

Description of a new species of *Cyphocharax* from the rio Juma, rio Aripuanã basin, southern Amazon basin (Teleostei: Curimatidae)



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A new species of *Cyphocharax* is described from the rio Juma, which flows across the meridional Amazon basin and is a tributary of the rio Aripuanã in the rio Madeira fluvial system. Features distinguishing the new species from congeners include a longitudinally elongated caudal peduncle blotch extending from the vertical line through the adipose-fin terminus to the base of median caudal-fin rays, the number of scale series along the lateral line and between the lateral line and dorsal-fin origin, morphometric variation, and the patterns of pigmentation along the body. The species was discovered in a lesser-explored region and appears to be an endemic of the rio Aripuanã in the southern Amazon basin.

Keywords: Brazilian Shield, Characiformes, *Cyphocharax spilurus* clade, Madeira River, Ostariophysi.

Uma nova espécie de *Cyphocharax* é descrita do rio Juma, que flui ao longo da Amazônia meridional e é um tributário do rio Aripuanã no sistema fluvial do rio Madeira. Características distinguindo a nova espécie das congêneres incluem uma mancha escura, horizontalmente alongada, se estendendo da linha vertical sob o término da nadadeira adiposa à base dos raios medianos da nadadeira caudal, o número de séries de escamas ao longo da linha lateral e entre a linha lateral e origem da nadadeira dorsal, variação morfométrica e padrões de pigmentação ao longo do corpo. A espécie foi descoberta em uma região menos explorada e parece ser endêmica do rio Aripuanã no sul da bacia Amazônica.

Palavras-chave: Characiformes, *Cyphocharax spilurus* clade, Escudo Brasileiro, Rio Madeira, Ostariophysi.

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INTRODUCTION

Cyphocharax Fowler, 1906 is the largest genus of the Neotropical freshwater fish family Curimatidae with 48 species ranging from Costa Rica to Argentina, with the epicenter of diversity being the lowlands of Greater Amazonia (Melo *et al.*, 2021). The genus is characterized by a bifurcate laterosensory canal on the sixth infraorbital, the absence of elaborated processes in the buccopharyngeal complex, and the absence of a dark mark on the basal portion of middle dorsal-fin rays (Vari, 1989; Melo *et al.*, 2022). *Cyphocharax* is recognizably non-monophyletic (Melo *et al.*, 2018) and therefore, species are usually recognized and described based on the lack of the synapomorphies supporting *Curimatella* Eigenmann & Eigenmann, 1889, *Pseudocurimata* Fernández-Yépez, 1948, and *Steindachnerina* Fowler, 1906 (Vari, 1992).

The taxonomic revision helped to solve long-standing taxonomic problems in curimatids and provided an exceptional reference for species accounts, key of identifications, and diagnostic features for all species (Vari, 1992). Molecular phylogenetics, on the other hand, have provided a solid basis for interspecific relationships and the definition of subclades in *Cyphocharax* (Melo *et al.*, 2018). The phylogeny resulted in a large group from Greater Amazonia named *C. spilurus* (Günther, 1864) clade containing *C. boiadeiro* Melo, 2017, *C. gillii* (Eigenmann & Kennedy, 1903), *C. oenas* Vari, 1992, *C. saladensis* (Meinken, 1933), *C. spiluroopsis* (Eigenmann & Eigenmann, 1889), *C. spilurus*, and *C. vanderi* (Britski, 1980) (Melo *et al.*, 2018). A recent update of the phylogeny split the *C. spilurus* clade and indicated *C. sanctigabrielis* Melo & Vari, 2014 as sister to both *C. saladensis* clade (*C. boiadeiro*, *C. caboclo* Melo, Tencatt & Oliveira, 2022, *C. saladensis*, and *C. vanderi*) and *C. spilurus* clade (*C. gillii*, *C. oenas*, *C. spiluroopsis*, and *C. spilurus*) (Melo *et al.*, 2022).

