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A New Species of *Curculionichthys* (Siluriformes: Loricariidae) from the Saramacca and Marowijne River Basins, Suriname and French Guiana

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A new species of *Curculionichthys* is described from the Saramacca and Marowijne (=Maroni) River basins in Suriname and French Guiana, eastern Guiana Shield. The new species possesses five of the seven diagnostic characteristics of the genus with the most remarkable morphological trait that distinguishes it from congeners being the presence of a single rostral plate. A genetic comparison with *C. karipuna*, the geographically closest species, showed a minimal distance of 5% in gene *coI* between individuals of the two species. The geographic distribution further extends the distribution of the genus across the Guiana Shield and represents the first species of the genus described from outside Brazil.

Uma nova espécie de *Curculionichthys* é descrita das bacias dos rios Saramacca e Marowijne (=Maroni), no leste do Escudo das Guianas, no Suriname e Guiana Francesa. A nova espécie possui cinco das sete características diagnosticas do gênero, sendo a característica morfológica mais marcante que a distingue das demais congêneres a presença de placa rostral única. A comparação genética com *C. karipuna*, a espécie geograficamente mais próxima, mostrou uma distância mínima de 5% entre os indivíduos das duas espécies. A distribuição geográfica da espécie estende a ocorrência do gênero no Escudo das Guianas e representa a primeira espécie descrita de fora do Brasil.

THE hypoptopomatine genus *Curculionichthys* currently comprises 12 species (Fricke et al., 2023) distributed in rivers that drain the Brazilian Shield, namely: *Curculionichthys coxipone* and *C. paresi* in the Paraguay River basin; *C. insperatus*, *C. oliveirai*, and *C. piracanjuba* in the upper Paraná River basin; *C. itaim* and *C. luteofrenatus* in the Tapajos River basin; *C. sabaji* in the Xingu River basin; *C. sagarana* in the upper São Francisco River basin; *C. scaius* in the Madeira River basin; and *C. tukana* in the upper Tocantins River basin, as well as the eastern border of the Guiana Shield, with *C. karipuna* described from coastal rivers of the Amapá State of Brazil.

Additional undescribed diversity in *Curculionichthys* was found in the Guiana Shield. The first mention and illustration of the species described in this paper was by Le Bail et al. (2000) in the *Atlas des Poissons d'Eau Douce de Guyane*, where the fish was treated as "nouveau genre (*aff. Parotocinclus*)," with collecting localities in the Tampock and Grand Inini Rivers in the upper Maroni (=Marowijne) River basin. A few years ago, Papa and colleagues (2021) conducted DNA barcoding on freshwater fishes of the Maroni River basin. During this study, they examined the same species, which at that time was classified as *Curculionichthys* sp. Maroni, from an additional ten localities in lower and upper Maroni basin. In the same study, Papa et al. (2021) studied the *coI* barcode sequences of *C. karipuna* from eastern French Guiana.

In the present paper, we describe the species of *Curculionichthys* from the Saramacca and Marowijne River basins. This description formally further extends the distribution of the genus into the Guianas Shield and represents the first species described from outside Brazil.

MATERIALS AND METHODS

Morphometric data were obtained from point-to-point measurements with precision to the nearest 0.1 mm with digital calipers, according to Carvalho and Reis (2009) with the modifications introduced by Calegari et al. (2011, 2014) and expressed as percent of standard length (SL), except for the subunits of the cephalic region, which are given as percent of the head length (HL). Meristic data include fin-ray, tooth, vertebra, and plate counts, the last two obtained from cleared and stained specimens only. Both measurements and counts were performed under a stereomicroscope with appropriate magnifications. For the osteological analysis, specimens were cleared and double stained (CS) for bone and cartilage, following the technique described by Taylor and Van Dyke (1985), and the terminology and counting of dermal plates are in accordance with Schaefer (1997). Vertebral counts comprise all vertebral centra, including the five centra of the Weberian apparatus and the caudal complex centrum (PU1 + U1) counted as a single element. Specimens examined belong to fish collections whose acronyms are given in Sabaj (2020). Sequences of the mitochondrial gene *coI* of 12 specimens of *Curculionichthys karipuna* from French Guiana and ten specimens of the new species were generously provided by Raphael Covain and used to compare their genetic distance and conduct a maximum likelihood analysis in MEGA v11 (Tamura et al., 2021). The geographic distribution map was prepared based on the tutorial by Calegari et al. (2016), using QGIS software (v. 3.26.2).

Curculionichthys monolechis, new species

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Figure 1

Nouveau genre (*aff. Parotocinclus*).—Le Bail, Keith, and Planquete, 2000: 262 (description, photography in life, map with localities in French Guiana).

Curculionichthys sp. Maroni.—Papa, Le Bail, and Covain, 2021 (DNA barcoding of seven specimens).

