Zootaxa 847: 1–23 (2004)
www.mapress.com/zootaxa/

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

847

A new *Stomatorhinus* (Osteoglossomorpha: Mormyridae) from the Ivindo River, Gabon, West Central Africa

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Abstract

Stomatorhinus ivindoensis n. sp. is described from the basin of the Ivindo River, a tributary of the Ogooué River, in Gabon, West Central Africa. This species is characterized by its very small size which is not known to exceed 56 mm standard length. It is distinguished from *S. fuliginosus* from the Congo basin, the only described *Stomatorhinus* for which all members of the type series are within the size range of *S. ivindoensis*, by a smaller caudal peduncle depth to length ratio, a narrower head, a greater number of lateral line scales with visible tubes and pores and by rounded caudal fin lobes. It is distinguished from the similar *S. polli*, also from the Congo basin, by a longer snout, a smaller eye and a greater interorbital width relative to head length. It is distinguished from *S. walkeri*, the only other species described from the Ogooué River basin, by its smaller size, smaller snout to pectoral fin distance (relative to standard length) and by its reduced numbers of pectoral rays, vertebrae, and lateral line scales with visible tubes and pores. *Stomatorhinus ivindoensis* is endemic to the Ivindo River basin of Gabon and is allopatrically distributed with respect to *S. walkeri* which, although found elsewhere in the Ogooué River basin, has never been recorded from the Ivindo River. *Stomatorhinus ivindoensis* may be the smallest species of mormyrid fish yet described.

Résumé

Stomatorhinus ivindoensis n. sp. est décrite de la rivière Ivindo, un affluent du fleuve Ogooué, au Gabon, Afrique Centrale. Cette espèce est caractérisée par sa très petite taille, qui ne dépasse pas 56 mm en longueur standard. Elle se distingue de *S. fuliginosus* du bassin du Congo, la seule espèce de *Stomatorhinus* décrite dont l'intervalle de taille des spécimens types est compris dans celui de *S. ivindoensis*, par un rapport largeur sur longueur du pédoncule caudal plus petit, une tête plus étroite, un nombre d'écailles percées le long de la ligne latérale plus grand et une nageoire caudale aux lobes arrondies. Elle se distingue de *S. polli*, une autre espèce similaire du bassin du Congo, par un museau plus long, un oeil plus petit, et une distance interorbitale plus grande par rapport à la longueur de la tête. Elle se distingue de *S. walkeri*, la seule autre espèce de *Stomatorhinus* décrite du

Accepted by L. Page: 25 Jan. 2005; published: 1 Feb. 2005

bassin de l'Ogooué, par une taille plus petite, une distance entre le museau et la nageoire pectorale (par rapport à la longueur standard) plus petite et par un nombre réduit de rayons aux nageoires pectorales, ainsi qu'un nombre réduit de vertèbres et d'écailles percées le long de la ligne latérale. *S. ivindoensis* est endémique du bassin de l'Ivindo au Gabon et est allopatriquement distribuée avec *S. walkeri*. Quoique cette dernière espèce se rencontre ailleurs dans le bassin de l'Ogooué, elle n'a jamais été collectée dans le bassin de l'Ivindo. *S. ivindoensis* est, possiblement, la plus petite espèce décrite chez les Mormyridae.

Key words: new species, systematics, taxonomy, freshwater fishes, electric fishes, mormyrid, electric organ discharge

Introduction

Stomatorhinus Boulenger 1898 is a genus of small mormyrid weakly electric fishes from African freshwaters that is diagnosed by having widely separated nares with the posterior nares located close to the mouth. In all other mormyrid genera the posterior nares are remote from the mouth. A second putative synapomorphy for the genus comes from the study of neuroanatomy: the electrosensory lateral line lobe has two distinct zones on each side of the midline in all assayed species of *Stomatorhinus* (7 of 12) in contrast to the three distinct zones found in all other mormyrid species examined to date (Bell & Russell 1978; McNamara, Denizot and Hopkins in press).

Twelve species of *Stomatorhinus* are regarded as valid (Gosse 1984). Ten of these are endemic to the Congo River basin; an eleventh is found in both the lower Congo and the coastal Chiloango River, just north of the Congo River mouth. *Stomatorhinus walkeri* (Günther 1867), from the Ogooué and Kouilou-Nairi river basins, is the type species of the genus and the only species described from a region remote from the Congo basin to date. Here we describe a new species of *Stomatorhinus* known only from the Ivindo River basin in Gabon. Although the Ivindo is a large tributary of the Ogooué, there are no records of *S. walkeri* from it. Adults of the Ivindo basin *Stomatorhinus* species are significantly smaller than adults of S. *walkeri* and differ in body proportions, counts and coloration. Harder (2000) assigned these Ivindo basin *Stomatorhinus* specimens to *S. fuliginosus* Poll 1941, a species described from the Congo basin to which they are more similar in counts, measurements and overall size than they are to *S. walkeri*. Here we show that the *Stomatorhinus* from the Ivindo River basin is distinct from S. *fuliginosus*, *S. walkeri* and other described *Stomatorhinus* and recognize it as a new species.

Materials and Methods

Over 500 specimens in 54 lots of the new species were examined as were the complete or partial type series of 10 of the 12 valid species of *Stomatorhinus*. For *S. patrizii* Vin-

ciguerra 1928 and *S. schoutedeni* Poll 1945, measurements and illustrations in the literature were consulted. Institutional abbreviations follow Leviton et al. (1985).

Morphometric and meristic measurements follow Boden et al. (1997). We took point-to-point measurements to the nearest 0.1 mm with digital needle-point calipers. We conducted a principal components analysis on 24 log-transformed morphometric measures taken from specimens of the new species and five others using the software Aabel (vers.1.5.5, Gigawiz Ltd. Co., 2003). We plotted specimens' scores on principal components two and three to evaluate the degree of size-independent morphometric distinctness between the new species and the others. Radiographs of specimens were taken at the AMNH and the ANSP. Vertebral counts do not include the urostyle. We counted circumpeduncular scales at the narrowest portion of the caudal peduncle. In all *Stomatorhinus* species, the first pterygiophore of both the dorsal and anal fin are associated with one, two, or sometimes three simple (unsegmented) rays. Usually, only one of these is substantial enough to be visible without the aid of radiographs. Therefore dorsal and anal fin ray counts incorporate only a single first, simple ray and reflect the number of pterygiophores. Morphometric abbreviations used in text are SL: standard length, HL: head length measured from tip of snout to posterior margin of opercular membrane.

We recorded electric organ discharges (EODs) in 5 to 20 liter plastic tanks with the fish immersed in 23 to 28°C water from the capture site. We used silver-chloride-coated silver wire electrodes mounted at either end of the tank with a ground electrode in the center. The electrodes were connected to an AC-coupled differential amplifier with a bandwidth of 0.1 to 50 kHz. Individuals collected post 1985 were recorded digitally with an IOTECH Daqbook 200 (16 bits, variable number of points, 100 kHz sampling rate), or an IOTECH Wavebook (12 bits, variable number of points, sampling rate to 500 kHz). Records made prior to 1985 were recorded photographically from an oscilloscope screen, or on analog tape using a Nagra IV SJ tape recorder and later digitized. We measure the duration of an EOD pulse as the time between the first and last points that deviate from baseline by more than 2% of peak-to-peak amplitude.

Stomatorhinus ivindoensis **new species**

Figs. 1 & 2.

Holotype. CU 85157 (original specimen no. 2161), male, 43.5 mm SL. Gabon, "Bialé Creek": a small tributary of the Ivindo River inside the Ipassa Plateau Reserve near Makokou, (0° 32.3' N, 12° 49.6' E). Dip net, C.D. Hopkins, 2 September 1975.

Paratypes. Seventy-two specimens from three localities. The 10 paratypes selected for a complete set of measurements are indicated in Table 1.

Near village of Ébiègn on Rte. N.4, ca. 18 km E. of Makokou, Gabon (0° 35.5' N, 12° 43.0' E), 3 Oct 1979, R. Lewis: CU 85465 (32, without specimen nos.), 20.9–53.3 mm SL. AMNH 235053 (10, without specimen nos.), 34.2–49.8 mm SL. MNHN 2004-1750–1759

(10, without specimen nos.), 38.4–50.7 mm SL. MRAC 2004-32-P-1–10 (10, without specimen nos.), 29.8–48.1 mm SL.

Balé Creek below bridge, ca. 500 m from the IRET field station on Ipassa Plateau, ca. 7 km SE of Makokou, Gabon (0° 31.1' N, 12° 48.0' E): CU 75437 (2, specimen nos. 1003, 1004), 37.9, 40.8 mm SL, 27 Oct 93, C.D. Hopkins. CU 86244 (2, specimen nos. 2143, 2144), 39.3, 41.1 mm SL, 16 Jan 98, C.D. Hopkins et al. CU 86247 (3, specimen nos. 2002, 2010, 2012), 42.3–49.5 mm SL, 11 Jan 98, C.D. Hopkins et al.

Creek at Makatabongoy crossing road from Makokou-Okondja (R.15), Gabon (0° 08.15' N, 13° 43.0' E): CU 86245 (3, specimen nos. 2223, 2352, 2358), 45.2–48.3 mm SL, 3 Oct 79, C.D. Hopkins et al.

