

Two new glyptosternine catfishes (Teleostei: Sisoridae) from Vietnam and China

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Abstract

Pareuchiloglanis macropterus new species, is described from the Salween River (Nujiang) and Irrawaddy River drainages in southern China, and *P. rhabdurus* new species, is described from the Red River (Song Hong) drainage in northern Vietnam. *Pareuchiloglanis macropterus* can be distinguished from congeners by the following unique combination of characters: prepelvic length 37.0–42.2% SL; length of adipose-fin base 31.8–37.0% SL (dorsal-fin base 3.3–3.5 times in adipose-fin base); caudal peduncle length 17.6–20.0% SL; caudal peduncle depth 6.8–7.4% SL (2.4–3.0 times in caudal peduncle length); body depth at anus 9.5–12.6% SL; snout length 50.3–56.5% HL; interorbital distance 24.6–30.2% HL; 41–42 vertebrae; pectoral fin reaching to pelvic-fin origin; ventral limit of gill opening to level of third or fourth pectoral-fin element; posterior base of adipose fin notched and separate from caudal fin; and presence of pale patches on body. *Pareuchiloglanis rhabdurus* can be distinguished from congeners chiefly by a slender body (8.7% SL) and caudal peduncle (4.2% SL; 4.2 times in caudal peduncle length), as well as a combination of the following characters: length of adipose-fin base 34.7% SL; dorsal to adipose distance 12.2% SL; caudal peduncle length 17.6% SL; snout length 57.0% HL; interorbital distance 25.5% HL; adipose and caudal fins separate; and ventral limit of gill opening to base of first pectoral-fin element.

Key words: *Pareuchiloglanis*, Red River, Salween River, Glyptosterninae

Introduction

Members of the sisorid catfish genus *Pareuchiloglanis* Pellegrin, 1936 are rheophilic catfishes chiefly found in the headwaters of major river drainages throughout South and East Asia. They belong to the sisorid subfamily Glyptosterninae, a group distributed from the Caucasus to China, and have been distinguished from other members of the subfamily by the presence of homodont dentition arranged in narrow bands with sides not extending posteriorly.

The monophyly of *Pareuchiloglanis* remains doubtful. He (1995, 1996) demonstrated the paraphyly of *Pareuchiloglanis*, *Oreoglanis*, and *Pseudexostoma* (possibly with the inclusion of *Myersglanis* and *Parachiloglanis*) and a rediagnosis of glyptosternine genera is badly needed. However, that is beyond the scope of this study, and the current definition of *Pareuchiloglanis* is used here.

While examining material for a study on the phylogenetic relationships of glyptosternine genera, material from the Red River (Song Hong) drainage in northern Vietnam, and the Salween River (Nujiang) and Irrawaddy River drainages in southern China were found to belong to two undescribed species. The description of the Chinese material as *Pareuchiloglanis macropterus* sp. nov. and the Vietnamese material as *P. rhabdurus* sp. nov, brings the total number of currently accepted species in this genus to fifteen.

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 & Rainboth (2001). In cases where comparisons are made with literature sources and comparable data (e.g. caudal peduncle depth expressed as %SL) are not available, the comparisons have been made using equivalent standards (e.g. caudal peduncle depth expressed as the number of times in caudal peduncle length).

Material examined in this study is deposited in the following institutions: American Museum of Natural History, New York (AMNH); Natural History Museum, London (BMNH); collection of Maurice Kottelat, Cornol (CMK); Living Aquatic Resources Research Institute, Vientiane (LARRI); Nationaal Natuurhistorisch Museum, Leiden (RMNH); University of Michigan Museum of Zoology, Ann Arbor (UMMZ); Zoological Reference Collection, Singapore (ZRC).

