New and poorly known Characiform fishes (Teleostei: Characiformes: Characidae) from French Guyana. A new Tetra of the genus *Bryconamericus*

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> Abstract

Bryconamericus guyanensis sp. n. is described from French Guyana. The new species is closely related to *B. subtilisform* Roman-Valencia, 2003 and characterized by the following features: (1) body depth relatively low (3.49–4.16), (2) anal-fin with 19–21 branched rays, (3) 17–21 setiform gill-rakers, (4) 38–41 scales in a longitudinal row, (5) 4½–5/1/3 transversal scales, (6) 37 to 40 vertebrae (total), (7) two to three tri- to quincuspid maxillary teeth, and (8) premaxilla in the outer row with four to five (mostly five) tri- to quincuspid teeth which are implanted in an irregularly row.

> Résumé

Bryconamericus guyanensis sp. n. est décrit de la Guyane française. Cette nouvelle espèce est étroitement liée à *B. subtilisform* Roman-Valencia, 2003 et est caractérisée par les éléments suivants: (1) une hauteur du corps relativement faible (3.49–4.16), (2) une nageoire anale avec 19 à 21 rayons ramifiés, (3) 17 à 21 branchiospines sétiformes, (4) 38 à 41 écailles dans la rangée longitudinale, (5) 4½–5/1/3 écailles transversales, (6) 37 à 40 vertèbres (totales) (7), deux à trois dents avec 3 à 5 cuspides au maxillaire, et (8) la rangée extérieure du prémaxillaire contenant quatre à cinq (majoritairement cinq) dents avec 3 à 5 cuspides qui sont implantées selon une ligne irrégulière.

> Resumen

Se describe *Bryconamericus guyanensis* sp. n. de Guayana Francesa. *B. subtilisform* Roman-Valencia, 2003 es la especie más cercanamente emparentada con la nueva especie, la cual se caracteriza por los siguientes rasgos: (1) altura del cuerpo relativamente baja (3.49–4.16), (2) aleta anal con 19–21 rayos divididos, (3) 17–21 dentículos branquiales finos y largos, (4) 38–41 escamas en una fila longitudinal, (5) 4½5/1/3 escamas transversales antes de la dorsal, (6) 37 a 40 vértebras (número total), (7) dos a tres dientes tri- a pentacúspides en el maxilar, (8) premaxilar en la fila externa con cuatro a cinco (en su mayoría cinco) dientes pentacúspides que están agrupados en una fila irregular.

> Kurzfassung

Bryconamericus guyanensis sp. n. aus Französisch Guyana wird beschrieben. Die neue Art ist am nächsten verwandt mit *B. subtilisform* Roman-Valencia, 2003 und charakterisiert durch folgende Merkmale: (1) Körper vergleichsweise niedrig (3.49–4.16), (2) Anale mit 19–21 geteilten Flossenstrahlen, (3) 17–21 lange, schlanke Kiemenreusenzähne, (4) 38–41 Schuppen in einer Längsreihe, (5) 4½–5/1/3 transversale Schuppen vor der Dorsale, (6) 37 bis 40 Wirbel (Gesamtanzahl), (7) zwei bis drei drei- bis fünfspitzige Zähne im Maxillare und (8) Praemaxillare in der äußeren Reihe mit vier bis fünf (meist fünf) drei- bis fünfspitzige Zähne, die in einer unregelmäßigen Reihe angeordnet sind.

> Key words

Teleostei, Characiformes, Characidae, *Bryconamericus, Knodus*, new species, French Guyana, South America, Biogeography.

Introduction

French Guyana has a very important biodiversity, particularly pronounced among freshwater fish. Endemic species are frequent, over forty of them are new and still to describe. This article aims to complement the knowledge on Characidae of French Guyana (see also GÉRY *et al*., 1996; GÉRY *et al*., 1988; GÉRY *et al*., 1995; GÉRY *et al*., 1998; JÉGU *et al*., 2002; JÉGU *et al*., 2003; ZARSKE *et al*., 2004; ZARSKE *et al*., 2005) and to enable managers of natural environments to better protect them. The publication of this paper was delayed because of the death of one of the authors. This paper describes a new species of *Bryconamericus*, which was mentioned in some previous publications under the name *B*. spec. aff. *stramineus* (GÉRY & PLANQUETTE, 1983; GÉRY *et al*., 1991; PLANQUETTE *et al*., 1996; BOUJARD *et al*., 1997).

