

Creagrutus lepidus, a new species from the Río Aroa system, Yaracuy State, Venezuela (Teleostei: Characiformes: Characidae)

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Creagrutus lepidus, new species, is described from the Río Aroa basin, a small river system of the states of Yaracuy and Falcón, Venezuela, which empties into the Golfo Triste of the Caribbean Sea. The species is evidently endemic to some hill streams of the Sierra de Aroa of northern Venezuela. *Creagrutus lepidus* is distinguished from all other members of the genus by its well developed, dark midlateral stripe, and the absence of the anterior tooth in the main series of premaxillary teeth.

Se describe una nueva especie, *Creagrutus lepidus*, proveniente de la Cuenca del Río Aroa, un pequeño río localizado en la vertiente Caribe de los estados Yaracuy y Falcón, Venezuela. *Creagrutus lepidus* se distingue de los otros miembros del género por la presencia de una banda oscura lateromedial bien desarrollada y por la ausencia del diente anterior en la serie principal del premaxilar.

Introduction

The characid genus *Creagrutus* Günther is a distinctive assemblage of species distributed from central Panama to Paraguay, typically found in running waters of foothills and uplands. The last revision of *Creagrutus* was that of Eigenmann (1927). Géry (1964) provided a key to the then known species. Ongoing studies of the genus by the two senior authors have revealed a need for a major revamping of the species level taxonomy

of the genus (Harold & Vari, in press) and numerous new species from east of the Andean cordilleras.

This paper is based on specimens collected by one of the authors (CAL) and collaborators in the Río Aroa system, Yaracuy State, Venezuela, a small river basin on the Caribbean versant of northern Venezuela. The species exhibits the derived pattern of premaxillary dentition characteristic of either *Creagrutus* or a monophyletic subunit of the genus. It differs, however, from all

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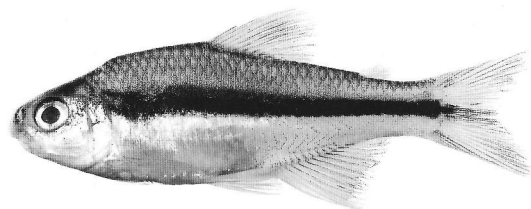


Fig. 1. *Creagrutus lepidus*, holotype, MHNS 4144, 37.9 mm SL.

previously described species of the genus in a number of features, in particular the body pigmentation. We describe the species at this time to make the name available for generic level phylogenetic studies underway by two of the authors (RPV & ASH).

Material and methods

The examined specimens are deposited in the California Academy of Sciences (CAS), Museo de Biología, Universidad Central de Venezuela, Caracas (MBUCV), Museo de Historia Natural La Salle, Caracas (MHNS), and National Museum of Natural History, Smithsonian Institution, Washington, D. C. (USNM). Counts and measurements were taken following methods outlined in Harold & Vari (in press).

Creagrutus lepidus, new species

(Fig. 1)

Holotype. MHNS 9659, 37.9 mm SL; Río Aroa basin, Quebrada El Charal, Finca El Jaguar, Sierra de Aroa, State of Yaracuy, Venezuela (approx. 10°32'N 68°32'W), collected by C.A. Lasso and J. Medina, 24 July 1985.

Paratypes. MHNS 4144, 12 specimens, 27.8–39.2 mm SL; MBUCV V-23560, 12 specimens, 24.5–37.8 mm SL; USNM 325045, 10 specimens, 25.7–42.4 mm SL; and CAS 79520, 7 specimens, 26.3–40.1 mm SL; all collected with holotype. -

MHNS 4715, 5 specimens, collected at the type locality by G. Colonello and C. Guaveca, 2 June 1987.

Diagnosis. *Creagrutus lepidus* can be distinguished readily from all congeners by the presence of a very dark midlateral stripe extending from the pectoral girdle to the base of the central caudal-fin rays (Fig. 1), which apparently subsumes the dark humeral mark typical of *Creagrutus* species. When present, the midlateral stripes in other *Creagrutus* species are distinctly relatively narrower and do not extend anterior of the humeral spot. Other features, possibly unique for *C. lepidus*, singly or in combination, are: the presence of only five rather than six teeth in the main row of premaxillary dentition; the cup-shaped pelvic fins which contrast with the flat fins in other members of the genus; and the angular profile of the snout which contrasts with the more rounded condition typical of other *Creagrutus* species (see figures in Harold & Vari, in press).

