

# A new tetra of the genus *Astyanax* (Characiformes: Acestrorhamphidae) with lateral stripes from lower Amazon basin, Brazil



Correspondence:  
Josué Sarino-Araújo  
[josuesarinoaraujo@gmail.com](mailto:josuesarinoaraujo@gmail.com)

Josué Sarino-Araújo<sup>1</sup>, Carlison Silva-Oliveira<sup>2</sup>, Flávio C. T. Lima<sup>3</sup>,  
 André L. C. Canto<sup>4</sup> and Frank R. V. Ribeiro<sup>1,4</sup>

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A new species of *Astyanax* is described from the rio Jauari and rio Mulato basins, tributaries of the left bank of the lower Amazon River, Pará State, Brazil. The new species is distinguished from the other congeners, except *A. kullanderi*, *A. lineatus*, and *A. superbus*, by presenting chromatophores concentrated on the edges of scales on the sides of the body, forming dark, wavy longitudinal stripes along the flanks. The new species can be diagnosed from *A. kullanderi*, *A. lineatus*, and *A. superbus* by having a greater number of gill rakers in the first branchial arch, body proportions, and color pattern. Among all congeners, the new species is most morphologically similar to *A. lineatus*. This is the first species of the genus to be described from tributaries of the northern bank of the lower Amazon basin.

**Keywords:** *Astyanax bimaculatus*, *Astyanax lineatus*, Calha Norte Paraense, Taxonomy.

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<sup>1</sup> Programa de Pós-Graduação em Biodiversidade, Universidade Federal do Oeste do Pará, Rua Vera Paz, s/n, 68040-255, Santarém, PA, Brazil. (JSA) [josuesarinoaraujo@gmail.com](mailto:josuesarinoaraujo@gmail.com) (corresponding author), (FRVR) [fraynner@yahoo.com.br](mailto:fraynner@yahoo.com.br).

<sup>2</sup> Instituto Federal de Educação, Ciência e Tecnologia do Pará - Campus Itaituba, Rua Universitário, s/n, 68183-300, Itaituba, PA, Brazil. (CSO) [carlison3@gmail.com](mailto:carlison3@gmail.com).

<sup>3</sup> Museu de Diversidade Biológica, Instituto de Biologia, Universidade Estadual de Campinas, Rua Monteiro Lobato, 255, 13083-682, Campinas, SP, Brazil. (FCTL) [fctlima@gmail.com](mailto:fctlima@gmail.com).

<sup>4</sup> Instituto de Ciências e Tecnologia das Águas, Universidade Federal do Oeste do Pará, Rua Vera Paz, s/n, 68040-255, Santarém, PA, Brazil. (ALCC) [cantoandre@gmail.com](mailto:cantoandre@gmail.com).

Uma nova espécie de *Astyanax* é descrita da bacia dos rios Jauari e Mulato, afluentes da margem esquerda do baixo rio Amazonas, estado do Pará, Brasil. A nova espécie distingue-se das demais espécies do gênero, exceto *A. kullanderi*, *A. lineatus* e *A. superbus*, por apresentar cromatóforos concentrados nas bordas de escamas na lateral do corpo, formando linhas escuras longitudinais onduladas nos lados do corpo. A nova espécie pode ser diagnosticada de *A. kullanderi*, *A. lineatus* e *A. superbus* por possuir maior número de rastros branquiais no primeiro arco branquial, proporções do corpo e padrão de coloração. Entre todos os seus congêneres, a nova espécie é morfologicamente mais semelhante a *A. lineatus*. Trata-se da primeira espécie do gênero a ser descrita de tributários da margem norte do baixo Amazonas.

**Palavras-chave:** *Astyanax bimaculatus*, *Astyanax lineatus*, Calha Norte Paraense, Taxonomia.

## INTRODUCTION

The genus *Astyanax* Baird & Girard, 1854 currently comprises approximately 120 valid species, distributed across freshwater drainages of the Neotropical region, from southern United States to central Argentina (Almirón *et al.*, 2015; Toledo-Piza *et al.*, 2024; Fricke *et al.*, 2025). The non-monophyly of the genus has been consistently demonstrated through multiple lines of evidence, including both morphological and molecular approaches (*e.g.*, Javonillo *et al.*, 2010; Mirande, 2010, 2019; Oliveira *et al.*, 2011; Schmitter-Soto, 2016; Terán *et al.*, 2020).

Terán *et al.* (2020) combined morphological and molecular data to provide the first comprehensive phylogenetic analysis of the genus recovering it as a polyphyletic group, relocating several species previously attributed to *Astyanax* to the genera *Deuterodon* Eigenmann, 1907, *Eretmobrycon* Fink, 1976, *Jupiaba* Zanata, 1997, *Psalidodon* Eigenmann, 1911, *Tetragonopterus* Cuvier, 1816, and to two newly erected genera, *Andromakhe* Terán, Benitez & Mirande, 2020, and *Makunaima* Terán, Benitez & Mirande, 2020. More recently Melo *et al.* (2024) presented a broad molecular phylogeny of Characidae and related families, further restricting this genus as several species were reassigned to other genera, including 12 species to the genus *Psalidodon*.

