J. South Asian Nat. Hist., ISSN 1022-0828. June, 2000. Vol. 5, No. 1, pp. 7–15, 4 figs.
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Descriptions of three new species of catfishes (Teleostei: Akysidae and Sisoridae) from Laos and Vietnam

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Abstract

Akysis inermis, new species, from the Xe Banghiang and Xe Kong basins in Laos, belongs to the *A. pseudobagarius* species-group and differs from all members of the group in having no serrae (vs. with 4-9 serrae) on the posterior edge of the pectoral spine, a light yellow snout with a sharp contrasted edge, and a colour pattern consisting of dorsal and ventral light yellow patches on the body that partially coalesce at midheight of the flank. *Bagarius rutilus*, new species, from the Red River basin in northern Vietnam and Laos, is differentiated from congeners in having a unique combination of the following characters: cranium and interneural covered with numerous large, elongate tubercles, supraoccipital and interneural without sharp ridges, skin above neural spines anterior and posterior to adipose fin never forming distinct ridges, slender elongate neural spines, elliptical eyes, and orange fins in life. *Pareuchiloglanis nebulifer*, new species, from the Nam Ma basin in northeastern Laos is differentiated from *P. macrotrema* and *P. poilanei* in having a unique combination of the following characters: preanal distance 73.0–73.4 % SL, adipose fin length 28.3–30.9 % SL, caudal peduncle depth 5.7–7.7 % SL, head length 22.5–23.8 %SL, head width 18.2–19.6 % SL, interorbital distance 29.3–35.6 % HL, and adipose fin not contiguous with caudal fin.

Introduction

While carrying fish surveys for the preparation of a field guide to the fishes of Laos (Kottelat, 2000) the second author collected three new species of catfishes which are described here. One of them had also been obtained independently by the two authors in the Red River basin in northern Vietnam.

Methods and material

Measurements were made point to point with dial callipers and data recorded to tenths of a millimetre. 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 itself and measurements of body parts are given as proportions of standard length (SL).

Measurements follow those of Ng & Kottelat (1998) with the following additional measurements: post-adipose distance is measured from the posterior-most point of the adipose-fin base to the posterior margin of the hypural complex; head depth is measured at the base of the occipital process; dorsal to adipose distance is measured from the base of the last dorsal-fin ray to the origin of the adipose fin. Numbers in parentheses following a particular count are the numbers of examined specimens with that count.

Drawings of the specimens were made with a Nikon SMZ-10 microscopic camera lucida. The specimens examined for the present study are in: BMNH, Natural History Museum, London; CAS, California Academy of Sciences, San Francisco; CMK, the collection of the second author; LARRI, Living Aquatic Resources Research Institute, Vientiane; MNHN, Muséum National d'Histoire Naturelle, Paris; NRM, Naturhistoriska Riksmuseet, Stockholm; and ZRC, Zoological Reference Collection, Raffles Museum of Biodiversity Research, National University of Singapore.

Akysis inermis, new species
(Figure 1)

Holotype. ZRC 45401, 34.9 mm SL; Laos: Attapeu province: unnamed creek entering Xe Kaman from the north at proposed Xe Kaman dam site, 14°57'40"N 107°9'16"E; M. Kottelat et al., 21 May 1999.

Paratypes. LARRI uncat., 3 ex., ZRC 45402, 3 ex., CMK 15619, 8 ex., 31.1-35.2 mm SL; data as for holotype. - CMK 13614, 1 ex., 29.0 mm SL; Laos: Savannakhet Prov.: Xe Bang Hiang at Muang Xepon, at rapids immediately upstream of confluence with Xe Nambok; 16°42'23"N 106°13'20"E; M. Kottelat et al., 25 Apr 1997.

Diagnosis. *Akysis inermis* can be differentiated from its congeners of the *A. pseudobagarius* group in lacking distinct serrae on the pectoral spine, and having a unique combination of the following characters: length of adipose-fin base 13.4-16.7 % SL, eye diameter 7-10 % HL, length of nasal barbel 38-57 % HL, a light yellow snout with a sharp contrasted edge, and a colour pattern consisting of dorsal and ventral light yellow patches on the body that sometimes coalesce at midheight of the flank.

Description. Head depressed, body moderately compressed and elongate. Mouth conspicuously subterminal; tip of snout noticeably in front of apex of lower jaw. Dorsal profile rising evenly from tip of snout to origin of dorsal fin, then sloping gently ventrally from there to end of caudal peduncle. Ventral profile horizontal to origin of anal, then sloping dorsally to end of caudal peduncle. Head and body covered with tubercles; those on body being arranged in 5-6 longitudinal rows on each side. Large anterior and posterior nostrils present, closely situated together and separated only by base of nasal barbel. Median fontanel not reaching base of occipital process. Occipital process narrow, its tip tapering and reaching predorsal plate. Premaxillary toothband partially exposed when mouth is closed.