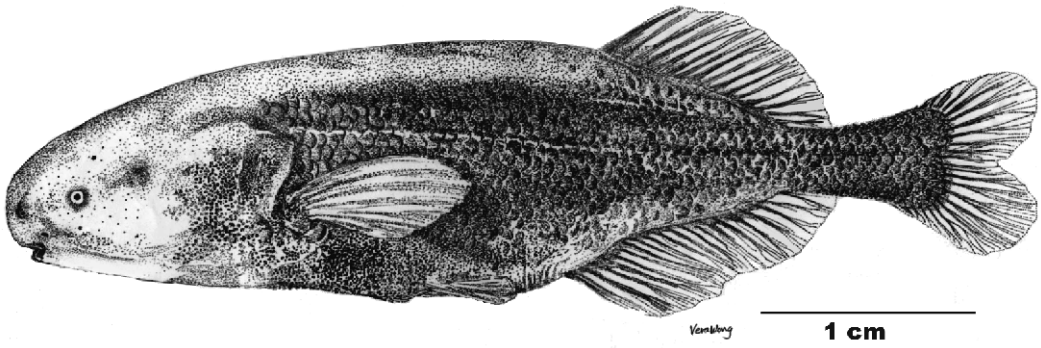

FIGURE 1. Drawing of *Stomatorhinus ivindoensis* n. sp. holotype, 43.8 mm SL. Drawn by Vera Ming Wong.

Additional (non-type) specimens.

Balé Creek, IRET field station on Ipassa Plateau, SE of Makokou, Gabon (0° 31' N, 12° 48.0' E): CU 85385 (3) 30.0–44.8 mm SL, 29 Nov 1976, C.D. Hopkins. CU 85486 (1, specimen no. 2367) 43.0 mm SL, 28 Jul 1976, C.D. Hopkins. CU 85496 (1, specimen no. 85–230) 38.7 mm SL, 9 Dec 1985, J. Crawford. CU 83094 (1, specimen no. 4879) 39.8 mm SL, 26 Aug 2001, C.D. Hopkins & M.E. Arnegard. CU 75442 (1, specimen no. 1027) 36.8 mm SL, 29 Oct 1993, C.D. Hopkins & M.A. Friedman. CU 79703 (1, specimen no. 2074) 45.1 mm SL, 15 Jan 1998, C.D. Hopkins et al. CU 86243 (2, specimen nos. 2078, 2155) 33.6, 46.7 mm SL, 15 Jan 1998, C.D. Hopkins et al.

Nyamé Pendé Creek inside Ipassa Plateau Reserve (0° 30' N, 12° 47' E): CU 85152 (1, specimen no. 2101) 44.3 mm SL, 5 Aug 1975, C.D. Hopkins & R. Askins. CU 86246 (2, specimen nos. 2133, 2136) 38.0, 40.0 mm SL, 17 Jan 1998, C.D. Hopkins et al. CU 89030 (1) 43.0 mm SL, 20 Sep 2002, Hopkins et al.

Mindouba Creek on route to IRET station (0° 31.6' N, 12° 48.2' E): CU 89048 (1, specimen no. 5701) 41.9 mm SL, 18 Sep 2002, C.D. Hopkins et al.

Near mouth of Mié Creek into Ivindo River, across from Ipassa Reserve (0° 27.3' N, 12° 48.5'E): CU 85123 (6), 21.3–49.6 mm SL, 20 Aug 1975, C.D. Hopkins & R. Askins. CU 85128 (10), 35.5–48.0 mm SL, 20 Aug 1975, C.D. Hopkins & R. Askins. CU 85156 (1, specimen no. 2150), 47.4 mm SL, 20 Aug 1975, C.D. Hopkins & R. Askins.

Near villages of Ébiègn and Èdzua Megne on route N.4 ca. 16 km E. of Makokou (approx. 0° 35.5' N, 12° 43'E): CU 85131 (11), 29.5–55.7 mm SL, 9 Sep 1976, C.D. Hopkins. CU 85132 (17, specimen nos. between 3067 and 3093), 21.0–44.7 mm SL, 1 Oct 1979, R. Lewis. CU 85151 (12, specimen nos. between 3114 and 3125), 36.5–47.1 mm SL, 1 Oct 1979, R. Lewis. CU 85153 (15, specimen nos. between 3095 and 3113), 27.1–47.1 mm SL, 1 Oct 1979, R. Lewis. CU 85154 (19, specimen nos. between 3045 and 3066), 26.2–51.2 mm SL, 1 Oct 1979, R. Lewis. CU 85446 (71), 20.5–52.0 mm SL, 3 Oct 1979, R. Lewis. CU 85464 (16), 32.2–50.8 mm SL, 10 Oct 1979, R. Lewis. CU 85487 (1, specimen no. 5015) 38.9 mm SL, Sep 2002, C.D. Hopkins. CU 85124 (4) 30.0–48.5 mm SL, 7 Nov 1979, R. Lewis. CU 85126 (4) 24.6–44.5 mm SL, 24 Oct 1979, R. Lewis. CU 85503 (16) 32.6–51.0 mm SL, 7 Nov 1979, R. Lewis. CU 85378 (19) 32.6–52.7 mm SL, 1 Dec 1979, R. Lewis. AMNH 231101 (21) 23.6–51.7mm SL, 6 Nov 1975, W. Harder. AMNH 231102 (51) 22.1–49.8 mm SL, 18 Nov 1975, W. Harder. AMNH 231173 (17) 23.2–51.33 mm SL, 3 Aug 1975, W. Harder.

Near village of Mbès on route N.4 ca. 18 km E. of Makokou (0° 34.8' N, 12° 41'E): CU 85125 (6), 37.0–45.7 mm SL, 12 Aug 1976, C.D. Hopkins. CU 85155 (1, specimen no. 2365), 52.0 mm SL, 12 Aug 1976, C.D. Hopkins. AMNH 231100 (30) 32.7–55.1 mm SL. 20 Sept. 1975, W. Harder. AMNH 231104 (1) 45.9 mm SL, 20 Nov 1975, W. Harder. AMNH 231105 (2) 44.5, 48.8 mm SL, 20 Nov 1975, W. Harder. AMNH 231106 (2) 41.3, 46.4 mm SL, 20 Nov 1975, W. Harder.

8 km downstream of IRET Ipassa Plateau Reserve station (0° 27.3' N, 12° 48.8' E): CU 85160 (9), 28.0–40.1 mm SL, 3 Aug 1976, C.D. Hopkins.

23 km W of Makokou along "route Fang" (N.4) (0° 33.5' N, 12° 37.7' E): CU 85159 (2) 40.3, 43.5 mm SL, 1 Dec 1979, R. Lewis.

7 km W of Makokou along "route Fang" (N.4) (0° 34.3' N, 12° 46.5' E): CU 85158 (1, specimen no. 2366) 44.0 mm SL, 1 Dec 1976, C.D. Hopkins.

Along banks of Ivindo River near Makokou (0° 33' N, 12° 51'E): CU 85127 (13) 27.2-46.3 mm SL, 1 Aug 1975, C.D. Hopkins & R. Askins. CU 85477 (3) 27.9–45.5 mm SL, 1 Dec 1976, C.D. Hopkins.

Weni Creek, Makokou (30° N, 12°50'E): CU 85130 (8) 28.0–41.8 mm SL. 22 Sep 1976, C.D. Hopkins. CU 85129 (16) 26.7–47.6 mm SL. 1 Oct 1976. C.D. Hopkins. CU 85499 (1) 30.6 mm SL, 11 Oct 1976, C. D. Hopkins.

Creek crossing road from Makokou to Okondja (R.15), ca. 60 km SE of Makokou (0° 18' N, 13° 13'E): CU 85420 (1, specimen no. 5014), 40.2 mm SL, C.D. Hopkins & R. Lewis.

Near Makokou, Gabon; precise locality not specified: AMNH 231103 (1) 42.8 mm

SL, 20 Nov 1975, W. Harder. AMNH 231151 (2) 30.0, 49.2 mm SL, 1978, W. Harder. AMNH 231166 (1) 25.5 mm SL, 29 July 1975, W. Harder. AMNH 231215 (1) 50.4 mm SL, no date, W. Harder.

