

A new *Hemigrammus* (Characiformes: Acestrorhamphidae) from the rio Cuiabazinho drainages, upper rio Paraguai basin

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A new species of *Hemigrammus* is described from tributaries of the rio Cuiabazinho, upper rio Paraguai basin, Mato Grosso State, Brazil. It can be readily distinguished from all its congeners by a unique combination of characters, including a distinctive body coloration pattern without spots, the number of perforated lateral-line scales (12–15), the number of branched rays on anal fin (21–25), and the presence of small bony hooks at the tips of the lepidotrichia of the second to fourth branched rays of the pelvic fins, which are absent in the anal fin. We also provide a brief discussion on the recent taxonomic reconfiguration of *Hemigrammus*.

Keywords: Freshwater fish, Rio Cuiabá drainage, Serra Azul, Serrana Province of Mato Grosso, Taxonomy.

Uma espécie nova de *Hemigrammus* é descrita de afluentes do rio Cuiabazinho, bacia do alto rio Paraguai, Mato Grosso, Brasil. Ela pode ser prontamente distinguida de todas as suas congêneres por uma combinação única de caracteres, incluindo um padrão distinto de coloração corporal sem manchas, o número de escamas perfuradas na linha lateral (12–15), o número de raios ramificados na nadadeira anal (21–25) e a presença de pequenos ganchos ósseos nas extremidades das lepidotriquiás do segundo ao quarto raios ramificados das nadadeiras pélvicas, os quais estão ausentes na nadadeira anal. Fornecemos também uma breve discussão sobre a recente reconfiguração taxonômica de *Hemigrammus*.

Palavras-chave: Peixes de água doce, Província Serrana de Mato Grosso, Rio Cuiabá, Serra Azul, Taxonomia.

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INTRODUCTION

Hemigrammus Gill, 1858 is a rich genus in Acestorhamphidae Eigenmann, 1907, with 57 valid species (Fricke *et al.*, 2025), widely distributed across the Neotropical cis-Andean basins, including the basins of the Amazonas, Orinoco, La Plata, and São Francisco rivers, as well as those in Guyana, Suriname, French Guiana, and northeastern Brazil, with higher species diversity in the Amazon basin (Lima *et al.*, 2009; Carvalho *et al.*, 2010; Mendonça, Wosiacki, 2011; Ota *et al.*, 2014; Lima *et al.*, 2020; Toledo-Piza *et al.*, 2024; Fricke *et al.*, 2025). Recent studies based on molecular phylogenies (Melo *et al.*, 2024), morphological phylogenies (Terán *et al.*, 2020), and combined analyses of morphological and molecular data (Mirande, 2019) consistently demonstrate and reinforce that the genus is not a monophyletic clade. Its classification has been revised over the past few decades, with the most recent proposal (Melo *et al.*, 2024), based on molecular data from ultraconserved elements (UCEs), housing *Hemigrammus* in the Pristellinae Géry & Boutière, 1964, within Acestorhamphidae. However, a specific morphological diagnosis for the genus, in this new approach, was not provided in this reclassification.

In view of this, *Hemigrammus* is still being diagnosed by a combination of non-exclusive morphological traits, as proposed by Durbin (in Eigenmann, 1918) and Géry (1977), including: an incomplete pored lateral line, teeth on the premaxilla arranged in two rows, with the inner row of the premaxilla containing five teeth, few or no maxillary teeth, and scales extending to the basal region of the caudal-fin lobes.

In the absence of an updated diagnosis based on synapomorphy(ies), herein we adopt the morphological definition proposed by Durbin (in Eigenmann, 1918) and Géry (1977), for the proposed new species. This taxon was recently discovered during field expeditions in the headwaters of the upper rio Paraguai basin, specifically in the SESC Serra Azul region, municipality of Rosário Oeste, Mato Grosso State. The description of this new species aims to contribute to the taxonomy of *Hemigrammus* and to reduce the Linnean shortfall (Hortal *et al.*, 2015; Reis *et al.*, 2024), at a time marked by profound climatic changes and extensive anthropogenic impacts on ecosystems.

MATERIAL AND METHODS

Counts and measurements follow Fink, Weitzman (1974) and Menezes, Weitzman (1990), except for counts of the horizontal scale rows below the lateral line counted to the pelvic-fin insertion. In the description, counts in parentheses refer to the number of specimens. Asterisks indicate value of the holotype. Counts of vertebrae and supraneurals were taken from cleared and stained (cs) paratypes; total vertebral counts include the four vertebrae of the Weberian apparatus and the terminal centrum. Specimens were cleared and stained following the method of Taylor, Van Dyke (1985). Osteological terminology follows Weitzman (1962) with the modifications listed by Vari, Harold (2001). Comparisons in *Hemigrammus* were based mainly on the analysis of type-specimens, including those in Carvalho *et al.* (2010). Institutional abbreviations follow Sabaj (2020).

RESULTS

Hemigrammus serrazul, new species

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(Figs. 1–5; Tab. 1)

Hemigrammus sp. n. —Ribeiro, Ferreira, 2023:8, 90 (listed).