Dorsal fin with I,4,i (10) or I,5 (5) rays. Adipose fin with moderately long base. Anal fin with iii,4,i (1), iii,5,i (2), iii,6 (4), iii,6,i (2), iv,6 (3), iii,7 (1), iii,6,ii (1) or iv,7 (1) rays. Caudal fin forked, with 7/7 (14) or 7/8 (1) rays. Pelvic fin with i,5 (15) rays. Pectoral fin with I,6 (2) or I,6,i (13) rays. Pectoral spine stout, without serrae on posterior edge (Fig. 2a). Branchiostegal rays 6 (1) or 7 (14). Gill rakers 2+4 (3) or 1+6 (3). Vertebrae 16+15=31 (1), 16+16=32 (3), 16+17=33 (7), 17+16=33 (2), 16+18=34 (1) or 17+18=35 (1).

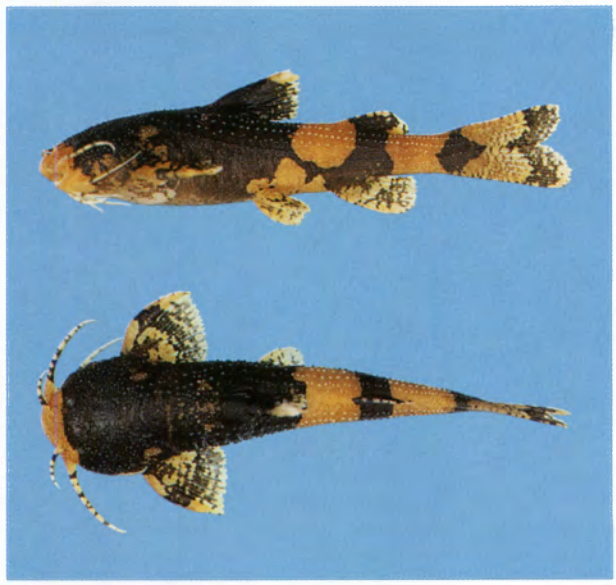


Figure 1. *Akysis inermis*, ZRC 45401, holotype, 34.9 mm SL.

Morphometrics (obtained from 15 specimens): in % SL: body depth at anus 7.6-9.5, predorsal length 36.3-41.0, preanal length 62.4-69.3, prepelvic length 46.6-51.1, prepectoral length 21.6-24.7, length of dorsal-fin base 12.6-17.3, length of adipose-fin base 13.4-16.7, length of anal-fin base 11.1-16.3, length of pelvic fin 12.6-14.8, length of pectoral fin 21.9-25.8, length of pectoral spine 16.3-22.3, depth of caudal peduncle 6.4-7.7, length of caudal peduncle 17.8-21.5, length of caudal fin 20.6-27.0, head length 24.8-27.8, head width 21.6-24.6, head depth 14.1-17.6; in % HL: snout length 35-45, interorbital distance 29-40, eye diameter 7-10, length of nasal barbel 38-57, length of maxillary barbel 84-115, length of inner mandibular barbel 47-64, length of outer mandibular barbel 65-87.

Colour. In 70 % ethanol: dorsal surfaces and sides of head brown. Snout light yellow. Belly, chest and ventral surface of head light yellow. Dorsal surface and sides of body brown, with two irregular light yellow patches over top and sides: one posterior to dorsal fin and contiguous with adipose fin and another from posterior end of adipose-fin base to immediately anterior to caudal flexure. Patches are contiguous with, or laterally narrowly separated from similar markings extending dorsally from surrounding of anal fin. Adipose fin brown, except for light yellow at the origin and along the edge. Basal two-thirds of dorsal fin brown, the remaining one third with brown spots. Distal half of caudal fin brown. Pectoral, pelvic, and anal fin with brown spots. Barbels and pectoral spines transversely barred with brown rings.

In life, the dark marks are blackish brown and the pale ones bright orange.

Distribution and habitat. Known from the Xe Banghiang and Xe Kong drainages (part of the Mekong River drainage) in southern Laos. *Akysis inermis* has been observed in various habitats from swift creek to riffles in streams and rapids in large rivers. All habitats had in common a stony (gravel to boulder) substrate and relatively swift current. In most of them the water was clear (in the dry season).

Etymology. From the Latin *inermis*, meaning unarmed, in reference to the lack of serrations on the pectoral spine. An adjective.