Taxonomic studies have increased the number of species of *Cyphocharax* from previously unexplored regions of Amazonia. This is the case for the recently described *Cyphocharax sanctigabrielis* from rio Negro (Melo, Vari, 2014), *C. boiadeiro* from the rio Araguaia (Melo, 2017), *C. cramptoni* Bortolo & Lima, 2020 and *C. muyrakyatana* Bortolo, Lima & Melo, 2018 from the rio Arapiuns of the lower rio Tapajós (Bortolo *et al.*, 2018; Bortolo, Lima, 2020), and *C. albiventris* Netto-Ferreira, Nogueira, Melo & Dutra, 2024 from the rio Xingu (Netto-Ferreira *et al.*, 2024). Other regions of the Brazilian Shield have also revealed new species of the genus, such as the case of *C. jagunco* Dutra, Penido, Mello & Pessali, 2016 from the rio Jequitinhonha (Dutra *et al.*, 2016), *C. caboclo* from the upper rio Paraguai (Melo *et al.*, 2022), and *C. tamuya* Dutra, Vita, Gentile, Ochoa & Netto-Ferreira, 2022 from the rio Paraíba do Sul (Dutra *et al.*, 2022).

A recent expedition in the rio Juma of the Aripuanã system of the rio Madeira basin revealed a remarkably distinct species with an elongated dark blotch on the posterior midline of body and caudal peduncle region. We thus describe formally the new species of *Cyphocharax* and discuss its morphological features in the context of the current phylogenetic understanding of the genus.

MATERIAL AND METHODS

Counts and measurements follow Melo, Vari (2014). Measurements were point-to-point linear distances taken with digital calipers to a precision of 0.1 mm in stereo microscopes. Measurements and counts were performed on the left side of specimens whenever possible. Scale counts above lateral line include the half scale, which is the scale observer over the predorsal midline of the body. Parentheses indicate the number of examined specimens for a particular count and asterisks designate the value for the holotype. Body proportions are given as percentages of standard length (SL), and head proportions given as percentages of head length (HL). Comparative material consists of specimens analyzed in museum collections, with type specimens being given preference. We opted not to clear and stain specimens for the description due to the limited sample size available. Locality of specimens were plotted in Google Earth Pro v. 7.3.6, exported as .kml files, and imported in QGIS v. 3.30.1. Type specimens were deposited in Laboratório de Biologia e Genética de Peixes, Universidade Estadual Paulista, Botucatu (LBP) and Museu de Diversidade Biológica, Universidade Estadual de Campinas, Campinas (ZUEC). Additional abbreviations of fish collections that include the examined comparative material follow Sabaj (2020, 2023).

RESULTS

Cyphocharax orion, new species

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(Figs. 1–2; Tab. 1)

Holotype. LBP 34856, 72.8 mm SL, Brazil, Amazonas, Apuí, rio Juma, rio Aripuanã, Madeira system, Amazon basin, 07°16'43.31"S 60°03'23.96"W, 8 Dec 2022, T. C. Faria, I. L. P. Monteiro & M. A. Pinheiro.



FIGURE 1 | *Cyphocharax orion*, LBP 34856, holotype, 72.8 mm SL, rio Juma, rio Aripuanã basin, Apuí, Amazonas, Brazil.



FIGURE 2 | *Cyphocharax orion*: **A.** ZUEC 18036, paratype, 77.8 mm SL, formalin-fixed specimen; **B.** LBP 33070, 57.9 mm SL, ethanol-fixed specimen; rio Juma, rio Aripuanã, Apuí, Amazonas, Brazil.

Paratypes. All from rio Juma, rio Aripuanã, rio Madeira, Amazon basin, collected with holotype. LBP 33070, 4 (tissues #112660–112663), 56.2–61.8 mm SL. ZUEC 18036, 1, 77.8 mm SL.