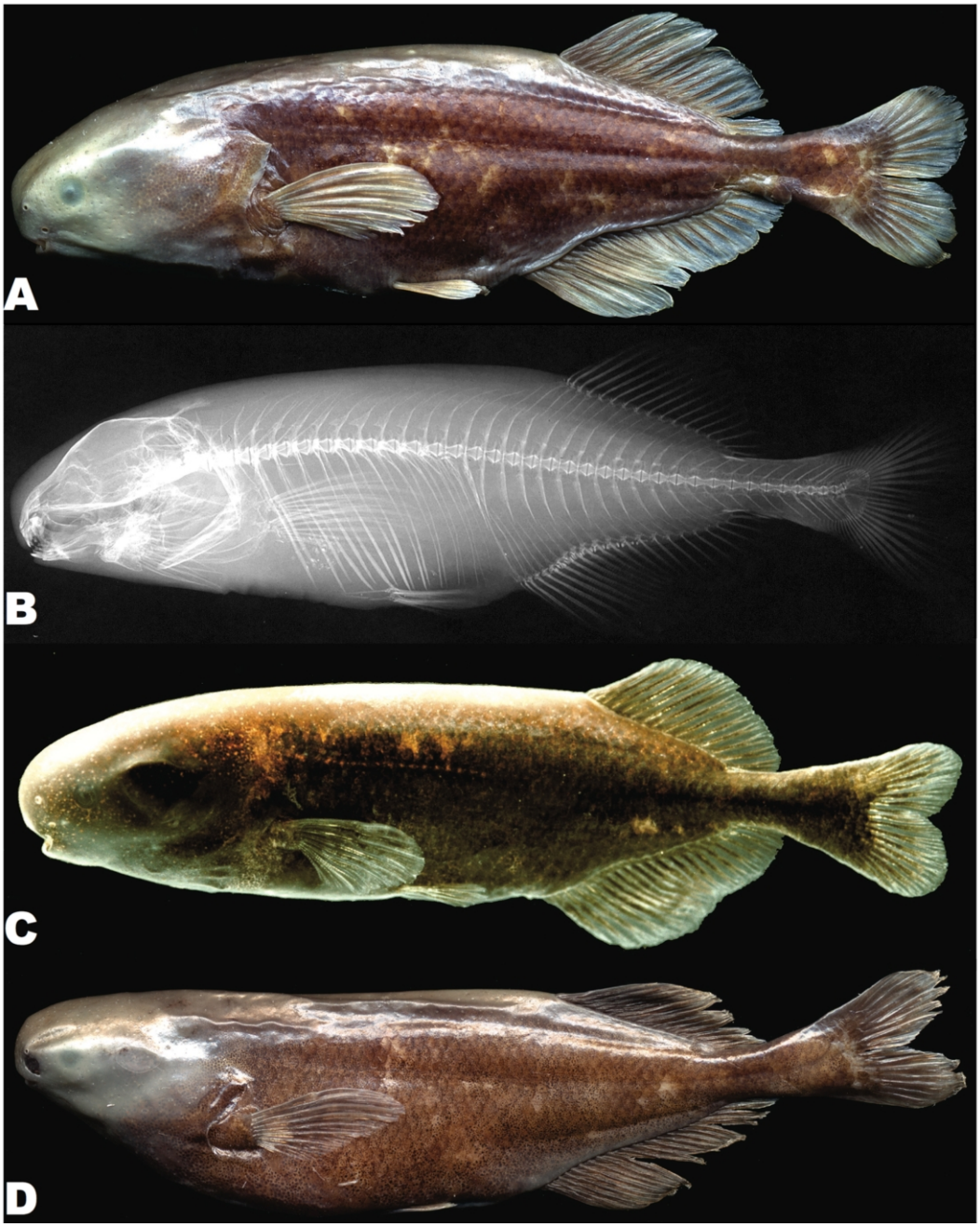

FIGURE 2. Photograph (A) and radiograph (B) of preserved holotype of *Stomatorhinus ivindoensis* n. sp., CU 85157, 43.8 mm SL, male; (C) live paratype specimen no.1004, CU 75437, 40.8 mm SL, male; (D) preserved paratype, CU 85465, 52.2 mm SL, female.

TABLE 1. Descriptive morphometrics and meristics for *Stomatorhinus ivindoensis n.sp.* Paratypes included in measurements are: CU 85465 (2 of 32, no specimen nos.), 52.2, 53.3 mm SL, CU 75437 (2 of 2, specimen nos. 1003, 1004), 37.9 & 40.8 mm SL, CU 86244 (2 of 2, specimen nos. 2143, 2144), 39.3, 41.1 mm SL, CU 86247 (1 of 3, specimen no. 2012), 42.3 mm SL, CU 86245 (3 of 3, specimen nos. 2223, 2352, 2358), 45.2–48.3 mm SL.

Character	Holotype	N	min	max	mean	Std. Dev.
Standard length, mm	43.75	11	37.37	53.09	44.37	4.75
Head length, mm	14.26	11	12.50	16.01	14.26	1.01
Percent of standard length						
Maximum body depth	27.04	11	23.92	26.67	25.87	1.49
Head length	32.41	11	30.16	33.87	32.26	1.28
Snout length	7.77	11	7.77	8.40	8.10	0.19
Pre-dorsal distance	65.62	11	65.62	70.60	67.92	1.56
Pre-anal distance	59.98	11	59.98	67.73	63.27	2.24
Pre-pelvic distance	45.97	11	45.36	49.75	47.31	1.19
Pre-pectoral distance	30.83	11	30.57	33.36	31.68	0.87
Caudal peduncle depth	6.33	11	5.31	6.49	6.03	0.46
Caudal peduncle length	14.24	11	14.17	16.46	14.92	0.82
Head width	14.67	11	13.96	16.43	15.13	0.76
Pectoral fin length	18.81	11	15.96	19.81	18.42	0.99
Pelvic fin length	10.03	11	9.57	10.79	10.28	0.44
Pelvic-anal fin distance	15.22	11	15.22	21.66	17.79	2.31
Anal fin base length	25.44	11	22.83	25.44	24.05	0.85
Dorsal fin base length	21.10	11	18.15	21.10	19.89	0.86
Percent of head length						
Snout length	23.98	11	23.68	27.57	25.15	1.22
Post-orbital length	69.25	11	66.91	71.83	69.41	1.52
Head width	45.28	11	42.52	50.59	46.96	2.47
Head depth	68.34	11	58.35	68.92	64.47	3.39
Eye diameter	9.87	11	6.65	10.10	8.30	1.19
Inter-nostril distance	24.82	11	23.04	26.70	24.96	1.11
Ratios						
Inter-orbital width as % head width	84.42	11	71.92	90.41	76.72	5.77
Pre-anal distance/pre-dorsal distance	0.91	11	0.89	1.03	0.93	0.04
Caudal peduncle depth as % CP length	44.46	11	37.29	45.33	40.55	3.42
Length of dorsal/length of anal	0.83	11	0.80	0.88	0.83	0.02
Counts					**median**	**quartile range**
Dorsal rays	17	11	14	17	16	1.50
Anal rays	21	11	19	21	20	1.00
Anal rays before dorsal	5	11	5	5	5	0
Pectoral rays	8	11	8	9	9	1.00
Pelvic rays	6	11	6	6	6	0
Caudal peduncular scales	12	11	12	12	12	0
Teeth, upper jaw	7	11	7	8	7	1.00
Teeth, lower jaw	8	11	8	9	8	1.00
Total vertebrae	36	11	36	36	36	1.00
Scale rows from pelvic fin origin to lateral line	13	11	11	13	11	1.00
Lateral line scales with tube & exposed pore	24	11	22	34	26	2.50
Scales along longitudinal line	46	11	44	50	46	3.50

Diagnosis: *Stomatorhinus ivindoensis* is recognized by the combination of the following characteristics: (1) very small adult size (specimens larger than 56 mm SL never observed) with most adults between 35 and 48 mm SL; (2) caudal peduncle of moderate width (caudal peduncle depth 37–45% of caudal penduncle length); (3) a small eye, 6.7–10% of HL; (4) 8 to 9 pectoral rays and 14 to 17 dorsal fin rays; (5) first 22 to 28 scales along lateral line bearing pores, last pore-bearing scale lying posterior to a vertical through origin of anal fin, but positioned well in advance of caudal peduncle; (6) lobes of the caudal fin broad and rounded, without distinct points at apices.

Description: A very small *Stomatorhinus* not known to surpass 56 mm SL. Morphometric ratios and meristics presented in Table 1. Body depth and width as proportions of SL are in middle range for species of this genus. In all but gravid females, depth at origin of anal fin equal to or slightly less than depth at mid-body. Greatest width at opercles. Dorsal and ventral profiles gently convex. The head profile is slightly convex above the eye, the snout is rounded to somewhat truncate and projects slightly beyond the mouth. Mouth small. No submental swelling. Eye small, covered by epidermis. Inter-orbital distance is 72–90% of head width. Nostrils well separated with posterior nostril located near rictus of mouth. Teeth 7–8/8–9, usually 7/8, bicuspid. Head (including eye), upper back and belly covered by epidermis that is translucent in life, semi-opaque in preservation. When pressed to side, tip of pectoral fin extends well past origin of pelvic fin. Pectoral fin has 8 or 9 rays. Dorsal and anal fins roughly symmetrical above and below body axis, the anal fin (of 19–21 rays) slightly longer, with the dorsal fin (of 14–17 rays) originating at vertical through the origin of the fourth or fifth anal fin ray; the origins of the last dorsal and last anal fin rays at roughly the same vertical. Lobes of caudal fin short, very rounded and blunt. Caudal peduncle relatively short (14–16.5% of SL), of moderate depth (37–45% of length), with 12 circumpeduncular scales. First 22–28 scales along lateral line bearing pores, last pore-bearing scale lying past vertical through origin of anal fin. Total scales along longitudinal line 44–50. Scale rows between origin of pelvic fin and lateral line scale 11 to 13. Total vertebrae 36 (excluding urostyle).