Materials and methods

Measurements were taken, with an accuracy of 0.1 mm, on the left side of each specimen with digital callipers under a binocular microscope. All counts and measurements were recorded following GÉRY (1972). The number of supraneurals, vertebrae and pterygiophores were counted by x-ray investigation (Faxitron 43855C). The count of vertebrae includes all vertebrae, considering the urostyle as the last one. Precaudal and caudal vertebrae are distinguished by the presence or absence of haemal spines. The four vertebrae of the Weberian apparatus, the precaudal and caudal vertebrae are separated by a plus sign.

The holotype and some paratypes of the described species are deposited in the Galerie d'Ichtyologie du Museum national d'Historie naturelle, Paris, France (**MNHN**); some paratypes are deposited in the following collections:

MHNG	Muséum d'histoire naturelle de la Ville de Genève
MTD F	Senckenberg Naturhistorische Sammlungen Dresden, Museum für Tierkunde, Fischsammlung
IRSNB	Institut royal des Sciences naturelles de Belgique
ZFMK	Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn
ZMB	Museum für Naturkunde Berlin

SD	standard derivation
SL	standard length.

Bryconamericus guyanensis sp. n.

Fig. 1–4, Table 1 and 2

Holotype. MNHN 2010-0036, 43.2 mm SL, French Guyana, Mana**,** crique Eau Claire at 7 km of Saül, *coll*. DURANTON and DEMARTY, 3.6.1983 (from lot 3).
Paratypes. All from French Guyana. **Maroni**: MTD F 31932–31936, 5 ex., 18.7–30.1 mm SL, crique Balatée, Bas Maroni, *coll*. P. PLANQUETTE, 9.10.1979 (lot 1). MNHN 2010-0037, 2 ex. 23.4–38.1 mm SL, Village Antecume Pata, Haut Maroni, *coll*. P. PLANQUETTE and P.-Y. LE BAIL, 15.12.1985 (lot 2). **Mana**: MNHN 2010-0038, 12 ex., 33.8–46.8 mm SL, crique Eau Claire at 7 km of Saül, *coll*. DURANTON and DEMARTY, 3.6.1983 (lot 3). MTD F 31937–31949, 13 ex., 31.8–43.1, same data like holotype. MHNG 2722.008, 10 ex., 31.6–41.0 mm SL, same data like holotype. ZFMK 41764–41773, 10 ex., 27.9–39.2 mm SL, same data like holotype. ZMB 33936, 10 ex., 31.0–41.4 mm SL, same data like holotype. MTD F 31950–31951, 2 ex., 27.3–33.5 mm SL, Saut Ananas, crique No. 3, (04°06'04"N, 53°31'23"W), *coll*. P.-Y. LE BAIL, P. PLANQUETTE and P. KEITH, 22.9.1995 (lot 4). MTD F 31988–31993, 6 ex., 21.4–7.9 mm SL, Saut Ananas, coll. GÉRY, 1957. MNHN 2010-0039, 14 ex., 24.2–42.3 mm SL, Saut Capiaie, (04°05'39"N, 53°31'31"W), *coll*. P.-Y. LE BAIL, P. PLANQUETTE and P. KEITH, 24.9.1995 (lot 5). IRSNB 21735, 9 ex., 36,2–56,7 mm SL, Crique Colon, affluent de la Crique Lézard, prés de Citron (04°44'19"N, 53°57'33"W), P. PLANQUETTE and P.-Y. LE BAIL, 13.11.1982. **Sinnamary**: MNHN 2010-0040, 1 ex., 40.0 mm SL, crique Coeur Maroni near Petit Saut, (05°03'27"N, 53°03'00"W), *coll*. P.-Y. LE BAIL, R. ROJAS-BELTRAN and D. TORVIC, 4.2.1983 (lot 6). **Comté**: MNHN 2010-0041, 14 ex., 25.8–38.2 mm SL, crique Blanche, (04°32'12"N, 52°22'22"W), *coll*. J. GÉRY and P. PLANQUETTE, 3.10.1979 (lot 7). MTD F 31952–31986, 35 ex., 26.9–38.1 mm SL, crique Boulanger, (04°34'10"N, 52°23'52"W), *coll*. J. GÉRY and P. PLANQUETTE, 4.10.1979 (lot 8). **Approuague**: MNHN 2010-0042, 4 ex., 30.1–38.5 mm SL, crique vers Saut Grand Mathias, (04°11'38"N, 52°21'44"W), *coll*. P.-Y. LE BAIL, 30.3.1983 (lot 9). MNHN 2010-0043, 18 ex., 19.9–41.5 mm SL, Arataye, *coll*. BOUJARD, 9.7.1989 (lot 10). MNHN 2010-0044, 1 ex. 43.2 mm SL, Arataye, crique Japigny, *coll*. BOUJARD, MEUNIER and PASCAL, 11.1988 (lot 11). MNHN 1989-0014, 12 ex., 22.4–37.3 mm SL, Arataye, crique Japigny, *coll*. BOUJARD, MEUNIER and PASCAL, 1.1989 (lot 12). MTD F 31987, 1 ex., 32.2 mm SL, Carbet Mais near Saül, *coll*. J.-F. RENNO, 7.1988 (lot 13).

