

(not Blkr) and *Chatodipterus* Lac. (= *Parephippus* Gill). *Drepane*, according to Cape, is a Carangid, and *Scatophagus*, judging from the figure of its skeleton (Agassiz's *Poissons Fossiles*, t. 4, pl. II. f. 1), belongs to a peculiar family—the *Scatophagida*—the ribs of which are simple and received in sockets comparatively high on the centra, and, apparently,* the post-temporal is forked. In fact, *Scatophagus* appears to have no direct affinity with the Chatodontids.

ON THE RELATIONS OF THE FAMILY LOBOTIDÆ.

BY THEODORE GILL.

Among those families which are "incertæ sedis" has been that designated as Lobotidæ. Its type—*Lobotes surinamensis*—has been almost universally placed with the Pristipomids except by American authors. There was, however, nothing in its physiognomy or characteristics, except the unarmed palate, to justify such a reference, and recent examination shows that the skepticism as to the propriety of such association was amply warranted. On the whole it appears to be most nearly related to the Serranidæ of the families whose characters are to some extent known, and may be provisionally defined as follows:

LOBOTIDÆ.

Synonymy.

< [Lobotidæ] Gill, Proc. Acad. Nat. Sc. Phila., [v. 14,] p. 238 (not named or defined †), 1862.

? Lobotidi Poey, Repertorio Fisico Nat. de Cuba, t. 2, p. 324 (not defined), 1838.

= Lobotidæ, Gill, Cat. Fishes E. Coast N. Am., p. — (not defined), 1873.

Sciënoides gen., Cuvier, etc.

Pristipomidæ gen., Günther, etc.

Percoidæ gen., Bleeker.

Percoidæ with an oblong compressed body equally developed above and below, a short snout and anterior eyes, edentulous palate, dorsal and anal with the soft portions equal and opposite, the former preceded by a much larger spinous portion, the latter with three spines, vertebrae 24, 12 abdominal and 12 caudal; ‡ the fifth to eleventh with short but gradually lengthening parapophyses projecting sideways and behind downwards, and the twelfth with the parapophyses elongated, converging at their extremities, and fitting into a groove of the first haemal spine, the costiferous pits excavated obliquely in the developed parapophyses, and gradually ascending forwards on the vertebrae, and finally

*The figure given by Professor Agassiz is ambiguous.

† "*Lobotes* Cuvier and *Dalnooides*, Blkr., rather represent a family, perhaps, somewhat allied to the *Nandoidæ*." Gill, *op. cit.*

‡ Dr. Günther has attributed to the "*L. auctororum*" "Vert. 13 | 11" (Cat. Fishes B. M., i, 338).

on the neurapophyses; the skull with its frontal portion broad, expanded forward and outward, and entering into the posterior borders of the orbits, which are advanced far forwards: the post-frontals elongated forwards and underlying the frontals; ethmoid short, decurved and expanded sideways.

The abbreviated orbital and ante-orbital regions and ensuing modifications contrast strongly with the corresponding parts in all the forms with which the genus *Lobotes* has been associated. With the exceptions noted, the vertebræ are essentially similar to those of the *Serranidæ*.

Lobotes is the only certainly known member of the family.

NOTE ON THE RELATIONSHIPS OF THE ECHENEIDIDS.

BY THEODORE GILL.

Among those forms that have been most shifted from place to place in the ichthyological systems is the genus *Echeneis* of Artedi and Linnæus.

By Artedi (1738) as well as by Linnæus, at first, it was placed in the order MALACOPTERYGII next to *Coryphæna*, the last a true acanthopterygian fish.

By Linnæus, in the later editions of the *Systema Naturæ* (1758, 1766), it was placed in the order THORACICI, but still kept by the side of *Coryphæna*.

By Cuvier (1817) it was referred to the order of "Malacoptérygiens subbrachiens" and the family "Discoboles" after *Lepadogaster* and *Cyclopterus* (R. A., t. 2, p. 227, 1817).

By Swainson (*Nat. Hist. and Class. Fishes, etc.*, v. 2, 1839) the genus *Echeneis* was raised to family rank and the family (Echeneidæ) referred to the order "Acanthopteryges" and the tribe "Microleptes," in which it was supposed to constitute an "aberrant family" (p. 30), which "represented" the Acanthopterygian "tribe Bleunides" (p. 32) and the "order Apodes" (p. 31).

It was preceded by the "typical" families (1) "Scomberidæ" and (2) "Zeidæ," and followed by the "aberrant" families (4) "Centrisidæ" and (5) "Coryphænidæ."

Subsequently all reference to the family as well to the genus was omitted (apparently through forgetfulness) by Swainson in the later and synoptical portion of the work. His eccentric classification is only noticed here because a similar or still more extreme view as to the affinity of the genus became long afterwards quite prevalent.

By Müller (1844) the genus was put in the order Acanthopteri and in the family Cyclopodii, but as the representative of a peculiar "group" ("3. Gruppe. Echeneiden").