

## A new species of *Pimelodus* La Cépède, 1803 (Siluriformes: Pimelodidae) from rio Ribeira de Iguape basin, Brazil

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*Pimelodus multicratifer*, a new species, is described from the rio Ribeira de Iguape basin. The new species differs from the other *Pimelodus* species by the following features: 26 to 30 gill rakers on the first branchial arch; a combination of three to six rows of dark spots regularly or irregularly scattered on the flanks and several small dark spots irregularly scattered on the dorsal surface of head, supraoccipital process, and sometimes on the dorsal and caudal fins; striated lips; maxillary barbels reaching between posterior tip of the pelvic-fin rays and posterior tip of the middle caudal-fin rays.

*Pimelodus multicratifer*, espécie nova, é descrita da bacia do rio Ribeira de Iguape. A espécie nova difere das demais espécies de *Pimelodus* pelas seguintes características: 26 a 30 rastros branquiais sobre o primeiro arco branquial; a combinação de três a seis fileiras de máculas regular ou irregularmente distribuídas sobre os flancos e várias máculas menores irregularmente distribuídas sobre a superfície dorsal da cabeça e processo supraoccipital, e algumas vezes, nas nadadeiras dorsal e caudal; lábios estriados; barbilhões maxilares alcançando a extremidade posterior dos raios da nadadeira pélvica e a extremidade posterior dos raios médios da nadadeira caudal.

**Key words:** Taxonomy, Catfish, Neotropical region, Coastal drainages.

### Introduction

*Pimelodus* La Cépède, 1803 is the most speciose genus of the Pimelodidae and has a broad distribution throughout the freshwater drainages of the Neotropical region, ranging from Panama in Central America to Argentina in South America (Lundberg & Littmann, 2003; Ferraris, 2007). The number of species described in the genus has significantly increased over the last two decades, with the description of thirteen new species, increasing the number of species of the genus from 20 (according to Lundberg & Littmann, 2003; Ferraris, 2007) to 32. Probably some of these species will be assigned to other genera after future phylogenetic studies.

A hypothesis of monophyly of *Pimelodus* is lacking, and the species are being included in the genus on the basis of the traditional non-cladistic diagnosis of Eigenmann & Eigenmann (1890), namely: pterygoid and palatine edentulous; a frontal fontanel not extending posterior to the orbit; a non-spiny broad posterior cleithral process; and first dorsal-fin ray spiny followed by six branched soft rays.

In the last seven years, eight new fish species were described based on recent collection efforts in the rio Ribeira de Iguape basin (e.g., Pereira & Oyakawa, 2003; Costa *et al.*, 2004; Oyakawa *et al.*, 2005; Takako *et al.*, 2005; Wosiacki & Oyakawa, 2005; Costa, 2006; Ottoni *et al.*, 2008). The new species described here increases the number of known species of the interesting ichthyofauna of that drainage.

### Material and Methods

Examined specimens belong to American Museum of Natural History, New York (AMNH), Instituto Nacional de Pesquisas da Amazônia, Manaus (INPA), Museu de Ciências e Tecnologia, Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre (MCP), Museo de La Plata, La Plata (MLP), Field Museum of Natural History, Chicago (FMNH), Museu de Zoologia da Universidade de São Paulo, São Paulo (MZUSP), Naturhistorisches Museum, Wien (NMW), and Rijksmuseum van Natuurlijke Historie, Leiden (RMNH).

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The measurements are straight-line distances taken point-to-point with digital calipers to 0.1 mm, and made on the left side of the fish whenever possible. Measurements and counts followed Lundberg & McDade (1986) and Lundberg *et al.* (1991) with the modifications of Lundberg & Parisi (2002) and Ribeiro & Lucena (2006). All measurements are expressed as percents of standard length (SL), except subunits of the head, which are expressed as percents of head length (HL).

All rudimentary fin rays were included in the counts. The two posterior-most anal-fin rays, which are inserted at same base, were counted as a single element. Gill rakers were counted on the first branchial arch (epibranchial and ceratobranchial). Vertebral counts included the five elements of the Weberian complex. The first caudal vertebra is that with hemal spine. The compound caudal vertebra (PU1+U1) was counted as a single element. Osteological preparations were cleared and stained (c&s) for cartilage and bone using the method of Taylor & van Dyke (1985). Two dry skeletal (SK) specimens and two radiographs (XR) were used for vertebral counts.

The types of *Pimelodus brevis* and *Pimelodus garciabarrigai* are missing, and thus comparative analyses were according to Marini *et al.* (1933) and Dahl (1961), respectively.

In the list of comparative material examined, the collections acronyms and catalog number are followed by the total number of specimens in that lot, range of standard length, PH - photograph, c&s (cleared and double stained) and collecting data.

## Results

### *Pimelodus multicratifer*, new species

Figs. 1 and 2

*Pimelodus maculatus*. -Oyakawa *et al.*, 2006: 117 (citation, figure).

**Holotype.** MZUSP 91287, 198.0 mm SL, São Paulo, confluence of the rios Pariquera and Pariquera-Mirim, near mouth to the rio Ribeira de Iguape, Pariquera-Açú, ca. 24°37'58"S 47°44'11"W, 14 Jun 2001, O. T. Oyakawa, A. Akama, J. C. Nolasco & A. C. Paixão.