Holotype. CPUFMT 8654, 36.7 mm SL, Brazil, Mato Grosso State, Rosário Oeste municipality, SESC Serra Azul Park, unnamed stream, rio Cuiabazinho tributary, upper rio Paraguai basin, 14°29'43.74"S 55°43'59.96"W, 280 m a.s.l., 28 Mar 2023, K. M. Ferreira & A. C. Ribeiro.

Paratypes. All from Brazil, Mato Grosso State, Municipality of Rosário Oeste, SESC Serra Azul Park, rio Cuiabazinho tributaries, upper rio Paraguai basin. CPUFMT 7894, 50, 16.2–34.7 mm SL, 2 cs, 19.4–24.6 mm SL, no name stream, 14°29'43.74"S 55°43'59.96"W, 25 Nov 2021, A. C. Ribeiro & K. M. Ferreira; CPUFMT 8005, 1, 26.2 mm SL, mouth of ribeirão Serra Azul, 14°28'24.37"S 55°44'12.69"W, 28 Sep 2021, A. C. Ribeiro; CPUFMT 8015, 3, 30.9–34.4 mm SL, ribeirão Serra Azul, below the waterfall, 14°29'23.33"S 55°42'24.97"W, 27 Sep 2021, A. C. Ribeiro; CPUFMT 8030, 2, 23.3–25.7 mm SL, ribeirão Serra Azul, near the bridge, 14°29'07"S 55°42'56"W, 25 Nov 2021, A. C. Ribeiro, K. M. Ferreira; CPUFMT 8059, 14, 29.7–35.1 mm SL, ribeirão Serra Azul, near the bridge, 14°29'07"S 55°42'56"W, 1 Jan 2022, A. C. Ribeiro & R. Anastácio; CPUFMT 8097, 1, 31.8 mm SL, ribeirão Serra Azul, near the bridge, 14°29'07"S 55°42'56"W, 27 Oct 2022, A. C. Ribeiro & K. M. Ferreira; CPUFMT 8123, 1, 28.8 mm SL, lagoon in front of the SESC Serra Azul restaurant, 14°28'28"S



FIGURE 1 | *Hemigrammus serrazul*, holotype, CPUFMT 8654, 36.7 mm SL, unnamed stream, rio Cuiabazinho drainage, upper rio Paraguai basin, Rosário Oeste, Mato Grosso State, Brazil.

55°41'58"W, 27 Oct 2022, A. C. Ribeiro & K. M. Ferreira; CPUFMT 8136, 69, 24.7–36.8 mm SL, 3 cs, 30.7–37.9 mm SL cs, collected with holotype; CPUFMT 8161, 58, 20.6–33.87 mm SL, unnamed stream, 14°29'43.74"S 55°43'59.96"W, 22 Sep 2023, A. C. Ribeiro & K. M. Ferreira; CPUFMT 8162, 18, 25.2–35.2 mm SL, alcohol fixed material, collected with holotype; CPUFMT 8187, 65, 11.9–35.2 mm SL, unnamed stream, 14°29'43.74"S 55°43'59.96"W, 21 Nov 2023, A. C. Ribeiro & K. M. Ferreira; CPUFMT 8218, 14, 21.5–30.8 mm SL, córrego Cocal, 14°28'10.99"S 55°40'15.99"W, 24 May 2023, A. C. Ribeiro & K. M. Ferreira; CITL 1556, 10, 22.8–34.9 mm SL, collected with CPUFMT 8161; DZSJRP 25257, 2, 28.4–29.1 mm SL, MZUSP 131458, 2, 26.8–30.2 mm SL, ZUEC 18563, 4, 21.6–27.6 mm SL, all collected with holotype.

Diagnosis. *Hemigrammus serrazul* can be distinguished from most congeners (except of *H. apiaka* (Esguícero & Castro, 2017), *H. erythrozonus* Durbin, 1909, *H. gracilis* (Lütken, 1875), *H. mimus* Böhlke, 1955, and *H. tupebas* (Esguícero & Castro, 2017) by flank uniformly colored, without spots, *i.e.*, no humeral and caudal spots, just a tiny and narrow longitudinal stripe (*vs.* species with spots in humeral and/or caudal peduncle). From *H. apiaka*, *H. erythrozonus*, *H. gracilis*, *H. mimus*, and *H. tupebas*, *H. serrazul* differs by premaxillary teeth in two rows: outer with three to five tricuspid teeth, inner with five tetra- pentacuspid teeth (*vs.* premaxillary teeth in one row in *H. apiaka*, *H. tupebas*, and just one tooth on outer row in *H. mimus*, with 7–10 conical or tricuspid teeth in inner/unique row); a narrow silvery/yellowish longitudinal stripe on flank, with slightly blackish upper eye portion in *in vivo* specimens (*vs.* conspicuous reddish longitudinal stripe on flank extending to upper eye portion in *H. erythrozonus*); pored lateral-line scales 12–15 (mode 15) [*vs.* 8–11 (mode 9) in *H. gracilis*] and branched anal-fin rays 21–25 (mode 22) [*vs.* 18–20 (mode 18) in *H. apiaka*; 17–18 (mode 17) in *H. erythrozonus*; 18–20 (mode 19) in *H. gracilis*; 14 in *H. mimus*, and 19–20 (mode 19) in *H. tupebas*]. Additionally, *H. serrazul* can be distinguished from its congeners by the presence of small bony hooks on the tip of lepidotrichia of the second to fourth branched pelvic-fins rays, these absent from the anal fin.