Discussion. *Akysis* constitutes a small genus of catfishes endemic to Southeast Asia. All of the species are found living on the bottom of swift-flowing streams. The study of their diversity has not received much attention until recently (Ng, 1996; Ng & Kottelat, 1996, 1998). In our review of the Indochinese *Akysis* (Ng & Kottelat, 1998), we divided *Akysis* into two species-groups based on differences in the morphology of the species. The *A. pseudobagarius* species-group was diagnosed to include species having a conspicuously subterminal mouth with the upper jaw noticeably overhanging the lower jaw, relatively large anterior and posterior nostrils closely situated together and separated only by the base of the nasal barbel, a relatively elongate body and a forked caudal fin. The *A. variegatus* species-group was diagnosed to include species having a terminal or slightly subterminal mouth with the upper jaw slightly overhanging or having a uniform margin with the lower jaw, relatively small anterior and posterior nostrils located further apart with a distance between the base of the nasal barbel and anterior nostril, a relatively short body and a truncate or emarginate caudal fin.

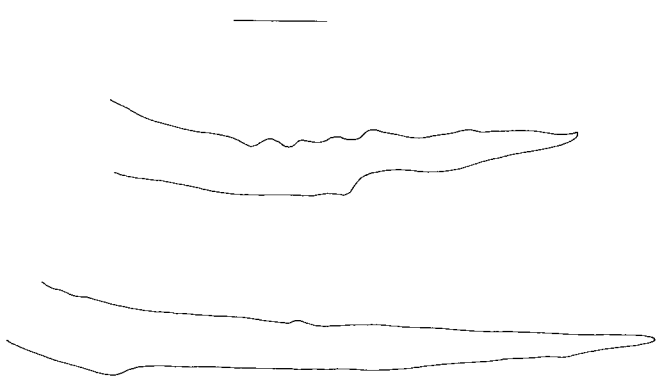


Figure 2. Schematic illustration of the pectoral spine of *Akysis*: **a**, *A. inermis*, CMK 15619, paratype, 32.4 mm SL; **b**, *A. leucorhynchus*, CMK 5149, 23.2 mm SL. Scale bar shows 1 mm.

The morphology of *A. inermis* places it in the former group and hereafter, comparisons will be made among members of the *A. pseudobagarius* species-group only. *Akysis inermis* is easily distinguished from all other members of this group by being the only known species that lacks serrae on the posterior edge of the pectoral spines (all other species have 4-9 serrae on the posterior edge of the pectoral spine) and is only similar in coloration with *A. leucorhynchus* (both species possess a light yellow snout with (vs. absence of) a sharp contrasted edge), from which it can be distinguished by the lack of serrations (vs. with 4-6 serrations; Fig. 2) on the pectoral spine.

Akysis inermis further differs from *A. leucorhynchus* in having a shorter adipose-fin base (13.4-16.7 % SL vs. 16.5-24.8), a smaller eye (eye diameter 7-10 % HL vs. 9-14), and a longer nasal barbel (38-57 % HL vs. 16-38). The colour pattern of the two species are also slightly different: *A. inermis* has dorsal and ventral light yellow patches on the body that sometimes coalesce at midheight of the flank while in *A. leucorhynchus*, the light yellow patches are replaced by complete transverse light yellow bands. The two species have broadly disjunct distributions: *A. inermis* is known from central and southern Laos in the Mekong basin while *A. leucorhynchus* is known from drainages in Peninsular Thailand and the Chao Phraya basin.

The only members of the *A. variegatus* species group without serrations on the pectoral spine are *A. pictus*, *A. prashadi* and *A. variegatus*, all of which are easily distinguished in lacking the light yellow snout with a sharp contrasted edge characteristic of *A. inermis* (in addition to the characters that separate the *A. variegatus* and *A. pseudobagarius* species groups). There are three other species of *Akysis* found in the middle and upper Mekong, viz. *A. brachybarbatus*, *A. sinensis*, and *A. varius*, all of which lack the light yellow snout with a sharp contrasted edge characteristic of *A. inermis*.

Comparative material. Comparative material is listed in Ng & Kottelat (1998). Additional material: *A. macronema*. ZRC 38731, 1 ex., 33.6 mm SL; Sumatra: Jambi province, market at Sungai Dareh.

Bagarius rutilus, new species
(Figure 3)

Bagarius bagarius (non Hamilton, 1822) – Chevey & Lemasson, 1937: 104, fig. 70; Mai, 1978: 266; 1985: 284.

Bagarius yarrelli (non Sykes, 1839) – Pellegrin, 1907: 499; Roberts, 1983: 438 (in part); Chu, 1986b: 124, fig. 80; 1989: 189, fig. 3–61 (in part); Chu, Mo & Kuang, 1990: 194, fig. 195 (in part).

Holotype. ZRC 40440, 415 mm SL; Vietnam: market in Hanoi; H. H. Ng & D. C. J. Yeo, 12 September 1997.