Diagnosis. A relatively small species (largest known specimen 56.7 mm SL) of the genus *Bryconamericus* EIGENMANN, 1907 (type-species: *B. exodon* EIGENMANN, 1907). The new species is characterized by the following features: (1) body depth relatively low (3.49–4.16), (2) anal-fin with 19–21 branched rays, (3) 17–21 setiform gill-rakers, (4) 38–41 scales in a longitudinal row, (5) 4½–5/1/3 transversal scales, (6) 37–40 vertebrae (total), (7) two to three tri- to quincuspid maxillary teeth, and (8) premaxilla in the outer row with four to five (mostly five) tri- to quincuspid teeth which are implanted in a irregularly row.

Description (n = 10 from lot 3; 37.8–46.8 mm SL; first figure = holotype; second figure = mean; figures

Fig. 1. *Bryconamericus guyanensis* sp. n., lateral view, 43.2 mm SL, holotype, French Guyana, Mana**,** crique Eau Claire at 7 km of Saül.

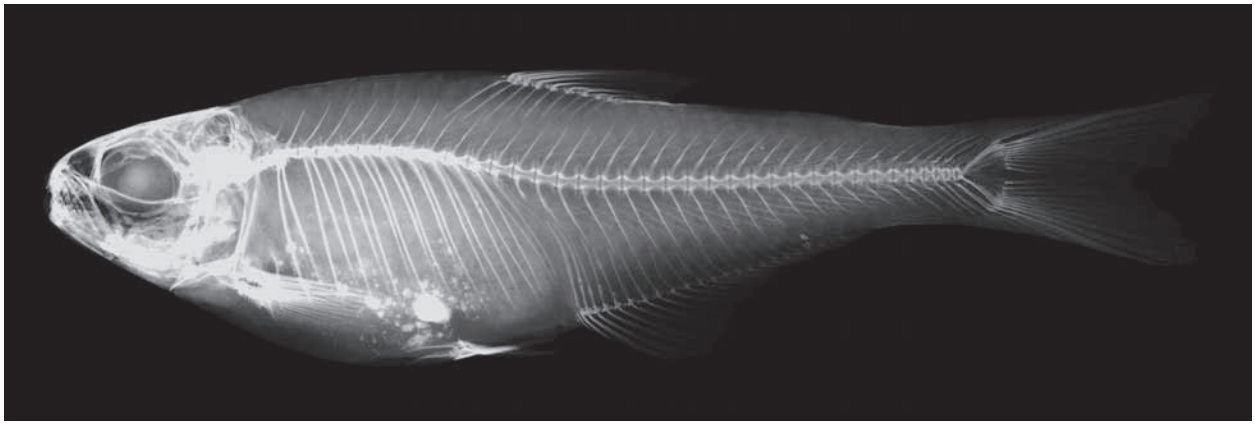

Fig. 1. *Bryconamericus guyanensis* sp. n., lateral view, 30.1 mm SL, paratype, French Guyana, Mana**,** crique Eau Claire at 7 km of Saül.