Description. Morphometric and meristic data for holotype and paratypes in Tab 1. Body laterally compressed. Greatest body depth anterior to vertical through dorsal-fin origin. Dorsal profile of head convex from tip of upper jaw to vertical through anterior nostril; straight or slightly convex from that point to tip of supraoccipital spine. Dorsal body profile slightly convex from tip of supraoccipital spine to dorsal-fin origin; straight along dorsal-fin base; slightly convex from terminus of dorsal-fin base to adipose-fin insertion, and concave posteriorly from that point to anteriormost procurrent caudal-fin ray. Ventral profile of head and body convex from tip of lower jaw to pelvic-fin insertion, straight from that point to anal-fin origin, straight along anal-fin base and concave along caudal peduncle.

Mouth terminal. Posterior terminus of maxilla reaching vertical through anterior third of eye. Premaxilla with two rows of teeth (Fig. 2). Outer tooth row aligned, with 3(10), 4*(6) or 5(14) tricuspid teeth, with median cusps more developed. Inner row with five teeth larger than those of outer series; symphyseal tooth with five cusps, remaining teeth with tri- to pentacuspid. Maxilla with 1(2), 2(19) or 3*(9) tricuspid teeth. Dentary with 4 anteriormost teeth larger tri- to pentacuspid, gradually decreasing in size laterally, followed by a series of five to eight smaller unicuspid teeth.

TABLE 1 | Morphometric data of *Hemigrammus serrazul*. SD = Standard deviation; N = 30 specimens, including holotype.

	Holotype	Paratypes		
		Range	Mean	SD
Standard length	36.7	21.0–37.4	29.8	–
Percentages of standard length				
Body depth	34.8	31.4–36.9	34.3	1.5
Snout to dorsal-fin origin	51.1	46.2–53.8	49.9	1.7
Snout to pectoral-fin origin	26.5	21.6–28.2	26.3	1.2
Snout to pelvic-fin origin	46.5	43.5–50.4	46.0	1.5
Snout to anal-fin origin	62.0	57.5–63.5	60.8	1.4
Pelvic-fin insertion to anal-fin origin	14.4	12.6–18.2	15.3	1.0
Caudal-peduncle depth	9.3	9.0–11.7	10.4	0.6
Caudal-peduncle length	10.7	10.0–13.9	12.2	1.1
Dorsal-fin origin to caudal-fin base	47.9	47.8–53.7	50.7	1.4
Dorsal-fin base length	14.4	10.0–14.8	13.2	1.0
Anal-fin base length	32.2	28.2–33.5	31.2	1.4
Pectoral-fin length	23.5	18.7–26.3	22.1	1.5
Pelvic-fin length	18.9	16.7–23.6	18.7	1.6
Dorsal-fin length	31.1	25.9–34.9	29.6	1.6
Anal-fin length	22.7	19.3–26.2	21.6	1.4
Bony head length	26.7	23.7–27.9	25.9	1.1
Head depth	24.2	21.8–25.9	23.7	1.1
Percentages of head length				
Horizontal eye diameter	42.4	41.1–45.8	43.4	1.3
Snout length	23.4	22.3–28.0	24.7	1.3
Least interorbital distance	31.6	28.3–33.5	31.7	1.2
Upper jaw length	47.9	45.9–49.7	47.7	1.1

Scales cycloid, with two to six radii diverging from focus to posterior portion of scale; *circuli* weakly marked. Lateral line incomplete, with 12*(6), 13(4), 14(2), 15(9), 16(5), 17(3), or 18(2) perforated scales, longitudinal scale series including pored scale, 32*(4), 33(9), 34(9), or 35(6). Scales rows between dorsal-fin origin and lateral line 5*(30). Scales rows between lateral line and pelvic-fin 3(3) or 4*(27). Predorsal scales 9(2), 10*(13), 11(10), 12(4), or 13(1). Circumpeduncular scales 14*(30). Single row of 4–5 scales covering base of anal-fin rays. Base of caudal-fin scaled; squamation slightly more developed on lower caudal fin lobe, covering at least one-third of lobe. Scales on the caudal fin smaller than the scales covering the body (Fig. 3).