Paratypes. CAS 94941, 4 ex., 113.0–124.3 mm SL; Vietnam: Hoa Binh Prov.: Hoa Binh market; T. R. Roberts, 10 July 1995. – CMK 15407, 1 ex., 230 mm SL; Laos: Houaphan Prov.: Nam Ma at Ban Sopxay; M. Kottelat et al., 9 May 1999. – MNHN 1934–286 to 290, 5 ex., 93.4–113.5 mm SL; Vietnam: Hanoi; Houdemer, date unknown. – NRM 13676, 2 ex., 121.6–185.1 mm SL; Vietnam: Vinh Phu Prov.: Phu Tho-Bai Bang-Lam Tao area; P. F. Nilsson et al., 11 November 1990. – ZRC 45704, 1 ex., 700 mm SL; ZRC 45705, 1 ex., 345 mm SL; data as for holotype.

Diagnosis. *Bagarius rutilus* can be differentiated from its congeners in having a unique combination of the following characters: cranium and interneural covered with numerous large, elongate tubercles, supraoccipital and interneural without sharp ridges, skin above neural spines anterior and posterior to adipose fin never forming distinct ridges, slender elongate neural spines, elliptical eyes, body depth at anus 11.0–12.3 % SL, head width 20.3–21.7 % SL, snout length 51.4–54.7 % HL, eye diameter 4.1–8.1 % HL; 12–13 pectoral-fin rays; 23–24 preanal vertebrae, and orange fins in life.

Description. Head and body broad and moderately depressed. Mouth broad, slightly inferior. Skin heavily keratinized, covered with tubercles, which are large and elongate on the cranium and interneural. Eyes small and elliptical, dorsolaterally situated. Maxillary barbels flattened, with a flap of skin on medial part of proximal half.

Dorsal fin with I,6 (7) rays, sometimes with filamentous extensions. Adipose fin with short base and angular dorsal margin. Anal fin with iv,8 (1), or iv,9 (6) rays. Caudal fin forked, with 8/9 (7) rays, its principal rays extended into a long, thin filament in large specimens. Pelvic fin with convex distal margin and i,5 (7) rays. Pectoral fin with I,12 (6) or I,13 (1) rays.

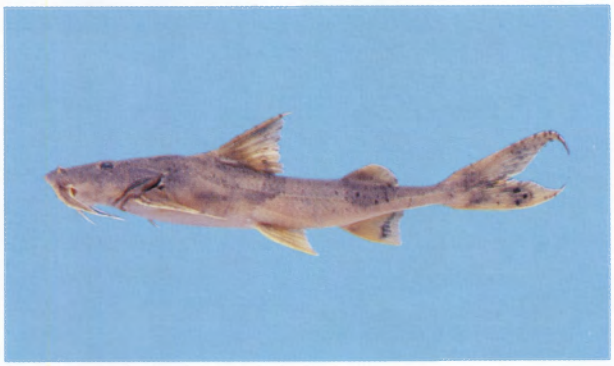


Figure 3. *Bagarius rutilus*, CMK 15407, paratype, 230 mm SL.

In % SL: body depth at anus 11.0–12.3, predorsal length 38.4–40.8, preanal length 69.0–72.5, prepelvic length 50.7–55.2, prepectoral length 13.4–18.9, length of dorsal-fin base 27.1–30.4, dorsal-spine length 12.7–18.1, length of adipose-fin base 11.1–13.3, dorsal to adipose distance 19.2–21.0, length of anal-fin base 11.8–13.5, length of pelvic fin 15.8–18.4, length of pectoral fin 25.8–31.2, pectoral-spine length 14.1–17.1, depth of caudal peduncle 4.1–5.0, length of caudal peduncle 16.9–19.5, length of caudal fin 30.1–38.4, head length 30.5–32.5, head width 20.3–22.2, head depth 11.6–16.5; in % HL: snout length 50.3–54.7, interorbital distance 28.4–31.5, eye diameter 5.2–8.3, length of nasal barbel 6.0–9.2, length of maxillary barbel 76.4–95.3, length of inner mandibular barbel 18.3–25.3, length of outer mandibular barbel 32.0–38.1. Vertebrae 23+19=42 (3), 23+20=43 (1) or 24+19=43 (2).

Colour. In 70 % ethanol: dark yellow on dorsal and lateral surfaces of head and body, fading to light yellow on ventral region. Dorsal surfaces of head and body with three darkly pigmented (brown) bands or blotches: one extending from dorsal fin base towards pelvic fins, second from adipose fin base towards anal fin, and last on posterior part of caudal peduncle. A few small brown spots irregularly distributed throughout lighter parts of body. All fins light yellow, with a variable pattern of small brown spots distributed irregularly. Dorsal surface of barbels brown, ventral surface light yellow.

Live coloration similar, except for orange fins. The second author has examined several live specimens in fishermen's catches and in markets in the Song Lo basin (the Rivière Claire of former colonial literature), a northern tributary of the Song Hong (Red River). Specimens larger than about 180 mm SL all have orange fins, smaller specimens (70–150 mm SL) have pale yellowish fins with brown markings.