Diagnosis. *Cyphocharax orion* distinguishes from all congeners, except *C. laticlavus* Vari & Blacklidge, 1996, *C. modestus* (Fernández-Yépez, 1948), *C. naegelii* (Steindachner, 1881), *C. pantostictos* Vari & Barriga Salazar, 1990, and *C. sanctigabrielis*, by having a horizontally elongated caudal-peduncle blotch of dark pigmentation running from the vertical line through the adipose-fin terminus to the base of median caudal-fin rays (*vs.* absence or blotch relatively small and confined to caudal-peduncle region). *Cyphocharax orion* differs from *C. laticlavus* by the absence of a midlateral dark stripe extending from midbase of dorsal fin to basal portions of middle caudal-fin rays (*vs.* presence), and head length 24.5–26.2% of SL (*vs.* 29.6–34.3% of SL). *Cyphocharax orion* differs from *C. modestus* by having 4.5 scales from dorsal-fin origin to lateral line (*vs.* 5.5–7) and head length 24.5–26.2% of SL (*vs.* 27–31% of SL). *Cyphocharax orion* differs from *C. naegelii* by having 29 scales in lateral line (*vs.* 39–45). The new species differs from *C. pantostictos* by the absence of dark spots over the center of scales on the lateral and dorsolateral region of the body (*vs.* presence) and distance from snout tip to anal-fin origin 77.5–81.3% of SL (*vs.* 83–85% of SL). Finally, *C. orion* differs from *C. sanctigabrielis* by having relatively thin and uniform caudal-peduncle blotch (*vs.* caudal-peduncle blotch thick and posteriorly wider), number of lateral-line scales 29 (*vs.* 31), distance between dorsal-fin origin and pelvic-fin origin 33.5–37.9% of SL (*vs.* 30.9–33.0% of SL), distance between dorsal- and pectoral-fin origin 34.6–37.1% of SL (*vs.* 32.2–34.0% of SL), and postorbital length 39.8–43.2% of SL (*vs.* 33.1–39.0% of SL).

Description. Morphometric data in Tab. 1. Dorsal profile of head convex from tip of snout to head at line through anterior margin of orbit; nearly straight from that point to tip of supraoccipital; slightly concave from that point to dorsal-fin origin; nearly straight to adipose-fin origin; gently concave to origin of anterior dorsal caudal-fin procurent ray. Ventral profile convex from chin to terminus of anal-fin base; gently concave to origin of anterior ventral procurent ray of caudal fin. Prepelvic region somewhat flattened transversely. Postpelvic region of body transversely rounded.

Head profile rounded anteriorly. Lower jaw of same size than upper jaw. Mouth subterminal, horizontally aligned with ventral margin of orbit. Nostrils separated; anterior nostril circular to ovoid, posterior nostril elongated dorsoventrally. Three thin flaps on buccopharyngeal complex. Adipose eyelid slightly developed anterior to orbit.

Dorsal fin pointed, with distal margin straight and first and second branched rays longest. Margin of pectoral fin pointed. Tip of adpressed pectoral fin reaching three or four scales short of vertical through pelvic-fin origin. Pelvic fin profile slightly rounded. Tip of adpressed pelvic fin reaching four scales short of anal-fin origin. Caudal fin forked. Adipose fin present. Anal fin emarginate, anterior branched rays one-third length of ultimate ray. Tip of adpressed anal fin reaching three scales short of origin of ventral caudal-fin ray.

TABLE 1 | Morphometric data for holotype and five paratypes of *Cyphocharax orion*. Range includes holotype. SD = standard deviation.

