

***Parodon orinocensis* (Bonilla *et al.*, 1999) (Characiformes: Parodontidae): emendations and generic reallocation**

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During recent studies on Parodontidae, specimens of the Venezuelan species *Parodon orinocensis* (Bonilla, Machado-Allison, Silvera, Chernoff, López & Lasso, 1999) were examined and a few incongruencies with the original description of the species were noted. Emendations to the descriptions of the jaw teeth and color pattern are presented. Three autapomorphies were also observed and are listed herein. The species is moved from genus *Apareiodon* to *Parodon* based on presence of dentary teeth.

Durante estudos recentes sobre Parodontidae, espécimes da espécie venezuelana *Parodon orinocensis* (Bonilla, Machado-Allison, Silvera, Chernoff, López & Lasso, 1999) foram examinados e reconhecidas algumas incongruências na descrição original. Foram realizadas retificações relacionadas aos dentes das maxilas e ao padrão de coloração. Três autapomorfias foram observadas e são aqui listadas. Com base na presença de dentes no dentário a espécie é transferida do gênero *Apareiodon* para o gênero *Parodon*.

Key words: Freshwater fish, Neotropical, Ostariophysi, Río Orinoco basin, Taxonomy.

Introduction

Parodontidae Eigenmann, 1910 is a small characiform family composed by three currently valid genera, *Parodon* Valenciennes, 1849, *Saccodon* Kner, 1863 and *Apareiodon* Eigenmann, 1916, and 32 valid species (Pavanelli, 1999; Pavanelli, 2003; Pavanelli & Britski, 2003; Ingenito & Buckup, 2005; Pavanelli, 2006; Taphorn *et al.*, 2008; Landoño-Burbano, 2011). The three genera are traditionally characterized by the variation of two characters: number of unbranched pectoral-fin rays (one in *Parodon* and *Apareiodon*, and two in *Saccodon*), and absence of mandibullary teeth (in *Apareiodon* and *Saccodon*) (Eigenmann, 1916; Ingenito & Buckup, 2005).

Up to latter last century, only one species of the genus *Apareiodon* (*A. gransabana* Starnes & Schindler, 1993) and three from the genus *Parodon* (*P. apolinari* Myers, 1930, *P. guyanensis* Géry, 1960 and *P. suborbitalis* Valenciennes, 1849) were known from the río Orinoco basin, in Venezuela. However, Bonilla *et al.* (1999) described a second species of *Apareiodon*

from that basin, *A. orinocensis*. Based on the classic tooth characterization of the parodontid genera, those authors allocated their new species to the genus *Apareiodon*, since the species was held to have an edentulous lower jaw. After examining extensive parodontid material from Venezuela, including the holotype (MBUCV-V 29170) and paratypes (MBUCV-V 26669) of *A. orinocensis*, we noted some incongruencies between the original description and the studied specimens. Such differences are herein presented.

Material and Methods

Analysis of *A. orinocensis* was based on 49 alcohol preserved museum specimens. Two specimens were cleared and stained (c&s) according to Potthoff's (1984) methodology. Counts and measurements follow Pavanelli & Britski (2003) and Ingenito & Buckup (2005). Morphological measurements were made point-to-point to the nearest 0.01 mm with electronic calipers on the left side of the specimens whenever possible.

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Number of observed teeth is presented in the text followed by their frequency in parenthesis. An asterisk indicates counts for the holotype. Standard length (SL) is presented after catalog numbers of the lots. All species from the family were examined except the recently described *P. alfonsoi* Londoño-Burbano, Román-Valencia & Taphorn, 2011, *P. atratoensis* Londoño-Burbano, Román-Valencia & Taphorn, 2011 and *P. magdalenensis* Londoño-Burbano, Román-Valencia & Taphorn, 2011. Data from these three species were obtained exclusively from the original descriptions. Osteological nomenclature follows Roberts (1974a) and Schultze & Arratia (1989). Institutional abbreviations are: AMNH, American Museum of Natural History, New York; CAS, California Academy of Sciences, San Francisco; IAvH - Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, Villa de Leyva; INPA, Instituto Nacional de Pesquisas da Amazônia, Manaus; MBUCV, Museo de Biología de la Universidad Central de Venezuela, Caracas; MCNG - Museo de Ciencias Naturales de Guanare, Guanare; MCP, Museu de Ciências e Tecnologia, Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre; MHNCI, Museu de História Natural Capão da Imbuia, Curitiba; MNRJ, Museu Nacional, Universidade Federal do Rio de Janeiro, Rio de Janeiro; MZUSP, Museu de Zoologia da Universidade de São Paulo, São Paulo; NUP, Coleção Ictiológica do Nupélia (Núcleo de Pesquisas em Limnologia, Ictiologia e Aquicultura da Universidade Estadual de Maringá) Maringá; USNM, National Museum of Natural History, Smithsonian Institution, Washington D.C.