Dorsal-fin rays ii, 9*(20). Dorsal-fin origin at middle of standard length or slightly behind this point. First dorsal-fin pterygiophore located between neural spines of 8th and 9th(2) vertebrae. First unbranched ray about half the length of second ray; small ossification anterior to first unbranched ray present in the two cs specimens examined. Adipose fin present, its origin in vertical through last or next to last anal-fin ray insertion. Pectoral-fin rays i, 11*(20) or 12(10). Tip of adpressed pectoral fin reaching pelvic-fin

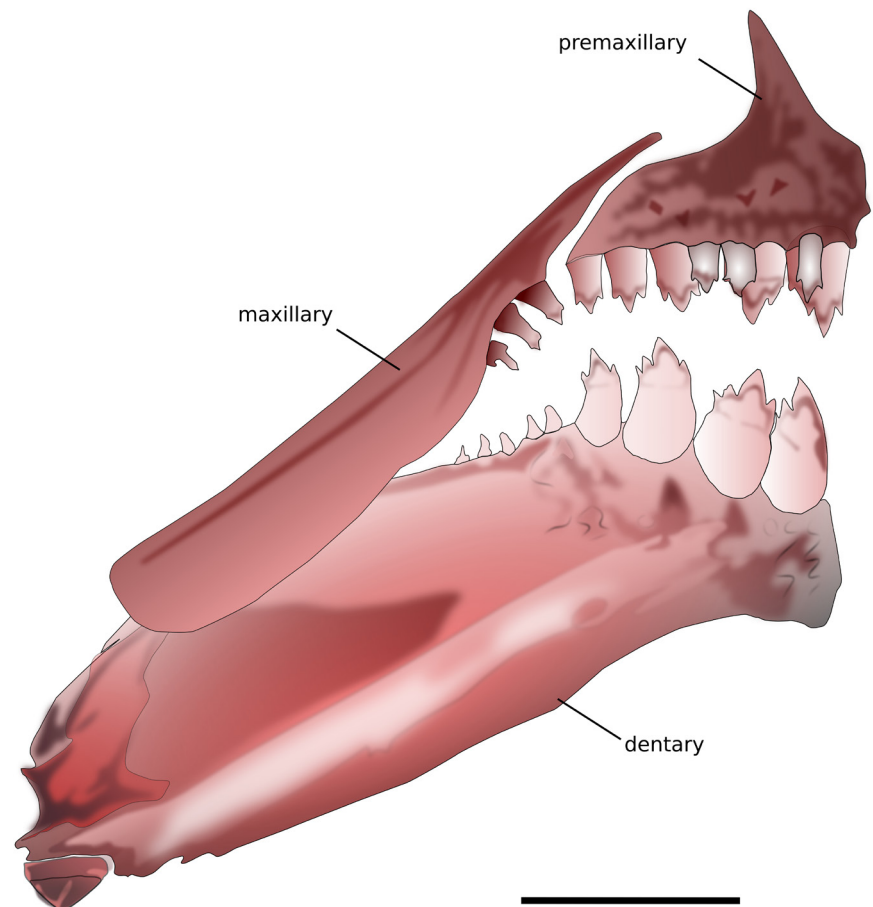


FIGURE 2 | *Hemigrammus serrazul*, paratype, CPUFMT 8136, 37.9 mm SL. Upper and lower jaws, left side, lateral view. Scale bar = 1 mm.

insertion. Pelvic-fin rays i,7*(30). Tip of adpressed pelvic fin reaching anteriormost anal-fin rays. Anal-fin rays iv, 21(7), 22(15), 23*(9), 24(1), or 25(1). First anal-fin pterygiophore located between hemal spine of 15th and 16th(2) vertebrae. Caudal fin forked, lobes similar in size; principal caudal-fin rays i,9/8,i*(20).

First gill arch with 10(4), 11*(14), or 12(9) gill rakers on the hypobranchial and ceratobranchial, 6(9), 7*(6), or 8(11) on the epibranchial, and 1 on cartilage between ceratobranchial and epibranchial. Branchiostegal rays 4(1), 3(2) on anterior ceratohyal, and 1(2) on posterior ceratohyal. Vertebrae 33(2). Supraneurals 4(2).

Coloration in alcohol. Ground color light beige. Snout and dorsal portion of head light brown, with high concentration of scattered melanophores. Dark background color over predorsal scales. Small melanophores present on maxilla and lower jaw, scattered melanophores on fifth to sixth infraorbitals and upper half of the opercle. Guanine on opercle, infraorbitals, and sides of body. Humeral and caudal peduncle spots absent. Slight and narrow longitudinal dark stripe along midline of body, originating at five to seven scales after opercle, covering less than one scale. Scales from the laterodorsal