between the brackets = Variability). The variability of morphometric (expressed in percent of standard length or head length) and meristic features see Table 1 and 2. Body elongated and slender, laterally compressed, broadest behind the head. The dorsal outline rises in a regular curve up to the anterior root of the dorsal-fin and is equal or less curved than the ventral outline. Preventral area flat, especially anterior to the beginning of ventral-fin. Greatest body depth approximately anterior to the beginning of ventral-fin, Depth at the beginning of dorsal-fin 3.75; 3.73 (3.49 to 4.16) times in standard length (SL). The males are somewhat more slender than the females. The head is relatively small. The head length is 4.61; 4.41 (4.05 to 4.81) times in SL. Eye relatively large. The eye diameter is 2.64; 2.65 (2.19 to 3.11) times in head length. Interorbital width slightly arched, 4.27; 3.79 (3.38 to 4.32) times in head length. Mouth terminal, sometimes directed slightly upwards, not pointed, nearly rounded, relatively short, snout 4.27; 3.79 (3.38 to 4.32) times in head length. Mandibulary bone not or only slightly prominent. Maxilla relatively short and broad, up to the rim of the pupil, 4.46; 4.13 (3.58 to 4.71) times in head length. Third suborbital is complete and large contacting the preopercle along its posterior and ventral margins. Fontanels are relatively large and long, craniad up to the eyes. The caudal peduncle is longer than high. The height of caudal peduncle is 1.87; 1.70 (1.58 to 1.92) times in its length. Interorbital width flat or little curved, 2.89; 2.99 (2.81 – 3.60) in head length. Premaxillary teeth arranged in two rows. The teeth of external row are irregularly implanted. Four to five (mostly five) tri- to quincuspid teeth are situated in the outer row and four quincuspid teeth in the inner row. The teeth are narrow at their bases, compressed. The lateral cusps begin relatively low. The cusps of the teeth of the inner row are arranged in a semicircle. Maxilla with two to three tri- or quincuspid teeth. Dentary bone with four large, quincuspid teeth followed by some abruptly smaller conical teeth.

The dorsal-fin originates distinctly anterior to the middle of the body. The predorsal area is 2.07; 2.06 (2.00 to 2.12) times in SL. The basis of dorsal-fin is 2.04; 1.92 (1.68 to 2.20) times in head length. The third fin ray is the largest and the first branched one. It is smaller than head and 1.17; 1.19 (1.03 to 1.36)

Table 1. Morphometric variability of *Bryconamericus guyanensis* sp. n. from different localities in French Guyana (all lots n=10).