Holotype.—ROM 114447, female, 21.8 mm SL, Suriname, Saramacca River, sandbank downstream from Lawai Falls,

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Fig. 1. *Curculionichthys monolechis*, ROM 114447, holotype, female, 21.8 mm SL, Suriname, Saramacca River, sandbank downstream from Lawai Falls.

4°03′55.3″N, 55°53′32.3″W, S. Anderson, M. Burridge, H. López-Fernández, and K. Wang, 21 September 2016.

Paratypes.—Suriname, Saramacca River basin: ANSP 208843, 20, 18.2–19.9 mm SL, MCP 54849, 18 + 2 CS, 20.8–22.8 mm SL, MZUSP 126856, 20, 19.9–21.5 mm SL, ROM 102246, 51, 20.3–22.8 mm SL, UMMZ 252966, 20, 18.2–21.7 mm SL, collected with the holotype; ROM 101460, 6, 14.5–22.9 mm SL, Saramacca River, Lawai Falls top, samples from rapids, 4°03′36″N, 55°53′43.6″W, S. Anderson, M. Burridge, H. López-Fernández, and K. Wang, 19 September 2016; ROM 102352, 3, 19.0–19.5 mm SL, Djubi Creek, small tributary of the Saramacca on the right bank, 4°13′59.4″N, 55°51′23″W, S. Anderson, M. Burridge, H. López-Fernández, and K. Wang, 23 September 2016; ROM 103050, 4, 18.0–19.1 mm SL, Saramacca tributary, Latambo, a small creek and backwater embayment on the right bank of the Saramacca, 4°17′42.36″N, 55°48′18.66″W, S. Anderson, M. Burridge, H. López-Fernández, and K. Wang, 23 September 2016.

Suriname, Marowijne River basin: ANSP 189133 (tissue sample 7049), 1, 19.1 mm SL, Sipalawini District, Lawa River, large cataract complex in side channel W of basecamp (SUR 07-01), ca. 8 km SSW of Anapaike, 3°19′52″N, 54°04′20″W, M. Sabaj, P. Willink, J. Mol, and K. Wan Tong You, 24 April 2007; MHNG 2718.049, 1, 20.8 mm SL, Tapanahony River, Kumaru Konde Sula, Sipaliwini District, 3°21′57.6″N, 55°25′55.6″W, J. I. Montoya-Burgos, R. Covain, J. Mol, and K. Wan Tong You, 27 October 2008; USNM 408464, 21, 18.5–22.3 mm SL, left tributary of upper Paloemeu River, 1 km downstream of basecamp, 2°28′38″N, 55°38′17″W, J. Mol and K. Wan Tong You, 13 March 2012; USNM 409759, 4, 20.3–22.6 mm SL, downstream waterfall in right tributary of upper Paloemeu River, 2°27′21″N, 55°37′35″W, J. Mol and K. Wan Tong You, 11 March 2012; USNM 409835, 5 + 2 CS 20.5–21.3 mm SL, creek left tributary of upper Paloemeu River, 1.2 km upstream of basecamp, 2°28′24″N, 55°38′39″W, J. Mol and K. Wan Tong You, 14 March 2012; USNM 409885, 1, 21 mm SL, Tapaje Creek, large left tributary of middle Paloemeu River (stream width 100 m) at point of confluence, 2°44′46″N, 55°26′26″W, J. Mol and K. Wan Tong You, 7 December 2012.

French Guiana, Maroni River basin: MHNG 2741.052, 1, 19.0 mm SL, Voltaire Creek at level of "camp Voltaire," Saint-

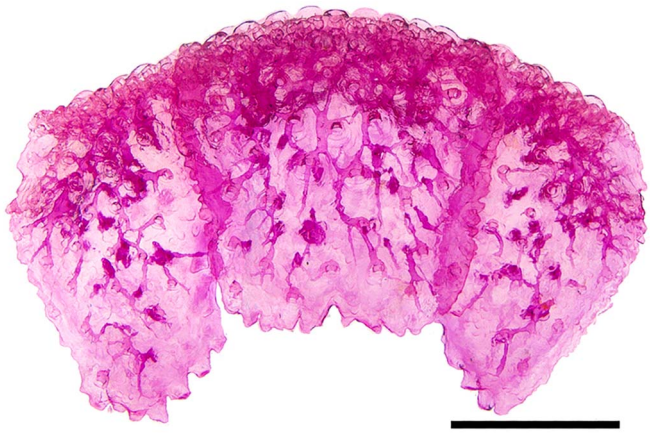

Fig. 2. *Curculionichthys monolechis*, MCP 54849, paratype. Undivided rostral plate flanked by first postrostral plate on each side. Dorsal view, anterior oriented up. Scale bar = 1 mm.