Distribution. Known from the Red River and Ma drainages in Vietnam, northern Laos and southern China.

Etymology. From the Latin *rutilus*, meaning red, a reference to the orange fins in life and an allusion to the type locality (Red River). An adjective.

Discussion. Catfishes of the genus *Bagarius* Bleeker, 1853, are the largest members of the family Sisoridae. These large predatory catfishes are usually found in large rivers with a moderate to swift current throughout India and Southeast Asia. The genus has been revised by Roberts (1983), who recognised three valid species, viz. *B. bagarius* (Hamilton, 1822), *B. yarrelli* (Sykes, 1839) and *B. suchus* Roberts, 1983.

While conducting fieldwork in northern Vietnam and Laos, we independently obtained specimens of *Bagarius* which were originally tentatively identified as *B. yarrelli* (according to Roberts, 1983) although differences in coloration were noted in the field. Comparison of the Red River material with Southeast Asian and Indian specimens of *Bagarius* has shown the Red River specimens to represent a previously unrecognised species, described here.

Both *B. rutilus* and *B. yarrelli* possess a cranium and interneural covered with numerous large, elongate tubercles, supraoccipital and interneural without sharp ridges, the skin above the neural spines anterior and posterior to the adipose fin never forming distinct ridges, and deeper body (10.4–14.3 % SL vs. 7.6–8.1), characters which readily differentiate them from *B. suchus*.

Both *B. rutilus* and *B. yarrelli* differ from *B. bagarius* in having slender (vs. distally expanded) elongate neural spines. *Bagarius rutilus* further differs from *B. bagarius* in having a smaller eye (4.1–8.1 % HL vs. 10.9–11.4), and more pectoral-fin rays (12–13 vs. 9–12) and preanal vertebrae (23–24 vs. 17–20). It further differs from *B. yarrelli* in having elliptical (vs. circular) eyes, a narrower head (20.3–21.7 % SL vs. 21.2–23.2), longer snout (51.4–54.7 % HL vs. 46.2–52.7), and smaller eye (4.1–8.1 % HL vs. 7.9–10.1).

The colour pattern of *B. rutilus* generally resembles that of *B. bagarius* more than that of *B. yarrelli* in having fewer spots and a more distinct outline between the light and dark areas (specimens of *B. yarrelli* we have examined tend to be more heavily spotted and have less distinct outlines between the light and dark areas). However, large specimens of *B. rutilus* have orange (vs. yellow) fins in life, a character that readily differentiates *B. rutilus* from the other two species.

The largest specimen of *B. rutilus* observed (by the second author) in the Song Lo basin in December 1999 was about 700 mm SL (one paratype obtained by the first author from a market in Hanoi is of a similar size). A specimen about 1000 mm SL was seen in the Nam Xam basin in north-eastern Laos in May 1999.

Comparative material. *Bagarius bagarius*. CMK 13830, 11 ex., 56.4–109.0 mm SL; Laos: Savannakhet Prov.: Mekong at Ban Donsen, about 6 km S of Savannakhet; M. Kottelat, 3 May 1997. – CMK 13900, 1 ex., 115.5 mm SL; Laos: Louang Phabang, Nam Xuang at its confluence with Mekong, at Ban Pak Xuang; M. Kottelat, 7 May 1997. – CMK 15586, 1 ex., 131.2 mm SL; Laos: Attapeu Prov.: Xe Kong between Attapeu and downstream to Ban Ouk; M. Kottelat et al., 20 May 1999.

B. suchus. ZRC 40750, 2 ex., 179.6–215.7 mm SL; Thailand: Bangkok, Chatuchak weekend market, reportedly from Chao Phraya River basin; H. H. Tan et al., 12 Jan 1997.

B. yarrelli. CAS 1441995, 1 ex., 130.2 mm SL; India: Tamil Nadu state, Madras presidency, Nellore; A. W. Herre, Jan 1941. – ZRC 40429, 1 ex., 325.4 mm SL; Sumatra: Jambi; from aquarium trade, 12 Nov 1996. – ZRC 41525, 4 ex., 138.1–418.0 mm SL; Sumatra: Jambi, Pasar Angso Duo; H. H. Tan & H. H. Ng, 23–29 Jul 1997. – ZRC 41899, 1 ex., 397.0 mm SL; Sumatra: Jambi, Pasar Angso Duo; H. H. Tan et al., 21–28 Nov 1996.

Pareuchiloglanis nebulifer, new species
(Figure 4)

Holotype. ZRC 45706, 94.8 mm SL; Laos: Houaphan province, small creek, tributary of Houai Siam, upstream of Ban Kangpabong, 20°19'36"N 104°25'01"E; M. Kottelat et al., 11 May 1999.