	crique Eau Claire at 7 km of Saül (lot 3)	Saut Capiaie (lot 5)	crique Blanche (lot 7)	crique Boulanger (lot 8)	Arataye (lot 10)	Arataye, crique Japigny (lot 12)
Standard length [mm]	37.8–46.8	26.8–32.8	29.3–38.2	30.9–38.1	31.9–41.2	29.5–37.3
% Standard length						
Depth	26.85 (24.00–28.62)	27.02 (22.83–30.45)	25.16 (22.99–26.79)	24.67 (21.71–28.57)	25.04 (22.65–27.68)	26.01 (24.66–27.58)
Head	22.70 (21.60–24.63)	24.00 (23.26–25.83)	24.21 (22.98–25.61)	23.63 (22.93–25.49)	23.49 (21.91–25.45)	23.36 (22.31–27.72)
Predorsal distance	48.29 (46.97–49.96)	49.04 (44.83–51.62)	48.84 (46.85–52.50)	49.78 (47.18–51.44)	49.35 (46.71–50.64)	49.66 (46.35–51.75)
Postdorsal distance	53.16 (51.41–55.70)	52.00 (49.90–55.10)	51.32 (47.08–55.21)	53.51 (51.71–56.81)	51.99 (48.64–54.06)	53.48 (49.33–55.95)
Preventral distance	44.67 (42.78–46.75)	45.31 (41.43–50.35)	44.46 (40.60–46.77)	44.01 (42.35–46.19)	45.08 (42.84–46.48)	44.71 (43.58–46.70)
Preanal distance	57.96 (55.06–60.96)	58.14 (54.80–63.30)	57.18 (54.17–60.00)	55.92 (52.08–60.33)	58.58 (55.86–61.73)	56.58 (53.06–60.28)
% Head length						
Eye	37.74 (33.61–41.65)	41.00 (36.73–45.92)	42.24 (36.00–44.76)	41,75 (37.82–43.60)	41.05 (37.65–44.46)	41.20 (37.41–45.75)
Snout	26.53 (23.15–29.57)	27.04 (21,27–30.99)	24.91 (21.62–29.19)	26.34 (21.64–27.81)	25.98 (21.32–30.51)	26.09 (20.55–30.60)
Maxilla	23.36 (17.94–24.97)	24.78 (21.13–26.64)	25.73 (20.92–30.66)	25.77 (23.23–27.38)	24.18 (22.76–26.22)	24.76 (22.12–27.32)
Interorbital width	33.48 (27.61–36.31)	33.81 (30.25–36.53)	33.06 (28.79–35.94)	34.44 (29.78–38.45)	35.75 (30.50–39.08)	33.26 (30.20–34.78)
D-Base	52.07 (49.39–59.33)	51.08 (45.66–57.65)	55.92 (42.40–62.12)	52.95 (49.04–57.39)	48.47 (43.37–54.89)	49.62 (36.58–56.52)
Longest ray	84.16 (73.49–91.02)	77.49 (69.64–87.15)	76.80 (54.78–89.30)	79.51 (76.19–83.54)	78.15 (68.92–88.74)	74.28 (63.52–75.69)
A-Base	124.05 (108.27–136.63)	118.89 (107.01–130.32)	119.93 (109.81–135.88)	122.60 (117.58–128.17)	123.37 (118.47–131.60)	125.38 (109.92–132.36)
Longest ray	60.89 (48.65–67.18)	51.83 (40.13–65.62)	59.77 (43.58–66.97)	59.55 (48.12–66.62)	56.05 (37.47–67.91)	66.03 (55.64–71.85)
P-Length	78.72 (74.44–85.19)	78.98 (64.89–87.92)	75.96 (65.80–92.00)	79.95 (74.89–97.02)	79.29 (65.39–92.22)	79.34 (73.05–84.15)
V-Length	52.29 (46.52–64.19)	49.05 (33.70–60.65)	47.38 (40.51–56.58)	48.77 (40.72–57.12)	47.98 (40.32–55.13)	47.00 (40.02–53.64)
High of caudal peduncle	42.33 (39.35–46.07)	43.47 (40.24–49.84)	42.19 (37.27–47.96)	42.80 (39.36–46.04)	42.52 (37.61–47.85)–	43.63 (40.71–48.57)
Length of caudal peduncle	72.30 (60.71–78.39)	65.08 (60.06–71.09)	71.40 (62.00–85.00)	70.34 (60.30–81.39)	69.48 (64.80–77.68)	76.83 (54.06–87.34)

times in head length. Fin rays: ii 8. 9 pterygiophores of the dorsal-fin (counted in x-ray investigation). The dorsal-fin starts with the first pterygiophore between the seventh and eighth precaudal vertebrae.

Anal-fin relatively long, somewhat larger than the head, beginning below the last fin rays of the dorsal-fin. The first fin rays are a little longer. There is a weakly concave lappet at the beginning of the fin. The preanal area is 1.78; 1.73 (1.64 to 1.81) times in SL. The anal-fin base is 0.76; 0.81 (0.73 to 0.92) times in head length. Anal-fin with a basal sheath of a single series of 10 to 19 scales which reach up to about the 12th or 18th branched fin ray. The fifth or sixth fin ray is the largest and the first branched one, 1.95; 1.59 (1.45 to 1.95) times in head length. Fin rays: iv to v 19 to 21 (i) (n=22), mean 20.1. Anal-fin with 21.7 (20 to 23) pterygiophores (n=22, counted in x-ray investigation). The anal-fin starts with one to two pterygiophores between the first and second or second or third and forth caudal vertebrae. No hooklets on the first rays of anal-fin.