Comparative material. *Pareuchiloglanis anteanalis*: BMNH 1969.4.15.93 (1), 154.6 mm SL; China: Sichuan province, Shiba. Additional data from Fang et al. (1984). *P. feae*: RMNH 10237 (3 syntypes), 62.8–98.8 mm SL; Myanmar: Kachin Hills. *P. gongshanensis*: Data from Chu (1981). *P. gracilicaudata*: Data from Wu & Chen (1979). *P. kamengensis*: Data from Jayaram (1966), Wu & Wu (1992) and Zhang et al. (1995). *P. longicauda*: Data from Yue (1981). *P. macrotrema*: BMNH 1926.2.19.5–6 (2 syntypes), 94.9–147.6 mm SL; Vietnam: Tonkin, Ngoi-Tio, Col des Nuages, elev. 4500–6500 ft. *P. myzostoma*: Data from Chu & Mo (1999). *P. nebulifer*: ZRC 45706 (holotype), 94.8 mm SL; CMK 15447 (1 paratype), 62.3 mm SL; Laos: Houaphan province, small creek, tributary of Houai Siam, upstream of Ban Kangpabong, 20°19'36"N 104°25'1"E. CMK 15342 (1 paratype) 86.1 mm SL; LARRI uncat. (1 paratype), 75.2 mm SL; Laos: Houaphan province, unnamed forest stream about 4 km SE from Ban Houatangoua on road to Xam Tai, 20°7'59"N

104°33'39"E. *P. poilanei*: MNHN 1935-5-11 (7 syntypes) 91.5–125.0 mm SL; Vietnam: Nha Trang, Song Cai basin, Song Ko. *P. robusta*: BMNH 1969.4.15.94 (1), 140.0 mm SL; China: Sichuan province, Shiba. Additional data from Ding et al., (1991). *P. sichuanensis*: Data from Ding et al. (1991). *P. sinensis*: ZRC 47234 (10), 85.3–135.1 mm SL; China: Yunnan province, Lijiang county, small creek at Shigu, 26°52'14.4"N 99°57'27.0"E.

***Pareuchiloglanis macropterus* sp. nov. (Fig. 1)**

Pareuchiloglanis kamengensis (non Jayaram, 1966) – Chu, 1979: 77; Chu, 1986: 41; Chu, 1989: 191, Fig. 3-63; Chu et al., 1990: 205, Fig. 205; He, 1996: 130; Yang, 1998: 307, Fig. 225; Chu & Mo, 1999: 167, Fig. 108 (in part); Ding, 2002: 27 (in part).

Type material. Holotype: ZRC 49124, 97.5 mm SL; China: Yunnan province, Salween River (Nujiang) drainage; Laowo River, a tributary of Salween River (Nujiang) ca. 5 km to Liuku on Yongping–Liuku road, 25°50'18.6"N 98°53'46.8"E, 900 m asl; Y.-X. Cai & H. H. Tan, 27 May 2000.

Paratypes. BMNH 1987.9.17.31–32 (2), 157.5–176.0 mm SL; China: Yunnan province, Lushui County, Gulang, 26°5'N 98°36'E; collector unknown, 1974. UMMZ 232108 (2), 61.5–62.2 mm SL; China: Yunnan province, Lushui County, river at Pianma, 26°1'N 98°38'E; collector and date unknown.

Diagnosis. *Pareuchiloglanis macropterus* can be distinguished from the two other species known from the Salween River (Nujiang) and Irrawaddy River drainages as follows: from *P. feae* in having a longer adipose-fin base (31.8–37.0% SL vs. 24.1–25.8) with the adipose fin being separate from (vs. confluent with) the caudal fin, and from *P. gongshanensis* in having a deeper caudal peduncle (2.4–3.0 times in caudal peduncle length vs. 4.0–4.6). It differs from *P. kamengensis* (with which it was previously identified) in having a shorter prepelvic length (37.0–42.2% SL vs. 53.2–64.9), a longer adipose fin (dorsal-fin base 3.3–3.5 times in adipose-fin base vs. 2.3–3.2), narrower interorbital (24.6–30.2% HL vs. 30.6–40.0), and the presence (vs. absence) of pale patches on the body.

With regard to the remaining congeners, *P. macropterus* can be distinguished from *P. anteanalis* in having more vertebrae (41–42 vs. 39–40), a shorter (17.6–20.0% SL vs. 21.7–27.0) and deeper (2.4–3.0 times in caudal peduncle length vs. 4.4–5.9) caudal peduncle, and from *P. gracilicaudata* and *P. longicauda* in having a deeper caudal peduncle (2.4–3.0 times in caudal peduncle length vs. 4.1–6.6). It further differs from *P. gracilicaudata* in having the posterior base of the adipose fin notched (vs. without a notch) and from *P. longicauda* in having a more restricted gill opening (reaching to the level of the third or fourth pectoral-fin element ventrally vs. to the base of the first pectoral fin element).