Despite these advances, the diversity of *Astyanax* remains underestimated (*e.g.*, Melo *et al.*, 2024), particularly in poorly sampled areas of the Amazon basin (*e.g.*, Dagosta, de Pinna, 2019; Dagosta, Marinho, 2022). During recent ichthyological surveys in tributaries of the northern bank of the lower Amazon River in Pará State, Brazil, were collected specimens of an unidentified species of *Astyanax* very similar to *Astyanax lineatus* (Perugia, 1891), a species distributed in the La Plata basin in Argentina, Bolivia, Brazil, and Paraguay, and in the upper Río Mamoré basin in Bolivia (*e.g.*, Liotta, 2005; Ferreira *et al.*, 2017; Maldonado *et al.*, 2020).

The so-called Northern Pará Drainage System (*sensu* Dutra *et al.*, 2020) covers approximately 270,000 km<sup>2</sup> and stands out for its uniqueness as it is home to some of the largest Conservation Units (CUs) in the tropics, including the Grão-Pará Ecological Station, the largest in the world, with approximately 4.2 million hectares (IMAZON,

2015). However, the ichthyofauna of this region remains poorly documented, although some fish species have been recently described for the area (*e.g.*, Silva-Oliveira *et al.*, 2018; Dutra *et al.*, 2020; Faria *et al.*, 2020), several additional undescribed species still await formal recognition. In the present study, we formally describe a new species of *Astyanax* from this poorly explored area, contributing to the knowledge of the biodiversity of the northern Amazon basin.

## MATERIAL AND METHODS

Counts and measurements follow Fink, Weitzman (1974), except for the number of scale rows below the lateral line, which were counted up to the pelvic-fin origin. Measurements were made point by point on the left side of the body using a digital caliper with an accuracy of 0.1 mm, and are expressed as a percentage of standard length (SL), except for head subunits, which are expressed as a percentage of head length.

Counts of vertebrae, supraneurals, procurrent caudal-fin rays, unbranched anal-fin ray, and minute dentary teeth were taken from specimens prepared according to Taylor, Van Dyke (1985), *i.e.*, cleared and stained (c&s) specimens. Vertebral counts included all four vertebrae in the Weberian apparatus. The compound caudal centrum (PU1+U1) was treated as a single element. A small incision was done at the lateral wall of the abdominal cavity to check the sex and gonadal development of the specimens. In the description, counts are followed by their absolute frequency in parentheses, and holotype counts are indicated by an asterisk. Numbers of gill rakers on the first branchial arch and teeth in the maxilla of *Astyanax superbis* Myers, 1942, were taken from Dagosta (2011) and Ruiz-C *et al.* (2018).

In the list of comparative material examined, museum abbreviations and catalogue numbers are followed by the total number of specimens in each lot, standard length range, and collection date. The map was generated using QGis 2.4.0 Chugiak©. Museum abbreviations follow Sabaj (2020).

## RESULTS

### *Astyanax pintacui*, new species

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(Figs. 1–3; Tab. 1)

**Holotype.** UFOPA-I 1747, 66.9 mm SL, Brazil, Pará State, Monte Alegre, Igarapé Mulato, tributary of rio Mulato, lower Amazon River basin, 01°43'32.11"S 53°59'54.00"W, 4 Nov 2024, J. Sarino-Araújo & C. Silva-Oliveira.

**Paratypes.** All from Brazil, Pará State, lower Amazon River basin: INPA 61813, 10, 36.1–43.3 mm SL; UFOPA-I 1745, 58 (4 c&s), 37.2–62.5 mm SL; ZUEC 18560, 10, 41.4–55.1 mm SL, collected with the holotype. UFOPA-I 1634, 8 (1 c&s), 42.0–48.8 mm SL, Monte Alegre, Igarapé Água Azul, rio Jauari, 01°20'22"S 53°59'22"W, 11 Aug

2022, C. Silva-Oliveira, M. Lima & S. Silva. UFOPA-I 1636, 2, 40.7–41.5 mm SL, Monte Alegre, rio Jauari, 01°20'28"S 53°56'15"W, 9 Aug 2022, F. R. V. Ribeiro, A. L. C. Canto, J. Sarino-Araújo & S. Silva. UFOPA-I 1637, 3, 51.2–55.0 mm SL, Prainha, cachoeira do Cupim, rio Jauari, 01°22'30"S 53°35'24"W, 12 Aug 2022, C. Silva-Oliveira, M. Lima & S. Silva. UFOPA-I 1644, 1, 72.9 mm SL, Monte Alegre, Igarapé do Lontra, rio Jauari, 01°19'45"S 53°56'49"W, 6 Oct 2023, C. Silva-Oliveira, M. Lima & S. Silva. UFOPA-I 1746, 14, 33.9–80.3 mm SL, Monte Alegre, igarapé Mulato, rio Mulato, 01°43'32.11"S 53°59'54.00"W, 7 Jan 2017, C. Silva-Oliveira, A. Canto, F. Ribeiro, A. Silva & J. Souza.

