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Synodontis ngouniensis, new species (Siluriformes: Mochokidae) from the Ngounié and Nyanga basins, Gabon and Republic of Congo

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Synodontis ngouniensis, new species, is described. It is endemic to the Ngounié River (Ogooué River basin) and the Nyanga River basin. It is distinguished from all other *Synodontis* species of the Lower Guinea Ichthyofaunal Province by: a dorsal spine with a smooth anterior margin except for the presence of 1-4 feeble serrations on the distal part; a maxillary barbel with a smooth membrane, which is proximally at least as broad as the barbel thread and situated on the posterior basal two third of the barbel; 12-19 mandibular teeth; 10-13 gill rakers on the ceratobranchial of the first branchial arch; a triangular humeral process, and a striking colour pattern of black overall background colour with irregular whitish lines and dots.

Une nouvelle espèce, *Synodontis ngouniensis*, est décrite. Elle est endémique de la rivière Ngounié (bassin de l'Ogooué) et du bassin de la Nyanga. La nouvelle espèce est distinguée des autres espèces de *Synodontis* de la province ichtyologique de la Basse Guinée par: une épine dorsale à bord antérieur lisse à l'exception de 1-4 faibles serrations sur la partie distale; un barbillon maxillaire avec une membrane lisse proximalement au moins aussi large que le barbillon lui-même et située sur les deux tiers basaux postérieurs du barbillon; 12-19 dents mandibulaires, 10-13 branchiospines sur le cératobranchial du premier arc branchial; un processus huméral triangulaire, un patron de coloration contrasté, à fond noir marqué de lignes et points blanchâtres.

Introduction

The genus *Synodontis*, also known as upside-down catfishes or squeakers, is a widespread African genus. With approximately 120 valid species, *Synodontis* is one of the largest African freshwater fish genera (Gosse, 1986; Paugy, 1987; Skelton & White, 1990; Seegers, 1996; De Vos, 2001; Ferraris, 2007; Friel & Sullivan, 2008). The genus is diagnosed by the presence of a strong bony cranium, scaleless skin without protrusions, branched mandibular barbels, bony dorsal and pectoral spines which can be locked and a well-developed adipose fin (Poll, 1971).

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Fifteen *Synodontis* species are known from the Lower Guinea Ichthyofaunal Province (Fermon et al., 2007; Friel & Sullivan, 2008), i.e. the coastal river basins from the Cross River basin (Cameroon/Nigeria) to the Shiloango River basin (Cabinda, Angola) (Roberts, 1975): *S. acanthoperca*, *S. albolineata*, *S. batesii*, *S. haugi*, *S. marmorata*, *S. nigrita*, *S. obesus*, *S. polyodon*, *S. rebeli*, *S. robbianus*, *S. schall*, *S. steindachneri*, *S. tessmanni*, *S. violacea* and *S. woleuensis*. For details on their distribution see Fermon et al. (2007). Six species are reported from the Ogooué River basin: *S. acanthoperca* known from the Upper Ogooué and Ngounié River basins; *S. albolineata* known only from the Ivindo and Ntem River basins; *S. batesii* known to occur in the entire Ogooué River basin and most other river basins of Gabon; *S. haugi* known from the Lower Ogooué River basin; *S. polyodon* known from the entire Ogooué River basin; and *S. tessmanni* reported from the Ivindo and Ntem River basins. The presence of *S. obesus* in Gabon is questionable and possibly erroneous (Friel & Vigliotta, 2006). At present only a single species (*S. batesii*) is known from the Nyanga River basin (Republic of Congo).

While studying the collections from Gabon and the Republic of Congo at the Musée Royal de l'Afrique Centrale (MRAC) it became apparent that some *Synodontis* specimens from the Ngounié River basin, the major southern tributary of the Ogooué River, and a single specimen from the Nyanga River basin could not be attributed to one of the fifteen species presently known from the Lower Guinea Ichthyofaunal Province. The description of this new species is given below.

Materials and methods

Twenty-eight measurements were taken to the nearest 0.1 mm, on the left side of the specimen (unless damaged), with a needle-point dial callipers and following the method of Skelton & White (1990). Three measurements follow Poll (1971): body depth, humeral process height, and postorbital length. The latter with the following modification: taken from the posterior end of the eye (orbit) to the posterior margin of the post-temporal bone.