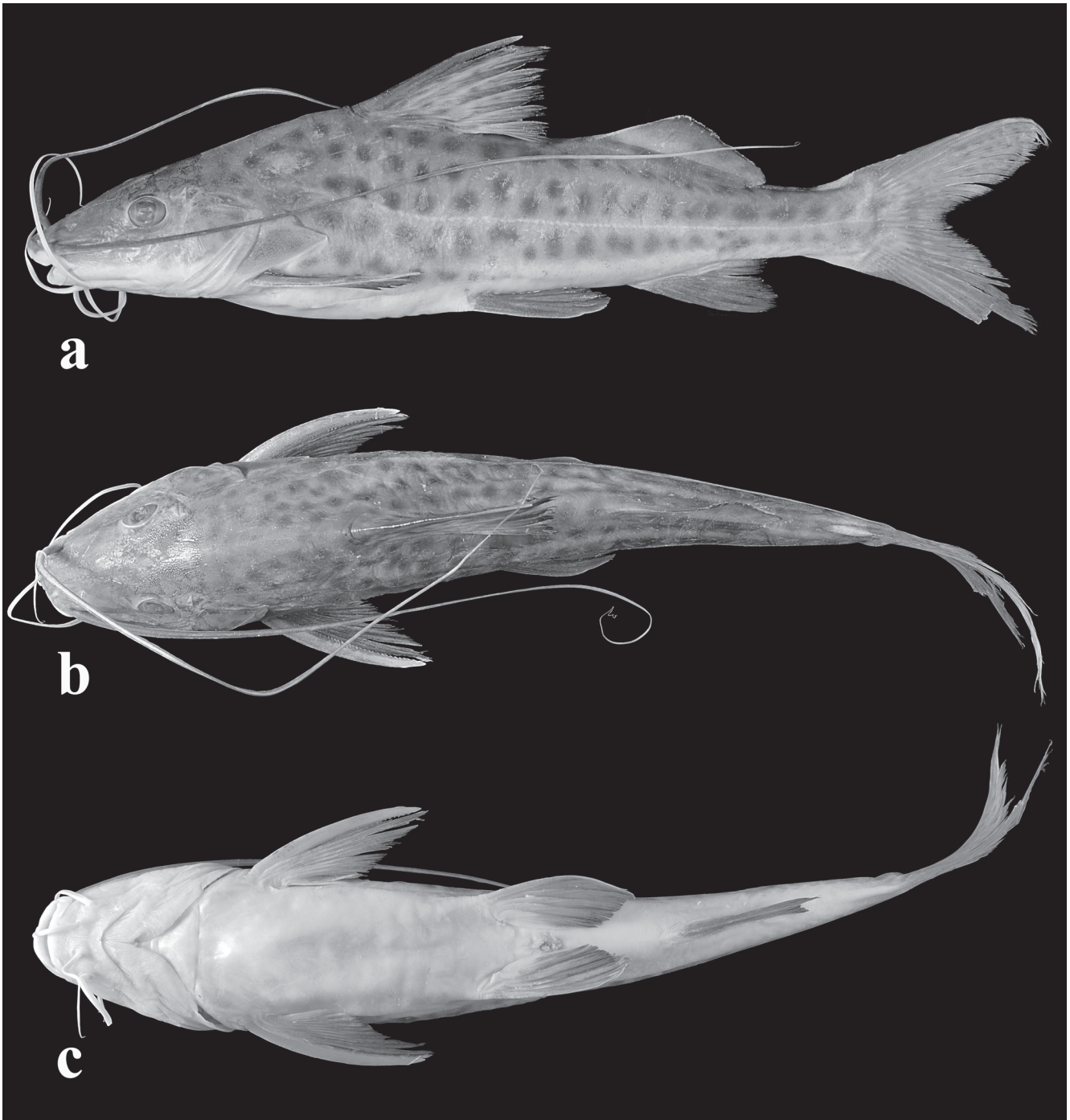
**Paratypes.** Brazil. São Paulo: rio Ribeira de Iguape basin: MZUSP 70428, 5, 188.3-212.5 mm SL, collected with holotype. INPA 33949, 2 XR, 139.8 and 149.7 mm SL; MCP 44408, 3, 121.5-148.5 mm SL; MZUSP 37995, 2, 116.9 and 133.8 mm SL, 1 SK 116.9 mm SL, rio Turvo, 14 km from Barra do Turvo, ca. 24°42'S 48°35'W, 22 Jul 1987, O. T. Oyakawa. MCP 14910, 1, 100.7 mm SL, rio Ribeira de Iguape, near mouth of the rio Iporanga, 24°37'S 48°37'W, 29 Apr 1990, R. E. Reis & G. Skuk. MZUSP 2265, 4, 107.0-130.8 mm SL, ribeirão Poço Grande, Juquiá, ca. 25°15'14.8"S 47°37'12.6"W, 1898, E. Garbe. MZUSP 45171, 1, 126.8 mm SL, Eldorado, rio Batatal, ca. 24°35'26.3"S 48°16'23.9"W, 2 Mar 1993, M. Damato. MZUSP 45208, 1, 139.1