The ventral-fins are situated anterior to the dorsal-fin. The preventral area is 2.29; 2.23 (2.14 to 2.33) times in SL. The length of ventral-fin is 2.15; 1.93 (1.55 to 2.15)

Table 2. Meristic variability of *Bryconamericus guyanensis* sp. n. from different localities of French Guyana.

	crique Eau Claire at 7 km of Saül (lot 3) (n=22)	Saut Capiaie (lot 5) (n=13)	crique Blanche (lot 7) (n=14)	crique Boulanger (lot 8) (n=23)	Arataye (lot 10) (n=18)	Arataye, crique Japigny (lot 12) (n=12)
Branched rays of anal-fin	20.1 (19–21)	20.0 (19–21)	19.5 (18–22)	19.3 (18–21)	20.0 (18–21)	20.1 (19–22)
Pterygiophors of anal-fin	21.7 (20–23)	21.2 (19–23)	20.4 (19–22)	20.3 (19–22)	21.2 (19–23)	21.5 (20–23)
Vertebrae (total)	38.5 (37–39)	39.1 (38–40)	38.9 (38–40)	39.0 (38–40)	38.8 (38–40)	39.0 (38–40)
Supraneurals	4.4 (4–5)	4.3 (4–5)	5.4 (5–6)	5.0 (4–6)	4.7 (4–5)	5.2 (4–6)
Longitudinal scales	39.3 (38–41)	39.4 (39–41)	39.6 (39–40)	40.3 (39–42)	39.9 (38–41)	40.1 (39–41)
Scales between origin of dorsal fin and l.at.	4.85 (4½–5)	4.7 (4½–5)	4.8 (4½–5)	4.85 (4½–5)	4.95 (4½–5)	4.9 (4½–5)
Scales in anal shield	14.3 (10–19)	13.4 (9–17)	12.4 (10–15)	13.1 (12–17)	14.4 (9–18)	13.1 (11–19)
Predorsal scales	11.6 (11–13)	11.5 (11–12)	11.5 (10–13)	11.2 (10–13)	11.5 (11–12)	11.5 (11–12)
Scales around caudal peduncle	12.8 (12–13)	11.4 (11–12)	12.1 (10–13)	12.2 (12–13)	13.0 (12–14)	12.3 (12–13)
Gill-rakers (total)	18.6 (17–21)	17.4 (17–18)	17.0 (15–20)	17.1 (16–19)	18.0 (16–20)	17.8 (16–20)

times in head length, not extending to the beginning of the anal-fin. Fin rays: ii 6. Pectoral-fin relatively long, 1.23; 1.28 (1.21 to 1.65) times in head length, reaching (sometimes not reaching) to the beginning of the ventral-fin. Fin rays: i 11–12. Caudal-fin deeply forked, lobes about equally long, principal caudal fin ray count 1/9–8/1, procurrent caudal rays 11–12/10–12.

Scales in a longitudinal row 39.3 (38 to 41, n=10), 8½–9 (4½–5/1/3) transversal scales anterior to dorsal fin. Lateral line complete. 11 to 13 predorsal scales in a regularly row. 12–13 scales around caudal peduncle. No scales on the basis of caudal-fin. 18.6 (17 to 21) relatively short, setiform gill-rakers on the first arch of the left side, six to seven on the upper and ten to fourteen on the lower branch.

4.4 (4–5) supraneuralia. 38.5 [37 to 39 (4+10+23–25)] vertebrae (n=22, counted on x-ray investigation).

Coloration (in vivo). Body pale to medium yellow, belly silvery, somewhat darker dorsally. Scales of dorsal part of body with a dark brown to black margin. A dark yellow to silvery lateral band extends from the gill cover to the base of caudal-fin. A black vertically prolonged humeral spot. The black caudal spot is prolonged to of middle caudal fin rays, sometimes reaching the tips. Iris of the eye silvery to light yellow, upper part reddish. Fins hyaline with white margins, some yellow and black melanophores on the basal parts of dorsal-fin and of the lobes of caudal-fin, also in the middle of anal-fin (see also Figs. 3 and 4).