Laurent du Maroni, 5°03′06.2″N, 54°05′20.1″W, S. Fisch-Muller, C. Weber, J. I. Montoya-Burgos, R. Covain, and J. Mol, 12 November 2006.

Genseq-2 GenBank and BOLD accession numbers.—Sequences of gene *coI* deposited in BOLD and GenBank by Papa et al. (2021): MHNG 2741.052, BOLD barcode number GBOL1214-16, GenBank accession number MZ051467.1; MHNG 2718.049 BOLD barcode number GBOL550-13, GenBank accession number MZ051619.1.

Diagnosis.—The new species is distinguished from congeners by having the rostral plate single (Fig. 2; vs. rostral plate paired, but variably single in *C. insperatus*, *C. luteofrenatus*, *C. oliveirai*, and *C. karipuna*). *Curculionichthys monolechis* differs from congeners (except *C. luteofrenatus*, *C. piracanjuba*, and *C. scaius*) by having more numerous premaxillary teeth, 20–28 (vs. 6–19) and (except *C. luteofrenatus* and *C. scaius*) by having more numerous dentary teeth, 19–25 (vs. 4–18). The new species differs from *C. luteofrenatus* and *C. coxipone* by having fewer plates in median lateral series, 22–24 (vs. 25–27), from *C. oliveirai* and *C. paresi* by having more numerous lateral abdominal plates, 6–8 (vs. 4–5 and 4–6, respectively). The new species further differs from *C. insperatus*, *C. sabaji*, and *C. sagarana* by having a single series of large median ventral plates (vs. usually three or more regular series of median ventral plates, or small plates irregularly distributed). Finally, *C. monolechis* is distinguished from *C. scaius* and *C. piracanjuba* by having a longer caudal penduncle, 27.0–31.6% SL (vs. 20.6–25.0 and 25.4–26.8% SL, respectively) and from *C. luteofrenatus* and *C. oliveirai* by having narrower cleithral width, 22.3–23.7% SL (vs. 23.8–25.2 and 23.8–26.8% SL, respectively).

The new species is further diagnosed from the geographically closer species, *C. karipuna*, by having a shorter head, 29.2–35% SL (vs. 36.4–44.1% HL), larger suborbital depth, 23.0–26.1% HL (vs. 13.3–22.9% HL); 29 total vertebrae (vs. 27–28), more numerous premaxillary teeth 20–28 (vs. 11–17), and at least 5% genetic distance in gene *coI*.

Description.—Morphometric data in Table 1 and meristic data in Table 2. Small-sized loricariid (maximum SL 22.9 mm), with dorsal body profile slightly concave anterior to nostrils, then convex and elevating from nostril to parieto-supraoccipital, and straight to dorsal-fin origin; slightly concave and descending along dorsal-fin base and proceeding relatively straight to caudal-fin origin. Ventral profile concave from snout tip to canal-cheek plate, straight to slightly convex from that point to pelvic-fin origin, rising to end of anal-fin base, and proceeding straight from that point to caudal-fin origin. Greatest body width at opercle or cleithrum. Greatest body depth immediately anterior to dorsal-fin origin. Narrowest and shallowest part of trunk just before end of caudal peduncle.

Head profile triangular in dorsal view with snout elongated, slightly pointed with a rounded tip, with hypertrophied odontodes turned backwards in both ventral and dorsal margins. Rostral plate single, not divided medially. Eye positioned laterodorsally, iris operculum present. Mouth on ventral region of head with lips rounded and papillose with fringed posterior margin. Lower lip with small fleshy ridge immediately behind the dentary and well-developed rictal barbel laterally. Lower lip not reaching pectoral girdle. Teeth bifid and slender, with blade-like medial cusp larger than lateral cusp. Premaxilla with 20–28 (holotype 21) and dentary with 19–25 (holotype 23).

Body completely covered by plates with small odontodes, except around urogenital opening and on ventral surface of head. Cleithrum and coracoid completely covered with odontodes, with no or very small arrector fossa central portion of coracoid covered by skin. Median series of lateral plates with 2 tubes and 22–24 plates; lateral-line perforations continuous and nearly complete, ending 1–2 plates anterior to caudal-fin origin. Mid-dorsal series with 7–9 plates, truncated anteriorly near end of dorsal-fin base. Mid-ventral series 15–17 plates truncated posteriorly, just after anal-fin base. Two predorsal plates anterior to the nuchal plate; anterior single or paired but centrally positioned, posterior paired and displaced laterally. Anterior abdomen with 6–8 rectangular, obliquely elongate lateral abdominal plates and single series of large middle abdominal plates. Posterior abdominal region usually with two pairs of rectangular obliquely arranged plates between pelvic-fin insertions, followed by single, oval, large pre-anal plate. Abdominal plates bearing small odontodes, mostly aligned in single line at posterior border of plate, except for posterior abdominal plates, which bear odontodes arranged in more numerous lines.