Description. Morphometric and meristic data for the holotype and paratypes are presented in Table 1. Body moderately deep relative to most *Creagrutus* species. Greatest body depth approximately at pelvic-fin origin. Anterior profile of snout and dorsal profile of head meeting in rounded obtuse angle near vertical line immediately anterior of nares. Dorsal profile of head posterior of that line straight and distinctly postrodorsally inclined. Predorsal profile of body with notable change in alignment relative to that

of head, asymmetrically convex, with convexity most pronounced in anterior one-quarter of region. Dorsal profile of body nearly straight from dorsal-fin origin to caudal peduncle. Ventral profile of head and body smoothly convex from margin of lower lip to pelvic-fin origin; rounded obtuse angle of ventral surface of lower jaw typical of many species of *Creagrutus* not apparent.

Upper jaw distinctly longer than, and overhanging, lower jaw. Anterior portion of snout fleshy, with minute papillae distributed over anterior portion of snout and with papillae continuing onto upper lip, margin of upper jaw, and into mouth on fleshy protuberances between premaxillary teeth. Lower jaw distinctly fleshy, with papillae most numerous on lip and continuing in decreasing numbers posteroventrally. Infraorbital bones not well developed, covering

approximately one-half of check, with ventral and posterior margins of infraorbitals distinctly separated from preopercle. Posteroventral margin of infraorbital series rounded and nearly concentric with posteroventral margin of orbit.

Premaxillary dentition with three major components: 1) main row consisting of five, rounded unicuspid to tricuspid teeth with second through fifth teeth in straight row and first tooth displaced somewhat medially relative to rest of series; 2) triangular cluster of three larger teeth with more prominent cusps located medial to main row; and 3) single tooth, similar in morphology to those of main premaxillary row, occurring lateral to third or fourth tooth of that row. Maxilla with three or four conical to tricuspid teeth. Dentary with four large tricuspid teeth anteriorly, followed posteriorly by two small conical teeth.

Table 1. Morphometrics and meristics of holotype of *Creagrutus lepidus* and 20 of the paratypes captured with the holotype. Standard length is expressed in mm; measurements 1 to 14 are percentages of standard length; 15 to 17 are percentages of head length.

	Holotype	Paratypes
Morphometrics		
Standard Length	37.9	32.7-42.4
1. Snout to anal-fin origin	61.7	60.6-64.8
2. Snout to pelvic-fin origin	46.4	45.8-49.2
3. Snout to pectoral-fin origin	26.1	26.0-28.3
4. Snout to dorsal-fin origin	50.7	47.6-52.4
5. Dorsal-fin origin to hypural joint	56.5	54.6-57.3
6. Dorsal-fin origin to anal-fin origin	33.8	32.4-36.1
7. Dorsal-fin origin to pelvic-fin origin	32.7	31.3-35.6
8. Dorsal-fin origin to pectoral-fin origin	35.8	35.8-37.6
9. Caudal peduncle depth	12.7	10.8-13.7
10. Pectoral fin length	21.1	20.1-23.0
11. Pelvic fin length	19.5	17.8-20.3
12. Dorsal fin length	29.8	26.4-31.2
13. Anal fin length	23.7	22.1-25.5
14. Head length	26.4	25.5-27.7
15. Postorbital head length	48.0	44.4-48.5
16. Snout length	32.0	27.1-31.9
17. Bony orbital diameter	32.0	30.9-35.8
18. Interorbital width	30.0	27.8-31.9
Meristics		
Lateral line scales	36	36-37
Scale rows between dorsal-fin origin and lateral line	6	5-6
Scale rows between anal-fin origin and lateral line	4	4-5
Predorsal median scales	11	10-12
Branched dorsal-fin rays	8	8
Branched anal-fin rays	11	11-13
Branched pelvic-fin rays	7	7
Pectoral fin rays	12	10-13
Vertebrae	35	34-35

Dorsal, anal, and pelvic fins relatively elongate compared with those of other *Creagrutus* species. Dorsal fin with 2 or 3 unbranched rays followed by 8 branched rays; when 3 unbranched rays present, first sometimes well-developed (Fig. 1). Dorsal-fin origin situated slightly posterior of vertical through pelvic-fin origin. Distal margin of dorsal fin nearly straight, but with anterior rays slightly elongate. Anal fin with 2 or 3 unbranched rays followed by 11 to 13 branched rays. Distal margin of anal fin nearly straight, but with anterior rays slightly elongate. Anal fin of males with hooks on 9 or 10 branched rays; hooks proximally directed with one per segment on posterior branch and segmented portion of main shaft of rays. Pectoral fins with one unbranched ray followed by 10 to 13 branched rays. Pectoral fin reaching posteriorly to or slightly beyond pelvic-fin origin. Pelvic fin with 1 unbranched ray followed by 7 branched rays. Pelvic fin usually reaching posteriorly to beyond anal-fin origin; with distal portion turned medially, giving fin a slightly cupped appearance. Branched rays of pelvic fin in males with hooks present on all portions of fin rays with exception of smaller distal branches.