Coloration (in alcohol). Body pale to medium brown, belly lighter, somewhat darker dorsally. There is the same pattern as in living specimens: a vertically prolonged humeral spot, a light longitudinal band from the gill cover to the caudal peduncle ending in a deep brown or black caudal spot prolonged to the middle caudal-fin rays. No further markings on the fins (see also Fig. 1).

Distribution. The species was collected in all river basins of French Guyana (see also Planquette *et al*., 1996, page 241).

Habitat and ecology. This species is present in the upstream part of the first rapids of various rivers. Catches are often abundant which suggests gregarious behavior. *B. guyanensis* sp. n. frequents shallow (10–50 cm) tributaries where the water is clear, the current relatively fast (0.5–1 m/s), and the substrate composed primarily of rock, gravel and sand, sometimes with mud and plant debris. It is accompanied by different species of Characidae (*Hemibrycon surinamensis*, *Moenkhausia moisae, M. oligolepis*), Lebiasinidae (*Pyrrhulina filamentosa*), Callichthyidae (*Corydoras guianensis*) and Cichlidae (*Crenicichla albopunctata*, *Krobia itanyi*). We can also meet *B. guyanensis* sp. n. in areas of rapid. During the month of October, the more squat specimens are adult females ready to spawn.

In the upper Maroni *B. guyanensis* sp. n. was syntop with *Bryconamericus* spec. aff. *hyphesson*.

Derivatio nominis. The species name is derived from its distribution.

Fig. 3. *Bryconamericus guyanensis* sp. n., lateral view, not preserved. Fleuve, Mana, 1995.

Fig. 4. *Bryconamericus guyanensis* sp. n., lateral view, not preserved. Tampoc, Maroni, 1998.

Discussion

Bryconamericus guyanensis sp. n. is described as *Bryconamericus* spec. aff. *stramineus* in GÉRY & PLANQUETTE (1983); GÉRY, PLANQUETTE & LE BAIL (1991); PLANQUETTE, KEITH & LE BAIL (1996) and BOUJARD *et al*. (1997).

The genus *Bryconamericus* EIGENMANN, 1907 (type-species: *B. exodon* EIGENMANN, 1907) is characterized by the following combination of characters: (1) two rows of teeth on the premaxilla with four teeth in the inner series, (2) a low number of teeth along the anterior margin of the maxilla, (3) lack of scales on the caudal fin, (4) a large third suborbital (=infraorbital) contacting the preopercle along its posterior and ventral margins, (5) setiform gill-rakers, (6) a complete laterosensory canal system on the body, and (7) the absence of a glandular pouch on the base of caudal fin in males (DA SILVA, 2004). There are some groups of species in the genus which differentiate by the arrangement of teeth in the outer row of premaxillary bone.

The differentiation of the genus *Knodus* EIGENMANN, 1911 (type-species: *Bryconamericus breviceps* EIGENMANN, 1908) is discussed. The main difference between *Bryconamericus* and *Knodus* is the scalation of the base of the caudal-fin (*Knodus*: base of caudal-fin scaled and *Bryconamericus*: base of caudal-fin not scaled). There are authors which accept *Knodus* as a valid genus (e.g. GÉRY, 1978; LIMA *et al*., 2004; ZARSKE & GÉRY, 2006; FERREIRA & LIMA, 2006; FERREIRA & CARVAJAL, 2007; ZARSKE, 2007, 2008; VARI *et al*., 2009, and others) and authors which do not accept *Knodus* (THAPHORN, 1992; ROMAN-VALENCIA, 2003, 2005). Here we accept *Knodus* because the phylogenetic relationships of the whole old Tetragonopterinae is not solved and if we do not accept the differentiation between *Bryconamericus* and *Knodus* so we also can not accept for example the differentiation between *Astyanax* and *Moenkhausia* or *Hyphessobrycon* and *Hemigrammus*. We think that it is better up to a general solution of the relationships to use the old view of the problem. *K. heteresthes* (EIGENMANN, 1908) is only known member of the genus *Knodus* from the Guyana Shield.