	Holotype	Range	Mean	SD
Standard length (mm)	72.8	56.2–77.8	64.3	–
Percents of standard length				
Greatest body depth	34.5	32.3–37.4	34.7	1.8
Snout to dorsal-fin origin	48.9	47.0–50.0	48.4	1.2
Snout to pectoral-fin origin	25.7	24.7–26.2	25.6	0.6
Snout to pelvic-fin origin	52.3	51.8–53.6	52.6	0.6
Snout to anal-fin origin	81.3	77.5–81.3	79.6	1.6
Dorsal-fin origin to hypural joint	58.5	57.6–59.4	58.1	0.7
Dorsal-fin origin to anal-fin origin	45.9	42.9–46.4	44.6	1.5
Dorsal-fin origin to pelvic-fin origin	35.9	33.5–37.9	35.6	1.5
Dorsal-fin origin to pectoral-fin origin	36.3	34.6–37.1	36.0	0.9
Caudal-peduncle depth	13.2	12.1–13.2	12.5	0.4
Pectoral-fin length	20.5	18.7–21.2	19.8	0.9
Pelvic-fin length	21.0	19.5–22.2	21.0	0.9
Dorsal-fin length	30.1	27.1–30.1	28.5	1.2
Head length	24.7	24.5–26.2	25.0	0.6
Percents of head length				
Snout length	28.3	25.5–30.3	26.6	1.8
Orbital diameter	31.7	29.7–34.5	32.1	1.7
Postorbital length	40.0	39.8–43.2	40.8	1.4
Interorbital width	44.4	40.0–45.0	42.1	1.9

Lateral line longitudinal scales from supracleithrum to hypural joint 29*(6). Continuous series of scales posterior to hypural joint 3*(6). Scales in transverse series from dorsal-fin origin to lateral line 4.5*(6). Scales in transverse series from lateral line to anal-fin origin 4*(1) or 5(5). Series of scales between anus and anal-fin origin 1(2) or 2*(4). Predorsal scales 8*(4) or 9(2). Circumpeduncular scales 16*(6).

Dorsal-fin rays iii,9*(6), first unbranched ray very short. Anal-fin rays iii,6(1) or iii,7*(5), first ray very short. Pelvic-fin rays i,8*(6). Pectoral-fin rays i,12*(3) or i,13(3). First gill arch with 8*(1) or 9(5) rakers on upper limb and 13*(1), 14(2) or 15(3) rakers on lower limb.

Coloration in alcohol. Ground coloration of formalin-fixed specimens olivaceous to silvery (Fig. 2). Dusky surface coloration, darker on dorsal portion of head; head dusky dorsolaterally and light colored ventrally. Dark chromatophores on opercle slightly larger than those on snout. Dusky surface coloration darker on dorsal and dorsolateral regions of body, with dark chromatophores dense on scales above lateral line, less concentrated on lateral line and almost absent on scales below lateral line. Reticulate pattern on almost all body due to higher concentration of dark chromatophores on scale margins, with anterior margin sometimes separated from middle region of scales by dark line of chromatophores. Reticulate pattern more conspicuous on middle region of body due to contrasting regions of scales; pattern not evident in ventral region of body, disappearing around fourth or fifth scale row below lateral line. Deep-lying, dark chromatophores forming faint, dusky midlateral stripe on body. Stripe more evident posterior of vertical through adipose-fin terminus, forming a longitudinally elongated caudal peduncle blotch that extends into base of middle caudal-fin rays. Middorsal region of body darker with dark stripe extending from tip of supraoccipital to dorsal margin of procurrent caudal-fin rays. Dorsal, anal, and caudal fins somewhat dusky with margins outlined by small, dark chromatophores. Dark pigmentation developed proximally on caudal-fin lobes, dorsal and anal fins. Pectoral and pelvic fins with rays outlined by small, dark chromatophores. Adipose fin speckled with small dark chromatophores.

Geographical distribution. *Cyphocharax orion* is known from the rio Juma, which is a tributary of the rio Aripuanã, itself a right-bank tributary of the rio Madeira basin, Amazon basin (Fig. 3). Specimens were collected along the BR-230 Transamazônica between Apuí and Santo Antônio do Matupi, Amazonas, Brazil. The distribution suggests that *C. orion* is restricted to the Aripuanã basin.