Pareuchiloglanis macropterus can be distinguished from *P. macrotrema* in having a deeper caudal peduncle (6.8–7.4% SL vs. 5.1–5.2), from *P. myzostoma* in having a more slender body (9.5–12.6% SL vs. 16.7–18.5), and from *P. nebulifer* in having a longer adi-

pose-fin base (31.8–37.0% SL vs. 28.3–30.9) and a longer snout (50.3–56.5% HL vs. 47.8–50.7). It differs from *P. poilanei* in having a longer (17.6–20.0% SL vs. 13.0) and more slender (6.8–7.4% SL vs. 8.6) caudal peduncle and the adipose fin separate from (vs. confluent with) the caudal fin, and from *P. robusta* in having a more slender body (9.5–12.6% SL vs. 13.3–16.7), more vertebrae (41–42 vs. 37–38), and the pectoral fin reaching to (vs. not reaching) pelvic-fin origin. It can be distinguished from *P. sichuanensis* in having a more slender caudal peduncle (6.8–7.4% SL vs. 7.8–11.4), more vertebrae (41–42 vs. 35–36) and the adipose fin separate from (vs. confluent with) the caudal fin, and from *P. sinensis* in having a more slender body (9.5–12.6% SL vs. 14.9–18.6) and caudal peduncle (6.8–7.4% SL vs. 8.1–9.3), a more restricted gill opening (reaching to the level of the third or fourth pectoral-fin element ventrally vs. to the base of the first pectoral fin element), and the pectoral fin reaching to (vs. not reaching) pelvic-fin origin.