Paratypes. CMK 15447, 1 ex., 62.3 mm SL; data as for holotype. – CMK 15342, 1 ex., 86.1 mm SL; LARRI uncat, 1 ex., 75.2 mm SL; Laos: Houaphan Prov.: unnamed forest stream about 4 km SE from Ban Houatangoua on road to Xam Tai, 20°07'59"N 104°33'39"E; M. Kottelat et al., 7 May 1999.

Diagnosis. *Pareuchiloglanis nebulifer* can be differentiated from *P. macrotrema* and *P. poilanei* in having a unique combination of the following characters: preanal distance 73.0–73.4 % SL, adipose fin length 28.3–30.9 % SL, caudal peduncle depth 5.7–7.7 % SL, head length 22.5–23.8 % SL, head width 18.2–19.6 % SL, interorbital distance 29.3–35.6 % HL, and adipose fin not contiguous with caudal fin.

Description. Head and body moderately broad and

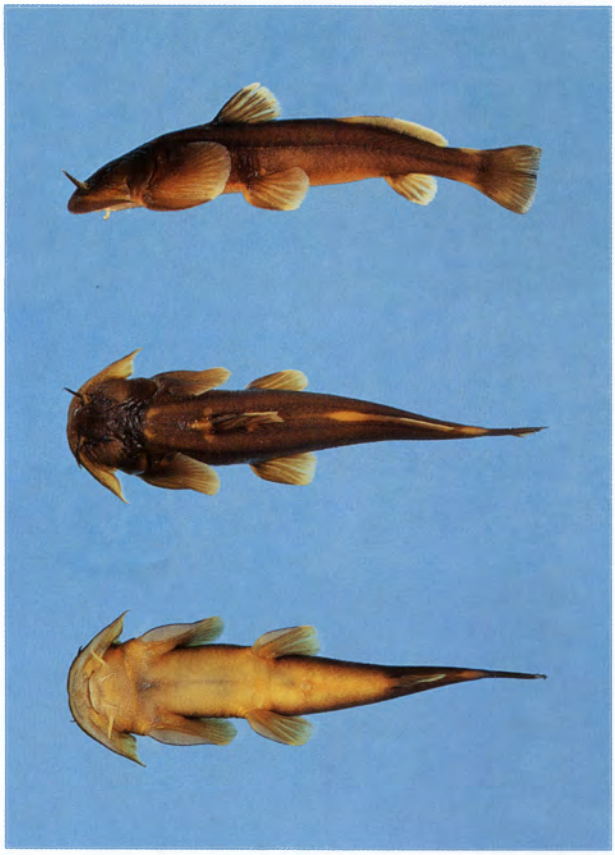


Figure 4. *Pareuchiloglanis nebulifer*, LARRI uncat., paratype, 75.2 mm SL.

very strongly depressed. Mouth and gape inferior with broad, thin, papillate lips. Jaw teeth viliform, in a large broad band with a small median indentation and rounded ends on both sides on upper jaw. Teeth on lower jaw viliform and present in two well separated crescentic bands. Eyes small, dorsolaterally situated and subcutaneous. Gill openings extend to middle of pectoral-fin base. Maxillary barbels flattened, with a surrounding flap of skin and rounded tip; ventral surface with numerous plicae.

Dorsal fin without spine, with i,6 (3) rays. Adipose fin with long base. Anal fin with ii,4 (3) rays. Caudal fin truncate, with 7/7 (2) or 7/8 (1) rays. Pelvic fin greatly enlarged, with convex distal margin and i,5 (3) rays; first ray greatly flattened and with numerous plicae on ventral surface. Pectoral fin greatly enlarged, without spine and with i,14 (1), i,14,i (1) or i,15 (1) rays; first ray greatly flattened and with numerous plicae on ventral surface.

In % SL: body depth at anus 9.5–13.6, predorsal length 35.3–37.2, preanal length 73.0–73.4, prepelvic length 39.0–42.6, prepectoral length 14.0–17.8, length of dorsal-fin base 10.7–10.8, length of adipose-fin base 28.3–30.9, dorsal to adipose distance 13.4–17.4, post-adipose distance 10.0–11.1, length of anal-fin base 7.0–8.0, length of pelvic fin 15.7–17.1, length of pectoral fin 22.6–23.8, depth of caudal peduncle 5.7–7.7, length of caudal peduncle 13.6–15.7, length of caudal fin 13.6–14.8, head length 22.5–23.8, head width 18.2–19.6, head depth 10.3–10.8; in % HL: snout length 47.8–50.7, interorbital distance 29.3–35.6, eye diameter 7.0–7.6, length of nasal barbel 33.8–39.0, length of maxillary barbel 72.8–86.6, length of inner mandibular barbel 13.1–18.0, length of outer mandibular barbel 19.8–31.7. Vertebrae 27+12=39 (1), 27+13=40 (1) or 27+14=41 (1).