Ecological notes. *Cyphocharax orion* was collected in a blackwater pond of rio Juma, characterized by a sand, dead leaf, and debris-filled bottom, and partially shadowed by the BR-230 Transamazônica road bridge (Fig. 4).

Etymology. The epithet *orion* derives from Ancient Greek Ὠρίων (Ōríōn) which means “heaven’s light”, or Arion, which means “warrior”. In ancient Greek mythology, Orion was a giant hunter who, after being killed by Scorpion sent by Earth mother Gaia, either Zeus or Artemis placed in the night sky as the constellation Orion. The Orion Constellation contains the Great Orion Nebula, one of the brightest nebulae in the visible sky, and the Orion’s Belt asterism formed by three bright blue supergiants: the triple star

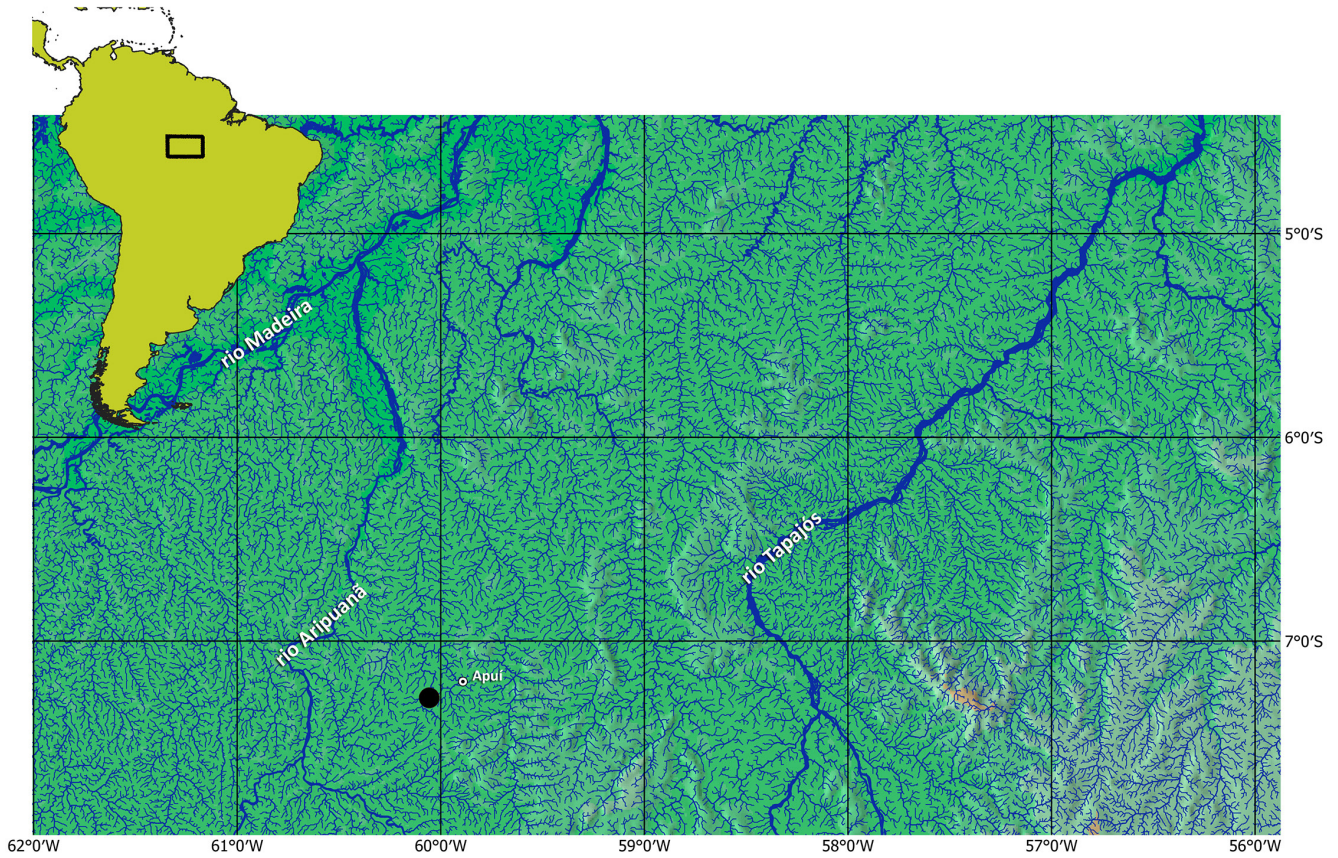


FIGURE 3 | Map of southern Amazon basin indicating the type-locality of *Cyphocharax orion* (black circle) in the rio Juma near the town of Apuí, Amazonas, Brazil.

system Alnitak, the major star Alnilam, and the multiple star system Mintaka. The name *Cyphocharax orion* is in allusion to three major southern Amazonian rivers Madeira, Aripuanã (type-locality), and Tapajós, and symbolizes the resistance to anthropogenic pressures with strength, bravery, and universe brilliance. A noun in apposition.

Conservation status. The region has been impacted with diffuse human activities, like the construction of the BR-230 Transamazônica road that longitudinally spans the Amazon rainforest and Caatinga from Lábrea-Amazonas to Cabedelo-Paraíba in northeastern Brazil. However, at least three enormous, protected areas exist near the type-locality: the Floresta Nacional do Aripuanã, the Floresta Nacional do Jatuarana, and the Parque Nacional do Acari. The small sample size is likely due to the lack of fieldwork efforts in the region. Given the current information, we suggest the category Least Concern (LC) for *Cyphocharax orion* under the categories and criteria of the International Union for Conservation Nature (IUCN Standards and Petitions Subcommittee, 2022).



FIGURE 4 | Rio Juma, affluent of rio Aripuanã, Apuí, Amazonas, Brazil. Photography: Tiago C. Faria.

DISCUSSION