Eight meristic characters were also taken on each specimen: number of dorsal-fin rays; number of pectoral-fin rays; number of pelvic-fin rays; number of anal-fin rays; number of mandibular teeth; number of primary maxillary teeth; total number of gill rakers on first branchial arch; and number of gill rakers on ceratobranchial of first branchial arch, the one at the angle not included.

When possible, specimens attributed to the new species were sexed by external examination. Females have a large urogenital opening surrounded by soft swollen tissue and posteriorly terminating in a small urogenital papilla whereas males have a large pointed urogenital papilla.

The distribution map was made with MapInfo (MapInfo Professional, Version 4.0) and ArcGIS 9. Institutional abbreviations follow Leviton et al. (1985). All locality data have been translated in English.

Synodontis ngouniensis, new species

(Fig. 1)

Synodontis sp.: Fermon et al., 2007: 749-750, fig. 24.37

Holotype. MRAC 99-90-P-1989, male, 119.3 mm SL; Gabon: Ngounié-Ogooué Basin: Ngounié River at Nzoundou, 2°17'15"S 11°28'55"E; Sullivan, Beck & Obame, 8 Sep 1998.

Paratypes. CU 93996 (former MRAC 99-90-P-1988), 1 female, 136.2 mm SL; MRAC 99-90-P-1986-1987, 1 male, 109.0 mm SL and 1 female, 127.0 mm SL; collected with holotype. – CU 93997 (former MRAC 99-90-P-1990), 1 male, 108.5 mm SL; Gabon: Ngounié-Ogooué Basin: Ngounié River at Nzoundou, 2°17'15"S 11°28'55"E; Sullivan, Beck & Obame, 9 Sep 1998. – MNHN 2008-0001 (former MRAC A2-06-P-2609-2610), 1 unsexed, 90.0 mm SL; MNHN 2008-0002 (former MRAC A2-06-P-2609-2610), 1 male, 104.0 mm SL; Gabon: Ngounié-Ogooué Basin (Nyanga Basin: in error): Dola River, 2°24'S 11°22'E; Lavoué, 4 Jul 2001. – MRAC 99-55-P-1360, 1 male, 130.0 mm SL. MRAC 99-55-P-1361, 1 male, 116.0 mm SL; Gabon: Doubou River at Mimongo between Mouila and Fougamou, ±1°47'00"S 10°53'00"E; Kamdem Toham, 1 Nov 1998. – MRAC 99-55-P-1362-1364, 1 male, 115.0 mm SL and 2 females, 117.0-147.0 mm SL; MRAC 99-55-P-1365, 1 female, 124.0 mm SL; Gabon: Ngounié basin: River situated beyond village Fèra, ±2°18'00"S 11°19'00"E; Kamdem Toham, 29 Sep 1998. – MRAC 99-55-P-1366-1367, 2 males, 79.5-80.0 mm SL; Gabon: Douafou (Ouafou) River at Nangha, ±2°10'00"S