**Diagnosis.** *Astyanax pintacuia* differs from its congeners, except *A. lineatus*, *A. kullanderi* Costa, 1995 and *A. superbus* Myers, 1942 by presenting wavy dark stripes between the rows of scales on the sides of the body, forming a well-defined longitudinal striped pattern (*vs.* absence of a wavy, striped pattern in the remaining congeners). *Astyanax pintacuia* differs from *A. lineatus*, *A. kullanderi*, and *A. superbus* in the greater number of gill rakers on the first branchial arch (26–28 *vs.* 19 or 20 in *A. kullanderi*, 22–24 in *A. lineatus* and 22 or 23 in *A. superbus*). *Astyanax pintacuia* can be diagnosed from *A. kullanderi* and *A. superbus* by presenting two vertically elongated humeral blotches (*vs.* presence of a single, horizontally elongated, oval-shaped humeral blotch). *Astyanax pintacuia* also differs from *A. kullanderi* by the number of scales in the lateral line (37–40 *vs.* 31–32). Additionally, the new species differs from *A. superbus* by presenting a short maxilla, not reaching the vertical that passes through the anterior margin of the pupil



**FIGURE 1** | *Astyanax pintacuia*: A. UFOPA-I 1747, holotype, 66.9 mm SL; B. UFOPA-I 1745, paratype, 50.8 mm SL. Brazil, Pará State, Monte Alegre, igarapé Mulato.

(*vs.* maxilla long, exceeding the vertical that passes through the center of the pupil), and by the presence of one tricuspid tooth in the maxilla (*vs.* 2–6 tricuspid teeth). Finally, it additionally differs from *A. lineatus* by presenting the longitudinal wavy stripes only present along the midbody (*vs.* longitudinal wavy stripes present both along the midbody and in the dorsal portion of the body).

**Description.** Morphometric data presented in Tab. 1. Body compressed, greatest body height at vertical through dorsal-fin origin. Dorsal profile of head slightly convex from upper lip to vertical through the posterior nostril, straight from that point to tip of supraoccipital spine. Body profile slightly convex from the distal end of supraoccipital spine to dorsal-fin terminus, straight to slightly convex from that point to adipose fin insertion; slightly concave between the insertion of adipose fin and the origin of the dorsal procurrent caudal-fin rays. Ventral profile of head and body convex from tip of lower jaw to anal-fin origin. Ventral profile straight and posterodorsally inclined along anal-fin base. Ventral profile of caudal peduncle concave.

**TABLE 1** | Morphometric data of *Astyanax pintacua* (N = 41; holotype included in the range and mean). SD = Standard deviation.

	Holotype	Range	Mean	SD
Standard length (mm)	66.9	32.9–77.5	47.6	–
<b>Percents of standard length</b>				
Predorsal distance	50.6	50.1–56.1	53.0	1.4
Prepelvic distance	49.5	47.6–52.0	49.6	1.3
Prepectoral distance	27.1	27.1–33.1	29.7	1.3
Preanal distance	68.4	64.0–69.5	67.2	1.3
Depth at dorsal-fin origin	40.1	36.1–41.3	38.7	1.5
Caudal peduncle depth	11.8	10.7–12.1	11.4	0.4
Caudal peduncle length	8.5	5.9–11.0	8.0	1.1
Anal-fin base length	29.7	26.8–33.7	30.8	1.3
Dorsal-fin base length	15.4	13.6–17.2	15.3	0.7
Dorsal-fin length	31.4	28.1–34.1	30.8	1.1
Pelvic-fin length	18.3	15.7–22.0	18.1	1.2
Anal fin length	20.0	15.0–22.5	20.2	1.3
Pectoral-fin length	22.4	21.7–25.5	23.5	1.0
Head length	28.2	28.2–33.5	30.8	1.2
<b>Percents of head length</b>				
Snout length	19.2	17.9–23.0	20.0	1.1
Upper jaw length	37.3	35.9–40.5	37.7	1.0
Orbital diameter	37.6	35.7–43.5	40.5	2.0
Interorbital width	31.3	26.2–33.8	30.6	1.4

Mouth terminal; jaws isognathous. Posterior terminus of maxilla reaching vertical through anterior margin of orbit. Premaxilla with two teeth rows; outer row with 4(5) tricuspid teeth; inner row with 5(5) tricuspid to pentacuspoid teeth. Maxilla with 1(5) tricuspid or pentacuspoid tooth. Dentary with 5(2) or 6(3) tricuspid to pentacuspoid teeth followed by 4 small conical teeth.