Colour. In 70 % ethanol: brown on dorsal and lateral surfaces of head and body, light yellow on ventral region. Dorsal surfaces of head and body with a series of small light-yellow patches: two ovoid patches on occipital region, an ovoid patch on base of first dorsal-fin ray, an elliptical patch on anterior base of adipose-fin and another on posterior base of adipose-fin. Dorsal and caudal fins brown; dorsal surfaces of pectoral and pelvic fins brown, with anal fin and ventral surfaces of pectoral and pelvic fins light yellow. Dorsal surface of barbels brown, ventral surface light yellow. In life, reddish brown with yellowish belly; body markings yellowish brown.

Distribution. Known from the Nam Xam and a tributary of the Nam Ma (Song Ma in Vietnam) in Laos. Collected in small cascading creeks in forest.

Etymology. From the Latin *nebula*, meaning cloud, and *ferre*, meaning to bear, in reference to the cream patches on the dorsal surface of the body. An adjective.

Discussion. Sisorid catfishes of the subfamily Glyptosterninae (sensu de Pinna, 1996) constitute a small subfamily of catfishes widely distributed from the Caucasus to China and in the main islands of Sundaland. Most species are adapted to living on the bottom of swift-flowing mountain streams or in riffles of lowland streams, and many of them have greatly enlarged pectoral and pelvic fins modified to form an adhesive apparatus. The vernacular English term "glyptosternoid catfishes" has been widely used to refer to the suprageneric group consisting of most of the genera within Glyptosterninae (particularly *Glyptosternum* and related genera; Hora & Silas, 1952a–b; Steinitz, 1961; Chu, 1979; 1986a), but it has never been defined, nor has there been any attempt to define the group using any synapomorphies. As currently understood, the term does not refer to a natural grouping (de Pinna,

1996) and we use the term glyptosternines in this study to refer to members of the Glyptosterninae.

The genus *Pareuchiloglanis* was established by Pellegrin (1936) for glyptosternine catfishes characterised by having teeth of the same shape arranged in narrow bands with sides that do not extend posteriorly. The systematic relationships of the genera within the Glyptosterninae have not been well studied. *Pareuchiloglanis* was shown to be paraphyletic with *Oreoglanis* and *Pseudexostoma* (and possibly with *Myersglanis* and *Parachiloglanis* as well) by He (1995, 1996) and may have to be redefined to include all the nominal species previously placed in the former two genera. Because a systematic reappraisal of the validities of glyptosternine genera is beyond the scope of this paper, we tentatively retain the original definition of *Pareuchiloglanis*, i.e. glyptosternine catfishes with homodont dentition in narrow bands not extending posteriorly at the sides, so as to make for easier comparisons (many glyptosternine types are deposited in museums in India and China, and are not readily accessible to researchers). There are currently twelve nominal species of *Pareuchiloglanis* (He, 1996): *P. feae* (Vinciguerra, 1890), *P. myzostoma* (Norman, 1923), *P. macrotrema* (Norman, 1923), *P. poilanei* Pellegrin, 1936, *P. sinensis* (Hora & Silas, 1952), *P. kamengensis* (Jayaram, 1966), *P. gracilicaudata* (Wu & Chen, 1979), *P. gongshanensis* Chu, 1981, *P. longicauda* Yue, 1981, *P. anteanalis* Fang, Xu & Chui, 1984, *P. robusta* Ding, Fu & Ye, 1991 and *P. sichuanensis* Ding, Fu & Ye, 1991.

While carrying out a survey of the Nam Ma and Nam Mat basins in north-eastern Laos, the second author obtained specimens of *Pareuchiloglanis* which differs from the known species: they are described here as a new species, *P. nebulifer*. Like most other highly specialised rheophilic fish species in Southeast Asia (Kottelat, 1989, 1990, 1998, 2000), glyptosternine species are known to have restricted distribution ranges and this is why the new species has been compared only with *P. poilanei* and *P. macrotrema*, the only species previously recorded from Southeast Asia (mainland and insular Asia south of 22°N latitude and east of 98°E longitude). The other species of the genus are known from localities distant from the distribution of *P. nebulifer*, in non-adjacent river basins, and they are not compared in detail with *P. nebulifer* here.