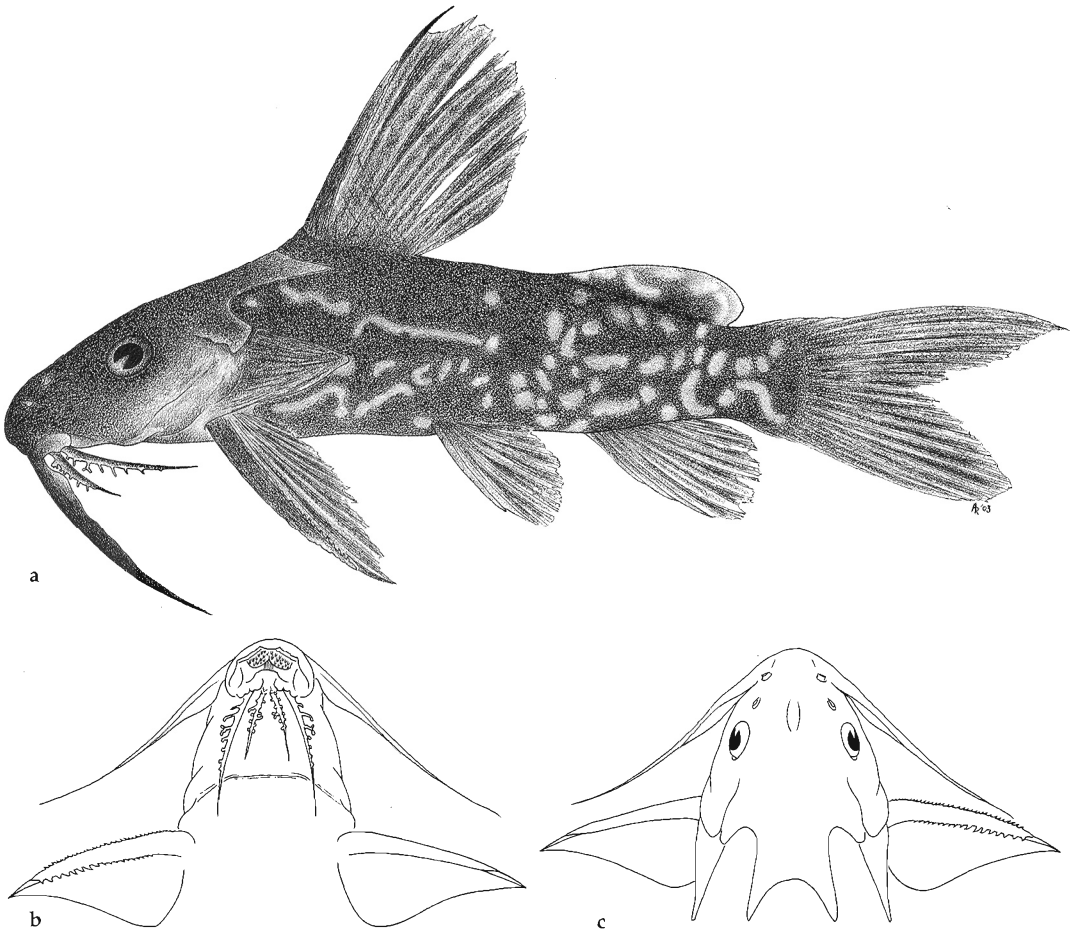

Fig. 1. *Synodontis ngouniensis*, MRAC 99-90-P-1989, holotype, 119.3 mm SL; Gabon: Ogooué basin: Ngounié River (after Fermon et al., 2007). **a,** lateral view; **b,** ventral view of head; and **c,** dorsal view of head.

11°13'00"E; Kamdem Toham, 29 Sep 1998. – MRAC 99-90-P-1982-1983, 2 males, 121.0-130.0 mm SL; Gabon: Ngounié-Ogooué Basin: Ngounié River at bridge, ± 6 km W. of Lébamba, road Lébamba-Ndendé, 2°12'32"S 11°24'45"E; Sullivan, Kamdem Toham & Mvé, 30 Aug 1998. – MRAC 99-90-P-1985, 1 male, 141.0 mm SL; Gabon: Ngounié-Ogooué basin: Ngounié River at Issinga, 2°20'S 11°29'E; Sullivan, Beck & Obame, 6 Sep 1998. – MRAC A1-88-P-2236-2237, 1 male, 93.0 mm SL and 1 female, 115.0 mm SL; Gabon: Dola River at Ndéndé, 2°24'S 11°22'E; Mamonekene, 4 Jul 2001.

Additional material (non types). MRAC A7-31-P-0014, 1 female, 132.5 mm SL; Republic of Congo: Ngongo River at Ngongo, just upstream of bridge, 2°39.75'S 11°36.07'E; Ibala Zamba & Vreven, 2 Sep 2007 (DNA sample: tag 668). – MRAC A7-31-P-0015, 1 unsexed, 121.7 mm SL, Republic of Congo: River Nyanga at Nyanga, at bridge, 2°54.72'S 11°53.60'E; Ibala Zamba & Vreven, 30 Aug 2007 (DNA sample: tag 597). – MRAC A7-31-P0016-0018, 3 males, 69.9-94.8 mm SL, Republic of Congo: River Ngongo at Ngongo, just downstream of bridge, 2°39'75"S 11°36'07"E; Ibala Zamba & Vreven, 02 Sep 2007 (DNA sample: tags 669-770).