Dorsal fin II,7; its origin slightly posterior to vertical through end of pelvic-fin base. Dorsal-fin spinelet V-shaped, locking mechanism functional; exposed dorsal surface of spinelet triangular to subrectangular with distal tip blunt. Pectoral fin I,6, with slender spine; tip of pectoral-fin spine almost reaching midportion of pelvic-fin unbranched ray. Pectoral-fin axillary slit present and large in adults and juveniles. Pelvic fin i,5; unbranched leading ray reaching to origin of anal fin, sometimes extending slightly beyond. Anal fin I,5; first anal-fin pterygiophore exposed anterior to anal-fin spine as small plate and bearing odontodes. All fins with inter-radial membrane fringed distally between rays. Odontodes distributed on lateral edge of fin spines. Caudal fin i,14,i. Total vertebrae 29 (in 4 CS).

Color in alcohol.—Ground color of dorsal and lateral surfaces pale yellow to light ochre, lighter ventrally. Dorsal surface of snout with lighter spot at tip and irregular areas in front of nares. Cheek with unpigmented areas below eye and

Table 1. Morphometric data of *Curculionichthys monolechis* by river basin, based on holotype and 40 paratypes (males and females); *n* = number of specimens measured. SD = standard deviation.

		Saramacca River					Marowijne River				
	Hol	*n*	Low	High	Mean	SD	*n*	Low	High	Mean	SD
Standard length (mm)	21.8	20	19.8	22.8	21.4	1.0	21	18.5	22.3	20.3	0.9
Percent of standard length											
Head length	33.6	20	29.2	34.0	31.9	1.3	21	30.5	35.0	32.4	1.3
Predorsal length	48.9	20	43.5	48.9	46.5	1.4	21	44.0	49.5	46.1	1.6
Postdorsal length	43.8	20	39.8	43.9	42.1	1.3	21	39.3	44.7	41.8	1.6
Prepectoral length	26.8	20	24.2	30.1	27.2	1.5	21	25.0	30.3	27.5	1.4
Prepelvic length	47.8	20	43.4	47.8	45.3	1.4	21	41.9	48.3	44.7	1.5
Preanal length	66.3	20	60.5	66.3	63.3	1.6	21	60.1	66.1	63.0	1.5
Cleithral width	22.8	20	21.2	23.7	22.7	0.6	21	21.9	25.2	23.1	0.7
Pectoral to pelvic fin	19.3	20	17.0	20.4	19.0	0.9	21	17.5	21.0	19.2	1.1
Pelvic to anal fin distance	19.3	20	17.0	20.4	19.0	0.9	21	17.5	21.0	19.2	1.0
Dorsal-fin spine length	22.5	20	20.8	23.9	22.5	0.8	21	20.7	24.4	23.0	1.1
Dorsal-fin base length	12.7	20	11.0	12.8	11.9	0.6	21	10.9	13.6	12.1	0.7
Pectoral-fin spine length	27.2	20	24.8	29.1	26.9	1.1	21	23.7	29.5	26.2	1.5
First pelvic-fin unbranched ray	20.2	20	18.3	23.1	20.8	1.3	21	18.4	24.4	21.7	1.6
First anal-fin unbranched ray	19.4	20	17.3	19.8	18.5	0.6	21	16.1	19.6	18.2	1.0
Caudal-peduncle length	27.0	20	27.0	30.6	29.0	1.3	21	28.1	31.6	30.2	1.0
Caudal-peduncle depth	8.9	20	8.7	9.3	9.0	0.2	21	8.6	9.4	9.1	0.2
Caudal-peduncle width	7.7	20	7.7	9.3	8.5	0.4	21	7.5	8.5	8.0	0.3
Body depth at dorsal-fin origin	17.9	20	16.4	18.4	17.2	0.5	21	15.3	17.1	16.0	0.6
Body width at dorsal-fin origin	18.7	20	17.3	19.8	19.0	0.7	21	15.6	19.8	17.0	1.1
Percent of head length											
Head depth	48.4	20	47.1	50.6	48.8	1.2	21	47.0	50.8	49.1	1.2
Head width	66.6	20	64.0	66.9	65.3	0.9	21	64.2	68.0	66.1	1.2
Snout length	58.3	20	55.8	61.6	58.9	1.4	21	56.6	62.1	59.2	1.5
Orbital diameter	14.2	20	14.2	19.2	16.9	1.5	21	15.2	18.5	16.7	1.0
Interorbital distance	37.4	20	35.2	39.9	37.7	1.3	21	35.0	39.9	38.1	1.5
Internarial width	14.1	20	14.1	18.2	16.1	1.5	21	14.6	18.3	16.6	1.1
Nares diameter (males)	—	9	18.1	19.7	19.0	0.5	13	15.7	19.4	18.0	0.9
Nares diameter (females)	8.7	11	8.5	10.8	9.5	0.8	8	8.4	10.7	9.9	0.7
Prenasal length	39.8	20	38.3	42.0	40.1	1.0	21	38.3	42.8	40.2	1.4
Snout–opercle distance	78.9	20	77.8	83.2	80.6	1.7	21	79.7	83.4	81.8	0.9
Suborbital depth	24.0	20	23.1	25.7	24.0	0.8	21	23.0	26.1	24.4	0.9
Barbel length	8.9	20	8.0	10.3	9.1	0.7	21	8.1	10.8	9.6	0.8