mm SL; Eldorado, rio Pilões, ca. 24°35'26"S 48°16'23"W, 5 Mar 1993, M. Damato. MZUSP 45465, 2, 118.6 and 185.5 mm SL, same locality and collector, 6 Mar 1993. MZUSP 51957, 1, 125.3 mm SL, Iporanga, rio Ribeira de Iguape, near mouth of the rio Betari, 21 Aug 1996, S. Buck. MZUSP 55492, 2, 145.9 and 211.1 mm SL, rio Momuna, Iguape, ca. 24°42'28.8"S 47°40'25.8"W, 9 Oct 1995, M. R. Santos. MZUSP 58711, 1, 130.0 mm SL, rio Pilões, Iporanga, ca. 24°33'16"S 48°25'31"W, 12 Oct 1995, M. R. Santos. MZUSP 58894, 4, 129.0-143.2 mm SL, rio Pardo, Barra do Turvo, ca. 24°48'10"S 48°33'08"W, 25 Jan 1995, M. R. Santos & M. Morato. MZUSP 60072, 1, 144.4 mm SL, same locality, 23 Mar 2000, O. T. Oyakawa *et al.* MZUSP 73872, 2, 134.5 and 138.4 mm SL, rio Catas Altas, Ribeira, ca. 24°36'32"S 49°04'46"W, 14 Oct 1995, M. R. Santos & M. Morato. MZUSP 84722, 1, 198.8 mm SL, Barro Branco, Ilha Comprida, ca. 24°50'17"S 47°41'46"W, 17 Feb 2000, R. Silva.

**Additional material (non-types).** All from Brazil, State of São Paulo, Municipality of Iguape: MZUSP 55479, 2, 231.7 and 315.2 mm SL, rio Una da Aldeia, 300 m above mouth of rio Una da Aldeia, 9 Oct 1995, M. R. Santos & C. E. Espírito Santo. MZUSP 62886, 2, 218.4 and 227.5 mm SL, rio Una do Prelado, Estação Ecológica Juréia-Itatins, 26 Jun 2000, M. Rodrigues.

**Diagnosis.** *Pimelodus multicratifer* differs from *P. absconditus* Azpelicueta, *P. albofasciatus* Mees, *P. atrobrunneus* Vidal & Lucena, *P. blochii* Valenciennes, *P. britskii* Garavello & Shibatta, *P. fur* (Lütken), *P. halisodous* Ribeiro, Lucena & Lucinda, *P. jivaro* Eigenmann & Pearson, *P. joannis* Ribeiro, Lucena & Lucinda, *P. luciae* Rocha & Ribeiro, *P. maculatus* La Cépède, *P. microstoma* Steindachner, *P. ornatus* Kner, *P. ortmanni* Haseman, *P. pantaneiro* Souza-Filho & Shibatta, *P. paranaensis* Britski & Langeani, *P. pictus* Steindachner, *P. pintado* Azpelicueta, Lundberg & Loureiro, *P. platicirris* Borodin, *P. pohli* Ribeiro & Lucena, *P. stewarti* Ribeiro, Lucena & Lucinda, and *P. tetramerus* Ribeiro & Lucena by the number of gill rakers on the first branchial arch (26-30 vs. 18-27).

The possession of three to six rows of dark spots, regular or irregularly, scattered on sides of trunk and several small dark spots irregularly scattered on the dorsal surface of head and supraoccipital process, distinguishes *Pimelodus multicratifer* from *P. altissimus* Eigenmann & Pearson, *P. argenteus* Perugia, *P. atrobrunneus*, *P. blochii*, *P. brevis* Marini, Nichols & La Monte, *P. halisodous*, *P. jivaro*, *P. joannis*, and *P. stewarti*, which have a uniform color pattern, without spots on sides of the trunk and dorsal surface of head and supraoccipital process, and from *P. albicans* (Valenciennes), *P. albofasciatus*, *P. ornatus*, and *P. tetramerus*, which have stripes or band along the sides of trunk. Also, the possession of spots on the dorsal surface of head and supraoccipital process distinguishes *P. multicratifer* from *P. absconditus*, *P. britskii*, *P. coprophagus* Schultz, *P. fur*, *P. garciabarrigai* Dahl, *P. grosskopfii* Steindachner, *P. microstoma*, *P. misteriosus* Azpelicueta, *P. navarroi* Schultz, *P. paranaensis*, *P. pictus*, *P. pohli*, and *P. punctatus* (Meek & Hildebrand).



**Fig. 1.** *Pimelodus multicratifer*, holotype, MZUSP91287, 198.0 mm SL, Brazil, São Paulo State, Pariquera-Açú, confluence of rios Pariquera and Pariquera-Mirim, near mouth of the rio Ribeira de Iguape, in lateral (a), dorsal (b), and ventral (c) views.