The extremely elongated dark mark on the caudal peduncle is the defining morphological feature of *Cyphocharax orion* (Figs. 1–2). Although other species of the genus including *C. laticlavius*, *C. modestus*, *C. naegeli*, *C. pantostictos*, and *C. sanctigabrielis* have an elongated blotch, our current phylogenetic understanding of the relationships suggests that it represents a homoplastic condition. For example, *C. modestus* has been hypothesized to be the sister species of *C. naegeli*, *C. platanus* (Günther, 1880), and *C. spilurus* (Vari, 1987) in the *Cyphocharax gilbert* (Quoy & Gaimard, 1824) clade (Melo *et al.*, 2018), whereas *C. sanctigabrielis* is a distinct lineage sister to both *C. saladensis* clade and *C. spilurus* clade (Melo *et al.*, 2022). Characteristics such as those related to body coloration have been documented to occur independently across the phylogeny of Curimatidae (Melo *et al.*, 2018), and recent research indicates that the dark blotch on the caudal peduncle of curimatids has evolved at least eight times during their evolutionary history (Netto-Ferreira *et al.*, 2024). Therefore, the existence of an elongated mark in *C. orion* and the aforementioned species are not suggestive of their relationship, and further research is required to determine the placement of the new species.

The rio Aripuanã contains several endemic species and is an affluent of the rio Madeira, one of the largest and most species-rich hydrographic systems of the Amazon basin with over 820 fish species (Zanata, Ohara, 2009; Queiroz *et al.*, 2013; Deprá *et al.*, 2014; Silva *et al.*, 2019; Menezes *et al.*, 2020). In the chapter “Curimatidae” of the book “Peixes do rio Madeira”, Vari, Röpke (2013) listed four species of *Cyphocharax*: *C. leucostictus* (Eigenmann & Eigenmann, 1889), *C. notatus* (Steindachner, 1908), *C. plumbeus* (Eigenmann & Eigenmann, 1889), and *C. spiluroopsis*, none of them having the morphological attributes of *C. orion*. In the study conducted in the headwaters of rio Aripuanã tributaries, Fernandes *et al.* (2013) reported 64 specimens of *C. notatus* and 54 specimens of *C. spilurus*. In the survey of the rio Aripuanã near the Dardanelos-Andorinhas waterfall complex, Silva *et al.* (2019) reported 82 *Cyphocharax* gr. *spilurus* specimens. Despite the lack of photographs of these specimens, the usually rounded dark blotch on the caudal peduncle of specimens from the Brazilian Shield is characteristic of *C. spiluroopsis* (BFM, pers. obs.), or the endemics *C. boiadeiro* from upper Araguaia, *C.*