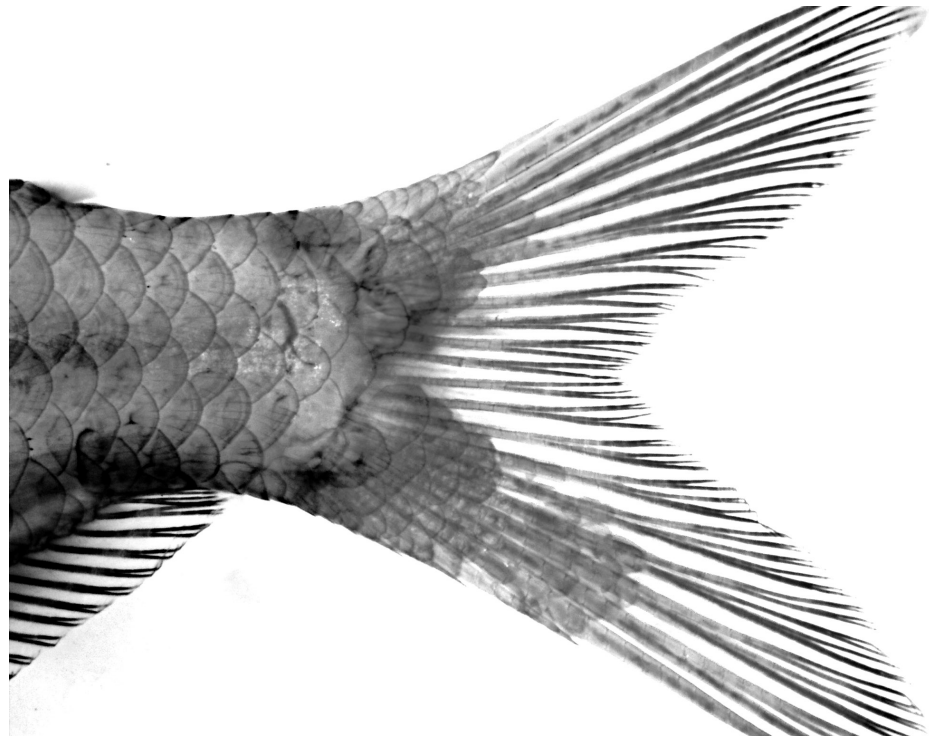


FIGURE 3 | *Hemigrammus serrazul*, paratype, CPUFMT 8187, 33.4 mm SL. Left lateral view of caudal-fin squamation, stained specimen.

portion of the body with a high concentration of melanophores near the posterior margin, with an overall darker coloration to dorsal portion of body. Abdominal region slightly pigmented, some scattered melanophores in region of anal-fin base. Dorsal, adipose, pectoral, pelvic, anal and caudal fins hyaline, with scattered melanophores on interradyal membranes. Melanophores outline the rays and form horizontal, narrow lines on the fins.

Coloration in life. Based on three specimens observed in the field (Figs. 4–5): general coloration of the body can vary from yellowish/reddish in males (Fig. 4A) and silver in females (Fig. 4B). Upper portion of eye dark. Caudal, anal, and dorsal fins reddish (Fig. 4A) or hyaline (Fig. 4B). Midlateral longitudinal stripe silvery-yellow. Melanophores as in preserved specimens (Fig. 1).

Sexual dimorphism. Bony hooks present only on pelvic-fin rays of males larger than 29.2 mm SL; anal-fin without hooks. Pelvic fin of males with small hooks along margin of second to fourth branched rays; one small and weakly developed hook per distal ray segment. Females without hooks. Distal border of anal fin approximately straight in males (Fig. 4A), and slightly concave (falcated) in females (Fig. 4B). Color in life yellowish to reddish in males (Fig. 4A) and silver in females (Fig. 4B).



FIGURE 4 | Color pattern variations in live specimens of *Hemigrammus serrazul*: **A.** Male; **B.** Female. Photo by Alexandre C. Ribeiro.



FIGURE 5 | *Hemigrammus serrazul*, live specimen in aquarium, photographed just after capture in córrego Cocal (CPUFMT 8218), upper rio Paraguai basin, municipality of Rosário Oeste, Mato Grosso State, Brazil. Inserir: Photo by Alexandre C. Ribeiro.

Geographical distribution. *Hemigrammus serrazul* is known from the rio Cuiabazinho (upper rio Cuiabá basin) and its headwater tributaries within the SESC Serra Azul Park, in the municipality of Rosário Oeste, Mato Grosso State, Brazil (Fig. 6).

Ecological notes. *Hemigrammus serrazul* was collected along the banks of the rio Cuiabazinho and in three of its tributaries, all within the SESC Serra Azul Park area. Among the sampled sites, the stream that showed the highest abundance and consistency of *H. serrazul* collections is a first-order stream and a direct tributary of the left bank of the rio Cuiabazinho. This stream is shallow (15–50 cm), with lentic waters, a muddy substrate, and abundant macrophytes (Fig. 7). The six stomach contents analyzed revealed the presence of ants and aquatic insect larvae.

Etymology. The specific epithet *serrazul* refers to the type locality where the new species was collected, the Serra Azul, the local portion of the so-called Serrana Province of Mato Grosso, a range of escarped relief that serves as a watershed divide between the rio Cuiabá, Paraguai, and Arinos basins. A noun in apposition.

Conservation status. The new species has been identified at four nearby localities within SESC Serra Azul Park, which spans 5,700 hectares of relatively well-preserved Cerrado. *Hemigrammus serrazul* is abundant at these sites, and we did not identify any imminent threats to the species within its range. Therefore, we suggest that *H. serrazul* be categorized as Least Concern (LC) according to the categories and criteria of the International Union for Conservation of Nature (IUCN Standards and Petitions Subcommittee, 2024).