*Pimelodus multicratifer* has a similar color pattern to *P. maculatus*, *P. ortmanni*, *P. pintado*, *P. platicirris*, *P. mysteriorus*, *P. pantaneiro*, and *P. luciae*. *Pimelodus multicratifer* differ further from *P. maculatus* by the shorter predorsal distance (40.1-43.0 vs. 43.3-47.3% of SL), shorter head (27.1-28.9 vs. 29.3-33.1% of SL), smaller caudal peduncle depth (7.6-9.2 vs. 9.8-11.6% of SL), and shorter adipose-fin base (20.9-23.4 vs. 24.6-27.6% of SL). *Pimelodus multicratifer* differ further from *P. ortmanni* by longer predorsal distance

(40.1-43.0 vs. 36.8-39.8% of SL); shorter adipose-fin base (20.9-23.4 vs. 24.7-27.0% of SL); and longer pectoral-spine (18.1-23.2 vs. 16.3-18.5% of SL). *Pimelodus multicratifer* differs further from *P. pintado* by having pectoral, pelvic and anal fins without spots (vs. often present); and lower total number of vertebrae (40 vs. 41 or 42). *Pimelodus multicratifer* differ further from *P. platicirris* by shorter head (27.1-28.9 vs. 29.2-32.2% of SL) and smaller caudal peduncle depth (7.6-9.2 vs. 9.7-11.3% of SL). *Pimelodus multicratifer* differ further from



*P. misteriosus* by the striated lips; maxillary barbels shorter, reaching between the end of the pelvic-fin and middle caudal-fin rays (*vs.* maxillary barbels reaching the tip of caudal-fin lobes). *Pimelodus multicratifer* differ further from *P. pantaneiro* by the smaller body depth (21.3-26.4 *vs.* 26.9-35.0% of SL) and by the supraoccipital process width about half its length (*vs.* approximately as long as its length). *Pimelodus multicratifer* differ further from *P. luciae* by having the posterior nostril closer to anterior nostril than to anterior margin of orbit (*vs.* posterior nostril closer to anterior margin of orbit than to anterior nostril).

**Description.** Morphometric data in Table 1. Body deeper than wide; relatively elongated. Dorsal profile of body slightly convex to straight from snout tip to dorsal-fin origin; straight from this point to adipose-fin origin, gently sloping to beginning of caudal peduncle. Ventral profile of body slightly convex from posterior region of isthmus to anal-fin origin; rising along anal fin. Ventral profile of head straight from the snout tip to anterior region of isthmus. Caudal peduncle relatively long; dorsal and ventral profiles of caudal peduncle slightly concave. Head covered by thin skin. Skull roof ornamented with numerous small osseous granulations, more visible in larger specimens. Snout relatively long. Mouth wide, subterminal, opening anteroventrally; its margins curved in ventral view when closed and exposing premaxillary tooth rows; upper lip thick, not very developed, fleshy and striated. Internarial length shorter than internarial posterior width; anterior nostril with fleshy rim slightly raised posteriorly; posterior nostril thin, fleshy rim anteriorly elevated. Anterior cranial fontanel triangular in dorsal view, open from mesethmoid to frontals, and terminating before vertical through posterior margin of eye. Posterior cranial fontanel completely closed. Premaxillary tooth patch short, broad, rectangular and transversely elongated; each premaxilla with 11-14 irregular rows of conical and slender teeth (mode = 12; n = 12). Dentary with 8-10 tooth rows (mode = 9; n = 12). Vomerine teeth absent. Pterygoid tooth patch absent. Eye large, elliptical, with margin completely free and laterodorsally located on head; horizontal orbital diameter greater than interorbital distance in specimens smaller than 140.0 mm SL; horizontal orbital diameter always greater than vertical diameter. Supraoccipital process wide, reaching anterior nuchal plate; dorsal surface ornamented with numerous small granulations; sides of supraoccipital process tapering posteriorly; rounded in its posterior tip, covered by thin band of opaque hyaline skin. Anterior and middle nuchal plates ornamented with tuberculated ridges. Gill membranes free, diverging just behind gular fold apex and supported by 8 branchiostegal rays (n = 2). Gill rakers well ossified, long, sharp and slender; rakers on first branchial arch 26-30 (mode = 27; n = 26); 6-10 on epibranchial (mode = 8), 19-22 on ceratobranchial (mode = 19). Three pairs of barbels. Maxillary barbel inserted at vertical through anterior edge of lower jaw; its tip reaching between posterior edge of pelvic fin and middle rays of