Diagnosis. *Synodontis ngouniensis* is distinguished from all other species of *Synodontis* of the Lower Guinea Ichthyofaunal Province by the following unique combination of characters: 1-4 feebly developed serrations, distally placed on anterior part of the dorsal spine (vs. entirely well serrated in *S. albolineata*, *S. batesii* and *S. woleuensis*); 12-19 mandibular teeth (vs. 23 or more in *S. haugi*,

S. nigrita, *S. polyodon*, *S. robbianus*, *S. steindachneri*, and *S. violacea*); a broad membrane, i.e. proximally at least as broad as barbel thread, on the proximal two third of the maxillary barbel (vs. no or only very weakly developed in *S. acanthoperca*, *S. marmorata* and *S. schall*); and a striking colour pattern, characterised by a black background with whitish irregularly shaped lines and dots (vs. a lighter brown background with small or bigger dark brown dots in *S. obesus* and *S. rebeli*; or a uniformly coloured body sometimes with a faint white lateral line and in addition most

Table 1. Morphometrics and meristics for holotype and 19 paratypes of *Synodontis ngouniensis*.

	holotype	holotype and paratypes			
Morphometrics		N	min	max	mean	SD
Total length (mm)	161.5	20	109.5	190.3	152.0	22.9
Standard length (mm)	119.3	20	79.6	146.8	115.2	18.8
Percent of standard length						
Body depth	24.0	20	18.9	27.0	22.6	2.4
Head length	32.6	20	29.5	33.1	31.4	1.1
Pectoral-spine length	28.0	20	23.7	29.5	26.8	1.6
Dorsal-spine length	24.4	19	21.4	27.3	24.8	1.8
Dorsal-fin length	30.8	19	26.1	36.7	30.0	3.2
Predorsal length	39.9	20	35.7	41.0	38.7	1.2
Prepectoral length	23.5	20	22.4	26.0	24.3	0.8
Prepelvic length	53.5	20	51.1	57.0	54.8	1.4
Preanal length	72.3	20	68.1	75.5	73.0	1.8
Caudal total length	34.5	20	26.7	43.7	33.1	4.6
Distance between dorsal and adipose fins	19.3	20	13.6	19.3	16.9	1.6
Adipose fin-base length	20.9	20	19.6	23.1	21.3	0.9
Maximum height of adipose fin	6.7	20	4.8	7.0	6.2	0.5
Adipose to caudal peduncle	12.1	20	11.1	13.3	12.3	0.7
Caudal peduncle length	17.3	20	15.5	18.6	16.7	0.8
Caudal peduncle depth	11.7	20	10.3	12.2	11.0	0.5
Percent of head length						
Head width	75.2	20	75.1	83.0	79.0	2.3
Orbital diameter	21.2	20	20.6	26.5	22.9	1.7
Interorbital distance	35.8	20	32.1	38.3	35.5	1.5
Snout length	47.5	20	45.7	49.8	48.1	1.3
Postorbital length	35.9	20	31.9	35.9	34.4	1.0
Internal mandibulary barbel length	31.8	20	27.1	37.1	31.7	2.5
External mandibulary barbel length	52.3	20	48.5	64.1	56.4	4.0
Maxillary barbel length	101.9	20	72.2	105.2	93.6	8.1
Humeral process length	57.9	20	54.3	67.6	60.3	4.1
Humeral process height	26.0	20	22.3	33.3	27.5	2.8
Percentage of snout length						
Orbital diameter	44.7	20	42.7	56.3	47.8	4.4
Interorbital distance	75.3	20	67.3	78.9	73.9	3.1
Postorbital length	75.6	20	66.9	75.6	71.7	2.4
Meristics		N	min	max	median	
Dorsal-fin rays	I,7	20	I,7	I,7	I,7	
Pectoral-fin rays	I,8	20	I,7	I,8	I,8	
Pelvic-fin rays	i,6	20	i,6	iii,6	iii,6	
Anal-fin rays	iii,8	20	iii,7	iii,9	iii,8	
Mandibulary teeth	16	20	12	19	16	
Primary maxillary teeth	30	20	29	40	34	
Total gill rakers on first arch	16	20	14	17	15-16	
Gill rakers on ceratobranchial	12	20	10	13	12	