Color: In life, specimens are uniformly dark chocolate brown, with little patterning in pigment along the body. Fins are translucent with dark brown pigmented rays. In alcohol, thick epidermis overlying head (including eye), upper back and belly appears opaque.

Size and sexual maturity: Review of 504 specimens in 54 lots from several localities reveals no specimens larger than 56 mm SL. Mature males are identifiable by a pronounced anal fin notch from about 35 mm SL. Gravid females are often enormously distended with eggs (e.g. female paratype shown in Fig 2D).

Distribution and ecology: All known collections of *S. ivindoensis* come from the upper Ivindo River (Fig. 3). Most were made in the vicinity of Makokou and the nearby field station located inside the Ipassa Plateau Reserve on the right bank of the Ivindo River. The species is usually taken along the margin of small forest streams (Fig. 4) in root tangle where it occurs with other species of mormyrids, but has also been taken along the

margin of the Ivindo River proper in deep water. Individuals are often found spaced apart at intervals of 50 cm to one meter. Diet of this species has not been studied, but is probably similar to that reported for *S. polli* Matthes 1964 in which stomach contents were dominated by small crustaceans and insect larvae.

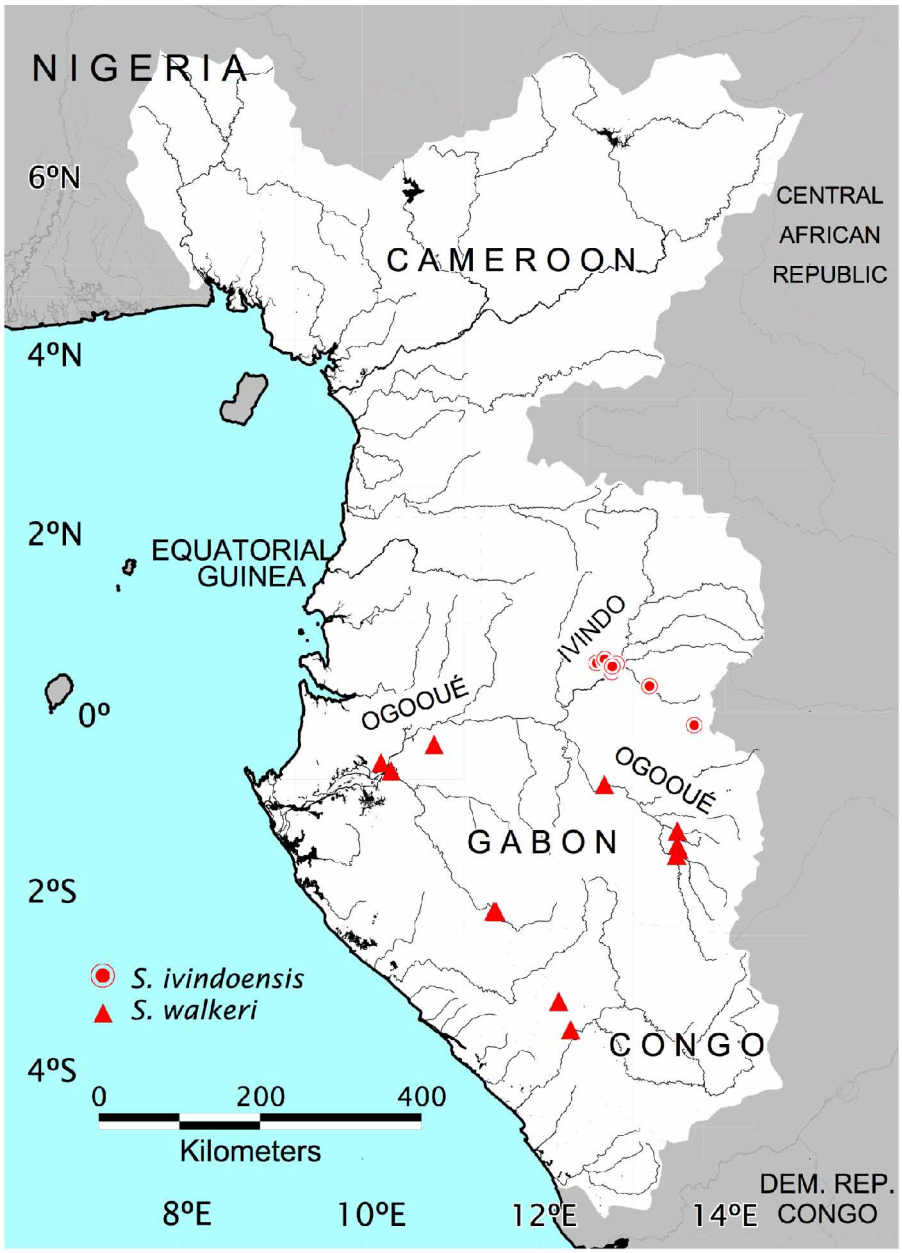

FIGURE 3. Collection sites of *Stomatorhinus ivindoensis* n. sp. (circles) and *S. walkeri* (triangles) in the Ivindo and Ogooué River basins of Gabon and the Kouilou-Niari basin of the Republic of Congo. Shaded areas delimit the boundary of the Lower Guinea ichthyofaunal province of West Central Africa.

FIGURE 4. Typical forest creek habitat of *Stomatorhinus ivindoensis* n. sp.: upper "Balé Creek" within the Ipassa Plateau Reserve near Makokou, Gabon.

Electric organ discharge: *Stomatorhinus ivindoensis* has a 110 to 720 microsecond duration EOD waveform with three to four peaks in the discharge (Fig. 5A–F). The EOD begins with a small head-negative phase or peak, P0, followed by a larger head-positive phase, P1, followed by the largest head-negative peak, P2. In some fish, the discharge ends with a final head-positive phase, P3. The peak spectral frequency of the Fourier Transform of the EOD is between 4000 Hz and 16,000 Hz. Average peak heights, total durations, and spectral peak frequencies for this species, are listed in Table 2. The EOD is sexually dimorphic among sexually mature individuals. Juvenile male EODs are similar to female EODs. Male EODs are longer in duration and have lower FFT peaks than females. They also differ in the heights of peaks P0 and P1 relative to the full peak to peak height compared to females (Table 2). The EOD of a juvenile of this species was reported by Heymer & Harder (1975).

Etymology: Named for the Ivindo River of Gabon.