**Table 1.** Morphometric data of *Pimelodus multicratifer*. Range includes the holotype (H).

Measurements	H	n	Low	High	Mean
Standard length (mm)	198.0	22	107.0	212.5	143.3
Percents of Standard length					
Predorsal length	42.2	22	40.1	43.0	41.6
Preanal length	74.5	22	72.3	76.3	74.6
Head length	28.3	22	27.1	28.9	28.0
Caudal peduncle length	14.2	22	13.5	16.9	15.4
Caudal peduncle depth	8.5	22	7.6	9.2	8.6
Adipose-fin length	22.7	22	20.9	23.4	21.9
Adipose-fin height	5.1	22	4.5	5.9	5.1
End of dorsal-fin base to origin of adipose-fin distance	14.2	22	11.0	16.7	14.9
Anal-fin base	13.4	22	10.9	14.2	12.2
Anal-fin length	16.2	22	13.9	16.2	15.0
Pelvic-fin length	16.5	22	14.1	16.9	15.4
Dorsal-fin length	22.5	21	20.5	24.5	22.2
Urogenital papilla to anal-fin base origin distance	11.7	22	8.5	12.7	11.2
Dorsal-spine length	22.7	21	19.6	23.9	21.6
Pectoral-spine length	21.3	15	18.1	23.2	20.1
Body depth	25.7	22	21.3	26.4	23.7
Body width	18.8	22	16.6	19.6	18.2
Cleithral posterior process length	13.1	22	11.8	14.0	12.6
Percents of Head length					
Head depth	65.0	22	58.8	69.8	63.7
Interorbital width	24.3	22	19.9	26.9	22.9
Snout length	49.6	22	42.2	50.2	46.8
Internarial length	14.1	22	12.5	15.2	14.1
Anterior internarial width	13.1	22	11.4	13.7	12.8
Posterior internarial width	17.0	22	16.2	20.4	18.5
Horizontal eye diameter	18.8	22	18.8	26.3	23.4
Mouth width	31.8	22	29.7	34.2	32.0
Supraoccipital width	19.5	22	17.4	22.4	19.5
Supraoccipital length	38.5	22	35.4	42.2	38.3

caudal fin. All mental barbels inserted in advance of gular fold apex, in a curved line parallel to mandibular margin. Tip of inner mental barbel sometimes reaching pectoral-fin base. Tip of outer mental barbel reaching tips edge middle pectoral-fin rays, or almost edge of pectoral-fin spine. Posterior cleithral process broad, triangular, with ventral margin nearly straight, dorsal margin somewhat concave; granular and osseous tubercles on lateral surface. Urogenital papilla short, located in shallow depression immediately behind anus and between pelvic fins; its distal portion nearly triangular. No apparent sexual dimorphism. Dorsal fin II,6-7 (mode = 6; n = 26); its origin slightly anterior to vertical through tip of innermost pectoral-fin ray. Spinelet narrow, sharply angular, rounded in front; its tip gently rounded. Dorsal-fin spine straight, strong, pungent, and shorter than first branched ray; approximately as long as pectoral-fin spine length. Dorsal-fin spine bearing 1-3 dentations in its anterior and distal margin. Posterior margin of dorsal-fin spine with moderate sharp retrorse aculeus distally, becoming gradually smaller and erect proximally. First branched dorsal-fin ray longest, last dorsal-fin ray less than half length of first ray; distal margin of dorsal fin nearly straight. Adipose-fin origin at vertical through tip of outer pelvic-fin ray. Adipose-fin margin rounded and moderately deep, its apex short posterior to vertical through anal-fin origin, ending in short free lobe

near vertical through tip of last anal-fin ray. Caudal fin deeply forked, with pointed lobes; dorsal lobe slightly longer than ventral lobe, its outer principal rays not filamentous. Dorsal lobe with 8 rays, 1 unbranched and 7 branched rays ( $n = 26$ ); ventral lobe with 9-10 rays (mode = 9), 1 unbranched and 8-9 branched rays ( $n = 26$ ). Anal fin insertion on last third of standard length; without a distinct lobe in anterior portion of its margin; posterior margin concave; tips of longest anterior and posterior rays meeting when depressed. Anal-fin rays 12-15 (mode = 14;  $n = 26$ ), 4-6 unbranched rays (mode = 5) and 7-9 branched rays (mode = 8); last ray unbranched, first and second branched rays longest. Pelvic fin, i,5 ( $n = 12$ ), at or slightly anterior to vertical through end of dorsal-fin base; first branched ray longest. Pectoral fin 1,9-10 (mode = 10;  $n = 26$ ); first soft ray approximately as long as pectoral-fin spine. Pectoral spine strong, pointed, dorsal and ventral surfaces smooth; numerous, regularly spaced, uniformly retrorse and simple dentations along most of posterior margin; antrorse and straight dentations along proximal half of anterior margin, becoming progressively less prominent and more concentrated proximally. Lateral line canal complete to caudal-fin base; declining to little ahead vertical through dorsal-fin origin, nearly straight from there to caudal-fin base; superficial tubular ossicles directed posteroventrally and more developed anteriorly; no accessory laterosensory canals posterior to nuchal area. Total vertebrae in four specimens, 40 (16 precaudals and 24 caudals). First pleural rib on 6th vertebra. Ten pairs of ribs.

**Color in alcohol.** Ground coloration of body grayish to yellowish, with three to six rows of dark spots regularly or irregularly scattered on sides of trunk. Number of rows of spots changes with body size - three or four rows in individuals smaller than 130.0 mm SL (Fig. 2) and four to six rows in larger individuals. Spots more abundant on anterior half of flanks; two to four rows of dark spots on posterior half of flanks. Dorsal surface of head with blackish spots; small dark brown spots on parietal and supraoccipital bones; several

dark chromatophores on opercle and below orbit region. Ventral region of body light. All fins usually yellowish or dusky. Interradial membranes of dorsal fin hyaline, with scattered small black spots on its first half and dusky on the last. Adipose fin sometimes with two or three spots, with regularly scattered minute melanophores on its distal region. Caudal fin with few black melanophores on its interradian membranes and some black spots on dorsal lobe of some specimens (MZUSP 45208, 45465, 58711, and 79428), sometimes very faint. Ventral surface of maxillary barbel dusky. All mental barbels light to yellowish.

