae which may be toothed  
   *Tetragonuridae, Stromateidae.*

IV. Pelvic bones remote from the clavicles; no fin-spines; no suprabranchial organ; no œsophageal sacs  
   *Icosteidae.*

In the second and third of these divisions we see the transition from abdominal