***Parodon orinocensis* (Bonilla, Machado-Allison, Silvera, Chernoff, López & Lasso, 1999), new combination**

Fig. 1

Apareiodon orinocensis Bonilla *et al.*, 1999:2 (original description; type locality: "Raudal Dimoshi, río Tabaro, BO"; holotype: MBUCV-V 29170; pictures of holotype and paratype). -Pavanelli, 2003: 43 (checklist). -Vari *et al.*, 2009: 25, 67 (checklist and picture).

Type material examined. MBUCV-V 29170, holotype, 131.9 mm SL, Venezuela, Bolívar State, río Caura system, río Tabaro, Raudal Dimoshi, río Orinoco basin, 15 September 1993, A. Machado-Allison *et al.* MBUCV-V 26669, 4 of 6 paratypes, 111.6-121.1 mm SL, same data as the holotype.

Non-type material examined. All from Venezuela. AMNH 233108, 11, 50.7-102.1 mm SL, Amazonas State, río Cuao, beach downstream of Raudal del Danto, 05°02'39"N 67°33'35"W, 10 March 2001; ANSP 185045, 4, 68.2-69.4 mm SL, Amazonas State, río Orinoco at Puerto Venado, 4.3 km S of Samariapo, 56.4 km SW of Puerto Ayacucho, 26 February 2005; ANSP 185048, 3, 58.2-103.2 mm SL, Amazonas State, río Casiquiare drainage, río Siapa, Raudal de Gallineta, 142 km E of San Carlos de río Negro, 17 March 2005; ANSP 185087, 3, 63.1-67.6 mm SL, Amazonas State, río Casiquiare drainage, Caño Guama, right bank trib. río Siapa, above Raudales de Aracamuni and below Salto Sardinias, 16 March 2005; ANSP 185090, 4, 52.7-94.5 mm SL, Amazonas State, río Casiquiare drainage, río

Siapa, Raudales de Aracamuni, 154 km E of San Carlos de río Negro, 11 March 2005; FMNH 109916, 1, 60.0 mm SL, Bolívar State, río Caura, rapids at Paují, 5°49'40"N 64°24'22"W, 28 November 2000; FMNH 109917, 2, 58.0-60.0 mm SL, Bolívar State, río Caura, Playa Rocosa across from El Playón, 6°19'43"N 64°31'40"W, 03 December 2000; MCNG 50127, 1, 87.1 mm SL, Amazonas State, río Parucito, río Venturari system, Raudales Salomón, 2.7 km NE of San Juan de Manapiare, río Orinoco basin, 16 April 2004; MBUCV-V 24475, 5 of 19, 35.4-39.8 mm SL, 1 c&s, 37.4 mm SL, Amazonas State, río Orinoco, Zamuro behind Puerto Ayacucho, 09 August 1984 (non-type material used in the original description); MBUCV-V 30116, 7 of 9, 52.6-127.9 mm SL, 2 c&s, A: 54.2 mm SL, B: 99.5 mm SL, Amazonas State, río Cuao, nearby Raudal del Danto, río Orinoco basin, 09 March 2001.

The first incongruence observed during our studies was the presence of mandibular teeth on dentary bones. Bonilla *et al.* (1999) indicated that such teeth were absent in their new species, resulting in their allocating that species to the genus *Apareiodon*. Nevertheless, one (1), two (32*) or three (3) mandibular teeth can be clearly observed. Under traditional concept of the genus *Apareiodon*, such information compels us to reallocate *A. orinocensis* to the genus *Parodon*.

Starnes & Schindler (1993) stated five synapomorphies for the genus *Apareiodon* based on morphology of mouth bones. However, such characters were tested by Ingenito (2008) for all species of Parodontidae and revealed to be related to some species only or inapplicable as stated by those authors for many species of the family. If the propositions of Starnes & Schindler (1993) were accepted, *P. orinocensis* should be kept in *Apareiodon*, what contradicts both the traditional Eigenmann's definition for the parodontids genera and the results obtained by Ingenito (2008).