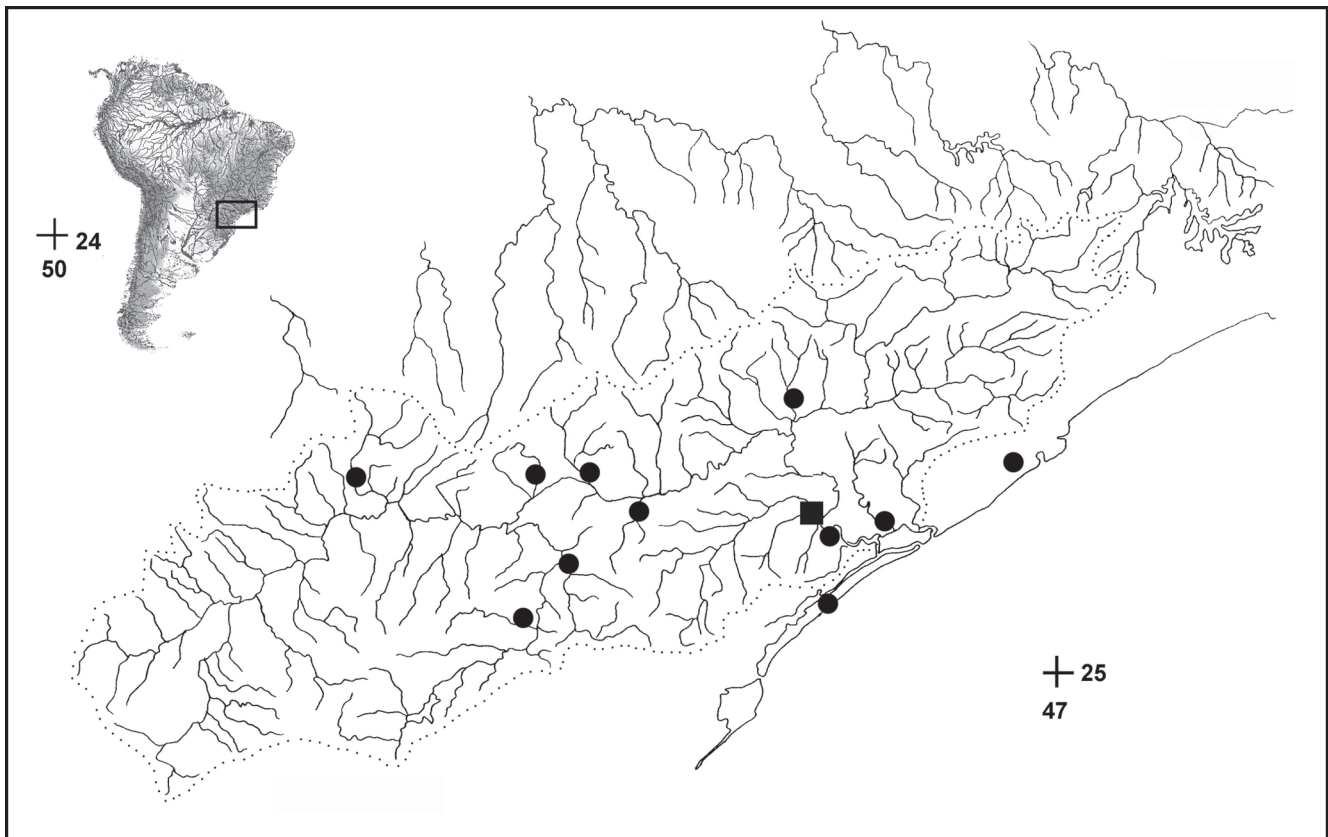
**Variation.** Two specimens (MZUSP 55479 and MZUSP 62886) from the rio Una da Aldeia, a tributary of rio Ribeira de Iguape, located just above of its mouth, and rio Una do Prelado, a small coastal river located just North of the mouth of the rio Ribeira de Iguape, respectively, possess ten to twelve rows of dark spots irregularly scattered on sides of trunk, whereas type specimens possess three to six rows of dark spots regularly or irregularly scattered on sides of trunk. Furthermore, the spots on non-type specimens are smaller when compared to type specimens, and the dorsal, adipose, and caudal fins are much more pigmented than those of types. The anal fin of the specimen from rio Una do Prelado is very spotted, while in specimens from rio Ribeira de Iguape basin, the anal fin is yellowish or dusky, spotless. These specimens were thus considered non-types, although no differences in morphometric or meristic features were found when compared with the specimens from rio Ribeira de Iguape.

**Distribution.** Rio Ribeira de Iguape basin, Ilha Comprida, and rio Una do Prelado (Fig. 3).

**Etymology.** From the Latin multi-, meaning many, numerous; cratis, from the Latin noun cratis, meaning rake, in reference to gill rakers; and fer from the Latin verb fero, meaning "to bear, carry, support, lift, hold, take up".