gangamon Vari, 1992 from the lower Tapajós, and *C. gouldingi* Vari, 1992 from Amapá, lower Amazonas and Tocantins-Araguaia (Vari, 1992; Melo *et al.*, 2016; Melo, 2017). Therefore, the existing evidence indicates that *C. orion* is not present in other sections of the Aripuanã or Madeira basins.

Cyphocharax orion was discovered in a blackwater pond of the rio Juma beneath the BR-230 Transamazônica road, which transverses through several Amazonian cities including Humaitá in Amazonas and Itaituba in Pará. Existing information based on fieldwork suggests that the species could potentially be found along the rio Juma in the southeastern Amazonas state surrounding the three protected areas Floresta Nacional do Aripuanã, Floresta Nacional do Jatuarana, and Parque Nacional do Acari. Road access may potentially exacerbate deforestation and habitat loss in the area, hence imposing a direct influence on freshwater ecosystems near the type-locality. Nevertheless, additional assessment of habitat conservation efforts throughout the region is necessary to have a more comprehensive understanding and quantify the actual consequences for *C. orion* as well as other sympatric species.

Comparative material examined. Brazil: *Cyphocharax abramoides*: INPA 3719, 6, 61.7–106.1 mm SL, rio Negro. *Cyphocharax albiventris*: MPEG 35000, holotype, 79.9 mm SL, rio Xingu. *Cyphocharax aninha*: MZUSP 113703, 2 paratypes, 24.6–27.0 mm SL, rio Paru. *Cyphocharax boiadeiro*: LIRP 14133, holotype, 42.9 mm SL, rio Araguaia. *Cyphocharax caboclo*: MNRJ 52506, holotype, 59.1 mm SL, rio Correntes. *Cyphocharax corumbae*: MZUSP 52361, holotype of *Steindachnerina corumbae*, 109.7 mm SL, rio Pirapitinga. *Cyphocharax gangamon*: MZUSP 22037, holotype, 48.4 mm SL, rio Tapajós. *Cyphocharax gilbert*: LBP 3460, 3, 49.5–70.7 mm SL, rio Itabapoana. *Cyphocharax gillii*: LBP 10789, 16, 24.8–67.0 mm SL, rio Paraguai. *Cyphocharax gouldingi*: MZUSP 41762, holotype, 94.0 mm SL, rio Cupixi. *Cyphocharax aff. helleri*: INPA 3261, 15, 78.5–112.5 mm SL, rio Trombetas. *Cyphocharax leucostictus*: MCZ 787, lectotype of *Curimatus leucostictus*, 104.3 mm SL, rio Negro. *Cyphocharax mestomyllon*: MZUSP 41755, holotype, 36.0 mm SL, rio Negro. *Cyphocharax modestus*: LBP 19718, 3, 118–128.3 mm SL, rio Tietê. *Cyphocharax multilineatus*: LBP 6935, 3, 34.0–73.4 mm SL, rio Negro. *Cyphocharax muyrakytan*: LBP 23759, 5 paratypes, 48.1–58.9 mm SL, rio Arapiuns. *Cyphocharax naegeli*: NMW 68808, 1 syntype of *Curimatus naegeli*, 110.3 mm SL. *Cyphocharax nigripinnis*: MZUSP 42025, holotype, 53.3 mm SL, rio Xerui. *Cyphocharax notatus*: NMW 75793, holotype of *Curimatus notatus*, 75.0 mm SL, Pará. *Cyphocharax pinnilepis*: USNM 298248, 4 paratypes, 