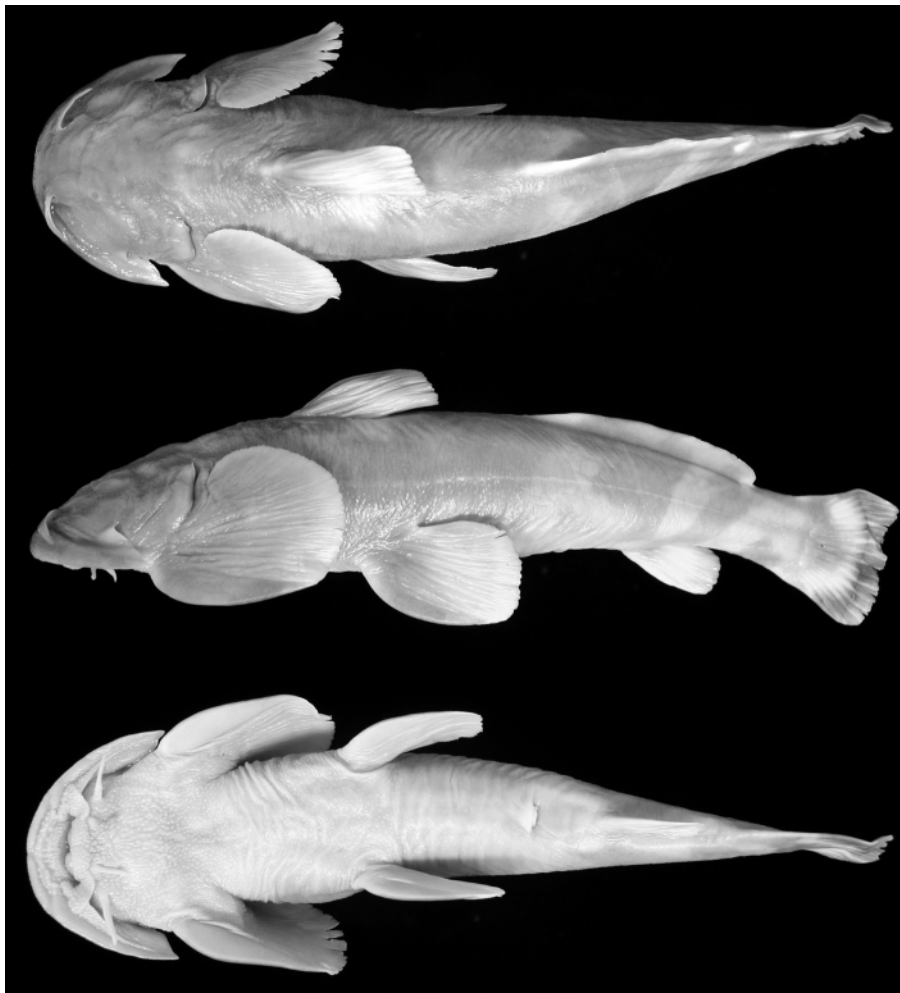


FIGURE 1. *Pareuchiloglanis macropterus*, ZRC 49124, holotype, 97.5 mm SL; China: Laowo River, Salween River (Nujiang) drainage. Dorsal, lateral and ventral views.

Description. Morphometric data as in Table 1. Head and abdominal region moderately broad and strongly depressed. Dorsal profile rising gently from tip of snout to origin of dorsal fin, then almost horizontal or sloping very gently ventrally to end of caudal peduncle. Ventral profile horizontal to anal-fin base, then sloping very gently dorsally to end of caudal peduncle. Caudal peduncle short, moderately deep and compressed. Anus and urogenital openings located approximately midway between posteriormost extent of pelvic fin and base of first anal-fin ray element. Skin smooth. Lateral line complete and midlateral. Vertebrae 24+17=41 (2), 25+16=41 (1), 25+17=42 (1) or 26+16=42 (1) (26+16 in holotype).

TABLE 1. Morphometric data for *Pareuchiloglanis macropterus* (n=5).

	Holotype	Range	Mean±SD
%SL			
Predorsal length	35.0	33.0–36.7	35.2±1.38
Preanal length	73.2	70.3–77.3	74.2±2.63
Prepelvic length	41.5	37.0–42.2	40.7±2.10
Prepectoral length	21.4	18.3–21.4	19.6±1.30
Length of dorsal-fin base	9.8	9.8–10.8	10.4±0.40
Anal-fin length	6.8	5.7–6.8	6.4±0.41
Pelvic-fin length	18.9	18.9–22.4	20.5±1.29
Pectoral-fin length	23.4	23.4–27.0	25.2±1.46
Caudal-fin length	14.4	14.3–16.4	15.4±0.97
Length of adipose-fin base	31.8	31.8–37.0	34.6±1.93
Dorsal to adipose distance	17.2	14.0–17.2	16.1±1.28
Post-adipose distance	9.9	9.0–10.1	9.7±0.42
Caudal peduncle length	17.6	17.6–20.0	18.7±1.10
Caudal peduncle depth	7.4	6.8–7.4	7.2±0.25
Body depth at anus	12.6	9.5–12.6	11.3±1.19
Head length	25.9	23.5–27.8	26.3±1.76
Head width	20.8	19.3–22.2	20.5±1.07
Head depth	12.4	10.6–12.4	11.6±0.67
%HL			
Snout length	56.5	50.3–56.5	53.8±2.87
Interorbital distance	24.9	24.6–30.2	27.0±2.43
Eye diameter	7.1	5.4–7.6	6.6±0.96
Nasal barbel length	28.1	25.0–42.4	31.9±6.57
Maxillary barbel length	70.4	70.4–79.7	75.1±3.85
Inner mandibular barbel length	19.8	19.3–26.5	22.0±2.85
Outer mandibular barbel length	28.5	27.5–31.6	29.4±1.54

Head broadly rounded when viewed from above. Gill openings moderate, extending from posttemporal region to base of third or fourth pectoral-fin element. Branchiostegal rays 4 (3) or 5 (2) (4 in holotype). Head covered with thick skin. Ventral surface of head and thorax covered with papillae, especially in larger specimens.

Barbels extremely flattened and in four pairs. Maxillary barbel with thin flap of skin fringing posterior margin and pointed tip; ventral surface with numerous plicae. Barbel extending just beyond base of first pectoral-fin element. Nasal barbel with small flap of thin skin fringing posterior margin and extending to middle of orbit. Inner mandibular-barbel origin close to midline, extending to midway between lower lip margin and first pectoral-fin element. Outer mandibular barbel originates posterolateral of inner mandibular barbel, extending nearly to first pectoral-fin element. Eye small and almost rounded, subcutaneous and located on dorsal surface of head.