Another incongruence of concern is the number of upper jaw teeth. Compared to the diagnosis supplied in the species' original description, which stated the presence of six premaxillary teeth, we found only four in all examined specimens, including types. Such a count is in agreement with all other *Parodon* and *Apareiodon* species, except *A. agmatos* Taphorn, López-Fernández & Bernard, 2008, *A. gransabana* and *P. guyanensis*, which bear five premaxillary teeth. The maxillary bone bears two teeth, as in most parodontids, which is in agreement with the authors' statements.

Finally, the description of the longitudinal stripes presented by Bonilla *et al.* (1999) is not fully compatible with the color pattern observed by us and needs to be emended, as this is an important diagnostic character for species of Parodontidae. The coloration pattern of the flanks of *P. orinocensis* is composed of three longitudinal stripes and five to seven wide, vertical, dark bars situated between the mid-lateral longitudinal stripe and dorsal region. The mid-lateral stripe has ill-defined limits, forming a zigzag, and transverse bars do not extend below this feature. That zigzag shape was not noted in the original description and is a useful character that discriminates *P. orinocensis* from *P. apolinari* and *P. caliensis* Boulenger, 1895 (which have disconnected



Fig. 1. *Parodon orinocensis*: (a) MBUCV-V 29170, holotype, 131.9 mm SL, Raudal Dimoshi (photo by Carlos do Nascimento and Nadia Milani); (b) AMNH 233108, 99.4 mm SL, Raudal del Danto (photo by Sandra Raredon).

transverse bars instead of a mid-lateral stripe) and from *P. guyanensis*, *P. moreirai* Ingenito & Buckup, 2005, *P. pongoensis* (Allen, 1942), and *Apareiodon* species (in which the mid-lateral stripe lacks dorsal or ventral projections). The mid-lateral stripe pattern found on *P. orinocensis* is also present in other congeners (*P. alfonsoi*, *P. atratoensis*, *P. bifasciatus* Eigenmann, 1912, *P. buckleyi* Boulenger, 1887, *P. carrikeri* Fowler, 1940, *P. hilarii* Reinhardt, 1866, *P. magdalenensis*, *P. nasus* Kner, 1859, and *P. suborbitalis*). From these species *P. orinocensis* can be distinguished by its very pointed snout (*versus* rounded), and the strongly rounded cutting edges of the premaxillary teeth (*versus* straight or almost straight). Additionally, the three sympatric congeners of *P. orinocensis* from the Río Orinoco basin can be easily distinguished from it as follows: *P. apolinari* has longer supraoccipital process to isthmus distance (1.2-1.5 *versus* 1.6-1.9 times in HL), deeper body (3.4-4.1 *versus* 4.2-5.3 times in SL), and 36-38 lateral-line scales (*versus* 40-43); *P. guyanensis* has five premaxillary teeth (*versus* four) and distal one-third of dorsal fin dark (*versus* not dark); *P. suborbitalis* has 36 to 39 lateral-line scales (*versus* 40-43), larger adipose to anal-fin distance (5.0-5.9 *versus* 6.0-7.7 times in SL), and larger supraoccipital process to isthmus distance (1.0-1.5 *versus* 1.6-1.9 times in HL).

The mid-lateral stripe of *P. orinocensis* may have well-defined dorsal and ventral margins (without zigzag projections) on caudal peduncle of some specimens. The zigzag limits of the mid-lateral stripe may not be noticeable in juvenile specimens (less than 50 mm SL), as shown in Fig. 1a of the original description, and specimens larger than 110 mm

SL, as shown in Fig. 1b by Bonilla *et al.* (1999: 4). So we conclude that the authors probably based their color descriptions only on these two length classes.

A second inconspicuous longitudinal stripe is present between the mid-lateral stripe and dorsal region. This dorsolateral stripe was noted by Bonilla *et al.* (1999) and can be easily observed in Figure 3 from Bonilla *et al.* (1999: 5). This stripe is present in all parodontid species, except *P. apolinari* and *P. caliensis*. However, the dorsolateral stripe is often difficult to discern and may be obscured by dusky coloration of the dorsum of Parodontidae's species. The non-observation of such stripes in *P. apolinari* and *P. caliensis* may be due to the faint color of the specimens we have studied.