**Fig. 2.** *Pimelodus multicrotifer*, paratype, MZUSP 45465, 118.6 mm SL, rio Pilões, rio Ribeira de Iguape basin, lateral view.



**Fig. 3.** Drainage map of the rio Ribeira de Iguape basin, showing geographic distribution of *Pimelodus multicratifer*. Type locality represented by square. Some symbols represent more than one lot of specimens.

**Ecological notes.** *Pimelodus multicratifer* is widely distributed throughout the rio Ribeira de Iguape drainage, ranging from the altitudes of 3 m above sea level at the rios Pariquera-Açu and Pariquera-Mirim in the lower stretch of the rio Ribeira de Iguape, to 250 m above sea level at the rio Catas Altas in the high stretch of the river basin. It was found mainly in the large rivers like Ribeira de Iguape, Catas Altas, Pariquera-Mirim and Turvo. The rivers of the high stretch have clear water running over rocks and sand; rivers of the low stretch have a turbid water, and in some case, acid black water like the rio Momuna, at the sandbank forest near the mouth of the rio Ribeira de Iguape into the sea. At the type locality, *Pimelodus multicratifer* occurs syntopically with the following species: *Cyphocharax santacatarinae* (Fernández-Yépez), *Hoplias malabaricus* (Bloch), *Oligosarcus hepsetus* (Cuvier), *Hoplosternum littorale* (Hancock) and *Crenicichla iguapina* Kullander & Lucena.

**Comments.** Among the species formally described in the genus, the color pattern of specimens of *Pimelodus pintado* is similar to that of specimens of *P. multicratifer*. The analysis of a series of specimens of *P. pintado* showed that this species has two color patterns: (1) present in the holotype and in most larger specimens (see Azpelicueta *et al.*, 2008: fig. 2A; MCP 43342, 160.0 mm SL), consisting of small dark spots forming 7-9 irregular horizontal rows on sides of trunk, and (2) consisting of larger

dark spots forming 4-6 regular or irregular horizontal rows on sides of trunk. According to Azpelicueta *et al.* (2008), the latter pattern is usually present in young specimens and is related to ontogeny. This color pattern was also observed in large specimens of *P. pintado* (MCP 21250, 240.0 mm SL; MCP 23768, 208.0 mm SL). Despite the similarity in color of adults of the two species, the characters listed in the diagnosis are sufficient to distinguish them.

**Comparative material.** *Pimelodus absconditus*: Brazil: MCP 13392, 2, 129.3 and 133.7 mm SL, rio Uruguai; MCP 12515, 1, 125.0 mm SL, rio Uruguai. *Pimelodus albicans*: MCP 19248, 4, 139.9-199.6 mm SL, Argentina, rio Paraná. *Pimelodus albofasciatus*: RMNH 26156, holotype, PH, Suriname, rio Sipaliwini. *Pimelodus altissimus*: MZUSP 24588, 1, 148.9 mm SL, Brazil, rio Purus. *Pimelodus cf. argenteus*: MCP 15811, 4, 53.5-166.5 mm SL, Brazil, rio Paraguai. *Pimelodus atrobrunneus*: MCP 19678, holotype, 131.5 mm SL, Brazil, rio Uruguai. *Pimelodus blochii*: Brazil: MCP 20953, 1, 149.4 mm SL, rio Amazonas; MCP 23987, 11, 69.3-137.3 mm SL, rio Madeira; MZUSP 6394, 2, 72.9 and 182.8 mm SL, rio Purus; MZUSP 23555, 13, 56.5-91.7 mm SL, rio Japurá; MZUSP 34512, 8, 128.5-159.8 mm SL, rio Araguari; MZUSP 34513, 2, 151.3 and 154.0 mm SL, rio Xingu; MZUSP 50523, 3, 114.2-134.9 mm SL, rio Amazonas, rio Juruá; MZUSP 54558, 14, 75.1-117.4 mm SL, rio Tapajós; Peru: MCP 34506, 2, 69.1 and 101.7 mm SL, rio Amazonas, rio Pacaya. *Pimelodus britskii*: Brazil: MZUSP 50042, 15, not measured, rio Iguaçú; MZUSP 50043, 4, not measured, rio