nostril. Mid-lateral stripe dark brown, running from snout tip to end of caudal peduncle; flanks mostly light yellow below mid-lateral stripe, with 2–3 blotches of dark pigmentation laterally on caudal peduncle. Trunk with five dark brown bars, extending transversely around back of trunk and reaching to mid-lateral stripe. First bar immediately posterior to head above pectoral-fin insertion; second bar inconspicuous, situated at dorsal-fin origin; third bar immediately behind end of dorsal-fin base, below depressed dorsal-fin rays; fourth bar on caudal peduncle between dorsal and caudal fins; and fifth bar immediately anterior to caudal fin, extending posteriorly through median rays of caudal fin (Figs. 1, 3).

Posterior portion of head and dorsal region of body with small dark patches of randomly dispersed chromatophores. Concentration of reddish-brown pigmentation sometimes on cranial bones, between frontals and parieto-supraoccipital. Dorsal-, pectoral-, and caudal-fin membranes hyaline, with transverse dark dots along unbranched rays, not evident on pelvic and anal fins. Variable amount of randomly dispersed chromatophores forming dark spots around anal fin. Tooth crown yellow to slightly golden.

Color in life.—General color pattern as above. Ground color of head and dorsum mostly light gray, whitish cream ventrally. Cheeks with unpigmented areas below eye and nostril. Bars on trunk with both dark brown and reddish brown pigments, second bar lighter than others. Mid-lateral stripe dark brown to black, contrasting with whitish cream ventral surface. Iris silvery with light golden hue (Fig. 4).

Sexual dimorphism.—Mainly characterized by the possession of a conical urogenital papilla, located immediately posterior to anal opening, mostly covered by the anal tube, and a skin flap along the dorsal margin of the pelvic-fin unbranched ray of males, both features absent in females. Males also exhibit larger nares as a secondary sexual dimorphism, 15.7–19.7% HL (vs. 8.4–10.8% HL in females). Both sexes have a membrane in the anal opening; however, this membrane is more developed in females, usually covering entirely the urogenital opening.

Geographic distribution.—*Curculionichthys monolechis* is described from nine localities in the Saramacca and Marowijne Rivers in

Table 2. Evolutionary divergence between sequences of *Curculionichthys karipuna* and *C. monolechis*, conducted using the Kimura 2-parameter model with rate variation among sites modeled with a gamma distribution. River sub-basin follows each species name. Sequences with an asterisk are from paratypes.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1 *karipuna* Oyapock																					
2 *karipuna* Oyapock	0.003																				
3 *karipuna* Oyapock	0.000	0.003																			
4 *karipuna* Oyapock	0.005	0.002	0.005																		
5 *karipuna* Oyapock	0.003	0.000	0.003	0.002																	
6 *karipuna* Approuague	0.012	0.009	0.012	0.007	0.009																
7 *karipuna* Approuague	0.009	0.005	0.009	0.003	0.005	0.003															
8 *karipuna* Oyapock	0.002	0.005	0.002	0.007	0.005	0.010	0.007														
9 *karipuna* Oyapock	0.002	0.005	0.002	0.007	0.005	0.010	0.007	0.000													
10 *karipuna* Oyapock	0.007	0.003	0.007	0.002	0.003	0.009	0.005	0.009	0.009												
11 *karipuna* Oyapock	0.003	0.003	0.003	0.005	0.003	0.012	0.009	0.005	0.005	0.003											
12 *karipuna* Oyapock	0.005	0.005	0.005	0.007	0.005	0.010	0.007	0.003	0.003	0.009	0.005										
13 *monolechis** Tapanahony	0.050	0.050	0.050	0.048	0.050	0.052	0.052	0.052	0.052	0.050	0.050	0.052									
14 *monolechis* Litany	0.061	0.061	0.061	0.059	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.012								
15 *monolechis* Litany	0.059	0.059	0.059	0.057	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.012	0.003							
16 *monolechis** Maroni	0.061	0.061	0.061	0.058	0.061	0.058	0.058	0.058	0.058	0.061	0.061	0.058	0.014	0.003	0.000						
17 *monolechis* Maroni	0.063	0.063	0.063	0.061	0.063	0.061	0.061	0.061	0.061	0.063	0.063	0.061	0.014	0.000	0.003	0.003					
18 *monolechis* Maroni	0.063	0.063	0.063	0.061	0.063	0.061	0.061	0.061	0.061	0.063	0.063	0.061	0.014	0.000	0.003	0.003	0.000				
19 *monolechis* Tampock	0.061	0.061	0.061	0.059	0.061	0.058	0.059	0.059	0.059	0.061	0.061	0.058	0.012	0.009	0.009	0.009	0.009	0.009			
20 *monolechis* Marouini	0.063	0.063	0.063	0.061	0.063	0.065	0.065	0.065	0.065	0.059	0.059	0.065	0.014	0.002	0.005	0.007	0.003	0.003	0.012		
21 *monolechis* Marouini	0.063	0.063	0.063	0.061	0.063	0.065	0.065	0.065	0.065	0.059	0.059	0.065	0.014	0.002	0.005	0.007	0.003	0.003	0.012	0.000	
22 *monolechis* Grand Abounami	0.061	0.061	0.061	0.059	0.061	0.058	0.059	0.059	0.059	0.061	0.061	0.058	0.012	0.005	0.005	0.005	0.005	0.005	0.010	0.009	0.009

