

NEW GENUS OF DARTER FROM WESTERN NORTH CAROLINA¹

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INTRODUCTION

Three specimens of darter collected in Paddys Creek, a tributary of the Catawba River in Burke County, N. C., in August, 1922, can not be referred to an established genus, at least in so far as genera are recognized and described by Jordan and Evermann in Bulletin 47 of the United States National Museum. They appear to be more nearly related to *Pæcilichthys (Etheostoma) flabellare* than to any other described species. *Flabellare* is apparently an even more variable species than others of the tribe of darters, and the writer has considered the possibility that these specimens represent an extreme variation of the *flabellare* form. This is conceivably so, but to place the Paddys Creek specimens in the genus *Pæcilichthys* (*Etheostoma* of Bulletin 47) would do violence to the principal criteria of that genus and merely cause additional confusion in the taxonomy of a group of fishes that already presents sufficient difficulty.² However loosely connected may be the various members of the genus *Pæcilichthys* as it now stands, the breaking up of the genus could not be attempted without an elaborate study in which consideration would have to be given to the validity of several other genera now standing independently. In these circumstances, the writer proposes for the new fish from Paddys Creek the genus *Richia*, type *Richia brevispina*.³

Richia brevispina differs from *Pæcilichthys* principally in that the parietal region of the skull is depressed and not strongly convex in section, the belly is not covered with ordinary scales, the back before the dorsal fin, as well as the entire head, is naked, and the dorsal fin has but 6 or 7 spines, as contrasted with the 9 or more characteristic of the genus *Pæcilichthys*. Doubtless no one of these characters is of decisive weight by itself; certainly not the last mentioned, for a very few species of the genus *Pæcilichthys* may have 8 spines in the dorsal, and a single species, *iowæ*, may have as few as 7 dorsal spines; but the last-mentioned species seems to have the typical squamation of belly and sides of head. No species of

¹ The specimens were collected while the author was in the service of the United States Bureau of Fisheries.

² Jordan, in *Copeia*, No. 29, April 12, 1916, suggests that several of the subgenera recognized by Jordan and Evermann in Bulletin 47 probably should stand as valid genera, in which case *flabellare* would be assigned to the genus *Catonotus*. If, however, the genus called *Etheostoma* (now *Pæcilichthys*) shall continue to be used in a broad sense to include *flabellare* and many other species, the name *Pæcilichthys*, according to Jordan, must displace *Etheostoma*. See also Jordan and Evermann, "The Genera of Fishes," Part I, p. 110.

³ *Richia* in honor of Dr. Willis H. Rich, in charge of scientific inquiry, Bureau of Fisheries; *brevispina*, referring to the low dorsal spines.

those now grouped in the genus deviates so notably from the generic type in so many characters.

The Paddys Creek fish differ from species of the genera *Ioa* and *Ammocrypta* in that the body is not exceedingly elongate and the premaxillaries are not protractile. They differ from *Cottogaster* (*C. shumardi*) in the small number of dorsal spines, in that the first dorsal is smaller than the second, which is larger than the anal; in having dorsals not separated, the opercles and gills naked, the gill membranes well connected, and the ventral fins close together. They differ from *Hadropterus* in that the soft dorsal is larger than the anal, the ventral fins are well separated, the gill membranes are broadly connected, and there are hardly half as many dorsal spines as in species of *Hadropterus*.

The Paddys Creek specimens may be said to show affinities with *Pacilichthys iowæ*, *Pacilichthys* (*Catonotus*) *flabellare*, *Cottogaster shumardi*, and *Ioa vigil*, but not to fall within the presumable limits of variation of any of these species.

***Richia*, nov. gen.⁴**

Body not particularly elongate; mouth terminal or slightly inferior; premaxillaries not protractile; skin of premaxillaries connected mesially with forehead by narrow frenum; teeth of jaws small; vomerine and palatine teeth present; parietal region of skull not strongly convex in cross section; gill membranes broadly united; body incompletely scaled, belly partly naked or covered with caduceous plates; head and region in front of dorsal naked; lateral line high anteriorly; first dorsal low with spines well separated by broad membranes, smaller than second dorsal, which is larger than anal; the first and second dorsals contiguous; anal spines 1 or 2, nearly equal; ventral fins separated by space approximately equal to one-half the base of fin.

***Richia brevispina*, n. sp.⁵**

D. VI or VII-12; A. I or II-8; P. 12-12 or 12-11; scales 8-48 (49)-9; head $3\frac{1}{8}$; depth 5; eye $4\frac{1}{2}$ -5.

Body not particularly elongate, rather compressed, tapering evenly from region of first dorsal to base of caudal. Caudle peduncle broad, depth about equaling length, or three-fourths of greatest depth of body. Back scarcely arched, dorsal profile being nearly straight from nape to caudal, but rising slightly just before origin of caudal; ventral profile somewhat round anteriorly. Parietal region of skull distinctly depressed. Cranium narrow between the eyes, the interspace less than eye. Eye small, its horizontal diameter slightly longer than vertical.

