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Ompok platyrhynchus, a new silurid catfish (Teleostei: Siluridae) from Borneo

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Abstract

Ompok platyrhynchus, a new species of silurid catfish is described from the Temburong River drainage in Brunei Darussalam, northern Borneo. *Ompok platyrhynchus* can be distinguished from all Southeast Asian congeners, except for *O. hypophthalmus*, *O. rhadinurus* and *O. urbaini*, in having 74–80 (vs. 40–70) anal-fin rays. *Ompok platyrhynchus* differs from *O. hypophthalmus*, *O. rhadinurus* and *O. urbaini* in lacking a distinct nuchal concavity, having a more slender body (13.5–17.7% SL vs. 18.9–24.5), shorter snout (37.1–38.1% HL vs. 39.4–47.5) and maxillary barbels (reaching to middle of pectoral fin vs. reaching to anterior third of anal fin), and more vertebrae (59–60 vs. 47–58).

Key words: *Ompok*, Siluridae, Borneo, Brunei, Temburong River, Southeast Asia

Introduction

The catfish genus *Ompok* Lacépede, 1803, refers to medium-sized silurid fishes found in inland waters throughout South and Southeast Asia. Bornbusch (1995) showed that *Ompok*, as currently understood, is probably paraphyletic. However, given the weak support for the monophyly of his clades, the taxonomy of *Ompok* is not stable enough to reassign any of the existing species to other genera.

During an ichthyological survey of the Temburong River in Brunei Darussalam, northern Borneo by the second author, an unusual silurid catfish with a broad, flattened head was obtained. Studies revealed this specimen to belong to an undescribed species, which is described herein as *Ompok platyrhynchus*, new species.

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Material and methods

Measurements were made point to point with dial calipers and data recorded to tenths of a millimeter. Counts and measurements were made on the left side of specimens whenever possible. Subunits of the head are presented as proportions of head length (HL). Head length and measurements of body parts are given as proportions of standard length (SL). Measurements follow those of Ng (2003). Asterisks after meristic counts indicate values for holotype.

Material examined in this study is deposited in the following institutions: Natural History Museum, London (BMNH), Collection of Maurice Kottelat, Cornol (CMK), Museum of Zoology, Field Museum of Natural History, Chicago (FMNH), Muséum National d'Histoire Naturelle, Paris (MNHN), Museum Zoologicum Bogoriense, Cibinong (MZB), Nationaal Natuurhistorisch Museum, Leiden (RMNH), University of Michigan, Ann Arbor (UMMZ), and the Zoological Reference Collection of the Raffles Museum of Biodiversity Research, National University of Singapore (ZRC).

Ompok platyrhynchus sp. nov. (Figs. 1 & 2a)

Ompok sp. Choy & Chin, 1994: 769.

Type material. Holotype: ZRC 48678, male, 78.9 mm SL; Borneo: Brunei Darussalam, Temburong district: Temburong basin, Belalong sub-basin; Sungai Esu, about 15 minutes upstream of Kuala Belalong Field Studies Centre (04°32'17.9"N 115°09'35.2"E); H. H. Tan & K. K. P. Lim, 6 Oct 2001.

Paratype: ZRC 31807, cleared and stained, 55.0 mm SL; Borneo: Brunei Darussalam, Temburong District, Sungai Belalong at Kuala Belalong Field Study Center; S. C. Choy, 27 July 1992.

Diagnosis. *Ompok platyrhynchus* can be distinguished from all Southeast Asian congeners, except for *O. hypophthalmus*, *O. rhadinurus* and *O. urbaini*, in having 74–80 (vs. 40–70) anal-fin rays. *Ompok platyrhynchus* differs from *O. hypophthalmus*, *O. rhadinurus* and *O. urbaini* in lacking a distinct nuchal concavity (Fig. 2), and having a more slender body (13.5–17.7% SL vs. 18.9–24.5), shorter snout (37.1–38.1% HL vs. 39.4–47.5) and maxillary barbels (reaching to middle of pectoral fin vs. reaching to anterior third of anal fin), and more vertebrae (59–60 vs. 47–58).

Description. Biometric data in Table 1. Body laterally compressed; maximum body depth located at pelvic-fin origin; head as broad as body and depressed. Dorsal profile of body gently convex.

Anterior profile of snout rounded. Anterior pair of nostrils tubular and anteromedial to maxillary barbel base. Posterior pair of nostrils bordered by fleshy dorsal and ventral membranes and posteromedial to maxillary barbel base.