Scales cycloid, moderately large, with 4 to 7 well-marked *radii*; *circuli* present in the anterior and posterior fields of scales. Lateral line complete, slightly curved, with 37(10), 38\*(11), 39(13) or 40(6) perforated scales. Longitudinal series of scales between dorsal-fin origin and lateral line, 7\*(32) or 8(9). Longitudinal series of scales between lateral line and pelvic-fin origin, 6\*(41). Predorsal scales 11(13), 12(22) or 13\*(6), arranged in regular series. Circumpeduncular scales 16(9) or 17\*(31). Single series of 20\*(29), 21(8), 22(2), 23(1) or 24(1) scales covering base of anal fin.

Dorsal-fin rays ii,9\*(41). Dorsal-fin origin at midbody, slightly posterior to vertical through pelvic fin origin. First unbranched ray approximately half length of second unbranched ray. Adipose fin present, origin approximately vertical through base of 23rd to 24th branched anal-fin rays. Pectoral-fin rays i,10(9), i,11\*(27), i,12(5); tip of pectoral fin reaching pelvic-fin origin when compressed. Pelvic-fin rays i,7\*(41); tip of pelvic



**FIGURE 2** | *Astyanax pintacua*, UFOPA-I 1634, paratype, 46.4 mm SL (c&s). Left side of the premaxillary, maxillary, and dentary. Lateral view. Scale bar = 1 mm.

fin extending beyond urogenital papillae and usually reaching first anal-fin rays when compressed. Anal-fin origin located vertically through posterior terminus of dorsal-fin base. Anal-fin rays iv, 24(2), 25(7), 26\*(14), 27(12), 28(3), or 29(3). Last unbranched and first three branched anal-fin rays longest, subsequent rays gradually decreasing in length. Caudal fin forked, lobes equal in size, slightly rounded. Principal caudal-fin rays 10+9\*(41); dorsal procurrent caudal-fin rays 11(4) or 12(1); ventral procurrent caudal-fin rays 9(2) or 10(3).

Total vertebrae 36(3) or 37(2). Supraneurals 4(3) or 5(2), with bony lamellae in the upper portion. Branchiostegal rays 4(5). First branchial arch with 26(29), 27(11) or 28(1) rakers: 3(40) or 4(1) on hypobranchial, 11(15), 12(25) or 13(1) on ceratobranchial, 1(41) on cartilage between the ceratobranchial and epibranchial and 9(1), 10(14), 11(25) or 12(1) on epibranchial.

**Coloration in alcohol.** Overall coloration of body brown to silver. Top of head and snout dark as a result of dense concentration of dark chromatophores. Infraorbitals, maxillary, ventral region of opercle, and gular region silvery to yellowish. Dorsolateral region of body darkened. Scales of latero-dorsal region of body with chromatophores concentrated. Humeral region with two vertically elongated blotches; first humeral blotch conspicuous, extending vertically over five to six rows of scales, extending beyond lateral line ventrally; upper portion broader and more evident than lower portion. Second humeral blotch diffuse, extending horizontally over two to three rows of scales and vertically over four rows of scales, not extending beyond lateral line ventrally. Darker diamond-shaped blotch on caudal peduncle, reaching to end of middle caudal fin rays. Faint, wide, longitudinal dark to silvery band extending posteriorly to second humeral blotch to caudal peduncle blotch. Six to eight wavy dark longitudinal stripes along middle portion of body. Abdominal region clear, with few scattered dark chromatophores. Dorsal, adipose, pectoral, pelvic and anal fins hyaline, with few dark chromatophores on interradial membranes. Median caudal-fin rays densely pigmented, forming a black band.