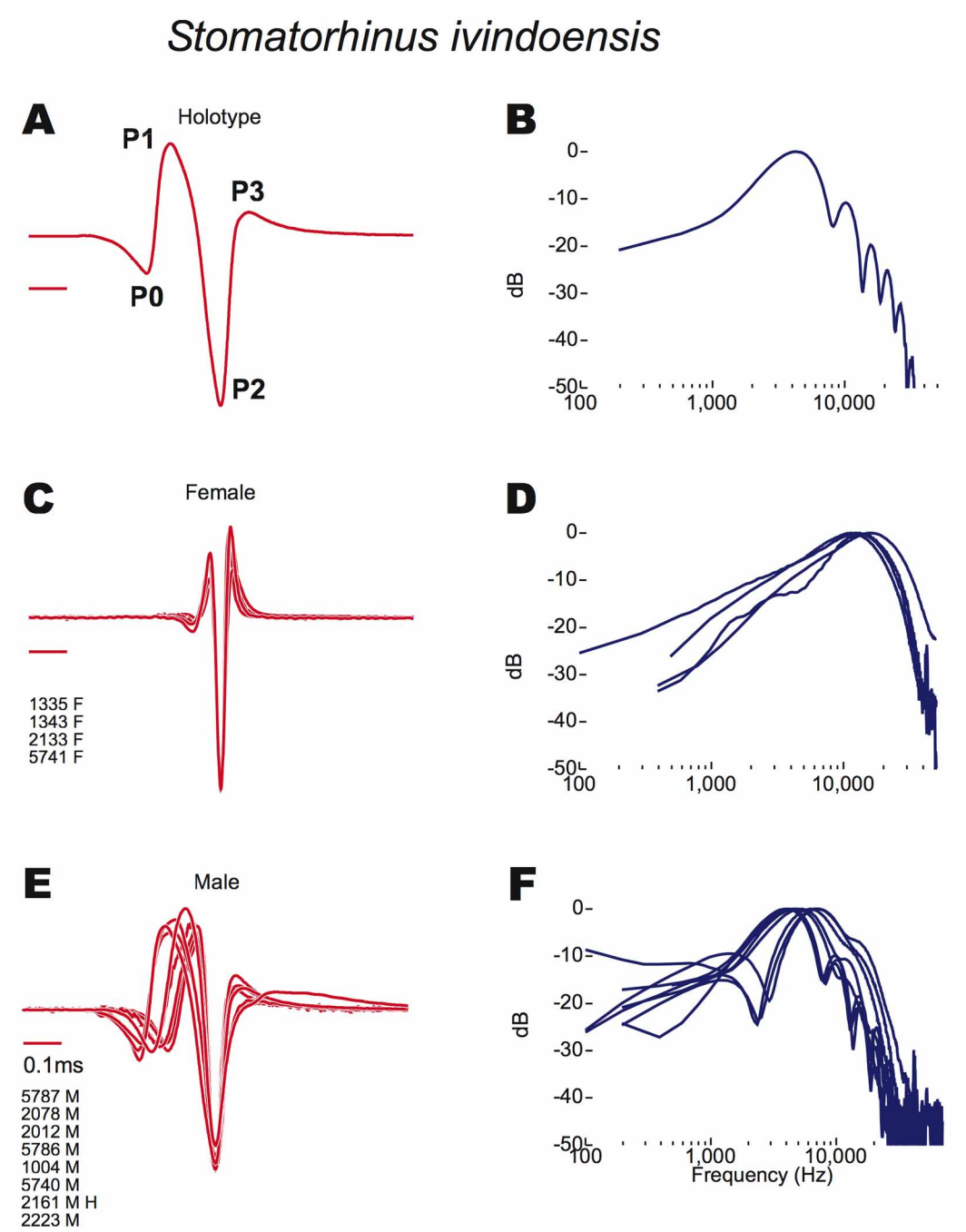

FIGURE 5. EOD waveforms (left) and power spectra (right) for *Stomatorhinus ivindoensis* n. sp. The holotype of *S. ivindoensis*, a male, is shown in A and B. Peaks are numbered in order from P0 to P3. EOD waveforms are centered about the largest head-negative peak and plotted with head positivity upward. Power spectra are normalized so that the peak energy is adjusted to 0 dB. EODs of reproductive males (E, F) are longer in duration and have a lower peak power frequency than those of females (C, D). Individual specimen numbers are indicated beneath waveforms; F=female, M=male, H=holotype. Time base = 0.1 millisecond.

TABLE 2. Descriptive statistics on measures of EOD waveforms from *Stomatorhinus ivindoensis* ranging in size from 34 to 49.5 mm and *Stomatorhinus walkeri* ranging in size from 33 to 99 mm SL. Peak heights have been normalized to the peak to peak height. Negative numbers indicate head-negative peaks. Only sexually mature males and females are included in the table. EOD durations are measured from the first and last points that deviated from the baseline by more than 2% of peak-to-peak amplitude.

	n	mean P0 height %	S.D.	mean P1 height %	S.D.	mean P2 height %	S.D.	mean P3 height %	S.D.	mean FFT peak (Hz)	S.D.	mean EOD duration (µs)	S.D.
S. ivindoensis													
Female	17	-4.9[1]	3.8	23.9[2]	7.1	-67.6	4.3	13.1[2]	8.7	13017[1]	2562	185[1]	62
Male	12	-12.0[1]	7.0	31.8[2]	7.0	-66.7	4.9	28.5[2]	8.5	7593[1]	3661	374[1]	172
S. walkeri													
Female	8	-2.5[1]	2.2	26.3	6.4	-69.2	6.7	19.5	10.3	18268[1]	6069	138[1]	63
Male	6	-0.6[1]	1.0	24.7	5.0	-73.8	6.0	24.4	10.5	16699[1]	7455	140[1]	84

[1] Male *S. ivindoensis* differ from all three other groups using Scheffe's post-hoc test, $p < 0.01$.

[2] Male *S. ivindoensis* differ from female *S. ivindoensis*. Scheffe's post-hoc test, $p < 0.05$

Discussion

External proportions and counts of *S. ivindoensis* n. sp. (Table 1 and above section) distinguish this species from other congeners. Here we highlight the most prominent of these differences.

As pointed out by Poll (1945), *S. puncticulatus* Boulenger 1899 and *S. patrizii* can be separated from other *Stomatorhinus*, including *S. ivindoensis*, by their deep bodies (depth more than 33% SL) and long, narrow caudal penduncles (caudal peduncle depth 25%–31% of caudal peduncle length). In all other species of *Stomatorhinus* body depth is 33% of SL or less and caudal peduncle depth is 32% of caudal peduncle length or more. In *S. ivindoensis*, body depth ranges from 24–27% of SL and caudal peduncle depth ranges from 37–45% of caudal peduncle length.

Eye diameter distinguishes two *Stomatorhinus* species from all others: *S. schoutedeni* Poll 1945 has a larger eye than other *Stomatorhinus* (~20% of HL, ~66% of interorbital distance), while *S. microps* Boulenger 1898, as its name implies, has a smaller eye than all other species (~6% of HL, ~17% of interorbital distance) that is partially obscured by overlying skin. In *S. ivindoensis* the eye diameter is 6.7–10% of HL and 35–44% of interorbital distance.

Members of the type series of three *Stomatorhinus* species—*S. polylepis* Boulenger 1899, *S. corneti* Boulenger 1899, and *S. ater* Pellegrin 1924—are far larger than the 56

mm maximum observed adult SL of S. *ivindoensis* and additionally differ from the new species in counts and measures. For *S. polylepis*, one of the syntypes exceeds 100 mm SL and two others are above 80 mm SL. Further distinguishing this species from *S. ivindoensis* are its high scales counts: *S. polylepis* has 53 or more scales in longitudinal series and 18–22 around the caudal peduncle vs. 44–50 longitudinal scales and 12 circumpeduncular scales in *S. ivindoensis*. Lateral line scales bearing tubes extend onto the caudal peduncle in *S. polylepis* while they do not in *S. ivindoensis*. The holotype of *S. corneti* has a SL of 93.3 mm and a distinctive rectilinear, gently sloping head profile above the eye that makes an abrubt, nearly vertical downward turn above the anterior nostril; the snout is truncate and does not extend beyond the mouth and the tooth count is 9/10. In *S. ivindoensis*, the head profile is slightly convex above the eye, the snout is rounded and projects slightly beyond the mouth and the tooth count is modally 7/8. The *S. ater* type series ranges in size from 70–94 mm SL and the four examined syntypes (of six total) examined exhibit deeper heads (head depth 74.4–79% of HL) than do specimens of *S. ivindoensis* (head depth 59–69% of HL). Additionally, the eye in *S. ater* is significantly larger than that of *S. ivindoensis* (12–15% of HL, vs. 6.7–10% in *S. ivindoensis*) and *S. ater* has 10 pectoral rays compared to the 8–9 in *S. ivindoensis*.

Two described species of *Stomatorhinus—S. humilior* Boulenger 1899 and *S. kununguensis* Poll 1945—are considerably more elongate than *S. ivindoensis*. In *S. humilior* the body depth above the anal fin origin is 19–21.5% of SL, in *S. kununguensis* it is 21–22%, while in *S. ivindoensis* it is 23–27 %. Members of the type series of both species exceed 70 mm SL, a significantly larger size than any known *S. ivindoensis*. Furthermore, *S. kununguensis* has larger eye than *S. ivindoensis* (10.5–13% of HL vs. 6.7–10% of HL).

In Tables 2–5 and in Figures 6–9, *S. ivindoensis* is compared with the two species it resembles most closely, *S. fuliginosus* and *S. polli*, as well as with *S. walkeri*, the sole *Stomatorhinus* species previously described from the Ogooué River basin.

S. fuliginosus, from the Itimbiri River in the Congo basin (Fig. 6 C, D), is the only described *Stomatorhinus* for which the entire type series is within the observed size range of *S. ivindoensis* and many of its proportions and counts are similar to those observed for *S. ivindoensis*. Harder (2000) assigned the *Stomatorhinus* specimens from the Ivindo basin to this species. However, *S. fuliginosus* differs from *S. ivindoensis* by having a deeper caudal peduncle (caudal peduncle depth is 50–69% of caudal peduncle length vs. 37–45% in *S. ivindoensis*), a wider head (head width is 50–56% of head length vs. 43–50% in *S. ivindoensis*), and a smaller inter-orbital width (57–69% of head width vs. 72–90% in *S. ivindoensis*). Differences between these two species in two morphometric ratios are illustrated in Fig. 7A. Furthermore, *S. fuliginosus* has fewer lateral line scales with exposed tubes and pores relative to *S. ivindoensis* (12–21 in *S. fuliginosus* vs. 22–34 in *S. ivindoensis*). In all eight syntypes of *S. fuliginosus*, the lateral line series of tubes and pores terminates midway along the side, well in advance of a vertical through the origin of the anal fin. In *S. ivindoensis*, the lateral line series of tubes and pores continues at least a short distance

beyond a vertical through the origin of the anal fin, but always terminates well in advance of the caudal peduncle. The caudal fins of all eight *S. fuliginosus* syntypes are damaged to one degree or another. Poll (1941) describes the lobes of the caudal fin of *S. fuliginosus* as "obtuse," however, examination of the *S. fuliginosus* syntypes and the illustration of the holotype indicates that the lobes of the caudal fin are narrower than those observed in *S. ivindoensis* specimens. No EOD information is available for *S. fuliginosus*. Taken together, we view the differences between the Ivindo basin *Stomatorhinus* specimens and the type series of *S. fuliginosus* as sufficient to recognize the two as distinct species.