Mouth inferior, with broad, thin papillate lips. Rictal lobe large and papillate. Pre-maxillary tooth band not exposed when mouth is closed. Oral teeth long, thin and somewhat rounded at tip; in irregular rows on all tooth-bearing surfaces. Premaxillary tooth band broad and of equal width throughout, with a small median indentation. Dentary teeth in two well-separated, roughly triangular patches.

Dorsal fin located at point through anterior third of body. Fin without spine, bearing i,6 (5) rays, and fin margin straight. Adipose fin with long base extending for at least two thirds of postdorsal distance. Fin margin almost straight for entire length; posterior base deeply incised. Caudal fin emarginate, with i,7,6,i (5) principal rays; procurent rays symmetrical and extend only slightly anterior to fin base.

Anal fin with short base extending approximately one-third of adipose fin-base length, with ii,3 (3) or ii,4 (2) rays (ii,4 in holotype). Fin margin almost straight. Pelvic-fin origin at vertical through posterior end of dorsal-fin base. Pelvic fin greatly enlarged and with broadly rounded margin, first element broadened and with regular striae on ventral surface; with i,5 (5) rays. Pectoral fin greatly enlarged and with broadly rounded margin, first element broadened and with regular striae on ventral surface; with i,14 (3) or i,15 (2) rays (i,15 in holotype).

Coloration. Light brown on dorsal and lateral surfaces of head and body, light yellow on ventral region. Dorsal surfaces of head and body with series of small light yellow patches: two ovoid patches on occipital region, one on base of first dorsal-fin ray, two on each side of base of last dorsal-fin ray, an elliptical patch on anterior base of adipose fin and another on base of caudal fin. Dorsal fin hyaline, with a thin light brown band near distal margin of fin. Adipose fin light brown, with lighter color around distal edge. Caudal fin brown at base, with a crescentic light-yellow band on middle third of fin. Anal fin hyaline. Dorsal surfaces of pectoral and pelvic fins brown, ventral surfaces light yellow. Maxillary and nasal barbels brown dorsally and light yellow ventrally.

Distribution. Known from the Salween River (Nujiang) and Irrawaddy River drainages in southern China (Fig. 2). The specimens of *P. kamengensis* from the Mekong River (Lancanjiang) drainage (e.g. by Chu et al., 1990) require study as to whether or not they might be referable to *P. macropterus*.

Etymology. From the Greek *makros*, meaning large, and *pteron*, meaning fin, in reference to the long-based adipose fin of this species. Used as an adjective.

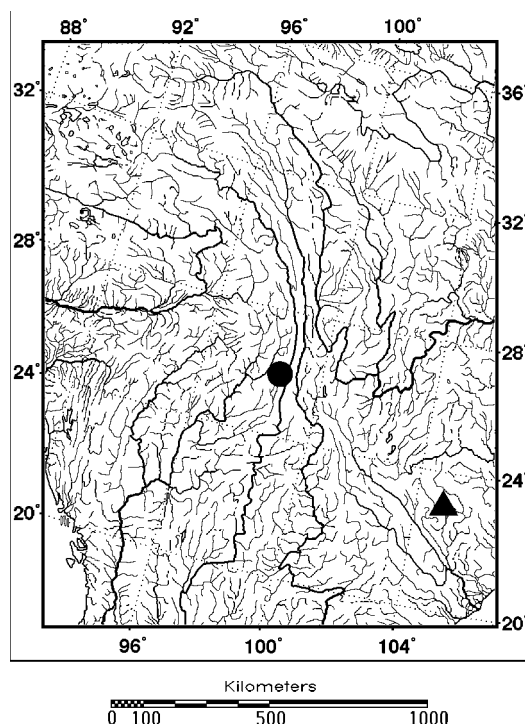


FIGURE 2. Map showing distributions of *P. macropterus* (●) and *P. rhabdurus* (▲).

Pareuchiloglanis rhabdurus sp. nov. (Fig. 3)

Type material. Holotype: AMNH 211153, 90.0 mm SL; Vietnam: Ha Giang province, Red River (Song Hong) drainage, Vi Xuyen district, Cao Bo stream (Bac Trao river) near camp 1, 22°45'18.0"N 104°52'11.4"E; R. C. Schelly et al., 22 April 2000.