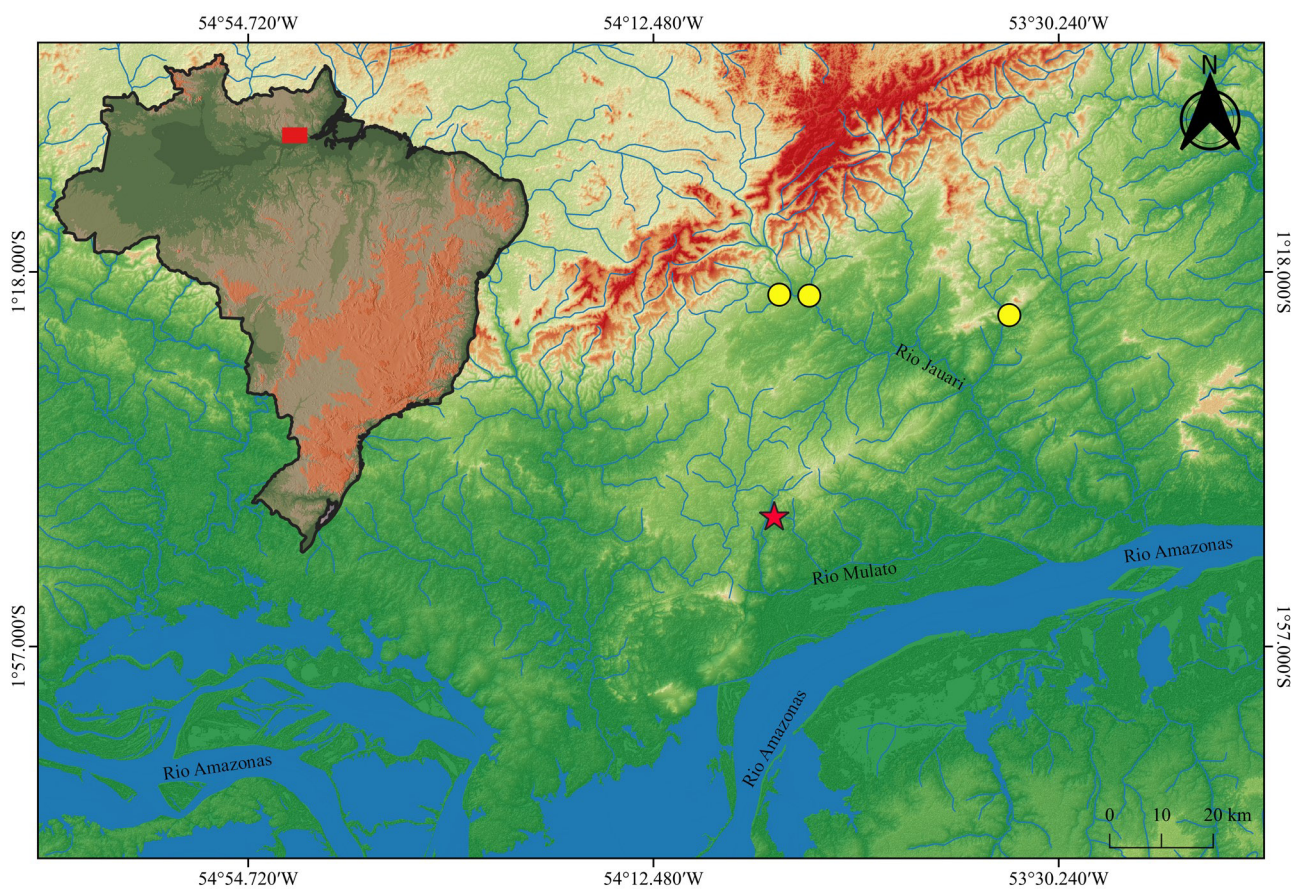
**Coloration in life.** Overall body coloration mainly silvery. Dorsal portion of the head and dorsal region of body light gray to yellowish. Lower portion of head and abdominal region silvery. Dorsal portion of orbit yellow to orange, lateral and ventral portions silvery. Dorsal, adipose, caudal, anal and pelvic fins yellowish with a reddish hue at fin tips. Pectoral fin hyaline, with few scattered chromatophores (Fig. 3).

**Sexual dimorphism.** Observed in three mature males (UFOPA-I 1746, 55.6–62.1 mm SL). Mature males have 11 thin, retrorse hooks on the largest unbranched anal-fin ray and 13 hooks on the first branched ray. Number of hooks gradually decreasing to five hooks on the 11th or 12th branched anal-fin rays. Three first branched pelvic-fin rays with six to nine slightly retrorse hooks, with a more robust base and smaller than those present in the anal fin. One hook per segment of anal and pelvic-fin rays. No other secondary sexually dimorphic features were identified.

**Geographical distribution.** *Astyanax pintacua* is known from tributaries of rio Jauari and rio Mulato, lower Amazon River basin, Pará State, Brazil (Fig. 4).



**FIGURE 3** | *Astyanax pintacui*, UFOPA-I 1745, paratype, 45.1 mm SL, in life. Lateral view, left side.



**FIGURE 4** | Distribution of *Astyanax pintacui* (yellow circles). The red star indicates the type locality.

**Conservation status.** *Astyanax pintacui* presents a wide Extent of Occurrence (EOO), and additionally, is common and abundant across its range. Furthermore, no threats were identified in the sites of occurrence of the species. Thus, according to the International Union for Conservation of Nature categories and criteria (IUCN, 2024), we suggest that *A. pintacui* should be classified as Least Concern (LC).