Suriname and French Guiana (Fig. 5, yellow dots). The species was also previously recorded from the Maroni River (=Marowijne) in French Guiana by Le Bail et al. (2000) and Papa et al. (2021; see Figure 5, squares). Both watersheds that harbor the new species drain the Guiana Shield northward. The Suriname River basin is located between the Saramacca and the Marowijne basins, and it is expected that the new species also occurs in that river.

Habitat and ecology.—*Curculionichthys monolechis* was collected in rivers and small- to medium-sized rainforest creeks in areas of rocky rapids and sandbanks.

Conservation assessment.—The extinction risk of *Curculionichthys monolechis* is estimated as low despite our incomplete knowledge of its populational trends and geographic distribution. The species is known from at least 16 localities in the Saramacca River of Suriname and the Marowijne (=Maroni) in Suriname and French Guiana, with an estimated Extension of Occurrence (EOO) of 56,513 km^2, based on the minimum convex polygon around known localities. The species seems to be abundant and despite logging and gold mining being widespread in the area, no specific threats were identified in the region, which is largely forested. For these reasons, *C. monolechis* is tentatively categorized as Least Concern (LC) according to the International Union for Conservation of Nature categories and criteria (IUCN Standards and Petitions Subcommittee, 2019).

Etymology.—*Curculionichthys monolechis* is from the Greek μονοσ (*monos*), one, single, and λεκοσ (*lekos*), plate, in reference to the single rostral plate. A noun in apposition.

DISCUSSION

The genus was diagnosed by Silva et al. (2016) as possessing the following characters: (1) a paired rostral plate at the tip of the snout, (2) two large prenasal plates immediately posterior to the rostral plates, (3) a supraopercular plate that receives the laterosensory canal of the compound pterotic before the preoperculum, (4) well-developed membrane at the anal opening in females, (5) V-shaped spinelet on the dorsal fin, (6) dark spots of pigmentation covering the caudal peduncle extending to the middle caudal-fin rays, and (7) lack of hypertrophied odontodes covering the tip of the snout. *Curculionichthys monolechis* possesses five of the above characters, with the most notable exception being the possession of a single rostral plate at the snout tip (Fig. 2). Although variation in number of rostral plates have been reported in other species such as *C. insperatus* and *C. luteofrenatus* (Martins and Langeani, 2012), *C. insperatus*, *C. luteofrenatus*, *C. oliveirai*, and *C. piracanjuba* (Roxo et al., 2014), and *C. karipuna* (Silva et al., 2016), the presence of a pair of plates has always predominated in species of *Curculionichthys*. The second diagnostic feature missing in the new species is the supposed lack of hypertrophied odontodes on the snout tip. In fact, members of *Curculionichthys* share with most hypoptopomatines the possession of hypertrophied retrorse odontodes on both upper and lower margins of the snout. Such hypertrophied odontodes are not as developed as those in *Hisonotus* or *Otothyris*, for example, but they are clearly larger than the odontodes on the remainder of head, as already demonstrated for *C. scaius* (Calegari et al., 2018), *C. itaim*, and *C. insperatus* (Gamarra et al., 2019).

Fig. 3. *Curculionichthys monolechis*, USNM 408464, paratype, female, 20.7 mm SL, Suriname, Marowijne River basin, left tributary of upper Paloemeu River.