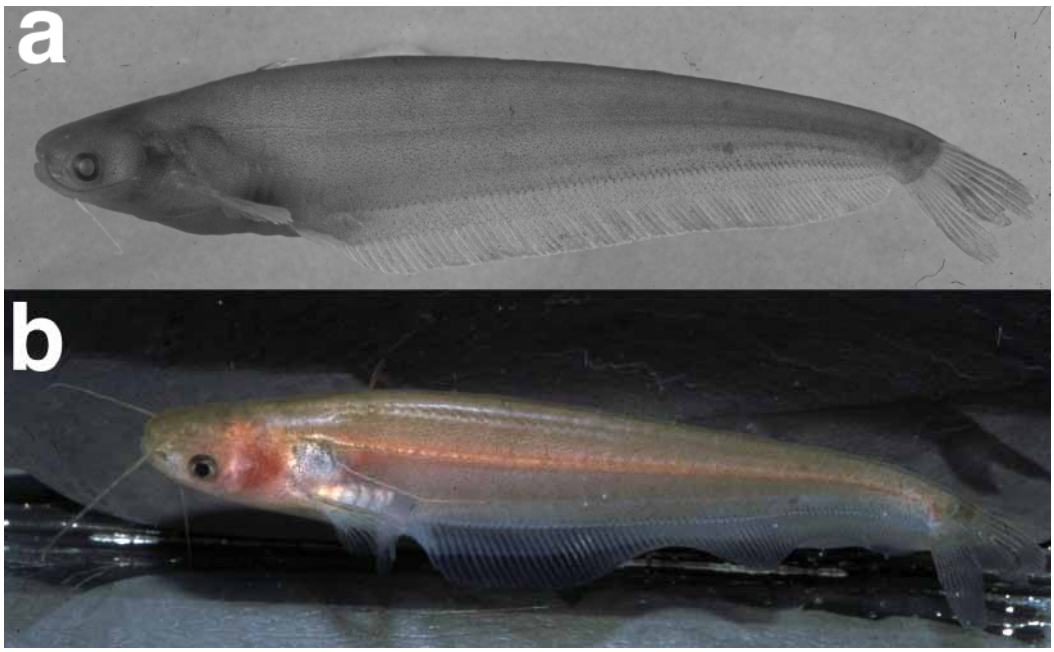

FIGURE 1. *Ompok platyrhynchus*, ZRC 48678, holotype, 78.9 mm SL; Borneo: Brunei Darussalam, Sungai Esu; a. preserved coloration; b. live coloration.

TABLE 1. Morphometric data for *Ompok platyrhynchus*.

	Holotype	**Paratype**
% SL		
Predorsal length	28.1	29.8
Preanal length	33.0	32.4
Prepelvic length	30.3	31.5
Prepectoral length	19.5	20.0
Dorsal-fin length	5.3	5.6
Anal-fin length	67.4	68.2
Pelvic-fin length	6.0	4.5
Pectoral-fin length	14.2	14.4
Pectoral-spine length	7.2	5.8
Caudal-fin length	15.2	14.9
Body depth at anus	17.7	13.5
Caudal peduncle depth	5.1	5.1
Head length	18.1	20.5
Head width	10.9	10.7
Head depth	11.2	10.5
% HL		
Snout length	37.1	38.1
Interorbital distance	54.5	49.
Eye diameter	17.5	19.5
Maxillary barbel length	165.7	123.9
Mandibular barbel length	55.2	57.5

Mouth terminal; gape horizontal, small and extending halfway between maxillary barbel base and anterior orbital margin. Well-developed rictal lobes present, subtended by deep submandibular groove; upper rictal lobe without skin fold. Thin, broad supralabial fold extending from below orbit to maxillary barbel base.

Jaw teeth depressible and villiform. Premaxillary teeth in 4–5 irregular rows in narrow, gently curved rectangular bands. Dentary teeth in similar, slightly narrower bands narrowing posterolaterally, reaching from symphysis almost to mouth corners. First row of dentary teeth slightly visible when mouth is closed. Vomerine teeth in 2–3 rows in single ovoid patch straddling midline.

Two pairs of barbels, slightly flattened along entire length. Maxillary barbels reaching to middle of pectoral fin. Mandibular barbels (only outer pair present) reaching just beyond head. Eyes small, subcutaneous (without free orbital margin); located approximately midway on head and immediately behind supralabial fold. Dorsal orbital margin just visible dorsally; ventral quarter of orbital margin visible ventrally.