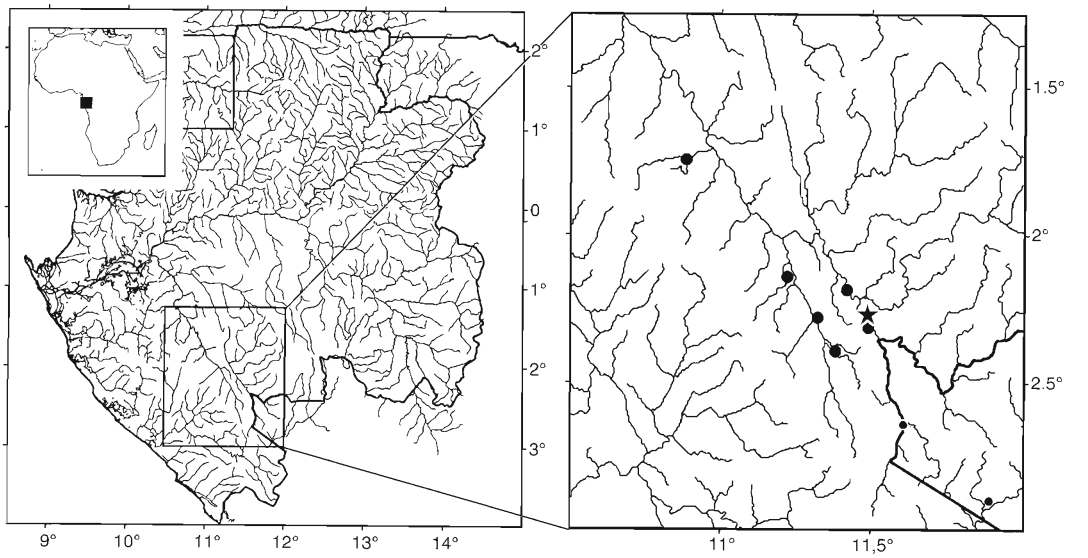

Fig. 2. Distribution of *Synodontis ngouniensis*. ★: type locality; ●: paratype localities; and •: additional localities.

often a caudal fin with a typical whitish central V-like part but with a dark border along all edges in *S. tessmanni*).

Description. Based on type series (20 specimens, 79.6-146.8 mm SL). Selected body proportions and meristics in Table 1. See Figure 1 for shape and general appearance. Maximum length observed: 147 mm SL (190 mm TL). An elongate species with more or less straight dorsal and ventral surfaces, when viewed laterally; maximum body depth near origin of dorsal fin, slightly decreasing towards level of anal-fin origin. Lateral line situated along lateral midline of body but hardly visible. Dorsal profile of head slightly convex from tip of snout to dorsal spine. Skull strongly ossified, with numerous granules. Head narrow with pointed snout.

Mouth inferior. Two irregular rows of unicuspid teeth on ventral shelf of the premaxillary toothplate. 12-19 long and slender mandibular teeth, arranged in small concentrated ovoid patch. Lips curved with prominent lateral lobes; lobes covered with rounded papillae. Upper lip with fringed rostral flap. Eye in posterolateral position and of moderate size. Maxillary barbel reaching slightly beyond posterior base of pectoral fin, i.e. up to ⅓ to ⅔ of horizontal humeral spine length. Outer mandibular barbels reaching up to posterior border of pectoral-spine base or pectoral-fin base, with long, branched ramifications. Inner mandibular barbels reaching up to below horizontal middle of eye or below posterior border of eye, with shorter, thick, branched ramifications.

Gill opening situated laterally above pectoral fin, not extending beyond base of pectoral fin. Gill rakers long and smooth, 10-13 on ceratobranchial, 0-1 at angle and 2-3 on epibranchial of first branchial arch.

Humeral process triangular, flat, granulated above with weak ridge. Upper and lower margin of humeral process convex.

Dorsal-fin base rather short with distal edge of fin slightly convex. Adipose fin moderately deep and with a round outline, well separated from dorsal fin, situated right above anal fin and as long as latter. Pectoral fin with strong spine. Pectoral spine covered with 26-40 serrae on entire anterior side, on most proximal part of spine anteriorly directed and more distal part outwardly directed. Pectoral spine covered with 13-18, inwardly directed, serrae on outer ¾ up to ⅝ of posterior side of spine. Serrae larger distally and more numerous with increasing size. Anal fin with convex distal margin. Pelvic fin reaching level of anal fin origin. Caudal fin forked with pointed lobes; upper lobe slightly longer than lower.