At the region between main stripe and pectoral fin there is an inconspicuous dark ventrolateral stripe extending from cleithral area to region over anal fin. This stripe is separated by one scale row beneath the mid-lateral stripe, occupies about a half to one scale width and was not cited by Bonilla *et al.* (1999), even its being seen in their Fig. 1a (Bonilla *et al.*, 1999: 4). The presence of a ventrolateral stripe also occurs in many species of Parodontidae, except on *A. davisii* Fowler, 1941, *A. hasemani* Eigenmann, 1916, *A. ibitiensis* Campos, 1944, *A. itapicuruensis* Eigenmann & Henn, 1916, *A. tigrinus* Pavanelli & Britski, 2003, *P. apolinari*, *P. bifasciatus*, *P. caliensis*, and *P. guyanensis*. Otherwise, *A. agmatos* and *A. gransabana* have multiple ventrolateral stripes. Based on inference from the original descriptions, this stripe also seems to be absent in *P. alfonsoi*, *P. atratoensis* and *P. magdalenensis*.

During our studies, we also discovered three autapomorphies for *P. orinocensis*. The first one is related to

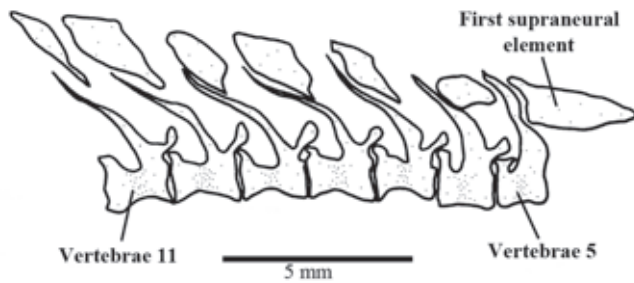


Fig. 2. Right view of vertebrae 5-11 of *Parodon orinocensis*, MBUCV-V 30116, 99.5 mm SL.

the form of the neural spines from vertebrae 5 to 16 or 17. At this region the neural spines of *P. orinocensis* are strongly curved backward, a condition not observed in any other characiform species and most evident on the distal half of vertebrae 5 to 11 (Fig. 2). This character state was not observed in the juvenile specimen of *P. orinocensis* examined herein, and thus may develop late in the ontogeny of this species.

We also observed that *P. orinocensis* has the opening of the lower lateral posttemporal fossa very narrow as compared with other members of the family. This species also has complete fusion of hypurals I and II, a condition lacking in all other parodontids.

Comparative material. Parodontidae. *Apareiodon affinis*: MCP 11594, 09, 39.4-59.2 mm SL, + 01 c&s, 42.6 mm SL, Argentina, Buenos Aires, Pdo. San Isidre, río de La Plata, en Náutica; lower rio Paraná basin. MNRJ 17042, 55, 69.0-81.0 mm SL, + 01 c&s, 72.4 mm SL, Brazil, Minas Gerais State, Bom Sucesso, ribeirão da Babilônia, right tributary of rio Grande, upper rio Paraná basin. MNRJ 19906, 64.7-72.8 mm SL, + 01 c&s, 71.56 mm SL, Brazil, Goiás State, Catalão, córrego Anta Gorda, left tributary of rio São Marcos, rio Paranaíba drainage, upper rio Paraná basin. ***Apareiodon agmatos*:** NUP 5950, paratypes, 3, 41.6-49.1 mm SL, + 01 c&s, 42.0 mm SL, sandy beach and embayment on right bank of rio Mazaruni, upstream from village of Jawalla, rio Mazaruni basin, atlantic coastal drainage. ***Apareiodon argenteus*:** MZUSP 59615, paratype, 14 of 25, 49.5-79.2 mm SL, + 01 c&s, 71.5 mm SL, Brazil, Goiás State, Minaçu, rio Tocantinzinho and affluents, rio Tocantins basin. ***Apareiodon cavalcante*:** MNRJ 12566, paratypes, 16, 37.4-55.6 mm SL, + 01 c&s, A: 45.0 mm, B: 47.0 mm SL, Brazil, Goiás State, Cavalcante, ribeirão do Padre, rio Tocantins basin. ***Apareiodon davisi*:** MNRJ 4678, 154, 16.3-59.7 mm SL, + 02 c&s, A: 44.2 mm, B: 42.6 mm SL, Brazil, Ceará State, Iguatu, rio Jaguaribe, atlantic coastal drainage. ***Apareiodon gransabana*:** MCNG 43343, 27, 49.1-89.4 mm SL, + 02 c&s, A: 75.8 mm, B: 67.8 mm SL, Venezuela, Bolívar, Roscio, rio Caroni drainage, rio Orinoco basin. USNM 267917, paratypes, 08, 42.3-62.4 mm SL, + 01 c&s, near 47 mm SL, Venezuela, Bolívar, La Gran Sabana, rio Tarota, rio Orinoco basin. ***Apareiodon hasemani*:** MNRJ 14212, 39, 18.6-56.8 mm SL, + 02 c&s, A: 53.0 mm, B: 55.6 mm SL, Brazil, Minas Gerais State, Manga, rio São Francisco, rio São Francisco basin. ***Apareiodon ibitiensis*:** MNRJ 28093, 53, 73.2-103.8 mm SL, + 02 c&s, A: 84.3 mm, B: 87.6 mm SL, Brazil, Minas Gerais State, Três Marias, riacho Frio, rio São