Gill membranes separate and overlapping, free from isthmus; gular fold well-developed and v-shaped. Branchiostegal rays 10 (1) or 11* (1). Gill rakers long and thin; anteriormost rakers on lower first arch widely spaced; 4+13 (1) or 4+14* (1).

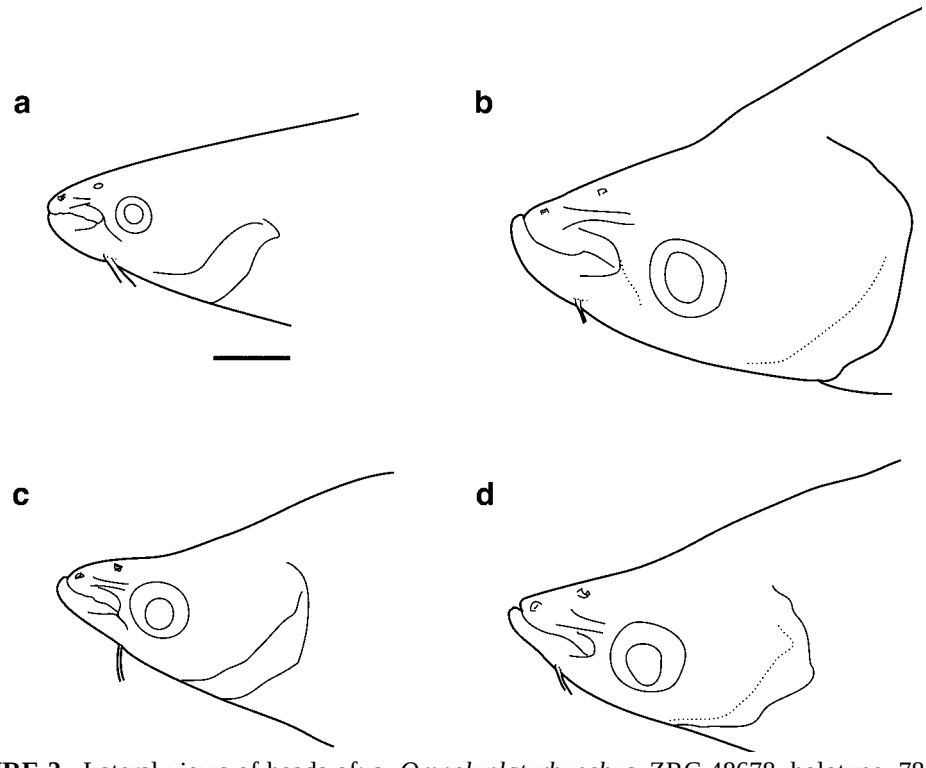

FIGURE 2. Lateral views of heads of: a. *Ompok platyrhynchus*, ZRC 48678, holotype, 78.9 mm SL; b. *O. hypophthalmus*, UMMZ155789, 126.0 mm SL; c. *O. rhadinurus*, UMMZ 155679, 80.9 mm SL and d. *O. urbaini*, UMMZ 234411, 85.5 mm SL. Scale bar represents 5 mm.

Dorsal fin small, with i,1 (2) rays. Depressed pectoral fin to origin of anal fin; distal margin broadly convex, with rounded tip. Third branched pectoral ray longest and fin with 10 (1) or 14* (1) rays. Proximal two-thirds of first pectoral-fin element co-ossified into a slender spine. Spine with shallow oblique striae on dorsal and ventral surfaces and with 5 serrations on posterior edge spanning the distal end of the ossified and proximal end of the flexible distal tip. Axillary pore small, located just above pectoral spine base. Depressed pelvic fin reaching to second or third anal-fin ray; distal margin convex with i,7 (2) rays. Distal margin of anal fin straight, with 74* (1) or 80 (1) rays; separate from caudal fin. Integument over anal fin thickened proximally for two thirds of ray lengths; fin-ray erector muscles attaching to base of fin rays, ventralmost extent of muscles defined by area of thickened integument. Caudal peduncle slender. Caudal fin deeply forked, lobes elongate and with rounded tips; upper lobe slightly longer; principal rays i,7,8,i (2).