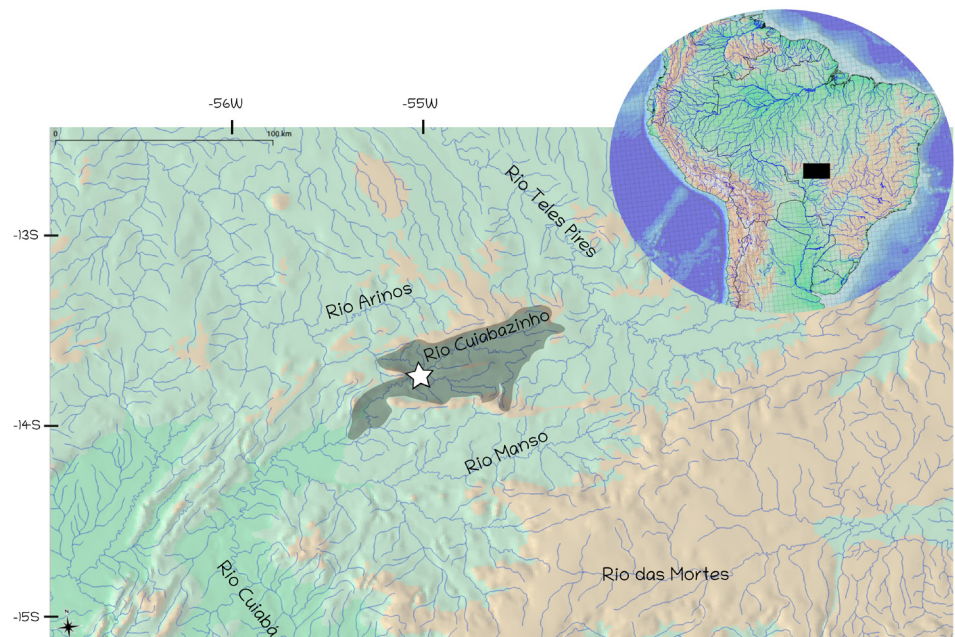


FIGURE 6 | Map of South American hydrography highlighting the upper rio Paraguai basin (dark rectangle). The inset shows the rio Cuiabazinho basin (highlighted in light gray), with the white star indicating the type locality of *Hemigrammus serrazul* within the rio Cuiabazinho basin.



FIGURE 7 | Type locality of *Hemigrammus serrazul*, unnamed stream, rio Cuiabazinho drainage, upper rio Paraguai basin, municipality of Rosário Oeste, Mato Grosso State, Brazil. Photo by Katiane M. Ferreira.

DISCUSSION

Géry (1977) conducted an artificial classification of *Hemigrammus* species based only on coloration patterns. In this approach, *Hemigrammus serrazul* is part of the group “a”, called “the *He. gracilis*-group” which is characterized by the absence of black spots on the body of the species. In addition to *H. gracilis* (Fig. 8B), from the rio São Francisco basin, Géry (1977) included *H. erythrozonus* (Fig. 8A) and *H. mimus* (Fig. 8C) in the group “a”. *Hemigrammus mimus* is a poorly known species from the the Amazon basin and *H. erythrozonus* from the río Essequibo basin in Guyana. *Hemigrammus serrazul* differs from the species of Géry’s group “a” as outlined in the diagnosis.

Hemigrammus serrazul represents the sixth species of the genus recorded for rio Paraguai basin. Among current species of *Hemigrammus* recorded in this basin, *H. flava* (Britzke, Troy, Oliveira & Benine, 2018), originally described as a *Moenkhausia* species from tributaries of the rio Sepotuba, above the Salto das Nuvens and Salto Maciel waterfalls, is restricted to the upper rio Paraguai basin. The other species, *H. lunatus* Durbin, 1918, *H. machadoi* Ota, Lima & Pavanelli, 2014, *H. tridens* Eigenmann, 1907, and *H. ulreyi* (Boulenger, 1895) also occur in adjacent basins. *Hemigrammus flava* can be easily distinguished from *H. serrazul* by several morphological features, including the presence of a complete lateral line (*vs.* lateral line incomplete), presence of a humeral spot (*vs.* absence), six scale rows above the lateral line (*vs.* five). Ota *et al.* (2014) proposed a putative monophyletic group within the genus *Hemigrammus*, based on

general body morphology and coloration patterns, termed the “*H. lunatus* group”. This group includes four species, three of which (*H. machadoi*, *H. lunatus*, and *H. ulreyi*) have records in the rio Paraguai basin. *Hemigrammus serrazul* can be readily distinguished from these three species by the absence of a conspicuous dark horizontal stripe across the eye (*vs.* presence). Additionally, *H. serrazul* differs from *H. machadoi* and *H. lunatus* in lacking a humeral spot (*vs.* presence). And finally, *H. tridens* is easily differentiated from *H. serrazul* by the presence of a conspicuous spot on the caudal peduncle (*vs.* absence).