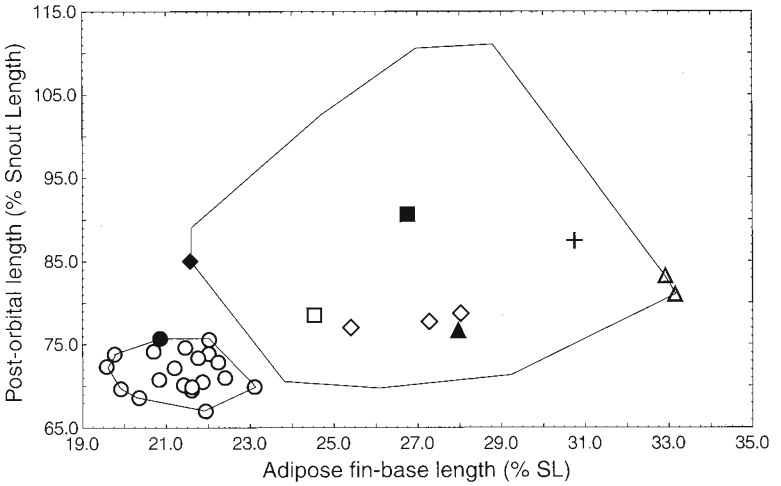

Fig. 3. Scatterplot of the adipose fin-base length (% SL) against the post-orbital length (% snout length) for *Synodontis ngouniensis* and the specimens of the *S. obesus/rebeli*-complex. *S. ngouniensis*: ● holotype and ○ paratypes; *S. obesus*: ▲lectotype, △paralectotypes; *S. rebeli*: ■lectotype, □paralectotypes; *S. loppei*: +syntype (= *S. obesus*); *S. hollyi*: ◆syntype (= *S. obesus*), and *S. hollyi*: ◇syntypes (= *S. rebeli*). Full lines enclosing the cluster of specimens attributed to *S. ngouniensis* and the *S. obesus/rebeli* complex.

Coloration. Preserved specimens dark brown to black with distinct white lines or dots on head, flank, belly and adipose (Fig. 1). Lines and dots sometimes less conspicuous on belly. Abdomen and ventral part of head generally lighter. Flanks of some specimens with a more purplish tinge. All fins uniformly dark, lighter in some specimens, except for adipose fin, which has same markings as body. Dorsal and pectoral spines lighter than rest of fins. Maxillary barbels dark brown with a broad black membrane; mandibular barbels creamy. Lips whitish.

Etymology. Specific name referring to the Ngounié River basin, type locality of the new species.

Distribution. The entire type series of *S. ngouniensis* is from the Ngounié River basin, the major southern affluent of the Ogooué River (Gabon). Further, the new species has recently been collected from another Ngounié tributary, i.e. the Ngongo River, in the Republic of Congo. In addition, a single specimen has been collected from the upper part of the Nyanga River basin, i.e. a smaller coastal river basin situated just south of the Ogooué basin, in the Republic of Congo (Fig. 2).

Ecology. Lavoué (pers. comm.) provided some data for the Dola River at Ndendé (Gabon). The river is approximately 24 m wide at this locality. Fishes were caught at a depth of 0.80 m, above a sand/gravel substrate with gill nets. The water was opaque, alkaline (pH 8.41), with a high conductivity (282 $\mu S \cdot cm^{-1}$) and with a temperature of 24.0 °C.

Discussion. Apart from its colour pattern, *S. ngouniensis* is further distinguished from specimens attributed to the *S. obesus/rebeli* complex (Fermon et al., 2007) by a slightly lower number of mandibular teeth (12-19 vs. 21-47) and the combination of a somewhat shorter adipose fin-base length and post-orbital length (Fig. 3). According to the data provided by Poll (1971), also *S. robbianus* can be distinguished from *S. ngouniensis* based on these characters (adipose fin-base length 30.5-39.2 % SL, post-orbital length 81.8-92.9 % of snout length).

Synodontis ngouniensis and *S. tessmanni*, known from the Nyong, Ntem and Ivindo (Ogooué) River basins (Cameroon and Gabon) (Fermon et al., 2007), have an important overlap in the number of mandibular teeth, i.e. 12-19 vs. 14-24. However, besides the above mentioned colour pattern differences, both species are further distinguished by a combined only slightly shorter