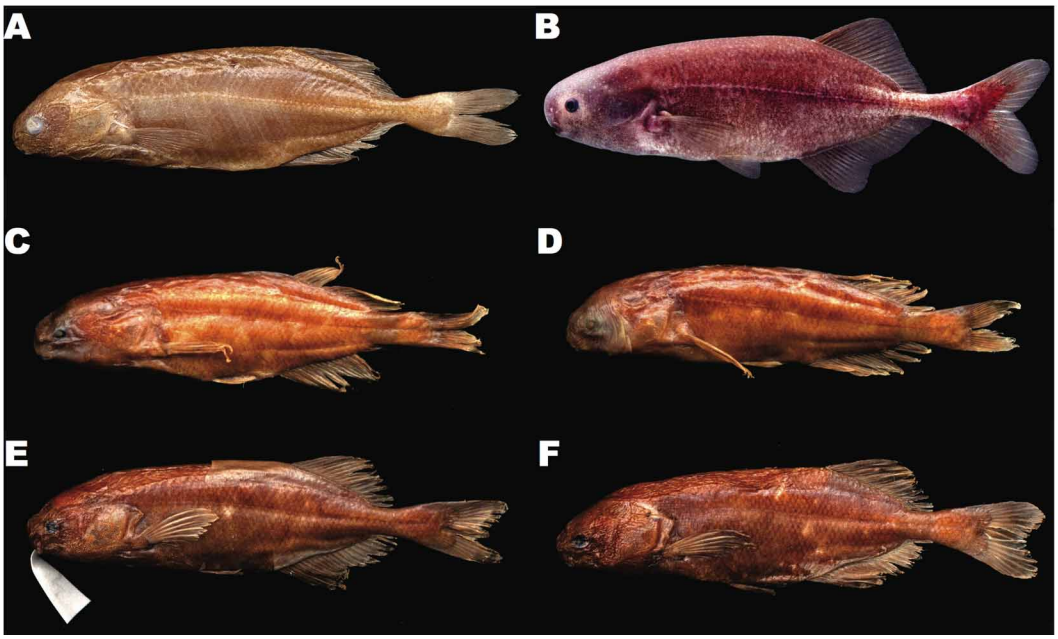

FIGURE 6. Species of *Stomatorhinus* to which *Stomatorhinus ivindoensis* n. sp. is closely compared in study: (A) *S. walkeri* syntype BMNH 1867.5.3.16, 85.6 mm SL; (B) *S. walkeri* live specimen no. 2880, CU 80237, 95 mm SL; (C) *S. fuliginosus* syntype MRAC 6652, 37.7 mm SL; (D) *S. fuliginosus* syntype MRAC 6648, 33.5 mm SL; (E) *S. polli* paratype MRAC 138993, 61.3 mm SL; (F) *S. polli* paratype MRAC 138977, 58.7 mm SL.

It remains unclear whether *S. fuliginosus* is actually as small a species as *S. ivindoensis*. Four of the eight *S. fuliginosus* syntypes are within the size range of sexually mature individuals of *S. ivindoensis*, yet none show the characteristic anal fin notch of males, nor abdominal distension from eggs (gonads were not examined). It is thus possible that all the syntypes of *S. fuliginosus* are juveniles and considerably smaller than adult size. (No non-type specimens from near the type locality are available for to ascertain the size range of adults.) If, as it seems likely, adults of *S. fuliginosus* achieve larger sizes than adults of *S. ivindoensis*, *S. ivindoensis* is the smallest known mormyrid species.

TABLE 3. Descriptive morphometrics and meristics for the 8 syntypes of *Stomatorhinus fuliginosus*. Asterix indicates non-overlapping range with *S. ivindoensis* n. sp.

Character	N	min	max	mean	Std. Dev.	
Standard length, mm	8	29.62	39.28	34.32	3.09	
Head length, mm	8	10.33	12.51	11.14	0.71	
Percent of standard length						
Maximum body depth	8	22.91	26.61	25.11	1.23	
Head length	8	30.85	34.88	32.53	1.22	
Snout length	8	6.57	8.95	7.44	0.84	
Pre-dorsal distance	8	66.99	68.91	68.27	0.7	
Pre-anal distance	8	61.1	64.13	62.66	1.14	
Pre-pelvic distance	8	44.13	47.98	46.32	1.41	
Pre-pectoral distance	8	31.26	34.84	32.75	1.26	
Caudal peduncle depth	8	7.31	8.38	7.71	0.41	*
Caudal peduncle length	8	11.14	14.74	13.29	1.31	
Head width	8	15.78	18.37	16.98	0.96	
Pectoral fin length	8	18.25	20.76	19.37	0.92	
Pelvic fin length	8	9.67	11.1	10.31	0.48	
Pelvic-anal fin distance	8	15.65	17.18	16.37	0.55	
Anal fin base length	8	23.65	26.27	25.35	0.94	
Dorsal fin base length	8	20.08	22.73	21.45	1.04	
Percent of head length						
Snout length	8	20.62	25.65	22.83	1.78	
Post-orbital length	8	68.98	76.48	72.76	2.84	
Head width	8	49.56	55.72	52.2	2.27	*
Head depth	8	64.67	73.66	67.37	3.19	
Eye diameter	8	5.95	9.99	8.23	1.63	
Inter-nostril distance	8	20.05	28.97	23.45	3.04	
Ratios						
Inter-orbital width as % head width	8	57.3	68.54	61.25	4.32	*
Pre-anal distance/pre-dorsal distance	8	0.89	0.94	0.92	0.02	
Caudal peduncle depth as % CP length	8	50.09	69.09	58.4	6.39	*
Length of dorsal/length of anal	8	0.79	0.88	0.85	0.03	
Counts				**median**	**quartile range**	
Dorsal rays	6	17	18	17	1.00	
Anal rays	7	21	23	22	1.00	
Anal rays before dorsal	8	4	5	5	0	
Pectoral rays	8	8	9	9	0	
Pelvic rays	8	6	6	6	0	
Caudal peduncular scales	8	12	14	12	0	
Teeth, upper jaw	8	7	8	7	0	
Teeth, lower jaw	8	8	10	8	0.25	
Total vertebrae	8	36	36	36	0	
Scale rows from pelvic fin origin to lateral line	3	12	13	12	0.50	
Lateral line scales with tube & exposed pore	8	12	21	18	5.00	*
Scales along longitudinal line	8	44	47	45	2.25	

TABLE 4. Descriptive morphometrics and meristics for seven paratypes and one non-type of *Stomatorhinus polli*. Asterix indicates non-overlapping range with *S. ivindoensis* n. sp.

Character	N	min	max	mean	Std. Dev.	
Standard length, mm	8	44.10	61.27	53.90	6.46	
Head length, mm	8	13.54	18.43	16.28	1.87	
Percent of standard length	8					
Maximum body depth	8	23.90	26.49	25.47	0.81	
Head length	8	29.07	31.85	30.23	0.89	
Snout length	8	6.97	7.59	7.30	0.21	*
Pre-dorsal distance	8	64.29	67.88	66.36	1.08	
Pre-anal distance	7	58.38	62.24	59.94	1.33	
Pre-pelvic distance	8	41.75	48.13	43.66	2.21	
Pre-pectoral distance	8	27.87	31.22	29.27	1.03	
Caudal peduncle depth	8	5.63	6.65	6.31	0.32	
Caudal peduncle length	7	15.01	16.72	15.72	0.85	
Head width	8	14.90	16.52	15.70	0.49	
Pectoral fin length	6	17.40	19.95	18.70	1.10	
Pelvic fin length	7	9.87	11.50	10.91	0.64	
Pelvic-anal fin distance	7	16.12	20.08	17.44	1.36	
Anal fin base length	7	23.02	26.51	25.34	1.12	
Dorsal fin base length	7	20.05	23.20	21.53	1.08	
Percent of head length						
Snout length	8	23.46	25.01	24.17	0.59	
Post-orbital length	8	68.98	73.24	71.09	1.59	
Head width	8	46.80	55.14	51.98	2.65	
Head depth	8	58.42	74.42	67.67	5.22	
Eye diameter	8	11.12	13.43	12.00	0.72	*
Inter-nostril distance	8	21.10	23.96	22.37	1.13	
Ratios						
Inter-orbital width as % head width	8	53.34	61.49	58.93	2.57	*
Pre-anal distance/pre-dorsal distance	8	0.87	0.94	0.90	0.02	
Caudal peduncle depth as % CP length	8	36.81	44.26	40.25	2.67	
Length of dorsal/length of anal	7	0.79	0.91	0.85	0.04	
Counts				**median**	**quartile range**	
Dorsal rays	4	17	18	18	0.25	
Anal rays	4	21	22	21	0.25	
Anal rays before dorsal	4	5	5	5	0	
Pectoral rays	8	8	9	9	0	
Pelvic rays	8	6	6	6	0	
Caudal peduncular scales	5	12	12	12	0	
Teeth, upper jaw	4	7	7	7	0	
Teeth, lower jaw	8	8	8	8	0	
Total vertebrae	3	36	36	36	0	
Scale rows from pelvic fin origin to lateral line	8	12	12	12	0	
Lateral line scales with tube & exposed pore	6	22	29	26	0.75	
Scales along longitudinal line	6	43	48	46	3.00	

TABLE 5. Descriptive morphometrics and meristics for *Stomatorhinus walkeri*; includes the two syntypes and twelve non-type specimens from the Ogooué River, Gabon. Asterix indicates non-overlapping range with *S. ivindoensis* n. sp.