Francisco basin. ***Apareiodon itapicuruensis*:** MCP 17877, 09 of 19, 67.7-85.0 mm SL, + 01 c&s, 72.8 mm SL, Brazil, Bahia State, rio Califórnia at rio Água Fria mouth, atlantic coastal drainage. MNRJ 21688, 21, 12.6-55.4 mm SL, + 01 c&s, 60.6 mm SL; Brazil, Bahia State, Itaetê, rio Una, rio Paraguaçu basin, atlantic coastal drainage. ***Apareiodon machrisi*:** MCP 15966, 08 of 39, 62.4-74.4 mm SL, + 02 c&s, A: 68.9 mm, B: 64.1 mm SL, Brazil, Goiás State, Niquelândia, ribeirão do Engenho, rio Tocantins basin. ***Apareiodon piracicabae*:** MNRJ 28155, 48, 67.2-91.6 mm SL, + 02 c&s, A: 79.5 mm, B: 74.0 mm SL, Brazil, São Paulo State, Ipeúna, rio Passa Cinco, upper rio Paraná basin. ***Apareiodon tigrinus*:** MZUSP 59616, paratypes, 07 of 15, 26.8-61.9 mm SL, + 01 c&s, 42.5 mm SL, Brazil, Goiás State, Santa Rita do Araguaia, córrego do Jacaré, rio Tocantins basin. ***Apareiodon vittatus*:** MHNCI 7141, 03 of 08, 98.8-122.0 mm SL, + 01 c&s, 106.5 mm SL, Brazil, Paraná State, Nova Prata do Iguacu, rio Iguacu, rio Paraná basin. MNRJ 28445, 10, 91.4-103.4 mm SL, + 01 c&s, 94.0 mm SL, Brazil, Paraná State, Quedas do Iguacu, Salto Osório reservoir, rio Iguacu, rio Paraná basin. ***Apareiodon vladii*:** MNRJ 28202, 05, 87.4-100.5 mm SL, + 01 c&s, 89.4 mm SL, Brazil, Paraná State, Nova Laranjeira, rio Piquiri, upper rio Paraná basin. ***Parodon apolinari*:** IAvH 3438, 04, 62.4-88.9 mm SL, + 01 c&s, 68.3 mm SL, Colombia, Casanare, rios Unete, Cravo Sur y Tua, rio Meta drainage, rio Orinoco basin. MCNG 19773, 05 of 131, 52.7-93.4 mm SL, + 01 c&s, 79.9 mm SL, Venezuela, Portuguesa, Guanare, rio Las Marias, rio Apure drainage, rio Orinoco basin. ***Parodon bifasciatus*:** INPA 10926, 03, 83.1-98.6 mm SL, + 01 c&s, 78.1 mm SL, Brazil, Roraima State, Mucajaí, rio Mucajaí, rio Branco basin. ***Parodon buckleyi*:** IAvH 6193, 01, 82.6 mm SL, + 01 c&s, 121.6 mm SL, Colombia, Putumayo, Mocoa, rio Rumiayaco, rio Caquetá