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STUDIES OF THE FISHES OF THE ORDER CYPRINO-
DONTES. XIV. *PLECTROPHALLUS*
REGARDED AS A DISTINCT
GENUS

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THE richness of the Middle American poeciliid fauna was again emphasized when Fowler (1932: 384, fig. on p. 381) described *Panamichthys tristani*, a new Costa Rican species, as the type of a new subgenus *Plectrophallus*. Fowler's diagnosis of the subgenus follows:

From the genotype of *Panamichthys* (*Priapichthys panamensis* Meek and Hildebrand) the present subgenus differs chiefly in its anal fin, which is inserted a little nearer the caudal base than the snout tip, though before the dorsal origin. The gonopodium extends only half way to the caudal base, its length 4 in combined head and body to caudal base. Pectorals not reaching middle of depressed ventrals. Coloration as in *Brachyrhaphis*.

I have separated this species as a subgenus chiefly on the structure of its gonopodium, which is more strongly recurved than in subgenus *Panamichthys*.

A reëxamination of the holotype, the only known specimen of the species, indicates that the gonopodial characters are so distinctive as to call for the elevation of *Plectrophallus* to full

generic rank. It agrees distinctively with *Panamichthys* Hubbs (1924: 8), which was based on *Priapichthys panamensis* Meek and Hildebrand (1916: 323, fig. 8), only in having the tip of the gonopodium bent forward. Even in this character the agreement is not close: in *Plectrophallus* a larger section of the tip is bent forward at a right angle, while the extreme tip is bent weakly outward; in *Panamichthys* the extreme tip of the organ is strongly hooked, first forward and then retrorsely. Ray 4p in *Plectrophallus* seems to be smooth, though shown as weakly serrate in Fowler's figure, certainly not strongly serrate as in *Panamichthys*. Ray 5, instead of being arched backward well behind ray 4 and instead of extending to the extreme tip of the organ, is folded on the right side of ray 4 so as nearly to touch ray 3 distally; it fails by most of the length of the bent portion to reach the extreme tip of the organ.

Following the current classification of the Poeciliidae, the folding over of the rays of the gonopodium calls for the inclusion of *Plectrophallus* in the subfamily Poeciliinae. It differs sharply from all known genera of that group (Hubbs, 1926: 63). From another Costa Rican genus, *Xenophallus*, it differs in having ray 5 shorter than the others, ray 4 without horn, and ray 3 with a smaller more nearly terminal process (when reëxamined this process appeared to be a quadrangular flap of thickened membrane rather than the spur described and figured by Fowler, but it may have been broken; the retrorse denticles of ray 3, also described and figured by Fowler, were not seen). From *Phallichthys* it differs among other respects in the conical teeth, and a slenderer and less rhombic body. From the other genera it differs in having the dorsal less posterior, and in other ways. From all the other genera referable to the Poeciliopsinae it is distinguished by the abrupt bend in the shorter gonopodium.

It is not certain, however, that *Plectrophallus* should be referred to the Poeciliopsinae, for the gonopodial rays conceivably may have become folded together independently in this genus. New discoveries in fact cause one to question the in-

tegrity of that nominal subfamily, which is held together by this one technical character. Whereas the naturalness of the group has heretofore appeared confirmed by the similarity in general appearance and coloration exhibited by its members, this new genus looks remarkably like species of *Brachyrhaphis*, a genus of the same general region, classified in the tribe Heterandriini of the subfamily Gambusiinae.

The gonopodial structure of *Plectrophallus*, as seen in the reëxamination of the type specimen, is shown on Plate I. Lack of an available projecting apparatus and of other equipment necessitated a free-hand drawing which may have left concealed some of the finer structures of the organ. The figures, however, are thought to be correct in essential details. The bent tip of the organ has a peculiar, strongly sigmoid curve, as seen in end view. The median part of the bent section is concave on the left side, as indicated by the shading.

Plectrophallus tristani (Fowler) is the only known species of the genus.

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PLATE I

Gonopodium of *Plectrophallus tristani* (Fowler), drawn free-hand from the type, as an opaque object. The upper view is of the left, the lower of the right side.