The Serra Azul region, located in the Serrana Province of Mato Grosso, encompasses the Raizama, Araras, and Diamantina Formations and is embedded in a geomorphological context marked by steep escarpments resulting from neotectonic activity (Ribeiro, Ferreira, 2023). Such conditions favor the isolation of biological lineages, particularly small-bodied taxa (≤ 150 mm SL *sensu* Castro, 1999). The discovery of a new taxon in this area highlights its biogeographical relevance and underscores the need for conservation actions on the plateau of the upper rio Paraguai basin. In this context, the SESC Serra Azul Park plays a central role in safeguarding the region’s biodiversity.

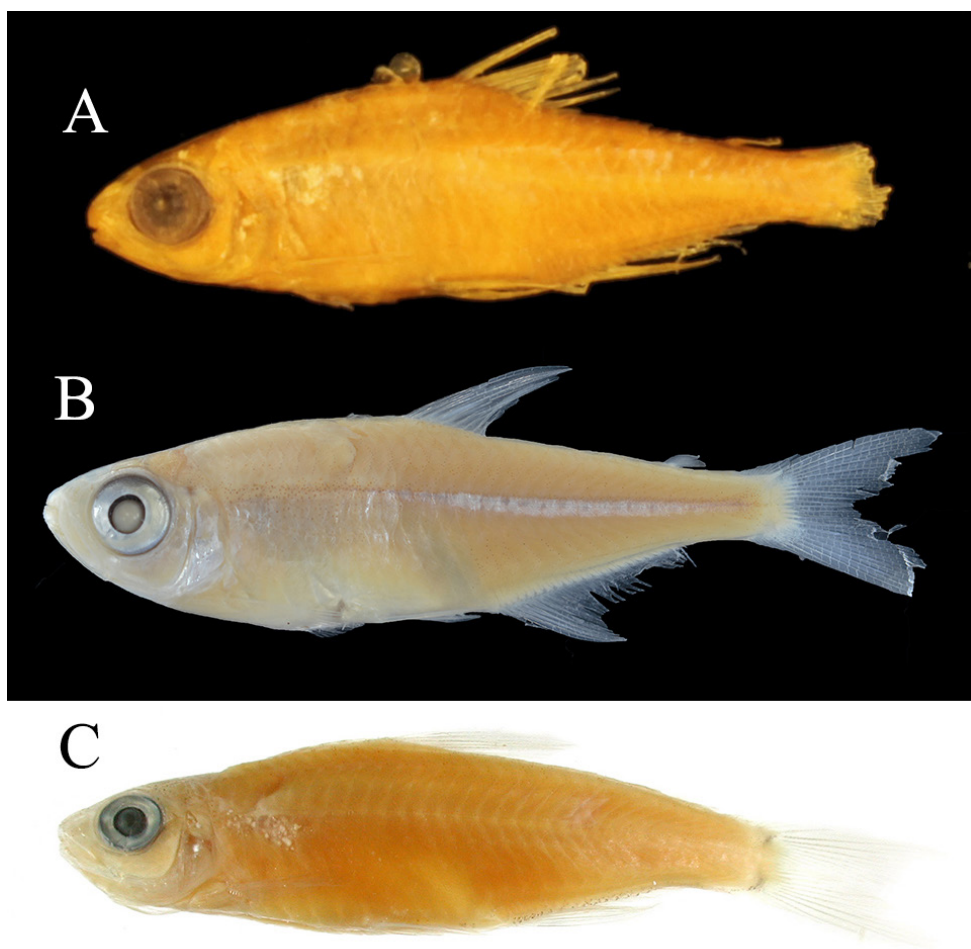


FIGURE 8 | *Hemigrammus* species without black markings *sensu* Géry (1977): **A.** *Hemigrammus erythrozonus*, FMNH 53546, holotype, 24.0 mm SL; **B.** *Tetragonopterus gracilis*, NMW 68066, syntype, 27.5 mm SL; **C.** *Hemigrammus mimus*, CAS 47759, holotype, 27.8 mm SL. Credits: **A.** © Field Museum of Natural History - CC BY-NC 4.0; **B.** Fernando R. Carvalho; **C.** © 2001 California Academy of Sciences.

