

## THE BREEDING HABITS OF THE PARADISE FISH,

(*POLYACANTHUS OPERCULARIS*, *Linnaeus*).

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In a former paper<sup>1</sup> I described the nesting habits of the Fighting Fish (*Betta pugnax*, Cantor) as observed in my aquaria. I have since had the good fortune to secure a number of living specimens of the Paradise or Rainbow Fish, *Polyacanthus opercularis*, Linnaeus,<sup>2</sup> which name, according to Dr. Boulenger,<sup>3</sup> represents the original species whence the domestic *Macropodus viridiauratus*, Lacépède,<sup>4</sup> is derived.

This fish is breeding very freely with me, but as its life history is well known I do not propose to do more than point out in what respects its habits differ from those of *Betta*.

The male is larger than the female, has the fins more produced and the caudal filamentous. Ordinarily the coloration of the sexes is similar, but when breeding the hues of the male are intensified, while the female becomes very pale and loses the beautiful greenish blue bars on the body. None of the illustrations I have seen do justice to this beautiful fish. My specimens exhibit ten bars as described by Linnaeus; published figures show a smaller number.<sup>5</sup>

The nest of *Polyacanthus* is usually not so extensive nor so dome-shaped as that of *Betta*: this may be accounted for by the former fish showing a greater preference for nesting beneath some shelter, as the leaf of a Nardoo (*Marsilea*) or the crossing ribbons of *Valisneria*. The first batch of eggs is frequently produced when but a few bubbles are formed, others being added below as oviposition proceeds. As a consequence the eggs are raised quite out of the water and hatched in this situation. The young ones may be seen wriggling within the egg on the surface of the nest: this lends support to the observation that some existing shelter is used, beneath which the bubbles are blown, otherwise the young would be very conspicuous to an enemy above.

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<sup>1</sup> Waite—Rec. Aust. Mus., v., 1904, p. 293, pl. xxxviii.

<sup>2</sup> Linnaeus—Syst. Nat., ed. x, 1758, p. 283.

<sup>3</sup> Boulenger—Cambridge Nat. Hist., vii., 1904, p. 669.

<sup>4</sup> Lacépède—Hist. Nat. Poiss., iii., 1802, p. 417.

<sup>5</sup> Cuvier et Valenciennes—Hist. Nat. Poiss., vii., 1831, pl. 197; Valenciennes—Reg. Anim. Ill. Poiss., pl. lxxiv., fig. 2; Pouchet—Rev. Mag. Zool., xxiii., 1872, pl. xxv.