**Etymology.** The specific epithet “*pintacuí*” is a tribute to the pinta-cuí (painted gourds) culture, a local custom inherited from the indigenous peoples of the Gurupatuba settlement, a term later affectionately extended to the natives of the municipality of Monte Alegre (Martins, 2015; Magnani, 2023). A noun in apposition.

## DISCUSSION

In a phylogenetic hypothesis of *Astyanax* and related genera based on combined morphological and DNA data, Terán *et al.* (2020) recovered a clade composed of *A. lineatus*, *A. metae* Eigenmann, 1914, *A. pirapuan* Tagliacollo, Britzke, Silva & Benine, 2011, and *A. venezuelae* Schultz, 1944. This monophyletic group, called *A. lineatus* clade by Terán *et al.* (2020), was supported by ten molecular synapomorphies and a single morphological synapomorphy, namely “*scale sheath covering three-quarters or more of the base of the anal fin*”. However, among the four species, only *A. lineatus* was analyzed using both morphological and molecular data, while the other species were included based solely on molecular evidence.

More recently, Melo *et al.* (2024), based on ultraconserved elements, obtained a close relationship among the species of the clade. Although *A. lineatus* was not included in their analysis, the remaining species of the *A. lineatus* clade were recovered in close phylogenetic proximity, partially corroborating the hypothesis of Terán *et al.* (2020). However, in Melo *et al.* (2024), this clade forms the sister group of all remaining *Astyanax* species, whereas in Terán *et al.* (2020), it was recovered as the sister group of a more inclusive clade, that includes *Gymnocharacinus* Steindachner, 1903, *Astyanax sensu stricto*, *Andromakhe*, *Oligosarcus* Günther, 1864, and *Psalidodon*.

The only morphological synapomorphy proposed for the *Astyanax lineatus* clade, *i.e.*, the scale sheath extending over at least  $\frac{3}{4}$  of the anal-fin base, is present in *A. pintacuí*, which exhibits a scale sheath covering approximately 80% of the anal-fin base. However, because this character is highly homoplastic and occurs in multiple taxa closely related to the *A. lineatus* clade, including several *Astyanax* species, the presence of this feature alone is insufficient to confidently place *A. pintacuí* within the *A. lineatus* clade.

Among all species currently included in *Astyanax*, *A. pintacuí* is morphologically most similar to *A. lineatus* (Fig. 5). Both species share the presence of two vertically elongated humeral blotches and longitudinal wavy stripes along the sides of the body. Furthermore, *A. pintacuí* shares with the species of the *A. lineatus* clade the predorsal scales arranged in a regular series. These morphological similarities suggest that *A. pintacuí* is more closely related to the members of this clade, although a study with a molecular approach is necessary to confirm the placement of the new species within *Astyanax*.

As mentioned in the Introduction, the diversity of *Astyanax* is still underestimated in the Northern Pará drainage system. Notably, a second putative species exhibiting a color pattern strikingly similar to that of *A. pintacuí* was recently collected from the same general region (ZUEC 18346). Despite the similar coloration, this morphotype presents some differences in body proportions, including body depth (30.3–35.4% *vs.* 36.1–41.3% SL in *A. pintacuí*) and predorsal length (49.2–52.7% *vs.* 50.1–56.1% SL in *A. pintacuí*). The two species were recorded occurring syntopically in the upper portion of the rio Jauri, while only *A. pintacuí* was recorded from the rio Mulato.



**FIGURE 5** | *Astyanax lineatus*: A. ZUEC 6811, 74.7 mm SL, Brazil, Mato Grosso, Chapada dos Guimarães, rio Claro; B. ZUEC 18550, 69.1 mm SL, Brazil, Mato Grosso, Nortelândia, rio Santana.

Furthermore, at least three additional putative species belonging to the *A. bimaculatus* species complex have been recorded in the Northern Pará drainage system (JSA, 2025, pers. obs.). An integrative taxonomic approach of *Astyanax* species inhabiting the rivers of northern Pará is currently being conducted by JSA to assess the true diversity of the genus in the region.