Comparative material examined. Besides the material presented in Carvalho *et al.* (2010), the comparative material examined include: type material (analysed by FRC). **Bolivia:** *Holopristis neptunus*: MTD F 25536, 31.3 mm SL, holotype of *Hemigrammus neptunus* Zarske & Géry, 2002; MTD F 25537–25545, 9, 24.8–28.6 mm SL, paratypes of *H. neptunus*. **Brazil:** *Hemigrammus bellottii*: NMW 57253, 14, 13.0–24.1 mm SL, NMW 57254, 4, 24.2–30.0 mm SL, syntypes of *Tetragonopterus bellottii* Steindachner, 1882. *Hemigrammus collettii*: NMW 57379, 3, 39.2–49.9 mm SL, NMW 57382, 5, 27.4–31.4 mm SL, syntypes of *Tetragonopterus collettii* Steindachner, 1882. *Hemigrammus elegans*: NMW 57390, 8, 21.6–24.5 mm SL, syntypes of *Tetragonopterus elegans* Steindachner, 1882. *Hemigrammus filamentosus* Zarske, 2011: MTD F 32438, 36.2 mm SL, holotype. *Hemigrammus gracilis*: NMW 68066, 5, 23.4–27.9 mm SL, MNHN 9583, 27.3 mm SL, syntypes of *Tetragonopterus gracilis*. *Hemigrammus pretoensis* Géry, 1965: SMF 7237, 45.3 mm SL, holotype. *Hemigrammus schmardae*: NMW 57979, 3, 26.1–26.2 mm SL, syntypes of *Tetragonopterus schmardae* Steindachner, 1882. *Hemigrammus minus*: CAS 147759, 27.8 mm SL, holotype. *Hemigrammus vorderwinkleri* Géry, 1963: MHNG 2179.043, 2, 21.9–29.5 mm SL, ZMA 113.852, 26.6 mm SL, paratypes. **French Guiana:** *Hemigrammus aereus* Géry, 1959: MHNG 2181.86, 23.7 mm SL, holotype; MHNG 2181.087, 17.2 mm SL, paratype. *Hemigrammus boesemani*: MHNG 2181.80, 25.6 mm SL, holotype of *Hemigrammus micropterus boesemani* Géry, 1959. *Hemigrammus unilineatus*: MHNG 2179.061, 36.4 mm SL, holotype of *Hemigrammus unilineatus cayennensis* Géry, 1959; MHNG 2179.055, 21.2 mm SL, MHNG 2179.063, 28.8 mm SL, SMF 5385, 26.2 mm SL, ZMA 101049, 19.8 mm SL, all paratypes of *H. u. cayennensis*. *Holopristis guyanensis*: MHNG 2181.023, 23.2 mm SL, holotype of *Hemigrammus guyanensis* Géry, 1959. **Guyana:** *Hemigrammus analis* Durbin, 1909: MHNG 2182.040, 2, 21.4–24.3 mm SL, paratypes; NMW 69498, 20.2 mm SL, paratype. *Hemigrammus erythrozonus*: FMNH 53546, 24.0 mm SL, holotype; ZMA 101032, 16.6 mm SL, paratype. *Hemigrammus orthus* Durbin, 1909: MHNG 2180.032, 21.0 mm SL, paratype; ZMA 100.977, 14.9 mm SL, paratype. Non-type specimens (analyzed by KMF and ACR). **All from Mato Grosso, Brazil:** *Cyanogaster geisleri*: CPUFMT 2676, 49, 20.5–22.3 mm SL, rio São Benedito, rio Teles Pires basin. *Hemigrammus bellottii*: CPUFMT 4908, 3, 19.2–34.4 mm SL, downstream of Dardanelos and Andorinhas waterfalls, rio Aripuanã, rio Madeira basin. *Hemigrammus lunatus*: CPUFMT 552, 4, 28.4–32.3 mm SL, rio Cuiabá, upper rio Paraguai basin. *Hemigrammus machadoi*: CPUFMT 4309, 3, 21.4–30.7 mm SL, rio Mutum, upper rio Paraguai basin. *Hemigrammus cf. microstomus* Durbin, 1918: CPUFMT 4245, 2, 18.9–19.9 mm SL, rio Verde, rio Teles Pires basin. *Hemigrammus neptunus*: CPUFMT 7683, 1, 22.4 mm SL, rio Aricá-Açu, upper rio Paraguai basin. *Hemigrammus ora* Zarske, Le Bail & Géry, 2006: CPUFMT 913, 15, 23.1–28.0 mm SL, rio Capão Bonito, rio Correntes basin, upper rio Paraguai basin. *Hemigrammus parana* Marinho, Carvalho, Langeani & Tatsumi, 2008: CPUFMT 2955, 24, 18.9–25.8 mm SL, córrego Covas, rio dos Mortos, Araguaia basin. *Hemigrammus silimoni* Britski & Lima, 2008: CPUFMT 5034, 5, 21.4–30.7 mm SL, upstream of Dardanelos and Andorinhas waterfalls, rio Aripuanã, rio Madeira basin. *Hemigrammus tridens*: CPUFMT 491, 699, 11.7–13.7 mm SL, lagoa 54, rio Cuiabá basin, upper rio Paraguai basin. *Hemigrammus ulreyi*: CPUFMT 4325, 1, 32.9 mm SL, rio Mutum, upper rio Paraguai basin.

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ETHICAL STATEMENT

The fish were collected under permission issued by the Instituto Chico Mendes de Conservação da Biodiversidade (ICMBio/SISBIO number 71172–3).

DATA AVAILABILITY STATEMENT

The authors confirm that the data supporting the findings of this study are available within the article.

IA STATEMENT

The authors did not use any AI-assisted technologies in the creation of this manuscript or its figures.

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The authors declare no competing interests.

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