Character	Syntype 1	Syntype 2	N	min	max	mean	Std. Dev.	
Standard length, mm	85.59	86.34	14	51.50	91.52	75.66	12.46	
Head length, mm	24.23	24.84	14	16.90	26.65	22.59	3.06	
Percent of standard length			14					
Maximum body depth	27.97	27.00	14	25.14	29.04	27.48	1.18	
Head length	28.31	28.77	14	28.31	33.04	30.02	1.29	
Snout length	8.05	7.42	14	7.42	9.11	8.09	0.49	
Pre-dorsal distance	67.79	67.28	14	62.38	68.01	65.81	1.83	
Pre-anal distance	58.00	61.41	14	58.00	62.00	59.94	1.30	
Pre-pelvic distance	40.83	40.61	14	40.61	45.67	42.19	1.44	
Pre-pectoral distance	28.15	27.59	14	26.80	30.56	28.53	1.07	*
Caudal peduncle depth	6.30	5.51	14	5.23	6.65	5.84	0.40	
Caudal peduncle length	16.19	14.78	14	14.78	16.70	15.97	0.66	
Head width	13.72	14.06	14	13.27	15.14	14.34	0.51	
Pectoral fin length	17.83	17.69	14	17.69	22.71	19.84	1.57	
Pelvic fin length	11.05	10.76	14	9.95	12.21	11.12	0.62	
Pelvic-anal fin distance	17.83	20.80	14	16.15	20.80	18.33	1.18	
Anal fin base length	26.43	25.69	14	24.08	26.66	25.50	0.86	
Dorsal fin base length	23.40	22.78	14	20.64	23.57	22.08	0.88	
Percent of head length								
Snout length	28.44	25.81	14	25.21	28.71	26.95	1.00	
Post-orbital length	63.27	65.14	14	54.50	68.71	64.65	4.58	
Head width	48.45	48.87	14	43.79	49.52	47.81	1.59	
Head depth	79.28	76.57	14	63.76	79.28	69.85	5.20	
Eye diameter	12.59	12.48	14	8.99	13.69	11.81	1.07	
Inter-nostril distance	22.16	21.14	14	21.14	28.42	24.90	2.19	
Ratios								
Inter-orbital width as % head width	65.84	63.67	14	62.93	83.24	73.74	7.27	
Pre-anal distance/pre-dorsal distance	0.86	0.91	14	0.86	0.95	0.91	0.02	
Caudal peduncle depth as % CP length	38.89	37.30	14	32.21	42.20	36.63	2.98	
Length of dorsal/length of anal	0.89	0.89	14	0.83	0.90	0.87	0.02	
Counts						**median**	**quartile range**	
Dorsal rays	20	19	14	17	20	19	1.00	
Anal rays	22	22	14	21	22	22	0	
Anal rays before dorsal	5	5	14	4	5	5	0	
Pectoral rays	10	10	14	10	10	10	0	*
Pelvic rays	6	6	14	6	6	6	0	
Caudal peduncular scales	14	12	14	12	14	12	0	
Teeth, upper jaw	9	9	14	7	9	9	3.00	
Teeth, lower jaw	10	10	14	8	10	8	1.75	
Total vertebrae	37	37	7	38	39	38	1.00	*
Scale rows from pelvic fin origin to lateral line	14	14	14	12	14	13	1.00	
Lateral line scales with tube & exposed pore	42	43	9	39	48	42	3.00	*
Scales along longitudinal line	52	49	14	46	53	50	4.50	

S. polli from the Tshuapa River in the Middle Congo basin (Fig. 6E, F) is somewhat larger than *S. ivindoensis*: the largest in the type series measures 63.5 mm SL and six of the eight others exceed the greatest size observed for *S. ivindoensis*. The depth to width ratio of this species is approximately the same as that for *S. ivindoensis*, as are scale counts and the number of scales bearing lateral line tubes and pores. As in *S. ivindoensis*, the lobes of the caudal fin are broad and rounded, lacking distinct points at the apices. However, this species differs from *S. ivindoensis* in having a shorter snout relative to body length (7–7.6% of SL vs. 7.8–8.4% in *S. ivindoensis*), a larger eye (11–13.4% of HL vs. 6.7–10% in *S. ivindoensis*) and a smaller inter-orbital width as a proportion of head width (53–61.5% vs. 72–90.4% in *S. ivindoensis*). Additionally, *S. polli* has a narrower head (head width 59–64% of HL to end of opercle) than *S. ivindoensis* (head width 66–78% of HL to end of opercle). Differences between these two species in two morphometric ratios are illustrated in Fig. 7B.

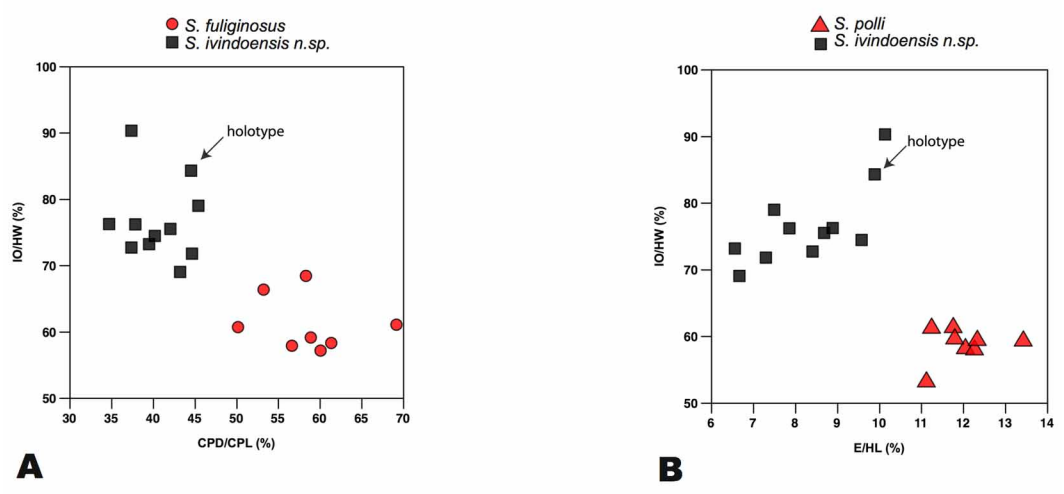

FIGURE 7. Selected morphometric ratios of *S. ivindoensis* n. sp. compared to those in *S. fuliginosus* (A) and *S. polli* (B). IO= interorbital distance, HW= head width, CPD=caudal peduncle depth measured at terminus of anal fin, CPL=caudal peduncle length, E=eye diameter, HL=head length.

Stomatorhinus walkeri (Fig 6A, B) is the type species of the genus and is, apart from the species described here, the only other *Stomatorhinus* species described from and known to occur within the Ogooué River basin. It is a considerably larger species than *S. ivindoensis*, with individuals exceeding a length of 90 mm SL. While the ranges of many morphometric ratios overlap those for *S. ivindoensis*, the pre-pectoral distance is a smaller proportion of SL (26.8–30.6%) than in S. *ivindoensis* (30.6–33.4%). The lobes of the caudal fin are more narrow and pointed at the apices than those of *S. ivindoensis*. Counts easily separate the two species. *Stomatorhinus walkeri* have 10 pectoral rays; *S. ivindoensis* have no more than 9. *Stomatorhinus walkeri* have 37 to 39 total vertebrae; *S. ivindoensis*

have 36. *S. walkeri* have lateral line scales with exposed tubes and pores that extend onto the base of the caudal peduncle. In *S. ivindoensis* lateral line scales with exposed tubes and pores terminate well in advance of the caudal penduncle. Furthermore, the body coloration in life of *S. walkeri* is light to medium gray with a purplish cast in daylight (see Fig. 6B) whereas *S. ivindoensis* are always a dark chocolate brown.

In a principal components analysis of the correlation matrix of 24 log-transformed measures, the type specimens of *S. ivindoensis* form a coherent cluster on a plot of the second and third factors that is non-overlapping with the type specimens of *S. fuliginosus*, *S. polli*, *S. walkeri*, *S. corneti* and *S. ater* (Fig. 8). We conclude that the significant morphological differences between *Stomatorhinus* specimens from the Ivindo River basin of Gabon and all other described species in this genus warrant its recognition as a new species.