basin. ***Parodon caliensis*:** CAS 6767, 01, 66.4 mm SL, Colombia, Cauca, rio Paila, rio Magdalena basin. ***Parodon carrikeri*:** USNM 319292, 12, 94.3-150.2 mm SL, + 01 c&s, 119.7 mm SL, Bolivia, Tarija, rio Salinas, rio Bermejo drainage, rio Paraguay basin. ***Parodon guyanensis*:** MBUCV-V 31463, 02 of 37, 46.3-57.8 mm SL, + 01 c&s, 58.0 mm SL, Venezuela, Bolívar, sector La Piña, poseción Los Monos, rio Aro, rio Orinoco basin. MCNG 18337, 04 de 25, 18.8-67.9 mm SL, + 01 c&s, 61.0 mm SL, Venezuela, Bolívar, Heres, rio Tocoma medio, rio Caroni drainage, rio Orinoco basin. ***Parodon hilarii*:** MCP 16939, 10, 41.3-75.2 mm SL, + 01 c&s, 63.6 mm SL, Brazil, Minas Gerais State, rio Catitu, rio São Francisco basin. MNRJ 28082, 14, 84.3-120.2 mm SL, + 01 c&s, 88.4 mm SL, Brazil, Minas Gerais State, Três Marias, rio São Francisco, rio São Francisco basin. ***Parodon moreirai*:** MNRJ 22207, paratypes, 03, 99.0-124.3 mm SL, + 01 c&s, 115.4 mm SL, Brazil, São Paulo State, São Bento do Sapucaí, tributary of rio Grande, upper rio Paraná basin. ***Parodon nasus*:** MNRJ 28157, 66, 63.3-110.4 mm SL, + 02 c&s, A: 94.1 mm, B: 77.6 mm SL, Brazil, São Paulo State, Ipeúna, rio Passa Cinco, upper rio Paraná basin. ***Parodon pongoensis*:** MNRJ 11756, 03, 95.2-96.4 mm SL + 01 c&s, 90.3 mm SL, Brazil, Goiás State, Formosa, rio Água Quente, tributary of rio Paraná, rio Tocantins basin. USNM 261400, 01 c&s, 44.1 mm SL, Peru, Ucayali, Pucallpa, rio Ucayali, rio Ucayali basin. ***Parodon suborbitalis*:** IAvH 0032, 07, 71.3-125.7 mm SL, + 01 c&s, 118.6 mm SL, Colombia, Guajira, rio Rancheria, atlantic coastal drainage. MBUCV-V 14569, 04 de 24, 35.6-47.6 mm SL, + 01 c&s, 36.1 mm SL, Venezuela, Zulia, Qda. Puerta El Hacha, lake Maracaibo basin. MCNG 15792, 20, 24.6-34.2 mm SL, + 02 c&s, A: 31.0 mm, B: 30.8 mm SL, Venezuela, Portuguesa, Guanare, rio Portuguesa, rio Apure drainage, rio Orinoco basin. ***Saccodon dariensis*:** IAvH