According to Vari *et al*. (2009) the following 10 species of the genus *Bryconamericus* are known from the Guyana Shield:

(1) *B. alpha* Eigenmann, 1914: Colombian Guyana, Venezuela (Amazon), Venezuela (Bolivar)

(2) *B. beta* Eigenmann, 1914: Venezuela (Amazon), Venezuela (Bolivar)

(3) *B. cinarucoense* Roman-Valencia, Taphorn, Ruiz- C., 2008: Guyana

(4) *B. cismontanus* Eigenmann, 1914: Venezuela (Amazon), Venezuela (Bolivar)

(5) *B. cristiani* Roman-Valencia, 1998: Colombian Guyana

(6) *B. deuterodonoides* Eigenmann, 1914: Venezuela (Amazon), Venezuela (Bolivar)

(7) *B. hyphesson* Eigenmann, 1909: Guyana

(8) *B. macrophthalmus* Roman-Valencia, 2003: Venezuela (Amazon)

(9) *B. orinocense* Roman-Valencia, 2003: Venezuela (Amazon)

(10) *B. subtilisform* Roman-Valencia, 2003: Venezuela (Bolivar).

The main differences between these species and *B. guyanensis* sp. n. are the following: The most discriminant character is the number of rays in anal-fin. There are species with a lower number of anal-fin rays as *B. guyanensis* sp. n. (23–27 total anal-fin rays): *B. cismontanus* (16 total rays of anal-fin), *B. deuteroides* (17 or 18), *B. hyphesson* (16), *B. macrophthalmus* (19–20), *B. orinocoense* (19–20) and *B. subtilisform* (20–21). *B. crisitiani* (26–29) has a higher number of branched anal-fin rays than *B. guyanensis* sp. n. (19–21). The total number of vertebrae also allows a discrimination of *B. guyanensis* sp. n.. *B. guyanensis* sp. n. has (37–) 38–39 (–40) total vertebrae, *B. cinarucoense* 35 (total vertebrae), *B. orinocoense* 29–30 and *B. subtilisform* 36. Some species have a higher body as *B. guyanensis* sp. n. (depth 3.49–4.16 in standard length): *B. alpha* (depth 2.75 times in standard length), *B. beta* (2.65–2.80) and *B. cismontanus* (3.00). Other species have a higher number of scales between the origin of dorsal fin and the lateral line as *B. guyanensis* sp. n. (4½–5 scales): *B. alpha* (6–7), *B. beta* (5–6) and *B. cristiani* (6–8). *B. orinocoense* has with 31–32 a fewer number of scales in a longitudinal row as *B. guyanensis* sp. n. with 38–41. The teeth of the outer row of premaxillary bone of *B. cinarucoense, B. macrophthalmus* and *B. subtilisform* are arranged in straight line and the teeth of *B. guyanensis* sp. n. are irregularly implant. *Knodus heteresthes* has some scales on the base of caudal-fin in opposite to *B. guyanensis* sp. n.. *K. heteresthes* has 34–38 scales in a longitudinal row and *B. guyanensis* sp. n. 38–41. *K. heteresthes* has 16–18 branched rays of anal-fin and *B. guyanensis* sp. n. 19–21.

B. stramineus Eigenmann, 1908 (loc. typ.: Piraciaba, rio Uruguay, Brazil) has a completely different distribution and a lower body depth as *B. guyanensis* sp. n. (4.25–4.5 vs. 3.49–4.16) (Britski *et al*., 1999).

The nearest species relative to *B. guyanensis* sp. n. is probably *B. subtilisform* Roman-Valencia, 2003 (loc. typ.: río Carapo, Bolivar, Venezuela). *B. guyanensis* sp. n. is differentiated from this species by its (1) irregularly implanted four to five tri- to quincuspid teeth in the outer row of premaxillary bone vs. four conical or bicuspid teeth arranged in straight line, (2) total number of vertebrae ((37–) 38–39 (–40) vs. 36 in *B. subtilisform*), (3) number of branched anal-fin rays ((18–) 19–22 vs. 17–18), (4) maxilla with two to three tri- to quincuspid teeth vs. two to three multicuspid teeth and (5) the number of scales between the origin of dorsal-fin and lateral line ((4½–) 5 vs. 4).

B. guyanensis sp. n. was syntop with *Bryconamericus* spec. aff. *hyphesson*. There were two specimens in lot 2 (Village Antecume Pata, Haut Maroni).

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