Curculionichthys karipuna was originally described from the Cassiporé River in the Brazilian State of Amapá, with additional, non-type specimens reported from the Jari River basin, lower Amazon drainage. More recently, Papa et al. (2021) recorded the species in several localities of the Oyapock and Approuague Rivers in French Guiana, expanding the species distribution northward and establishing the distribution limit with *C. monolechis*.

A molecular comparison of ten specimens of *Curculionichthys monolechis* from the Maroni River basin in Suriname and French Guiana and 12 specimens of *C. karipuna* from the Oyapock and Approuague Rivers in French Guiana yielded a minimum genetic distance of 5% between species (Table 2). A maximum-likelihood phylogenetic analysis of the same sequences produced two reciprocally monophyletic groups corresponding to the two species (Fig. 6).

Despite the presence of *C. karipuna* in coastal rivers of Amapá and eastern French Guiana, the discovery of *C. monolechis* in Suriname further expands the distribution of the genus in the Guiana Shield and outside the Brazilian territory. Judging from the presence of *C. monolechis* in Suriname and French Guiana, it is likely that the species is more widespread in the Guiana Shield.

MATERIAL EXAMINED

Comparative material is that listed in Calegari et al. (2018), with the addition of:

Curculionichthys karipuna: INPA 4888, 1, igarapé Água Branca, rio Amaparí, Serra do Navio, Amapá, Brazil; NUP 18739, 5 of 8 paratypes, rio Cassiporé on road BR-156,

Fig. 4. *Curculionichthys monolechis*, live coloration. Saut Tampock, Tampock River basin, Maroni drainage, French Guiana. Specimen not preserved. Image from Le Bail et al. (2000), used with permission.

Oiapoque, Amapá, Brazil. Genetic sequences of *coI* available from BOLD (BIN: ADE3937).

Curculionichthys cf. *karipuna*: INPA 7475, 1, rio Iratapuru at cachoeira Dois Irmãos, Amapá, Brazil; MPEG 15607, 1, MPEG 15714, 8, rio Ipitanga, Almerim, Pará.

Curculionichthys scaius: MCP 53800, holotype, AMNH 264144, 10 paratypes, MCP 53801, 16 + 3 CS paratypes, MZUSP 123834, 10 paratypes, NUP 18526, 85 paratypes, creek on road to Lontra, tributary of rio Aripuanã, Aripuanã, Mato Grosso, Brazil.

