The Thrissopidæ of the Oolitic period (Thrissops, Leptolepis, Tharsis), which are most closely allied to the herrings of the present day, are probably the oldest of all Osseous fish, and have directly arisen out of Round-scaled Ganoid fish, closely allied to the existing Amia. In the older Osseous fish of the legion called *Physostomi*, as also in the Ganoides, the swimming bladder throughout life was connected with the throat by a permanent air passage (a kind of windpipe). This is still the case with all the fish belonging to this legion, namely, with herrings, salmon, carp, shad, eels, etc. However, during the chalk period this air passage, in some of the Physostomi, became constricted and closed, and the swimming bladder was thus completely separated from the throat. Hence there arose a second legion of Osseous fish, the *Physoclisti*, which did not attain their actual development until the tertiary epoch, and soon far surpassed the Physostomi in variety. To this legion belong most of the sea fish of the present day, especially the large families of the Turbot, Tunny, Wrasse, Crowfish, etc., further, the Lock-jaws (Plectognathi), Trunk fish, and Globe-fish and the Bushy-gills (Lophobranchi), viz., Pipe-fish, and Sea-horses. There are, however, only very few Physoclisti among our river fish, for instance, Perch and Sticklebacks; the majority of river fish are Physostomi.

Midway between genuine Fish and Amphibia is the remarkable class of *Mud-fish*, or *Scaly Sirens* (Dipneusta, or Protopteri). There now exist only a few representatives of this class, namely, the American Mud-fish (Lepidosiren paradoxa) in the region of the river Amazon, and the African Mud-fish (Protopterus annectens) in different parts of Africa. A third large Salamander-fish (Ceratodus Fosteri)