Lateral line complete, extending to middle of caudal-fin base, with short branches along flanks directed posteroventrally. Urogenital papilla located immediately posterior to insertion of pelvic fin. Vertebrae 13+46=59 or 14+46=60*.

Coloration. In 70% ethanol: Body and head cream and diffusely pigmented. Light powdering of melanophores on all surfaces of head and body imparting a grayish color, somewhat less dense on belly and ventral surface of head. All fin rays with a light powdering of melanophores; fin membranes hyaline. Barbels with melanophores on dorsal half; ventral half unpigmented.

Color in life translucent (Fig. 1b)

Distribution. Known from the Temburong River drainage in northern Borneo (Fig. 3).

Habitat. The holotype of *O. platyrhynchus* was obtained from a small meandering stream about 3 meters at its widest and up to 1 meter deep. The water was clear and fast flowing over a rock and sand substratum, at parts bedrock that split the stratum and formed small cascades up to 3 meters high (Fig. 4). Syntopic fish collected include: *Hampala bimaculata*, *Nematabramis steindachneri*, *Paracrossochilus acerus*, *Rasbora agyrotaenia*, *Tor tambra* (Cyprinidae), *Gastromyzon lepidogaster*, *Neogastromyzon* sp., *Parhomaloptera microstoma*, *Protomyzon* sp. (Balitoridae), *Pangio* cf. *mariarum* (Cobitidae), *Hemibagrus baramensis* (Bagridae), *Pterocryptis furnessi* (Siluridae) and *Macrognathus maculatus* (Mastacembelidae).

Etymology. From the Greek platys, meaning flat, and rhynchos, meaning nose; in reference to the lack of a distinct nuchal concavity in this species. Used as a noun.

FIGURE 3. Type locality *of Ompok platyrhynchus* (Sungai Esu, Brunei Darussalam, Borneo).

Discussion

The highly elevated anal-fin ray counts of *O. platyrhynchus* easily distinguishes it from other species of Southeast Asian *Ompok*, except for *O. hypophthalmus*, *O. rhadinurus* and *O. urbaini* (Table 2).

The biometric differences between *O. platyrhynchus* and members of the *O. hypophthalmus* species group are summarized in Table 3. The differences observed in the body depth and snout length between O. *platyrhynchus* and *O. hypophthalmus*, *O. rhadinurus* and *O. urbaini* are not solely due to ontogeny. A bivariate analysis (ANCOVA) shows that the regression lines of the body depth (Fig. 5a) and snout length (Fig. 5b) on SL are signif-

icantly different (with P=0.0137, P<0.0001, and P=0.011 for body depths of *O. hypophthalmus*, *O. rhadinurus* and *O. urbaini* respectively and P=0.034, P=0.0347, and P<0.0001 for snout lengths of *O. hypophthalmus*, *O. rhadinurus* and *O. urbaini* respectively).

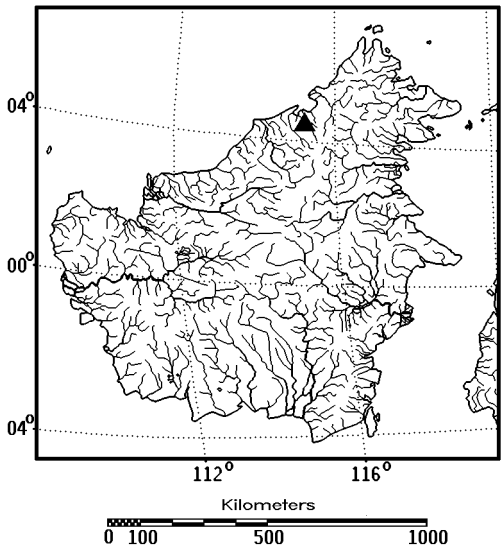

FIGURE 4. Distribution of *O. platyrhynchus* (▲) in Brunei Darussalam, northern Borneo.

TABLE 2. Anal-fin ray counts for Southeast Asian *Ompok*.

Species	Anal-fin rays
O. bimaculatus	55–64
O. binotatus	53–58
O. borneensis	50–58
O. eugeneiatus	58–62
O. fumidus	53–60
O. hypophthalmus	74–80
O. leiacanthus	52–60
O. pinnatus	53–58
O. platyrhynchus	74–80
O. pluriradiatus	63–70
O. rhadinurus	76–85
O. sabanus	55–66
O. urbaini	65–71
O. weberi	40–48

TABLE 3. Key biometric and meristic differences between *O. platyrhynchus* and members of the *O. hypophthalmus* species group.