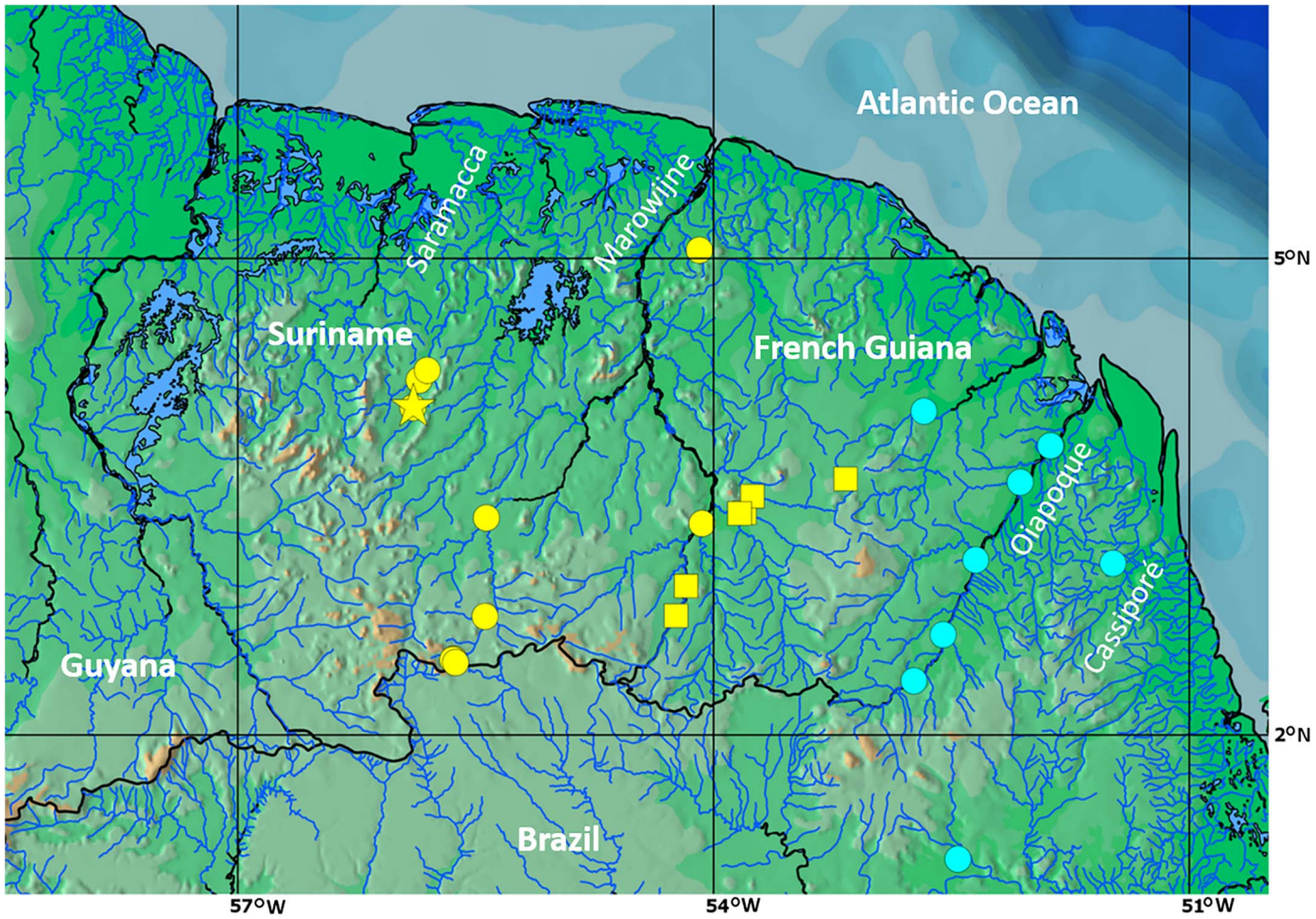

Fig. 5. Geographic distribution of *Curculionichthys monolechis* (yellow symbols) and *C. karipuna* (light blue dots). Yellow dots correspond to type material, star represents type locality, and squares represent other specimens examined by Le Bail et al. (2000) and Papa et al. (2021).

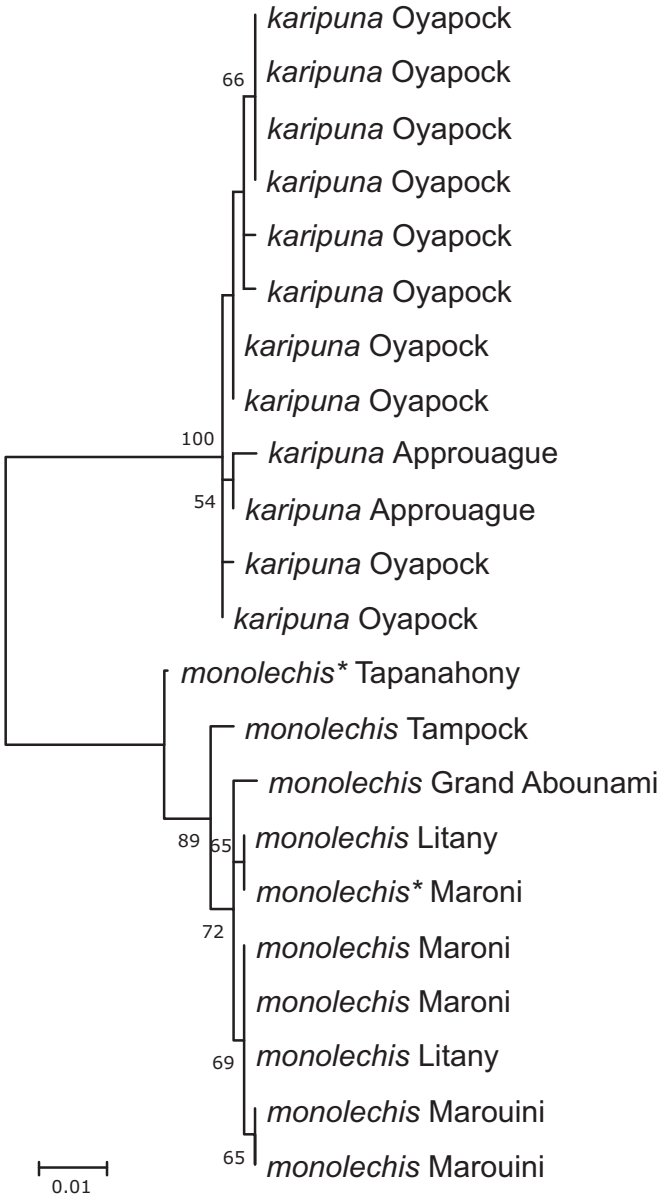

Fig. 6. Maximum likelihood tree of samples of *Curculionichthys monolechis* and *C. karipuna*, using General Time Reversible model with invariant sites (62.8%). Log likelihood –1015.54. Bootstrap values below 50% not shown. River sub-basin name follows each species name. Sequences with an asterisk from paratypes.

DATA ACCESSIBILITY

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