Gill rakers very short and stout; 13 to 15 (based on 11 specimens).

Color in alcohol. Head with pattern of diffuse chromatophores on dorsal surface, chromatophores most concentrated posteriorly and on snout and upper lip, with small crescent of dark pigmentation immediately anterior of nares. Band of scattered dark chromatophores extending from pigmentation on snout posteriorly to anteroventral margin of orbit, continuing around ventral and posterior margin of orbit; band developed to differing degrees along its length and between specimens. Lateral surface of head with numerous scattered dark chromatophores overlying posterodorsal portions of infraorbital series and dorsal part of opercle. Dorsal portion of body with dark pigment concentrated on posterior exposed portion of scales, but with posterior margin of each scale unpigmented; overall pattern reticulate. Distinct midlateral dark stripe extending from pectoral girdle to slightly beyond bases of central caudal-fin rays. Stripe generally most sharply defined ventrally, extending below lateral line posterior of vertical through anal-fin origin, grading dorsally into dark pigmentation on body, especially anteriorly (Fig. 1). Limits of

anterior portion of midlateral stripe somewhat variable but always extending ventral of lateral line, perhaps representing imbedded humeral mark common to many *Creagrutus* species. Dark midlateral stripe obvious in live specimens. Diffuse lines of dark chromatophores delimiting myosepta in ventrolateral region of body above anal fin. Lines of dark chromatophores located between bundles of fin ray musculature at base of anal fin.

Central caudal-fin rays with large dark chromatophores basally. Diffuse dark smaller chromatophores associated with remainder of central rays and extending across distal portion of ventral lobe of fin. Dark chromatophores also associated with five dorsal-most branched rays of upper lobe of caudal fin. Posterior dorsal and ventral procurrent rays darkly pigmented. Anal fin with dark pigmentation associated with anterior surface of basal portions of rays. Scattered darker, small chromatophores in distal portions of fin membranes. Pectoral fins with lines of dark chromatophores associated with all or nearly all rays. Pelvic fins unpigmented.

Distribution. *Creagrutus lepidus* is evidently endemic to hill streams in the Sierra de Aroa. Fernández-Yépez (1972) reported on a series of collections from the rivers of the Caribbean versant of Venezuela, including the Río Aroa basin. No species of *Creagrutus* was cited by that author as having been captured in the Río Aroa basin, but Fernández-Yépez (1972: 13) does report a *Creagrutus* species he equated with *C. beni* Eigenmann from the rivers east of the Río Aroa system (Ríos Yaracuy, Urama, San Esteban, and Ocumare). The *Creagrutus* species illustrated by Fernández-Yépez differs dramatically in a number of features (see Fernández-Yépez, 1972: plate 14). The most notable of these is the lack in his *C. beni* of the dark midlateral body stripe characteristic of *C. lepidus* and the presence of a distinct vertically elongate humeral spot which is absent in *C. lepidus*.

Etymology. *lepidus*, from the Latin adjective meaning elegant, in reference to the distinctive pigmentation of this species.

Ecology. The type locality, Quebrada El Charal, is a tributary of the Río Aroa at an altitude of approximately 60 m above sea level. It is a relatively small stream with alternating pools (to 3 m

depth) and regions of rapid current. The bottom is largely sandy with numerous larger stones and lacks submergent vegetation. The pH at the time of capture of the holotype and most paratypes ranged between 7.9 and 8.0.

Observations by one of the authors (CAL) indicate that *Creagrutus lepidus* occurs in various streams in the Sierra de Aroa, being more abundant in pools than in regions of rapid current flow. The species tends to gather in groups of 15 to 30 individuals, typically distributed from the middle to the bottom of the water column. Collecting efforts in Quebrada El Charal that captured the type-series of *C. lepidus* yielded sixteen other fish species, largely characiforms and siluriforms.

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