	Body depth at anus (% SL)	Snout length (% HL)	Vertebrae
Ompok platyrhynchus	13.5–17.7	37.1–38.1	59–60
O. hypophthalmus	18.9–21.9	42.1–44.7	54–55
O. rhadinurus	21.2–24.5	39.4–47.5	56–58
O. urbaini	21.1–24.2	42.7–44.0	47–52

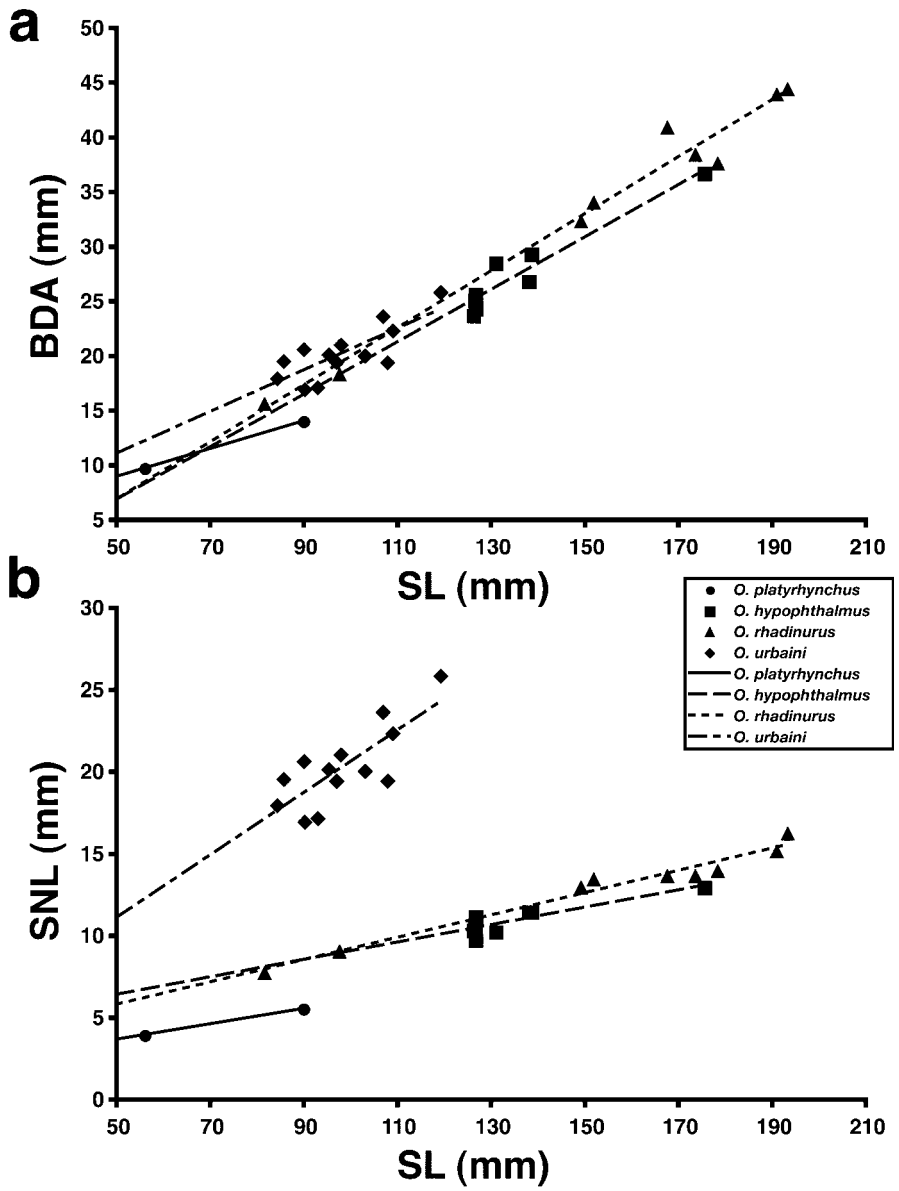

FIGURE 5. Biplots of biometric values for *O. platyrhynchus*, *O. hypophthalmus*, *O. rhadinurus* and *O. urbaini*: a. body depth at anus; b. snout length.

