

**PSEUDECHENEIS SYMPELVICUS, A NEW SPECIES OF
RHEOPHILIC SISORID CATFISH FROM LAOS
(MEKONG BASIN)**

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ABSTRACT. - *Pseudecheneis sympeivicus*, new species (Siluriformes: Sisoridae) is described from the Nam Theun watershed of the Mekong basin in Laos. It is the only known catfish with united pelvic fins. In the structure of the specialized thoracic adhesive disc and other important respects, it agrees very well with the type species and other described members of the genus *Pseudecheneis*.

KEYWORDS. - *Pseudecheneis*, catfish, Laos, new species.

INTRODUCTION

Recent ichthyological exploration in the Nam Theun watershed of Laos in connection with environmental assessment for hydropower projects resulted in the discovery of an undescribed species of the rheophilic catfish genus *Pseudecheneis* (family Sisoridae). This differs from all previously described members of the genus (and from all other known catfishes) in having the pelvic fins united. In other *Pseudecheneis* species, as in sisorids generally, the pelvic fins are widely separated at the base. *Pseudecheneis sympeivicus* is known only from the Nam Theun watershed on the Mekong basin in central Laos.

Specimens are deposited at the Zoological Reference Collection of the Department of Biological Sciences, National University of Singapore (ZRC).

***Pseudecheneis* Blyth, 1860**

Pseudecheneis Blyth, 1860: 154 (type species *Glyptosternon sulcatus* McClelland, 1842, by monotypy).

Parapseudecheneis Hora, in Hora & Chabanaud, 1930: 216 (type species *Pseudecheneis paviei* Vaillant, 1902, by monotypy).

Propseudecheneis Hora, 1937: 348 (type species *Propseudecheneis tchangii* Hora, 1937, by original designation and monotypy).

Diagnosis. - *Pseudecheneis* belongs to a group of sisorid catfishes characterized by a "thoracic adhesive organ" located on the breast or abdomen between the pectoral fins. This organ consists of a series of unculiferous ridges or laminae separated by unculiferous or non-unculiferous grooves or sulcae. Ridges and grooves of the thoracic organ of *Pseudecheneis* are transversely oriented, whereas in all other sisorids with a thoracic adhesive organ they are organized in an anteroposteriorly-oriented whorl. Another distinct feature of *Pseudecheneis* is an unculiferous collar on the distal margin of the branchiostegal membrane immediately anterior to the thoracic adhesive organ. This collar, observed by me in all species of *Pseudecheneis*, tends to confirm the monophyly of the genus. Ventral surface of outermost ray of both paired fins unculiferous. Unculi on pelvic fin arranged in lamellae (flattened ridges separated by narrow grooves).

Unculi (singular unculus) are horny or keratinous projections, often hook-shaped, arising from single epidermal cells. They are an important adaptive feature of the epidermis in many catfishes including *Pseudecheneis* and other sisorids (Roberts, 1982; Pinna, 1996: figs. 48-49).

The following species are referable to *Pseudecheneis* :

Pseudecheneis sulcatus (McClelland, 1842)

P. paviei (Vaillant, 1904)

P. tchangi (Hora, 1930)

P. immaculatus Chu, 1982

P. intermedius Chu, 1982

P. sulcatoides Zhou & Chu, 1992

All of these species have separated pelvic fins (pers. obs.; Chu, 1982: fig. 4; Zhou and Chu, 1992).

Pseudecheneis sympelvicus, new species

(Fig. 1)

Material examined. - Holotype, ZRC 40359, 56.5 mm standard length, Nam Veo, tributary of Nam Phao 25 km east of Lak Sao, Nam Theun watershed, Mekong basin, central Laos, P. Vongsay, 16 Feb. 1996.

Paratype - ZRC 40360, 1: 56.3 mm standard length, collected with holotype.

Diagnosis. - Pelvic fins united medially for their entire length, except for a small notch distally. Pelvic fins widely separated to base in all other *Pseudecheneis*. Outer ray of pelvic fin with unculi in lamellae on both dorsal and ventral surfaces. Transverse lamellae in thoracic adhesive disc 14 (vs. 9-12 in *P. paviei*, 8-13 in *P. intermedius*, 13-20 in *P. sulcatoides*, 14-20 in *P. sulcatus*, 14-21 in *P. immaculatus*, and 20 or 21 in *P. tchangi*). Vertebrae 17+18=35 (holotype). Vertebrae in caudal peduncle (entirely posterior to anal fin base) 10.

Pseudecheneis sympelvicus further differs from *P. sulcatus* in having a much darker color; from *P. paviei* in having a much narrower mouth, smaller, more cylindrical head and body, and more slender caudal peduncle; from *P. immaculatus* in having shorter barbels, smaller adipose fin, shorter caudal peduncle, smaller and less forked caudal fin, and well-developed color pattern; and from *P. intermedius* in having a narrower and more cylindrical head, and a more slender body and caudal peduncle. It is perhaps most closely related to *P. sulcatoides*, the only other species of *Pseudecheneis* known from the Mekong basin.

Another peculiar feature of the pelvic fins that may distinguish *P. sympelvicus* from all other *Pseudecheneis* is that both dorsal and ventral (rather than ventral only) surfaces of the simple pelvic fin ray bear numerous well-developed unculiferous lamellae. At least in *P. sulcatus* such lamellae are absent or but weakly developed on the dorsal surface of this ray.