Pareuchiloglanis nebulifer can be differentiated from *P. macrotrema* and *P. poilanei* in having the anal fin set further forward (preanal distance 73.0–73.4 % SL vs. 74.5–83.7) and eyes set wider apart (interorbital distance 29.3–35.6 % HL vs. 22.9–26.1). It can be further differentiated from *P. macrotrema* in having a shorter adipose fin 28.3–30.9 % SL vs. 35.2–42.2), a deeper and longer head (head depth 10.3–10.8 % SL vs. 8.1–8.7; head length 22.5–23.8 % SL vs. 20.2–21.5), and deeper caudal peduncle (5.7–7.7 % SL vs. 5.1–5.2). *Pareuchiloglanis nebulifer* can be further differentiated from *P. poilanei* in having a more slender caudal peduncle (5.7–7.7 % SL vs. 8.6), shorter head (22.5–23.8 % SL vs. 26.2), narrower head (18.2–19.6 % SL vs. 22.4), and adipose fin not contiguous (vs. contiguous) with caudal fin (only one of the examined syntypes of *P. poilanei* was measured; the other syntypes were in a state not suitable for taking reasonably accurate measurements; all specimens have the diagnostic contiguous adipose and caudal fins found in no other species of the genus).

As mentioned earlier, comparisons with the other nominal species of *Pareuchiloglanis* have not been performed in great detail, and only the most apparent differences are noted herein. *Pareuchiloglanis nebulifer* differs from *P. anteanalis, P. gracilicaudata, P. kamengensis,* and *P. myzostoma* in having a widely-interrupted (vs. narrowly-interrupted) labial fold. It further differs from *P. anteanalis, P. gongshanensis, P. gracilicaudata* and *P. longicauda* in having a deeper caudal peduncle (length of caudal peduncle 1.8–2.6 times its depth vs. 3.9–5.6). *Pareuchiloglanis nebulifer* differs from *P. feae, P. kamengensis* and *P. robusta* in having a longer caudal peduncle (length of caudal peduncle 4.9–7.3 times in SL vs. 4.0–4.9), from both *P. myzostoma* and *P. sichuanensis* in having the eyes more widely set apart (interorbital distance 2.8–3.4 times in head length vs. 3.4–4.8) and from *P. sinensis* in having a truncate (vs. emarginate) caudal fin.

Data for *P. anteanalis* were obtained from Fang et al. (1984); for *P. feae* and *P. myzostoma* from Chu, Mo & Kuang (1990); for *P. gongshanensis* from Chu (1981); for *P. gracilicaudata* from Wu & Chen (1979); for *P. kamengensis* from Jayaram (1966); for *P. longicauda* from Yue (1981); for *P. robusta* and *P. sichuanensis* from Ding et al. (1991); and for *P. sinensis* from Hora & Silas (1952b).

Comparative material. *Pareuchiloglanis macrotrema.* BMNH 1926.2.19.5-6, 2 ex., syntypes, 94.9–147.6 mm SL; Vietnam: Tonkin, Ngoi-Tio, Col des Nuages, elev. 4500–6500 ft.

P. poilanei. MNHN 1935-5 to 11, 7 ex., syntypes, 91.5–125.0 mm SL; Vietnam: Nha Trang, Song Cai basin Song Ko. – MNHN 1936-15 to 18, 4 ex., syntypes, 61.4–84.9 mm SL; Vietnam: Nha Trang, Song Cai basin, confluence of Song Tan and Du Do, elev. 420 m. 1936–19 to 20, 5 ex., syntypes, 55.3–75.0 mm SL; Vietnam: Nha Trang, Song Cai basin, Song Tan, elev. 1400 m.

Acknowledgments

We thank Kelvin Lim and Carl Ferraris for critically reviewing the manuscript. Specimens from Laos were obtained by MK in 1997 while conducting a biodiversity assessment for NTEC Development Group, Vientiane, and in 1999 while conducting surveys for production of a field guide. For the 1997 work, he is pleased to thank Peter Goldston and David Iverach (NTEC) for their support, Kongpheng Bouakhamvongsa (Ministry of Agriculture, Department of Livestock and Veterinary), Keo Kou (Department of Livestock and Veterinary, Muang Sing), and Khamsing Phimmasone for assistance in the field. The 1999 work was supported (in part) by the Netherland-World Bank Partnership Program project for local language field guides in East Asia. The assistance of Khamtanh Vatthanatham (Ministry of Agriculture, Department of Livestock and Veterinary) and Mr. Nom (driver) greatly contributed to the success of this work; Xaypladeth Choulamany (LARRI) and Robert J. Tizard (WWF Lao) assisted with many aspects of logistics and administrative support. The support of Tony Whitten (World Bank, Washington) is greatly appreciated. The first author is grateful to Mai Dinh Yen, Nguyen Xuan Quynh and Darren Yeo for assistance during field work in Vietnam. We are grateful to the following for permission to examine material under their care: David Catania (CAS), Sven Kullander (NRM), Guy Duhamel (MNHN), Darrell Siebert (BMNH) and Peter Ng (ZRC). The first author acknowledges financial support from research grant RP3982327 to Peter K. L. Ng from the National University of Singapore.

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