**Comparative material examined. Brazil:** *Astyanax* cf. *argyrimarginatus* Garutti, 1999: UFOPA-I 1638, 1, 97.8 mm SL. UFOPA-I 1640, 1, 63.9 mm SL. UFOPA-I 1645, 2, 63.1–86.0 mm SL. *Astyanax* cf. *bimaculatus* (Linnaeus, 1758): UFOPA-I 1635, 8, 45.3–95.9 mm SL. *Astyanax* gr. *bimaculatus*: UFOPA-I 867, 2, 53.4–65.2 mm SL. *Astyanax* sp.: ZUEC 18346, 5, 42.6–49.2 mm SL. *Astyanax* sp. 1: UFOPA-I 1641, 27, 38.8–88.1 mm SL. *Astyanax* sp. 2: UFOPA-I 1576, 33, 42.6–81.1 mm SL. *Astyanax kullanderi*: ZUEC 13447, 3, 50.5–54.5 mm SL. ZUEC 13452, 1 of 2, 48.7 mm SL. *Astyanax lineatus*: LBP 35852, 16, 33.1–50.1 mm SL. MZUSP 90013, 4, 59.3–65.4 mm SL. MZUSP 91118, 8, 64.3–82.2 mm SL. ZUEC 4188, 2, 72.0–74.6 mm SL. ZUEC 6811, 11, 51.12–100.3 mm SL. ZUEC 18505, 6, 43.5–71.2 mm SL. ZUEC 10569, 1, 50.1 mm SL. ZUEC 18550, 14, 63.2–83.1 mm SL. *Astyanax pirapuan*: LBP 17539, 16, 16.3–41.4 mm SL. ZUEC 7634, 8, 31.0–76.6 mm SL. **Venezuela:** *Astyanax metae*: LBP 18700, 5, 58.3–71.3 mm SL. *Astyanax venezuelae*: LBP 18701, 5, 48.3–64.5 mm SL.

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## REFERENCES

- **Almirón AE, Casciotta JRC, Ciotek L, Giorgis P.** Guía de los peces del Parque Nacional Pre-Delta. Ciudad autónoma de Buenos Aires, Argentina: Administración de Parques Nacionales; 2015. Available from: <https://sib.gob.ar/archivos/bfa004429.pdf>
- **Dagosta FCP.** Taxonomia e relações filogenéticas do gênero *Astyanacinus* Eigenmann, 1907 (Characiformes: Characidae). [Master Dissertation]. Ribeirão Preto: Universidade de São Paulo; 2011.
- **Dagosta FCP, Marinho MMF.** New small-sized species of *Astyanax* (Characiformes: Characidae) from the upper rio Paraguai basin, Brazil, with discussion on its generic allocation. *Neotrop Ichthyol.* 2022; 20(1):e210127. <https://doi.org/10.1590/1982-0224-2021-0127>
- **Dagosta FCP, de Pinna M.** The fishes of the Amazon: distribution and biogeographical patterns, with a comprehensive list of species. *Bull Am Mus Nat Hist.* 2019; 2019(431):1–163. <https://doi.org/10.1206/0003-0090.431.1.1>
- **Dutra GM, Freitas TMS, Prudente BS, Salvador GN, Leão MDV, Peixoto LAW et al.** Rapid assessment of the ichthyofauna of the southern guiana shield tributaries of the amazonas river in Pará, Brazil. *Acta Amaz.* 2020; 50(1):24–36. <https://doi.org/10.1590/1809-4392201901402>
- **Faria TC, Lima FCT, Wosiacki WB.** A new *Hyphessobrycon* (Characiformes: Characidae) from the Guiana Shield in Northern Brazil. *Copeia.* 2020; 108(2):369–75. <https://doi.org/10.1643/CI-19-311>
- **Ferreira FS, Vicentin W, Suárez YR.** *Astyanax lineatus* (Perugia, 1891) (Characiformes: Characidae): first record in the upper Paraná river basin, Mato Grosso do Sul, Brazil. *Check List.* 2017; 13(2):1–04. <https://doi.org/10.15560/13.2.2094>
- **Fink WL, Weitzman SH.** The so-called cheirodontin fishes of Central America with descriptions of two new species (Pisces: Characidae). *Smithson Contrib Zool.* 1974(172):1–46. <https://doi.org/10.5479/SL.00810282.172>
- **Fricke R, Eschmeyer WN, Van der Laan R.** Eschmeyer's catalog of fishes: genera, species, references [Internet]. San Francisco: California Academy of Natural Sciences; 2025. Available from: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>
- **Instituto do Homem e Meio Ambiente da Amazônia (IMAZON).** Calha Norte Sustentável: situação atual e perspectivas. [Internet]. 2015. Available from: <https://imazon.org.br/calha-norte-sustentavel-situacao-atual-e-perspectivas/>
- **International Union for Conservation of Nature (IUCN). Standards and petitions committee.** Guidelines for using the IUCN Red List categories and criteria. Version 16 [Internet]. Gland; 2024. Available from: <http://www.iucnredlist.org/documents/RedListGuidelines.pdf>
- **Javonillo R, Malabarba LR, Weitzman SH, Burns JR.** Relationships among major lineages of characid fishes (Teleostei: Ostariophysi: Characiformes), based on molecular sequence data. *Mol Phylogenet Evol.* 2010; 54(2):498–511. <https://doi.org/10.1016/J.YMPEV.2009.08.026>
- **Liotta JR.** Distribución geográfica de los peces de aguas continentales de la República Argentina. *ProBiota Ser Doc.* 2005; 3.
- **Maldonado M, Barra E, Araya M, Zubieta J, Machicao F, Carvajal-Vallejos FM et al.** Patrones de distribución, composición y riqueza de la ictiofauna en los Andes de Bolivia. *Neotrop Hydrobiol Aquat Conserv.* 2020; 1(2):139–60.