Proportional measurements of holotype (as times in standard length). - Head length 4.6; head width 5.6; snout length 8.3; mouth width 17.1. Body depth 6.0; predorsal length 3.0; prepelvic length 2.5; caudal peduncle length 3.8; caudal peduncle height 17.1. Dorsal fin height 5.4; anal fin length 4.7; pectoral fin length 3.8; pelvic fin length 4.9; upper lobe of caudal fin length 4.7.

Coloration. - Color pattern in *P. sympelvicus* is similar to that in other species of *Pseudecheneis*. The background color is relatively dark (palest in *P. sulcatus*), with a

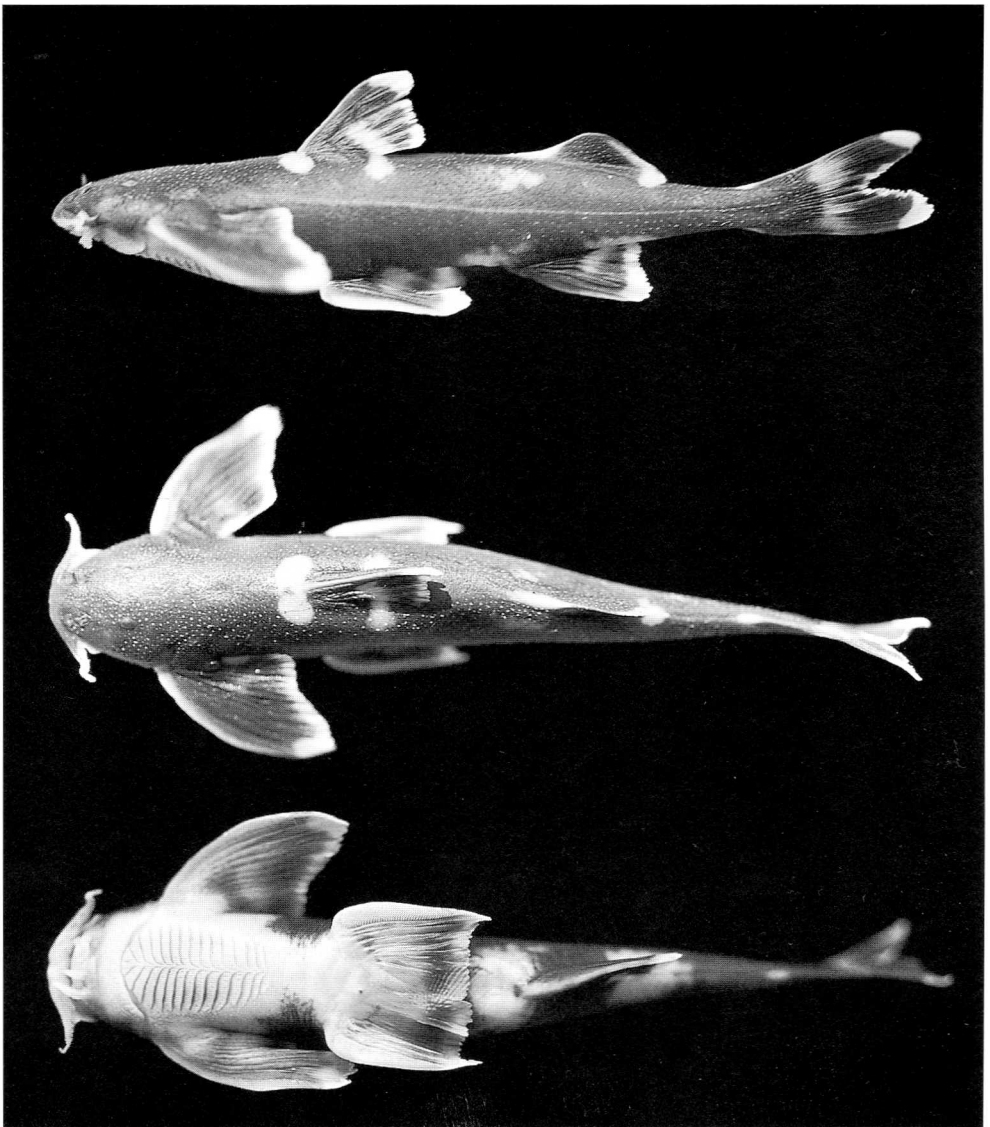


Fig. 1. *Pseudecheneis sympelvicus*, 56.5 mm holotype. Lateral, dorsal and ventral views.

distinctive pattern of light spots, including ovate transverse spots on body at dorsal fin origin and posterior insertion, just below origin and at posterior insertion of adipose fin, at origin and posterior insertion of anal fin, and at origin of upper and lower lobes of caudal fin. All fins with same darker background color as body, all with margin or tips pale; dorsal, anal, caudal, and pelvic fins with prominent pale bands near the middle. In freshly preserved specimens of *P. sympelvicus* the dark background is uniformly a dark chocolate, almost black; and the pale areas are bright yellow. Coloration in life probably is identical. After transfer from formalin to alcohol, the yellow coloration rapidly left the specimens and turned the alcohol bright yellow.

In live *Pseudecheneis* (as in *Glyptothorax*) the thoracic adhesive organ is red, because it is suffused with blood. This coloration disappears within minutes after preservation in formalin.

Food habits. - Gut contents of the 56.7 mm paratype consisted mainly of aquatic insect larvae, predominantly chironomids and stone-clinging ephemeropterans.

Distribution. - *Pseudecheneis sympelvicus* is known only from the Nam Theun watershed of the Mekong basin in central Laos.

Etymology. - Latin *sym-*, together or joined, and *pelvicus* (adj.).

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