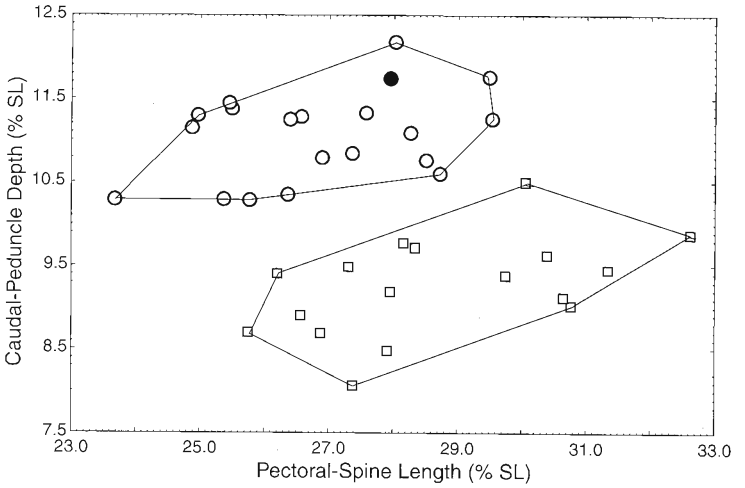

Fig. 4. Scatterplot of the pectoral-spine length (% SL) against the caudal-peduncle depth (% SL) for *Synodontis ngouniensis* and the specimens of *S. tessmanni*. *S. ngouniensis*: ● holotype and ○ paratypes; *S. tessmanni*: □ specimens. Full lines enclosing the cluster of specimens attributed to *S. ngouniensis* and *S. tessmanni*.

pectoral spine length and a clearly deeper caudal peduncle depth (Fig. 4).

In addition to *S. ngouniensis*, three other *Synodontis* species are known from the Ngounié River basin: *S. polyodon* from the entire Ogooué River basin; *S. acanthoperca* from the Ngounié River basin (i.e. the Louétsi River, but also from the Upper Ogooué; Friel & Vigliotta, 2006); *S. batesii* [a species complex according to Friel (pers. comm.)] from the entire Ogooué River basin, but also some other Lower Guinea coastal river basins [from the Nyong (Cameroon) in the North to the Nyanga (Gabon) in the South], as well as the Congo River basin. Within the Ngounié, *S. batesii* is the only species collected syntopically with the new species. At present, the only additional *Synodontis* species known to occur within the Nyanga basin is *S. batesii*.

Material examined. Pending further research on the *S. obesus/rebeli* species-complex, we use the names under which the examined specimens of *S. obesus* and *S. rebeli* are identified in the collections.

Synodontis obesus: Ghana: BMNH 1903.4.24.80-81, 2, 90.7-109.6 mm SL; Infoan. – BMNH 1903.4.24.82-85, 4, 67.2-111.9 mm SL; Offin River. – Nigeria: BMNH 1896.5.5.67, lectotype, 198.6 mm SL; Azuminie Creek, Opobo River. – BMNH 1909.10.8.2, 1, 180.5 mm SL; 26-30 m up Engong River. – MRAC 86-8-P-26, 1, 127.9 mm SL; Ikot Offrong, tributary of Cross River. – MRAC 86-10-P-80, 1, 104.9 mm SL; Rivers State: Chokoche, Imo River. – MRAC 86-10-P-81, 1, 130.5 mm SL; Rivers State: Okoso, Nun River. – MRAC 88-3-P-25, 1, 140.4 mm SL; Cross River basin: Uyo, Ikpa River. – MRAC 87-35-P-7, 1, 148.4 mm SL; Niger delta: Sombreiro River at Rumuekpe. – MRAC 88-3-P-26-27, 2, 125.6-137.4 mm SL; Ugep, Cross River. – MRAC 91-1-P-298, 1, 81.2 mm SL; Rumuji, New Calabar River. – MRAC 92-52-P-376, 1, 129.7 mm SL; Sombreiro River at Obiozimini, about 17 km ENE of Ahoada, 5°13'N 6°43'E. – MRAC 93-39-P-101, 1, 58.8 mm SL; Etinan, Kwa Ibo River, 4°50'N 7°51'E. Cameroon: BMNH 1902.11.12.136, 1, 194.2 mm SL; Kribi River. – MNHN 1927-278, 1 syntype of *S. loppei*, 188.7 mm SL; Edea, Sanaga River. – MNHN 1929-48, 1 syntype of *S. hollyi*, 147.1 mm SL; Nanga-Eboko, Sanaga River. – MNHN 1979-605, 1, 75.8 mm SL; Sanaga River: Kouala, Lobo River. – MRAC 7040, 1, 184.9 mm SL; Kribi River. – MRAC 165675, 1, 121.4 mm SL; Lobé Basin, neighbourhood of Kribi. – MRAC 168519, 1, 45.1 mm SL; Kondi, small brook. – MRAC 168520, 1, 54.2 mm SL; Bekoko, small brook. – MRAC 168521, 1, 72.8 mm SL; MRAC 168522-168525, 4, 155.7-212.0 mm SL; Tondé, Sandjé River. – MRAC 168546, 1, 222.6 mm SL; MRAC 168547, 1, 254.9 mm SL; Yabassi, Wouri River. – MRAC 168135, 1, 165.6 mm SL; Edea, Sanaga River. – MRAC 73-40-P-243, 1, 217.9 mm SL; Mongo River. – MRAC 88-53-P-440-448, 2, 65.2-75.6 mm SL; mainstream of Cross River, 5-15 km downstream from Mamfé. Gabon: BMNH 1881.7.20.5-6, 2 paralectotypes, 127.9-147.7 mm SL.

