

XVIII.—The Type of *Exocætus exiliens* (L. Gmel.).

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IN the collection of Linnean specimens of Fishes, now in the possession of the Linnean Society of London, there is a specimen of *Exocætus*, sent by Garden to Linnæus from Carolina at an uncertain date. I have already mentioned it in my list of Linnean specimens in Proc. Linn. Soc. 1899, p. 37, no. 165; but I then failed to recognize its importance; it undoubtedly proves to be the type of (L.) Gmelin's *Exocætus exiliens*.

It is the dried skin of a fish 6 in. long, which had been preserved in the manner of a botanical specimen; the head has been compressed and crushed; both sides of the skin are preserved, and the vertebral column shows through large vacuities in the skin; the fins are collapsed, with the exception of the pectorals, which are stretched to their full width and glued to a supporting piece of paper. The specimen is labelled by Garden, No. 25, and in Linné's handwriting *Exocætus volans*.

It is not necessary to repeat here Gmelin's diagnosis of the fish; and I may at once proceed to supplement it as far as the dilapidated condition of the specimen will allow.

The length of the head is contained $4\frac{1}{2}$ times in the total (without caudal); the snout seems to have been rather pointed. The pectoral fin extends nearly to the caudal, and consists of 14 rays on one side, and 15 on the other; of these the first is simple (33 mm. long), half as long as the second which is branched; however, on one side, a rudimentary ray (3 or 4 mm. long) can be made out to precede the first ray*; none of the rays are lamellated in the basal portion as in *E. lamellifer*. The ventrals are inserted midway between the gill-opening and the root of the caudal, and reach nearly to the base of this fin. The dorsal and anal fins are collapsed, firmly adhering to the skin of the tail, so that it is difficult to

* Lütken attached considerable taxonomic value to the presence of either one or two simple rays in front of the first branched pectoral ray. If the additional simple ray is of some length and connected with the second simple ray by an interradyal membrane, its presence, no doubt, forms a specific character. However, I find that in several species, which were supposed to have, and are generally described as having, one simple ray only, there is a rudimentary additional ray present. It is more or less covered by the skin, attached to the base of the long simple ray, with which in adult individuals it actually coalesces, thus increasing the power of resistance at the spot where it is most wanted for flying. I suppose that in young individuals this ray is much more conspicuously distinct.

count the rays, but the former seems to be formed of 12 or 13, and the latter of 9 or 10 rays. *The dorsal fin commences far in advance of the anal*, in fact, the first anal ray is opposite to the sixth of the dorsal; on the other hand, the basis of the anal extends rather more backwards than that of the dorsal. The dorsal is elevated throughout its length, some of the hinder rays reaching nearly to the caudal. The lower caudal lobe in its present dried condition is considerably longer than the head (33 mm.). The majority of the scales are lost, but there seem to have been 42 in a longitudinal series on the side of the body, and 28 between head and dorsal fin; I count 9 longitudinal series above the first anal ray.

The hinder part of the dorsal, possibly the entire fin, was black; the anal whitish, the extremity of the caudal blackish. Basis of the pectoral blackish, then follows a broad white cross-band from the lower to the upper margin; the posterior half of the fin black, with traces of a narrow white margin. Anterior half of ventrals whitish, posterior blackish. No black band across the abdomen.

The characters given above tally very well with the notes left by Gmelin, except the numbers of the fin-rays, which Gmelin states to be D. 10, A. 11. However, no great weight can be attached to this discrepancy, considering the frequent inaccuracies which we meet in this respect in Gmelin's edition, as well as the great difficulty in ascertaining the correct numbers in this particular specimen, the fins of which must have been always (since it came into Linné's possession) in the same collapsed and dried-up condition. Mr. Tate Regan assisted me in fixing the numbers by counting the swelled joints at the base of the fin-rays.

Gmelin says: "pectorales radio primo et secundo brevibus"; we must therefore conclude that he saw and counted the rudimentary ray which I find on one side of the specimen, but not on the other. But this condition is very different from that obtaining in the young individuals which Lütken (Vid. Meddel. 1876, pp. 110 *et seq.*) determined as *E. exiliens*, and which have that anterior ray much more developed, nearly one half the length of the second.

Jordan and Evermann (Fish. N. Amer. p. 732) ascribe the priority of the original description and the name "*exiliens*" to P. L. S. Müller, giving 1776 as the date. This is an error. That date is the year of publication of the *first* volume of Müller's work: the description of our fish appears in the seventh volume (Supplement) dated 1789, a year later than Gmelin's edition of the 'Systema naturæ,' and published several years after Müller's death. Besides, Müller (or, after



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