2717, 03, 33.6-43.3 mm SL, +01 c&s, 44.1 mm SL, dental form type II (Roberts, 1974a), Colombia, Guajira, arroyo Tabaco, atlantic coastal drainage. USNM 208503, 04 c&s, A1: 100.8 mm, A2: 88.7 mm, B: near 80.0 mm, C: 96.2 mm SL, dental form type I and IV (Roberts, 1974a), Panama, Panama, río Sabalo, tributary of upper río Bayano, pacific coastal drainage. **Saccodon terminalis**: CAS 222676, 03, 42.8-37.4 mm SL + 01 c&s, 35.6 mm SL, dental form type II (Roberts, 1974a), Ecuador, Los Rios, río Vinces, río Daule basin, pacific coastal drainage. **Saccodon wagneri**: MZUSP 20254, 04, 58.2-65.0 mm SL, + 01 c&s, 58.1 mm SL, dental form type IV (Roberts, 1974a), Ecuador, Los Rios, Montalvo, Arroyo Bambine, affluent of rio Crystal, pacific coastal drainage. MZUSP 20255, 03, 47.9-53.0 mm SL, same data as anterior. **Distichodontidae**. **Xenocharax spilurus**: AMNH 230302, 01 of 78, 106.7 mm SL, + 01 c&s, 99.9 mm SL, Gabon, Moyen-ogooue, Lake Zile, Ogooué river basin. **Curimatidae**. **Cyphocharax gilbert**: MNRJ 12845, 12, 39.1-105.9 mm SL, + 02 c&s, A: 46.9 mm, B: 51.3 mm SL, Brazil, Rio de Janeiro, Campos dos Goytacazes, lagoa Verde, rio Paraíba do Sul basin. **Steindachnerina insculpta**: MNRJ 27587, 14, 104.1-131.8 mm SL, + 02 c&s, A: 110.7 mm, B: 109.1 mm SL, Brazil, São Paulo, Canitar, mouth of Ribeirão Santo Antônio, tributary of rio Paranapanema, upper rio Paraná basin. **Anostomidae**. **Schizodon knerii**: MNRJ 15867, 06, 111.9-120.6 mm SL, + 01 c&s, 115.3 mm SL, Brazil, Minas Gerais, Manga, rio São Francisco, rio São Francisco basin. **Crenuchidae**. **Characidium** sp. aff. **C. alipioi**: MNRJ 22643, 57, 49.1-81.7 mm SL, + 02 c&s, A: 66.1 mm, B: 69.9 mm SL, Brazil, São Paulo, Pindamonhangaba, Ribeirão dos Buenos or Ribeirão dos Moreiras, rio Paraíba do Sul basin. **Crenuchus spilurus**: MNRJ 22106, 14, 23.5-34.0 mm SL, + 01 c&s, 31. mm SL, Brazil, Pará, Aveiro, Igarapé Açu, rio Tapajós basin. **Hemiodontidae**. **Hemiodus ternetzi**: MNRJ 13038, 74, 49.9-97.9 mm SL, + 02 c&s, A: 55.6 mm, B: 61.7 mm SL, Brazil, Goiás, Minaçu, tributary of Córrego Lageado, rio Tocantins basin. **Alestiidae**. **Brycinus lateralis**: MNRJ 13407, 08, 33.1-100.0 mm SL, + 02 c&s, A: 40.5 mm, B: 65.2 mm SL, Botswana, Okavango river basin. **Chalceus erythrurus**: MZUSP 6707, 04 of 33, 107.9-123.9 mm SL, + 02 c&s, A: 120.0 mm, B: 117.8 mm SL, Brazil, Amazonas, Manaus, rio Negro, rio Negro basin. **Hydrocynus vittatus**: MNRJ 13412, 03, 99.4-115.4 mm SL, + 01 c&s, 87.6 mm SL, Namibia, Matave, Okavango river basin. **Characidae**. **Astyanax rivularis**: MNRJ 28003, 202, 12.5-76.9 mm SL, + 02 c&s, A: 63.8 mm, B: 55.2 mm SL, Brazil, Minas Gerais, Piumhi, rio Araras, rio São Francisco basin. **Brycon orthotaenia**: MNRJ 14226, 04, 102.1-112.1 mm SL, + 01 c&s, 84.6 mm SL, Brazil, Minas Gerais, Manga, rio Mocambinho, rio São Francisco basin. **Phenacogaster franciscoensis**: MNRJ 14206, 24, 13.1-37.6 mm SL, + 02 c&s, A: 39.1 mm, B: 36.0 mm SL, Brazil, Minas Gerais, Montes Claros, rio Verde Grande, rio São Francisco basin. **Cynodontidae**. **Acestrorhynchus lacustris**: MNRJ 26251, 13, 120.2-172.0 mm SL, + 01 c&s, 137.0 mm SL, Brazil, Goiás, Paracatu, rio São Marcos, tributary of Rio Paranaíba, upper rio Paraná basin. **Erythrinidae**. **Hepsetus odoe**: MNRJ 13405, 01, 115.7 mm SL, + 01 c&s, 123.0 mm SL, Botswana, Matlapenang, Okavango river basin. **Hoplias malabaricus**: MNRJ 14133, 25, 20.5-55.3 mm SL, + 03 c&s, A: 51.7 mm, B: 35.4 mm, C: 35.9 mm SL, Brazil, Rio de Janeiro, Silva Jardim, Lagoa de Juturnaíba, rio São João basin, atlantic coastal drainage. **Lebiasina bimaculata**: MZUSP 80085, 08 of 78, 42.6-58.0 mm SL, + 02 c&s, A: 59.5 mm, B: 69.4 mm SL, Peru, Cajamarca, rio Jequetepeque, rio Chilete basin, pacific coastal drainage.

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