

the third and fourth form the lower part of the orbit; the fourth and fifth touch the lower postorbital; the sixth and seventh are equal in size. Two posterior oculars; two temporals, one behind the other. The median lower labial is triangular; six lower labials, the first pair forming a suture behind the median shield; two pairs of chin-shields, the anterior pair being twice the size of the posterior; there are four pairs of scales between the chin-shields and the first ventral. The scales are smooth, rhombic, in fifteen series. Ventral shields 172; anal bifid. The posterior quarter of the tail is mutilated. The ground-colour of the upper parts is shining black; the anterior part of the snout, a spot on the fifth upper labial, the rings of the body, and all the lower parts, are brownish-yellow. The rings, in this specimen, are one-fourth or one-fifth of the width of the black interspaces, and occupy two or three transverse series of scales; they are sometimes irregular and interrupted; all those on the tail are interrupted, the halves of one side alternating with those of the other; the first ring forms a collar, crossed by a narrow black streak.

	inches.
Length of the head .....	0 $\frac{1}{2}$
——— of the trunk .....	17
——— of the tail (restored).....	4

## MISCELLANEOUS.

### *On Alepidosaurus, a Marine Siluroid Fish.*

By Dr. ALBERT GÜNTHER.

IN his Family *Scomberoidei* Cuvier has brought together many dissimilar fishes, whilst he has omitted others which approach very closely to the typical forms. Other species discovered by subsequent zoologists, and exhibiting some agreement with a Scomberoid fish, went to increase the unnatural group. Amongst the latter is *Alepidosaurus ferox*, described by Lowe (Proc. Zool. Soc. 1833, p. 104; Trans. Zool. Soc. i. p. 124, pl. 19, and p. 395, pl. 59; vol. ii. p. 181). This profound naturalist, to whom we are indebted for our best information upon the fauna of Madeira, deceived himself in this case as to the structure of the rays of the dorsal fins. These are not the inarticulate bones of the *Acanthopterygii*, but they are soft, and their division into joints appears indistinct only because the individual joints are separated from each other by great spaces, and each ray, notwithstanding its length, only consists of a few joints. It is true the absence of the spiny fins would be of itself no proof of the position of our fish amongst the *Malacopterygii*: this is wanting in several true *Acanthopterygii*; but then other characters aid us in recognizing their natural position, and the place where the spiny fin should stand is not occupied by the soft dorsal, as is the case in *Alepidosaurus*; in them the spiny fin is merely reduced to a rudimentary condition (*Brama*). If to this we add the presence of the adipose fin in *Ale-*



*pidosaurus*, and the abdominal position of its ventrals, which consist of one simple and nine branched rays, we cannot but come to the conclusion that this fish is a true Malacopterygian. The swimming bladder is wanting, as in many other Physostomi.

I have obtained evidence to which family of Physostomi *Alepidosaurus* is to be referred, by the examination of its skeleton\*. 1. *The suboperculum is wanting*; it is replaced by the interoperculum, which equals the operculum in size. 2. *The margin of the upper jaw is formed entirely by the intermaxillary bone*; it is armed throughout its length with a row of small teeth; it is very weak, and dilated only in front into a nearly transparent lamella. 3. *The maxillary bone is rudimentary*: whilst in freshwater Siluroids with a short skull it is diminished in length, in *Alepidosaurus* it certainly imitates the cranial bones in its elongated form, but is not thicker than a needle, and can only be retained by careful preparation of the skull.

These osteological characters distinctly indicate a near alliance of our fish with the *Siluroidei*, notwithstanding any difference of form; and to this we may add that it is destitute of scales, and predatory; that, like most species of this family, it has an adipose fin, and that, like all of them, it is destitute of cæca. The relationship betrays itself even in some less important characters,—for example, in the outer ray of the pectoral fins, which is thickened and toothed. We have thus in *Alepidosaurus* the first example of a marine Siluroid fish; and if there be an objection to destroy the unity of the freshwater *Siluroidei* by the interpolation of *Alepidosaurus*, we may form for it a peculiar family (*Alepidosauridæ*) with the characters of the genus, which will then take its place in the immediate vicinity of the *Siluroidei*.

It is to be expected that *Alepidosaurus ferox* will not remain the sole species of this group. The fish described by Richardson, from the fragment of a cranium from Van Diemen's Land, as *Alepisaurus* sp. (Voy. 'Erebus' and 'Terror,' Ichthyol. p. 34, pl. 22. figs. 1–4), is identical with that from Madeira, as I have convinced myself by personal examination of the specimen, as far as the characters can be ascertained from the existing materials. His assertion that *Alepidosaurus* belongs to the *Sphyrænidæ* rests upon a very superficial investigation. But Mr. Lowe has told me of another species, very similar to our fish, which the fishermen in Madeira not unfrequently take with the hook at great depths. The union of the vertebræ, of the bones of the skull, and of the muscular segments is, however, so loose that, by its own efforts to free itself, the fish breaks up into fragments, and those portions which can be brought up to the surface become broken up in the air as though they had been dissolved by boiling.—*Wiegmann's Archiv*, 1860, p. 121.

\* I will give a detailed description of the skeleton in the course of my 'Catalogue of Fishes.' It is remarkable in general for the singular deficiency of earthy constituents, as the muscles are for the extremely small development of the ligamentous tissue.





Günther, Albert C. L. G. 1860. "On Alepidosaurus, a Marine Siluroid fish." *The Annals and magazine of natural history; zoology, botany, and geology* 6, 150–151.

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