Steindachner (1901) described *Ompok borneensis* from the Baram River. The species is known only from the holotype whose current disposition is unknown. Because of the similarity in the freshwater ichthyofauna of the Temburong and Baram River drainages, some comments on the identity of *O. borneensis* and more detailed comparison with *O. platyrhynchus* is necessary. *Ompok borneensis* is treated as a senior synonym of *Ompok jaynei* Fowler, 1905 here. Steindachner (1901) noted that the two median caudal-fin rays were shorter and thinner than the ones immediately adjacent to it ("Die mittleren 2 caudalstrahlen sind bedeutend kürzer und zarter als die nahe gelegenen längsten strahlen der flosse."), implying that the caudal fin is forked, and not rounded as illustrated in the original description (Steindachner, 1901: Pl. 18 Fig. 3). The caudal-fin shape, its confluence with the anal fin, the anal-fin ray count (Table 2) and the coloration (dark brown), indicate that *O. borneensis* is almost certainly conspecific with *O. jaynei* (also described from the Baram River). In addition to the more numerous anal-fin rays of *O. platyrhynchus* compared to *O. borneensis* (Table 2), the former species also has fewer dorsal-fin rays (2 vs. 4).

Comparative material

Ompok bimaculatus: RMNH 7811 (holotype of *Wallago miostoma*), 205.4 mm SL; Borneo: Tepoe. ZRC 45558 (9), 123.3–187.2 mm SL; Borneo: Kalimantan Timur, Mahakam River upstream of Kota Bangun.

Ompok binotatus: FMNH 94243 (holotype), 67.3 mm SL; FMNH 108813 (2 paratypes), 60.5–72.1 mm SL; Borneo: Kalimantan Barat, Sungai Mandai Kechil near its confluence with the Kapuas mainstream, 18 km WSW of Putussibau. CMK 6923 (11 paratypes), 48.1–90.5 mm SL; Borneo: Kalimantan Barat, Kapuas River drainage, right tributary of Sungai Sibau, about 3 km upstream of Putussibau.

Ompok borneensis: ZRC 2968 (14), 72.7–110.6 mm SL; Borneo: Sarawak, near Sibu. ZRC 40374 (1), 101.0 mm SL; Brunei: Tutong District, base camp at Tasik Merimbun, Sungai Meluncur (4°34'52.9"N 114°41'24.4"E). ZRC 40378 (1), 148.8 mm SL; Brunei: Tutong District, Tasik Merimbun (4°35'22.4"N 114°40'21.6"E).

Ompok eugeneiatus: CMK 16344 (1), 72.5 mm SL; Borneo: Kalimantan Barat, Sungai Letang near Kampung Kandung Suli. UMMZ 209881 (1), 91.3 mm SL; Borneo: Kalimantan Barat, Danau Piam near Ketungau, 38 km NNE of Sintang. ZRC 11819–11820 (2), 72.7–78.7 mm SL; Peninsular Malaysia: Pahang, Tasek Chini. ZRC 30458 (1), 92.8 mm SL; Peninsular Malaysia: Pahang, Sungai Chini. ZRC 38803 (3), 61.0–62.3 mm SL; Borneo: Kalimantan Barat, Danau Basuk, lake adjacent to Kapuas immediately downriver of Jongkong. ZRC 39036 (2), 82.7–84.5 mm SL; Sumatra: Riau, Sungai Bengkwang, tributary of Batang Kuantan (Indragiri River), 4 hours downstream of Rengat.

Ompok fumidus: ZRC 15094 (holotype), 113.8 mm SL; ZRC 15050–15052, 3 paratypes, 97.1–112.8 mm SL; Peninsular Malaysia: Selangor, North Selangor peat swamp

forest, 43 km from Tanjung Malim. ZRC 2967 (1), 139.1 mm SL; Peninsular Malaysia: Pahang, Tasek Bera. ZRC 15048 (1), 118.8 mm SL; Peninsular Malaysia: Selangor, North Selangor peat swamp forest, stream at 0.7 km from 41 km marker on road to Tanjung Malim. ZRC 25112 (1), 112.8 mm SL; Peninsular Malaysia: Pahang, 16 km on Kuantan–Mersing road. ZRC 27689–27692 (4), 92.2–113.0 mm SL; Peninsular Malaysia: Perak, Ulu Basir, N bank of Sungai Bernam.

Ompok hypophthalmus: UMMZ 155789 (6), 126.0–130.8 mm SL; Java: vicinity of Batavia. CMK 11856 (1), 137.8 mm SL; Borneo: Kalimantan Tengah, market in Puruk Cahu. ZRC 40036 (1), 175.3 mm SL; Borneo: Kalimantan Selatan, Banjarmasin.