Mouth rather wide, terminal, moderately oblique, lower jaw barely shorter than upper. Maxillary reaching a little past anterior margin of pupil. Lips rather heavy, premaxillaries not protractile, skin of premaxillaries connected with forehead by very narrow frenum. Teeth small; vomerine and palatine teeth present. Gill membranes broadly united.

⁴ Type No. 87411, U. S. National Museum; two paratypes, U. S. National Museum, No. 87412.

⁵ Grateful acknowledgment is due to Charles M. Breder, jr., for supervision of the drawing reproduced as Figure 1.

Area before dorsal and extending back close to base of dorsal as far as the third or fourth spine naked of scales. Belly scaled posteriorly, anterior one-half to two-thirds naked but with indications of caduceous plates. Head, cheeks, and opercles entirely naked.

Lateral line running high anteriorly, nearly complete; pores 36-38, none on last 10 or 12 scales.

Dorsal fins close together; first dorsal low, about one-half of second, its base relatively long because of wide spaces with membrane between the short stiff spines; base of first dorsal less than 5 in length of body (or about the same as with other darters having double the number of spines), corresponding to about 12 rows of scales.

Anal fin a little smaller than second dorsal. In the type there is a single relatively stout anal spine, followed by 8 rays, the first ray being simple but articulate; in the larger paratype, which is of the same size as the type, there are two spines of

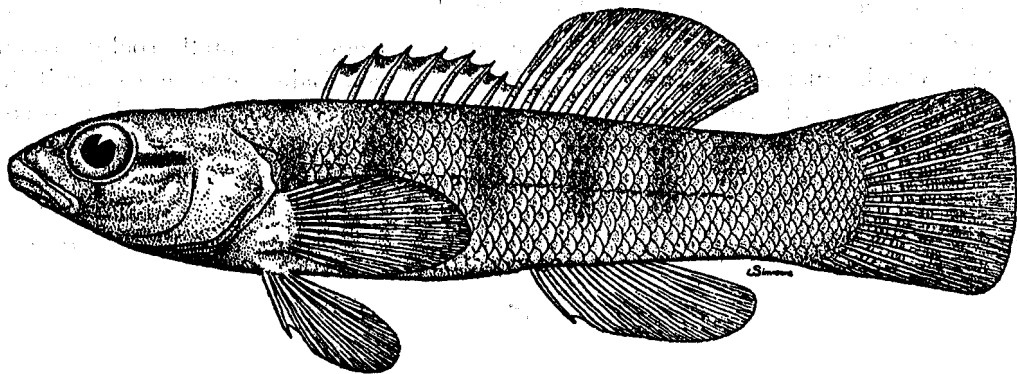


FIG. 1.—*Richtia brevispina*, gen. nov., sp. nov. (From the type. Length, 46 millimeters.)

equal length, the second feebler than the first, which is less stout than the single spine of the type; the other paratype conforms with the larger paratype, the spines being feebler than in the larger fish, as would be expected; in each of the paratypes, as in the type, the spines are followed by 8 rays, of which the first is simple.

Ventral fins not widely separated, space between fins being slightly less than one-half of base of fin.

Color in alcohol.—Ground straw color, finely stippled with dark brown; sides crossed by 7 or 8 dark brown bars extending (usually) a little below the lateral line, width of bands being less than eye, and width of space between bands being about twice width of bands. Fins without conspicuous markings, distal parts of membranes between dorsal spines each with spot of dark olive. Caudal with 5 or 6 irregular reticulated vertical bars of olive green. A dark horizontal streak through eye and a similar streak extending downward vertically from eye. No pale stripes.

<i>Measurements of type specimen</i>		Millimeters
Length, standard.....		39
Length, total.....		46
Length of head.....		12
Depth, greatest.....		8
Length of fourth dorsal spine.....		2.5
Length of fourth dorsal ray.....		7
Length of third anal ray.....		6
Length of pectoral.....		10.5
Length of ventral.....		7
Eye from snout.....		4
Eye.....		3
Snout to origin of first dorsal.....		14
Base of first dorsal.....		9
Base of second dorsal.....		9
Base of anal.....		8
Least depth of caudal peduncle.....		6
Distance between base of second dorsal and base of caudal.....		7.5

Habitat.—The fish were taken in the swift waters of a small, rocky stream (Paddys Creek) just above the head of Paddys Creek Lake, part of the artificial Lake James system in Burke County, N. C. Ten species of fish were taken in collections at the same station. Most abundant were *Campostoma anomalum*, *Notropis procne*, and *Hybopsis hypsinotus*; in small numbers were *Notropis skepticus*, *Boleosoma nigrum*, and *Schilbeodes insignis*. Species of which only one to three examples were found were *Hadropterus peltatus*, *Richia brevispina*, *Lepomis auritus*, and *Moxostoma rupiscartes*.