Diagnosis. *Pareuchiloglanis rhabdurus* can be distinguished from the three other species known from Vietnam and adjacent regions in Laos (*P. macrotrema*, *P. nebulifer* and *P. poilanei*) in having a more slender body (8.7% SL vs. 9.4–13.6) and caudal peduncle (4.2% SL vs. 5.1–8.6). It further differs from *P. macrotrema* in having a smaller dorsal to adipose distance (12.2% SL vs. 15.2–20.7), and a longer snout (57.0% HL vs. 50.0–52.1), from *P. nebulifer* in having a narrower interorbital (25.5% HL vs. 29.3–35.6) and a longer adipose-fin base (34.7% SL vs. 28.3–30.9), caudal peduncle (17.6% SL vs. 13.6–15.7) and snout (57.0% HL vs. 47.8–50.7), and from *P. poilanei* in having separate (vs. confluent) adipose and caudal fins.

Pareuchiloglanis rhabdurus can be distinguished from all other congeners except *P. longicauda* and *P. sinensis* in having the gill opening extending to the base of the first pectoral-fin element (vs. not extending ventrally beyond the third pectoral fin ray). It differs from *P. longicauda* in having a longer adipose-fin base (34.7% SL vs. 24.5–32.7) and a shorter caudal peduncle (17.6% SL vs. 20.0–22.2), and from *P. sinensis* in having a more slender body (8.7% SL vs. 14.9–18.6) and caudal peduncle (4.2% SL vs. 8.1–9.3).

Description. Morphometric data as in Table 2. Head and abdominal region moderately broad and strongly depressed. Dorsal profile rising gently from tip of snout to origin of dorsal fin, then almost horizontal or sloping very gently ventrally to end of caudal peduncle. Ventral profile horizontal to anal-fin base, then sloping very gently dorsally to end of caudal peduncle. Caudal peduncle long slender and moderately compressed. Anus and urogenital openings located almost at level of line through posterior pelvic-fin margins. Skin smooth. Lateral line complete and midlateral. Vertebrae 26+14=40.

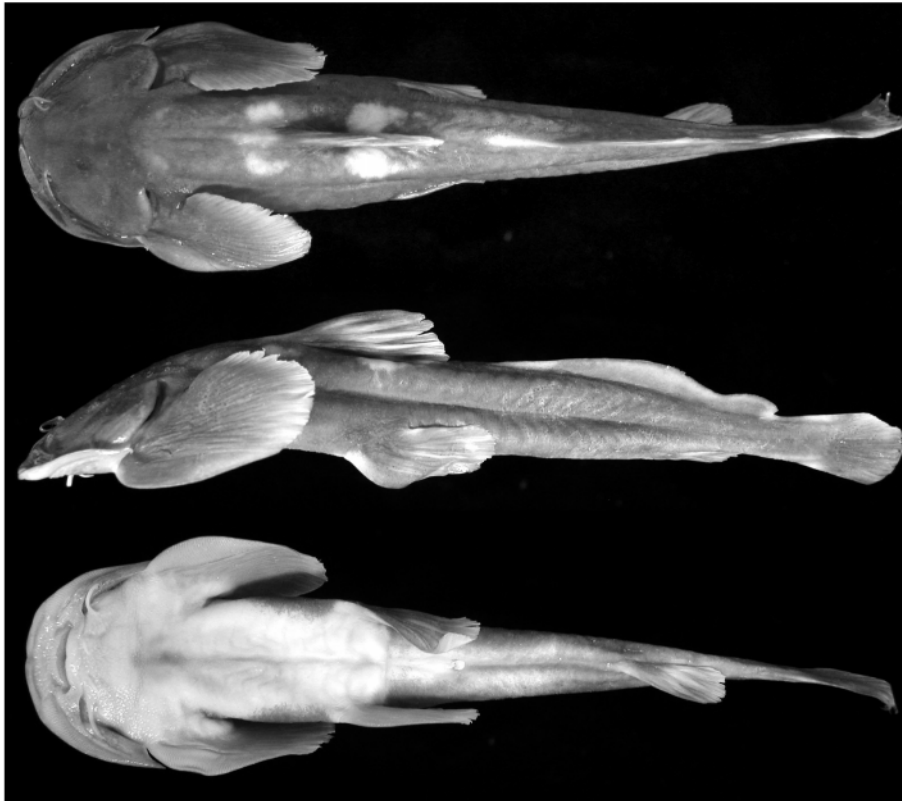


FIGURE 3. *Pareuchiloglanis rhabdurus*, AMNH 211153, holotype, 90.0 mm SL; Vietnam: Bac Trao River, Red River (Song Hong) drainage. Dorsal, lateral and ventral views.