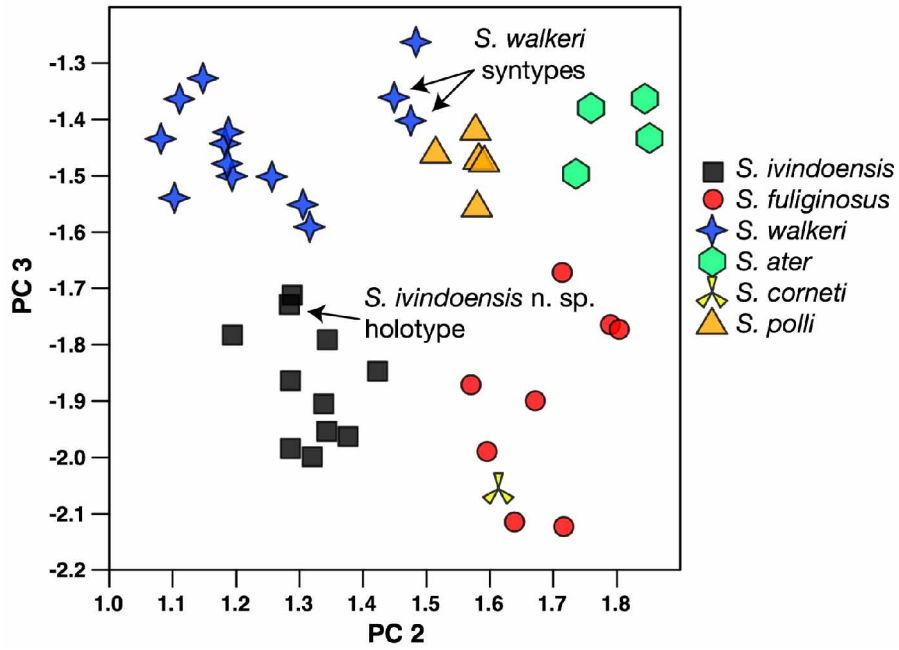

FIGURE 8. Scores from types of *S. ivindoensis* n. sp. and five other *Stomatorhinus* species on the second and third factors of a principal components analysis of the covariance matrix calculated from 24 log-transformed morphometric measures. Twelve non-type specimens of *S. walkeri* and one non-type of *S. polli* included. Variables loading most heavily on the second principal component are caudal peduncle depth, interorbital distance and internostril distance. Variables loading most heavily on the third principal component are eye diameter, post-orbital head length and caudal peduncle length.

The addition of this Ivindo River-endemic *Stomatorhinus* further highlights the distinctiveness of this river's fish fauna, already notable for species of mormyrids (Sullivan et al. 2002), gonorhynchiforms (Géry 1964), cyprinodontiforms (Wildekamp 1993), and

cichlids (Thys van den Audenaerde 1966) either endemic or shared only with the Ntem River basin to the north.

Comparison of electric signals. The EOD of *S. ivindoensis* is similar to that of *S. walkeri* from the Ogooué River basin of Gabon. The latter species has a shorter duration EOD that measures 70 to 270 microseconds with an average spectral frequency peak at 17,355 Hz (Fig. 9A–D). We found no differences between the sexes or different age-classes of *S. walkeri* comparing EODs from eight sexually mature females with six sexually mature males and with seven juveniles of 34–99 mm SL, although all samples were taken during the dry season when most mormyrids are not breeding. The EOD of *S. walkeri* is characterized by two head-positive peaks of about the same amplitude (23% of peak to peak height), separating a single large head negative peak. A weak head-negative phase preceding P1 occurs in some individuals. Table 2 summarizes descriptive statistics on EODs from 14 adult individuals. Although similar, EODs of *Stomatorhinus walkeri* differ from those of *S. ivindoensis* by having a shorter waveform duration, higher peak spectral frequency, and in the heights of peak P0 (Scheffe's post-hoc comparison).

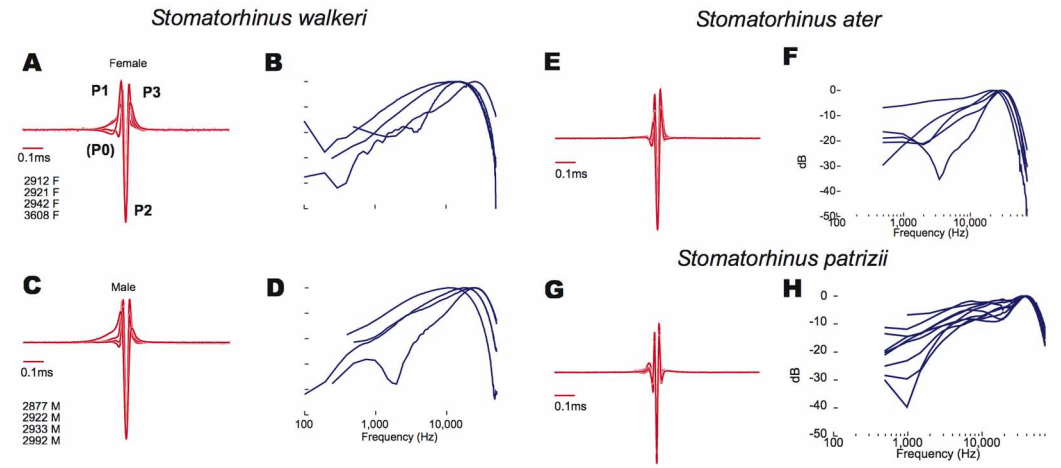

FIGURE 9. Waveforms and power spectra of EODs from *Stomatorhinus walkeri* (A–D), *S. ater* (E, F) and *S. patrizii* (G, H) on the same time scale as those shown in Fig. 5. EOD waveforms are centered about the largest head-negative peak, normalized to the same peak-to-peak height and plotted with head positivity upward for each trace. Power spectra are normalized so that the peak energy is adjusted to 0 dB. Individual specimen numbers are indicated beneath waveforms; F=female, M=male.

EOD recordings have been made for only two other species of *Stomatorhinus* that we can confidently assign to described species. These are *S. ater* and *S. patrizii*. These specimens were collected in Odzala Park in the Republic of Congo in 2002 by Drs. John Sullivan, John Friel, and Sébastien Lavoué. Five individuals of *S. ater*, ranging in size from

57.8 to 83.5 mm SL were recorded (Fig. 9 E, F). The mean EOD duration is 69.3 microseconds ± 10.0 (std. dev.) and the power spectrum peak occurred at 26,562 Hz ± 3,945. The EOD waveform has four peaks, beginning with a small, head-negative peak of low amplitude (4.5% of the peak to peak height). Thirteen individuals of *S. patrizii*, ranging in size from 35 to 62 mm SL, were recorded (Fig. 9 G, H). The mean EOD duration is 88.4 microseconds ± 17.2 (std. dev.) and the power spectrum peak is 36,425 Hz ± 8,706. The EOD waveform is complex, with as many as six peaks in many of the recordings.

Note. Specimens of *S. ivindoensis* have been identified as *S. corneti* in the following previously published studies: Bass (1986); Heymer & Harder (1975); Hopkins (1980, 1981, 1986).

Comparative Material Examined. (All in alcohol.) *Stomatorhinus ater* Pellegrin 1924. 4 (of 6) syntypes: MRAC 15.097–15.099, MNHN 23–155; non-types: CU 87781 (1), CU 87893 (1), CU 87897 (1), CU 87912 (1), CU 87981 (1), CU 89099 (1), CU 89100 (3), CU 89190 (2). *Stomatorhinus corneti* Boulenger 1899, 1 (holotype): MRAC 638. *Stomatorhinus fuliginosus* Poll 1941. 8 syntypes: MRAC 66.546–553. *Stomatorhinus humilior* Boulenger 1899, 2 (of 3) syntypes: MRAC 636, 637. *Stomatorhinus kununguensis* Poll 1945, 1 lectotype: MRAC 21.573; 5 (of 8) paralectotypes: MRAC 21.574, 38.627, 48.785, 57.221–57.222. *Stomatorhinus microps* Boulenger 1898, 2 (of 7) syntypes: MRAC 68, MRAC 94. *Stomatorhinus patrizii* Vinciguerra 1928; non-types: CU 81662 (1), CU 87989 (1). *Stomatorhinus polli* Matthes 1964, 12 (of 43) paratypes: MRAC 69597, MRAC 120179–185, MRAC 138976–978, MRAC 138993. *Stomatorhinus polylepis* Boulenger 1899, 4 (of 9) syntypes: MRAC 640–643. *Stomatorhinus puncticulatus* Boulenger 1899, 2 (of 3) syntypes: MRAC 634, 635; non-types: CU 41319 (1). *Stomatorhinus walkeri* (Günther 1867), syntypes 2 (of 2): BMNH 1867.5.3.15–16; non-types: CU 79708 (1), CU 80149 (4), CU 80227 (12), CU 80237 (3), CU 80245 (1), CU 80248 (1), CU 80255 (1), CU 80256 (2), CU 80264 (2), CU 80304 (2), CU 80315 (2), CU 80347 (1), CU 80467 (1), CU 80469 (1), CU 80472 (2), CU 80477 (2), CU 80523 (4), CU 80536 (1), CU 81069 (4), CU 81076 (1), CU 81340 (6), CU 81341 (2), CU 81631 (9), CU 81638 (11), CU 82204 (1), CU 83071 (1), CU 83261 (3). *Petrocephalus affinis* Sauvage 1879 (synonym of *S. walkeri*), holotype: MNHN A.894.

Acknowledgments

In Gabon, we thank P. Posso, Director of the Tropical Ecology Research Institute (IRET) for permission to research and collect specimens at the Ipassa Plateau Reserve research station near Makokou, Gabon. We also thank J. D. Mbega, Director of the Agronomy and Forestry Research Institute (IRAF) for assistance with field work. At the AMNH we thank M. Stiassny for her support for this study, R.A. Arrindel for assistance with radiographing specimens, and B. A. Brown and D. R. Batista for curatorial assistance. K.R. Luckenbill radiographed specimens at the ANSP. V. M. Wong illustrated the holotype. The late G.

Teugels provided the initial inspiration for this project. This work was funded by an H.R. Axelrod postdoctoral fellowship at the AMNH to JPS and NSF 0108372 to CDH.

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