Synodontis rebeli: Cameroon: MNHN 1929-47, 1 syntype of *S. hollyi*, 155.4 mm SL; MNHN 1929-49, 1 syntype *S. hollyi*, 123.0 mm SL; MNHN 1929-50, 1 syntype of *S. hollyi*, 96.0 mm SL; Sanaga Basin: Nanga-Eboko. – MNHN 1978-450, 1, 142.1 mm SL; MNHN 1978-451, 1, 107.6 mm SL; MNHN 1978-452, 1, 85.7 mm SL; MNHN 1978-453, 1, 55.6 mm SL; MNHN 1978-454, 1, 41.2 mm SL; MNHN 1978-455, 1, 44.0 mm SL; MNHN

1978-725, 1, 129.4 mm SL; Sanaga River. – MNHN 1987-557, 1, 95.7 mm SL; Edea, Sanaga River. – NMW 7796, lectotype, 191.6 mm SL; NMW 7797, 1 paralectotype, 166.4 mm SL; Mbam River. – MRAC 165676, 1, 158.2 mm SL; Sanaga River, Edea market. – MRAC 168136, 1, 133.2 mm SL; Nachtigal, Sanaga River. – MRAC 168559, 1, 162.1 mm SL; Nachtigal, Sanaga River. – MRAC 75-4-P-24, 1, 15.3 mm SL; Nyong River, 12 km SE of Eseka, above falls. – MRAC 93-15-P-77-78, 2, 148.1-154.1 mm SL; Mape River, in-between dam and mouth, Mape in Mbam, 5°59'N 11°16'E. – MRAC 93-15-P-82, 1, 138.9 mm SL; MRAC 93-15-P-87-88, 2, 157.4-171.3 mm SL; Mbam River, near Masaroum (Mamboungam), 5°58'N 11°14'E. – MRAC 93-52-P-160, 1, 119.1 mm SL; Mantoum, Mbam River after confluence with Nchi, 5°36'N 11°09'E. – MRAC 93-82-P-520-524, 3, 114.1-124.9 mm SL; Bongola River, at rapids, before confluence with Ntem, 2°17'N 9°58'E. – MRAC 93-82-P-525-531, 4, 112.1-150.5 mm SL; Mvini River, at confluence with Bongola, 2°19'N 10°6'E. – MRAC 93-85-P-291-295, 1, 117.2 mm SL; Bongola River, after rapids, before confluence with Ntem, 2°17'N 9°58'E. – MRAC 94-49-P-564-568, 5, 78.5-165.8 mm SL; Manki II, Mvi River, 5°51'N 11°06'E. – MRAC 95-54-P-377, 1, 116.5 mm SL; Sanaga Basin: Lom River at Wakaso, 6°19'N 14°30'E. – MRAC 95-54-P-378, 1, 143.2 mm SL; Sanaga Basin: Lom River at 2 km before mouth of Panghar, 5°21'N 13°31'E. – MRAC 95-88-P-455, 1, 114.5 mm SL; MRAC 95-88-P-456-458, 3, 52.0-74.5 mm SL; Sanaga Basin: Mvi River at Manki II, 5°53'N 11°07'E. – MRAC 95-88-P-459-460, 2, 107.2-112.5 mm SL; MRAC 95-88-P-461, 1, 73.3 mm SL; Nachtigal Falls, Middle Sanaga, 4°21'N 11°38'E.

Synodontis tessmanni: MRAC 93-085-P-0296-0300, 5, 104.8-127.8 mm SL; Nkyé River, near to Adjou'ou. – MRAC A1-070-P-2775-2780, 6, 98.1-141.3 mm SL; Ntem River, at hotel Ayengbe-sur-Ntem. – MRAC A2-006-P-2618-2623, 6, 83.8-95.6 mm SL; Ogowe Basin, Ivindo River, Loa-Loa.

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