Iguaçu; MZUSP 50044, 11, not measured, rio Iguaçu. *Pimelodus coprophagus*: USNM 121150, holotype, PH, Venezuela, rio Agua Caliente. *Pimelodus fur*: Brazil: MCP 14051, 4, 84.8-111.3 mm SL, rio São Francisco; MCP 37328, 1, 123.2 mm SL, rio São Francisco; MZUSP 39643, 11, 58.7-105.9 mm SL, rio São Francisco; MZUSP 39643, 11, 59.5-105.9 mm SL, rio São Francisco; MZUSP 39143, 1, 89.4 mm SL, rio São Francisco. *Pimelodus grosskopfii*: NMW 45781-82, syntypes, PH, Colombia, rio Cauca. *Pimelodus halisodous*: MCP 41738, holotype, 108.8 mm SL, Brazil, rio Paraná, rio Tocantins. *Pimelodus jivaro*: Brazil: MZUSP 57672, 2, 90.9 and 92.5 mm SL, rio Trombetas. *Pimelodus joannis*: MCP 41739, holotype, 51.0 mm SL, Brazil, Ipueiras, rio Tocantins. *Pimelodus maculatus*: Argentina: MCP 19249, 3, 56.7-102.0 mm SL, Argentina, rio Paraná; MZUSP 44776, 2, 82.9 and 128.2 mm SL, rio de La Plata. Brazil: MCP 13235, 1, 167.7 mm SL, rio Uruguai; MZUSP 1188, 1, 211.7 mm SL, rio Uruguai; MZUSP 24456, 1, 61.8 mm SL, ilha Solteira, rio Paraná; MZUSP 58655, 4, 128.5-200.1 mm SL, rio Paraná. *Pimelodus microstoma*: Brazil: NMW 45823, syntype, PH, Irisanga, rio Paraná; NMW 45824, 2 syntypes, 140.0 and 125.8 mm SL, Irisanga, rio Paraná; MZUSP 22713, holotype of *Pimelodus heraldoi*, PH, 179.0 mm SL, rio Paraná, rio Mogi Guaçu; MZUSP 22695, paratypes of *Pimelodus heraldoi*, 7, not measured, Pirassununga, rio Mogi Guaçu, Cachoeira de Emas; MZUSP 22696, paratypes, 18, 90.5-171.5 mm SL; rio Mogi Guaçu; MZUSP 38915, paratypes of *Pimelodus heraldoi*, 7, 104.6-116.1 mm SL, rio Paranaíba. *Pimelodus misteriosus*: Argentina: MLP 9191, holotype, 103.0 mm SL, PH, Argentina, arroio Anselmo; Brazil: MZUSP 44403, paratype, not measured, rio Paraguay. *Pimelodus navarroi*: USNM 121174, holotype, PH, Venezuela, Lago Maracaibo. *Pimelodus ornatus*: Brazil: MCP 28870, 1, 90.7 mm SL, rio Purus; MCP 15898, 1, 152.7 mm SL, rio Tocantins. *Pimelodus ortmanni*: Brazil: FMNH 54240, holotype, 161.5 mm SL, PH, rio Iguaçu; MZUSP 50048, 6, 128.5-151.2 mm SL, rio Iguaçu; MZUSP 50053, 22, 115.2-170.1 mm SL, rio Iguaçu; MZUSP 50057, 27, 94.6-128.4 mm SL, rio Iguaçu. *Pimelodus pantaneiro* MZUSP 87808, 1, 228.0 mm, Brazil, rio Miranda. *Pimelodus paranaensis*: Brazil: MZUSP 23089, holotype, 235.0 mm SL, rio Paraná; MZUSP 24454, 1, 121.4 mm SL, rio Paraná; MZUSP 28431, 1, 99.3 mm SL, rio Paraná; MZUSP 28432, 1, 71.1 mm SL, rio Paraná; MZUSP 28434, 1, 70.4 mm SL, rio Paraná. *Pimelodus pictus*: Brazil: MCP 29853, 1, 72.0 mm SL, rio Solimões; Peru: MZUSP 25976, 1, 67.4 mm SL, rio Ucayali. *Pimelodus pintado*: Uruguay: ZVC P 6482, holotype, PH, Merín-Patos System, rio Cebollati; Brazil: MCP 8979, 1, 89.5 mm SL, c&s, Taquara, rio Jucaí; MCP 17654, 9, 105.0-202.0 mm SL, lago Guaíba; MCP 21250, 8, 116.0-234.0 mm SL, rio Jacuí, Arroio do Tigre; MCP 23768, 23, 112.9-208.0 mm SL, rio Jacuí; MCP 28087, 15, 89.8-213.0 mm SL, rio Jacuí, delta of rio Jacuí; MCP 43342, 1, 160.0 mm SL, rio Jacuí; MZUSP 78452, 4, 87.8-125.5 mm SL, laguna dos Patos. *Pimelodus platicirris*: Brazil: AMNH 8628, 1, 190.0 mm SL, PH, rio Mogi Guaçu; MZUSP 22716, 76, 108.6-170.0 mm SL, rio Mogi Guaçu; MZUSP 79838, 26, 111.8-140.3 mm SL, rio Mogi Guaçu; MZUSP 58655, 4, 128.5-200.9, rio Mogi Guaçu. *Pimelodus pohli*: Brazil: MCP 16661, 6, 44.3-105.7 mm SL, rio São Francisco; MCP 16668, 4, 69.3-85.3 mm SL, rio São Francisco; MCP 16671, 7, 63.6-98.8 mm SL, rio São Francisco; MZUSP 24704, 2, 128.7 and 134.3 mm SL, rio São Francisco; MZUSP 39320, 6, 95.0-121.7 mm SL, rio São Francisco. *Pimelodus punctatus*: FMNH 7577, holotype, PH, Panamá. *Pimelodus stewarti*: MCP 41737, holotype, 54.1 mm SL, Brazil, rio Paraná, rio Tocantins. *Pimelodus tetramerus* MZUSP 85809, holotype, 112.9 mm SL, Brazil, rio Tocantins.

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