Head broadly rounded when viewed from above. Gill openings moderate, extending from posttemporal region to base of first pectoral-fin element. Branchiostegal rays 5. Head covered with thick skin. Ventral surface of head and thorax covered with small papillae.

Barbels extremely flattened and in four pairs. Maxillary barbel with thin flap of skin fringing posterior margin and pointed tip; ventral surface with numerous plicae. Barbel extending just beyond base of first pectoral-fin element. Nasal barbel with small flap of thin skin fringing posterior margin and extending to middle of orbit. Inner mandibular barbel origin close to midline, extending to midway between lower lip margin and first

pectoral-fin element. Outer mandibular barbel originates posterolateral of inner mandibular barbel, extending nearly to first pectoral-fin element. Eye small and almost rounded, subcutaneous and located on dorsal surface of head.

TABLE 2. Morphometric data for the holotype of *Pareuchiloglanis rhabdurus*.

	Holotype
%SL	
Predorsal length	34.6
Preanal length	70.7
Prepelvic length	39.9
Prepectoral length	16.7
Length of dorsal-fin base	11.2
Anal-fin length	7.1
Pelvic-fin length	16.8
Pectoral-fin length	23.4
Caudal-fin length	13.2
Length of adipose-fin base	34.7
Dorsal to adipose distance	12.2
Post-adipose distance	8.7
Caudal peduncle length	17.6
Caudal peduncle depth	4.2
Body depth at anus	8.7
Head length	22.2
Head width	20.1
Head depth	8.6
%HL	
Snout length	57.0
Interorbital distance	25.5
Eye diameter	8.0
Nasal barbel length	30.5
Maxillary barbel length	77.0
Inner mandibular barbel length	13.0
Outer mandibular barbel length	24.0

Mouth inferior, with broad, thin papillate lips. Rictal lobe large and papillate. Pre-maxillary tooth band not exposed when mouth is closed. Oral teeth long, thin and somewhat rounded at tip; in irregular rows on all tooth-bearing surfaces. Premaxillary tooth band broad and of equal width throughout, with a small median indentation on anterior edge. Dentary teeth in two well separated, roughly triangular patches.

Dorsal fin located at point through anterior third of body. Fin without spine, bearing i,6 rays; fin margin straight. Adipose fin with long base extending for about two thirds of postdorsal distance. Fin margin almost straight for entire length (damaged and partially healed, as evidenced by presence of shallow notch); posterior end deeply incised. Caudal fin emarginate, with i,6,6,i principal rays; procurrent rays symmetrical and extend only slightly anterior to fin base.

Anal fin with short base extending approximately one-third of adipose fin-base length and ii,3 rays. Fin margin almost straight. Pelvic-fin origin at vertical through posterior end of dorsal-fin base. Pelvic fin greatly enlarged and with broadly rounded margin, first element broadened and with regular striae on ventral surface; with i,5 rays. Pectoral fin greatly enlarged and with broadly rounded margin, first element broadened and with regular striae on ventral surface; with i,14 rays.

Coloration. Grayish brown on dorsal and lateral surfaces of head and body, light yellow on ventral region. Dorsal surfaces of head and body with series of small light yellow patches: two ovoid patches on occipital region, two on each side of base of first dorsal-fin ray, two on each side of base of last dorsal-fin ray, an elliptical patch on anterior base of adipose fin and another on base of caudal fin. Dorsal fin hyaline, with a grayish brown band on base and middle third of fin. Adipose fin grayish brown, with lighter color around distal margin. Caudal fin grayish brown at base, membranes (but not fin rays) fading to light yellow distally, with dark submarginal band. Anal fin hyaline, with faint gray band on middle one-third of fin rays. Dorsal surfaces of pectoral and pelvic fins grayish brown, ventral surfaces light yellow. Maxillary and nasal barbels grayish brown dorsally and light yellow ventrally.

