SPECIAL ARTICLES

THE AMPHIBIOIDEI, A GROUP OF FISHES PROPOSED TO INCLUDE THE CROSSOPTERYGII AND THE DIPNEUSTI

THE typical fishes or Teleostomi (Osteichthyes) obviously form a monophyletic group, being distinguished from the Elasmobranchii (Selachii) by: the development of true scales and of two related structures—articulated fin rays and membrane bones, the latter including an opercle covering the branchial clefts; the reduction of the interbrapchial septa; the presence of a developed air-bladder or lung, of two external nostrils on each side; the lack of pelvic claspers (mixipterygia), etc. The Teleostomi, as Mr. C. Tate Regan[1] has recently stated, "may be arranged in two series : in the Actinopterygian series (Chondrostei and Teleostei) the duct of the air-bladder opens dorsally or dorsolaterally into the alimentary canal, the branchiostegals retain their primitive serial arrangement, and the supports of the paired fins are either in the form of a series of parallel pterygiophores each of which is *segmented* into a basal and a radial portion or are modified from this plan by a simple process of concentration and reduction; in the Crossopterygian series (Crossopterygii and Dipneusti) the opening of the pneumatic duct is ventral, the branchiostegals are replaced by a pair of gular plates, and the paired fins are more or less lobate, with their supports tending to the biserial arrangement with axial basalia." The first of these two series, the primary subdivisions of the Teleostomi, is known as the Actinopterygii or Actinopteri; the second series apparently has received no definite name. As both morphological and paleontological evidence indicate the monophyletic naturalness of this group, it should receive a distinctive designation; to indicate its similarity and relationship with the primitive Amphibia, this group, comprising the Crossopterygii and the Dipneusti (Dipnoa), may be termed Amphibioidei.

The taxonomic rank to which the Amphibioidei may be assigned is largely a matter of personal opinion. The writer would classify the group in serial arrangement among other chordates as follows, leaving out of consideration several groups wholly extinct and of doubtful affinities (of these the Arthrodira or Arthrognathi have often been regarded as related to the Dipneusti or the Crossopterygii) :

1 *Ann. Mag. Nat. Hist.* (8), 3, 1909, p. 76.

2 Dollo, *Bull. Soc. Belg. Géol.*, 9, 1895, p. 79.

Subphylum **Euchorda.**
  Superclass Pisces.
    Class **Marsipobranchii.**
    Class **Elasmobranchii.**
    Class Teleostomi.
      Sub class **Actinopterygii.**
        Superorder **Chondrostei.**
        Superorder Holostei.
        Superorder Teleostei.
      Subclass **AMPHIBIOIDEI.**
        Superorder **Crossopterygii.**
        Superorder Dipneusti.
  Superclass Tetrapoda.
    Class Amphibia, etc.

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