- **Magnani AOM, Ferreira SLM.** Mulheres do Brasil: artes e artistas. Sevilla: Enredars/Universidad Pablo de Olavide, Roma, Roma TrE-Press/Università degli studi Roma Tre; 2023.
- **Martins RMA.** Além do olhar: as fontes sobre a apropriação das técnicas e dos materiais das culturas indígenas nas artes da Amazônia Colonial (séculos XVII e XVIII). In: Knauss P, Malta M, editors. *Objetos do olhar: história e arte.* São Paulo: Rafael Copetti Editor; 2015. p.139–54.
- **Melo BF, Ota RP, Benine RC, Carvalho FR, Lima FCT, Mattox GMT et al.** Phylogenomics of Characidae, a hyper-diverse Neotropical freshwater fish lineage, with a phylogenetic classification including four families (Teleostei: Characiformes). *Zool J Linn Soc.* 2024; 202(1):1–37. <https://doi.org/10.1093/zoolinnean/zlae101>
- **Mirande JM.** Phylogeny of the family Characidae (Teleostei: Characiformes): from characters to taxonomy. *Neotrop Ichthyol.* 2010; 8(3):385–568. <https://doi.org/10.1590/S1679-62252010000300001>
- **Mirande JM.** Morphology, molecules and the phylogeny of Characidae (Teleostei, Characiformes). *Cladistics.* 2019; 35(3):282–300. <https://doi.org/10.1111/cla.12345>
- **Oliveira C, Avelino GS, Abe KT, Mariguela TC, Benine RC, Ortí G et al.** Phylogenetic relationships within the speciose family Characidae (Teleostei: Ostariophysi: Characiformes) based on multilocus analysis and extensive ingroup sampling. *BMC Evol Biol.* 2011; 11(1):275. <https://doi.org/10.1186/1471-2148-11-275>
- **Ruiz-C. RI, Román-Valencia C, Taphorn DC, Buckup PA, Ortega H.** Revision of the *Astyanax orthodus* species-group (Teleostei: Characidae) with descriptions of three new species. *Eur J Taxon.* 2018; 2018(402). <https://doi.org/10.5852/EJT.2018.402>
- **Sabaj MH.** Codes for natural history collections in ichthyology and herpetology. *Copeia.* 2020; 108(3):593–669. <https://doi.org/10.1643/ASIHCONDONS2020>
- **Schmitter-Soto JJ.** A phylogeny of *Astyanax* (Characiformes: Characidae) in Central and North America. *Zootaxa.* 2016; 4109(2):101–30. <https://doi.org/10.11646/ZOOTAXA.4109.2.1>
- **Silva-Oliveira C, Lima FCT, Bogotá-Gregory JD.** A new species of *Bryconops* Kner (Characiformes: Iguanodectidae) from the rio Maicuru, lower Amazon basin, Brazil. *Zootaxa.* 2018; 4514(3):372–82. <https://doi.org/10.11646/ZOOTAXA.4514.3.4>
- **Taylor WR, Van Dyke GC.** Revised procedure for staining and clearing small fishes and other vertebrates for bone and cartilage study. *Cybium.* 1985; 9(2):107–19.
- **Terán GE, Benitez MF, Mirande JM.** Opening the Trojan horse: phylogeny of *Astyanax*, two new genera and resurrection of *Psalidodon* (Teleostei: Characidae). *Zool J Linn Soc.* 2020; 190(4):1217–34. <https://doi.org/10.1093/zoolinnean/zlaa019>
- **Toledo-Piza M, Baena E, Dagosta FCP, Menezes NA, Andrade M, Benine RC et al.** Checklist of the species of the order Characiformes (Teleostei: Ostariophysi). *Neotrop Ichthyol.* 2024; 22(1):e230086. <https://doi.org/10.1590/1982-0224-2023-0086>

## AUTHORS' CONTRIBUTION

**Josué Sarino-Araújo:** Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Writing-original draft, Writing-review and editing.  
**Cárllison Silva-Oliveira:** Conceptualization, Investigation, Methodology, Supervision, Writing-original draft, Writing-review and editing.

**Flávio C. T. Lima:** Data curation, Formal analysis, Investigation, Supervision, Writing-original draft, Writing-review and editing.

**André L. C. Canto:** Data curation, Methodology, Project administration, Supervision, Writing-original draft, Writing-review and editing.

**Frank R. V. Ribeiro:** Project administration, Supervision, Writing-original draft, Writing-review and editing.

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

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