Ompok leiacanthus: ZRC 38538 (neotype), 71.4 mm SL; Sumatra: Jambi, E end of Danau Arang Arang. BMNH 1863.12.4.85 (1), 119.7 mm SL; Bleeker material.

Ompok pinnatus: UMMZ 232679 (holotype), 80.5 mm SL; Cambodia: Tonle Sap at Kompong Chhnang, fishing lot 9 in second channel E of town. UMMZ 186749 (1 paratype), 67.1 mm SL; Thailand: Maharaj province, Koh Tong canal 17.5 km N of Ayutthaya. UMMZ 232375 (2 paratypes), 67.4–71.5 mm SL; Cambodia: Kandal, Prek Ta Pov, 11 km S of Phnom Penh.

Ompok pluriradiatus: MZB 5951 (holotype), 94.2 mm SL; CMK 7797 (15 paratypes), 73.1–111.7 mm SL; Borneo: Kalimantan Timur, a swift blackwater stream entering Mahakam River from the left side downriver of Muarapahu.

Ompok rhadinurus: ZRC 14897 (holotype), 190.8 mm SL; ZRC 14898 (1 paratype), 193.1 mm SL; Peninsular Malaysia: Selangor, North Selangor Peat Swamp Forest, irrigation canal on western boundary. UMMZ 155678 (1 paratype), 151.7 mm SL; UMMZ 155679 (2 paratypes), 80.9–94.2 mm SL; Sumatra: Musi River, Moeara [=Muara] Klingi. ZRC 41718 (2 paratypes), 166.3–179.6 mm SL; Sumatra: Jambi, Danau Arang Arang, brown water lake (1°37'32.0" S 103°47'19.0"E). UMMZ 243278 (1), 149.0 mm SL; Sumatra: Jambi, Jalan Baru, between Payung Selincar & Kompeh, (1°34'18.0" S 103°39'1.0"E).

Ompok sabanus: FMNH 44828 (holotype), 131.6 mm SL; FMNH 44829 (11 paratypes), 101.6–117.8 mm SL; Borneo: Sabah, Lahad Datu district, Segama River at Segama Estate. CMK 9480 (2), 47.1–54.6 mm SL; Borneo: Kalimantan Timur, Sungai Tulit, about 1 km downriver from Semunad and small creek entering it. CMK 9514 (1), 49.8 mm SL; Borneo: Kalimantan Timur, Sungai Tulit between Semunad and 300m downriver. CMK 9492 (1), 115.5 mm SL; Borneo: Kalimantan Timur, Sungai Sebuku at and near Pembeliangan. ZRC 37635 (8), 75.2–111.7 mm SL; Borneo: Sabah, Kinabatangan River near Kampung Batu Puteh, Danau Biandum.

Ompok urbaini: MNHN 1966-706 (1 syntype) 181.0 mm SL; MNHN 1966-707, 1 ex., syntype, 165.0 mm SL; MNHN 1966-708, 1 ex., syntype, 112.6 mm SL; Cambodia: Tonle Sap. UMMZ 232360 (1), 92.2 mm SL; Cambodia: Kompong Chhnang, Tonle Sap at Kompong Chhnang fishing lot 9 in second channel east of town. UMMZ 232378 (5), 84.1–119.0 mm SL; UMMZ 234411 (2), 85.5–96.8 mm LS; Cambodia: Kandal, Prek Ta

Pov, 13 km south of Phnom Penh. UMMZ 232427 (4), 90.0–107.7 mm SL; Cambodia: Siem Reap, floating village at mouth of Siem Reap River. UMMZ 235389 (1), 108.8 mm SL; Laos: Champasak, Mekong River at Ban Hang Khone, just downstream from Khone Falls.

Ompok weberi: BMNH 1994.12.16.228229 (2), 27.729.2 mm SL; Borneo: Kalimantan Tengah, Sungai Serendan. CMK 14802 (10), 21.6–34.5 mm SL; Borneo: Kalimantan Barat, Sungai Pinyuh, 8 km SE of Anjungan on road to Pontianank. ZRC 46124 (2), 23.0–32.1 mm SL; Borneo: Kalimantan Tengah, road from Pangkalanbun to Nipa between Kubu and Nipa.

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