31.2–98.5 mm SL, rio Gongogi. *Cyphocharax plumbeus*: MCZ 31493, lectotype of *Curimatus plumbeus*, 94.8 mm SL, Paraná do Januári. *Cyphocharax saladensis*: LBP 6034, 8, 28.1–43.0 mm SL, rio Maquiné. *Cyphocharax sanctigabrielis*: MZUSP 115004, holotype, 60.7 mm SL, rio Negro. LBP 6963, 6 paratypes, 44.3–67.0 mm SL, rio Negro. *Cyphocharax santacatarinae*: LBP 766, 1, 39.0 mm SL, rio Marumbi. *Cyphocharax signatus*: MZUSP 41757, holotype, 33.8 mm SL, rio Araguaia. *Cyphocharax spilotus*: USNM 285194, 10 paratypes of *Curimata spilita*, 35.9–60.6 mm SL, rio Santa Maria. *Cyphocharax spiluroopsis*: MCZ 92961, lectotype of *Curimatus spiluroopsis*, 65.6 mm SL, rio Içá. MCZ 20218, 5 paralectotypes of *Curimatus spiluroopsis*, 49.0–53.9 mm SL, rio Içá. *Cyphocharax spilurus*: INPA 7886, 2, rio Takutu. FMNH 122066, rio Takutu. *Cyphocharax stilbolepis*: MZUSP 41759, holotype, 108.1 mm SL, rio Xingu. *Cyphocharax vanderi*: MZUSP 4325, holotype, 42.6 mm SL, upper rio Paraná. *Cyphocharax voga*: LBP 17002, 9, 36.0–42.3 mm SL, Laguna dos Patos. **Colombia:** *Cyphocharax magdaleneae*: NMW 68873, lectotype of *Curimatus magdaleneae*, 128.7 mm SL, rio Magdalena. **Ecuador:** *Cyphocharax laticlavius*: FMNH 101503, holotype, 51.9 mm SL, rio Napo. *Cyphocharax pantostictos*: USNM 306594, holotype, 72.5 mm SL, Laguna de Jatuncocha. *Cyphocharax punctatus*: FMNH 101731, rio Napo. **Peru:** *Cyphocharax derhami*: AMNH 274311, rio Ucayali. *Cyphocharax festivus*: USNM 280426, holotype, rio Nanay. *Cyphocharax vexillipinnus*: USNM 296394, holotype, 62.6 mm SL, rio Itaya. MZUSP 41761, 3 paratypes, 50.8–55.0 mm SL, rio Itaya. **Suriname:**

Cyphocharax biocellatus: ANSP 189146, holotype, 62.8 mm SL, Litanie basin. *Cyphocharax microcephalus*: MCZ 785, holotype of *Curimatus microcephalus*, 104.0 mm SL, no exact locality. *Cyphocharax punctatus*: USNM 275000, holotype, 25.7 mm SL, Marowijne basin. **Uruguay**: *Cyphocharax platanus*: ANSP 203188, 6, 90.6–119.6 mm SL, río de La Plata. **Venezuela**: *Cyphocharax aspilos*: USNM 121311, 2 paratypes, 104.6–108.5 mm SL, Río Palmar. *Cyphocharax meniscaprorus*: USNM 235484, 13 paratypes, río Aro. *Cyphocharax oenas*: USNM 235485, 10 paratypes, 31.8–46.5 mm SL, río Orinoco.

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AUTHORS' CONTRIBUTION 

Bruno F. Melo: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Resources, Writing–original draft, Writing–review and editing.

Tiago C. Faria: Formal analysis, Investigation, Methodology, Validation, Visualization, Writing–review and editing.

Neotropical Ichthyology

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The author declares no competing interests.

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