

CONTRIBUTIONS TO THE CRANIAL OSTEOLOGY OF THE  
FISHES.

Nos. III., IV. AND V.

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No. III. THE TELEOSTOME SKULL ; AN ATTEMPT TO PROVIDE AN ICHTHYO-  
CRANIOLOGICAL NOMENCLATURE.

The several skulls described in these communications were dealt with as they came to hand and not in any prearranged order. As the work progressed, the disability of the want of a recognised terminology for the various skull areas and cavities was increasingly felt. When a number of skulls had been described it was found that similar areas or cavities were not always similarly constituted in the different skulls. Two illustrations may be cited. There are at the back of all the skulls described three muscle fossae on each side. Of these, that which is next the mid-line appears to be constantly related to the most anterior epiaxial capiti-nuchal muscles; the middle fossa on each side appears equally constantly to be developed for the attachment of the anterior hypoaxial capiti-pectoral muscles, whilst the relation of the third fossa to the dilatator operculi muscle gained it the name of *dilatator fossa* from the pen of Sagemehl and Allis.<sup>1</sup> The three fossae are developed in very different degrees and constituted differently in different fish. Again, the various bony recesses for the parts of the auditory organ are not constantly accommodated in the same bones, yet the cavities themselves are constantly recognisable.

To obviate this disability a halt was called in the description of the skulls and the following general description of a fish skull was drawn up. It will be noted that this description is, for the most part, based on the form and constitution of the adult skull, without reference to the nature, covering, or origin of the constituent bones. Where suitable designations have been already used they have been availed of; in the absence of such, topographical terms have been applied in most instances, in preference to anatomical terms which imply relation to soft parts.

GENERAL DESCRIPTION.

The cranium of the bony fishes presents three very readily recognisable regions; placed in line in front of one another, they are the *cerebral*, *orbital*, and *ethmo-nasal* or *preorbital* regions.

The nasal capsules are very incomplete, and the bones related to them are the premaxillae below, the mesethmoid behind, and the nasals above. Usually the premaxillary labial is also related to the capsule,

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<sup>1</sup>See papers cited on pages 184 and 186.