Distribution. Known from the Song Lo drainage, part of the Red River (Song Hong) drainage, in northern Vietnam.

Etymology. From the Greek *rhabdos*, meaning rod and *oura*, meaning tail, in reference to the slender caudal peduncle of this species. Used as an adjective.

Discussion

The types of many nominal glyptosternine species are deposited in Indian and Chinese institutions, and are usually fairly inaccessible to researchers. This produces obstacles to easy comparison when new species of glyptosternines are described. The problem is also exacerbated by the limited availability of non-type material for comparison in institutions outside of China and India. Glyptosternine catfishes live in habitats that are difficult for researchers to gain access to and are difficult to capture using conventional sampling methods; these are the primary reasons for the paucity of (non-type) comparative material. Furthermore, much of this comparative material actually consists of material exchanged from Indian or Chinese institutions (for example, all the paratypes of *P. macropterus* had been exchanged from the Kunming Institute of Zoology in Yunnan, China). However, these obstacles can be overcome and adequate comparisons are possible, at least for the species described within the last 50 years, by using the data from the original descriptions. It is with this limitation in mind that the two species described herein are compared with other congeners.

Pareuchiloglanis macropterus has often been misidentified as *P. kamengensis* in the literature, but can be distinguished from it by the characters stated in the diagnosis. Fur-

thermore, the two species are found in different drainages (*P. macropterus* from the Salween River and Irrawaddy River drainages and *P. kamengensis* from the Brahmaputra River drainage) and are not likely to be conspecific, as glyptosternine catfishes, like many other highly specialized rheophilic fish species, have very restricted distributions.

Additional characters may exist to distinguish *P. macropterus* from *P. kamengensis*. The specimen of *P. kamengensis* collected from the Yarlong Tsangpo River (a tributary of the Brahmaputra River upstream of the type locality of *P. kamengensis*) illustrated in Wu & Wu (1992: Fig. 155) shows a distinct postlabial and thoracic groove not present in *P. macropterus*, as well as the disposition of the premaxillary teeth in two distinct patches (although the accompanying text mentions the teeth as being arranged in a single band). The validities of these characters await confirmation by direct comparison of specimens and are therefore not used as diagnostic for the species. The figure does illustrate, however, some of the characters that distinguish *P. kamengensis* from *P. macropterus* (such as the shorter adipose fin).

Although the pale-colored patches on the body of *P. macropterus* are not particularly evident in Fig. 1, they can still be made out with some difficulty in pale specimens (as in Fig. 1), and are clearly visible in darker specimens (the BMNH paratypes). The presence of these patches is also mentioned in the literature and amply illustrated (e.g. Chu et al., 1990).

There are only two species of *Pareuchiloglanis* reported from the Red River (Song Hong) drainage: *P. macrotrema* (known from the Red River (Song Hong) drainage in Lao Cai province) and *P. rhabdurus* (found further to the west in the Song Lo drainage). The only other species reported from the region is *P. nebulifer*, which is known only from the Song Ma drainage, which lies immediately adjacent southwards to the Red River (Song Hong) drainage. Given how poorly the freshwater ichthyofauna of northern Vietnam is currently understood (Kottelat, 2001), it would not be surprising that more *Pareuchiloglanis* species await discovery there.

The material identified as *P. macrotrema* by Chu et al. (1990) from the upper Red River (Yuanjiang) drainage in China probably represents an undescribed species. As noted in Kottelat (2001), differences exist between the Vietnamese and Chinese material, with the former having a shorter caudal peduncle (13.7–18.2% SL vs. 20.8–24.4). However, the Chinese material was unavailable to me for further verification of its status. Another undescribed *Pareuchiloglanis* species from the Salween River (Nujiang) drainage possibly exists. The material identified as *P. feae* by Chu et al. (1990) is characterized by distinctly separate (vs. confluent) adipose and caudal fins and therefore does not appear to be conspecific with *P. feae* s. str. . Again, I was unable to obtain material to verify its identity.

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