BEAUFORTIA

BULLETIN ZOOLOGICAL MUSEUM

UNIVERSITY OF AMSTERDAM

Vol. 50, no. 11 December 20, 2000

HEMILEIOCASSIS PANJANG, A NEW GENUS AND NEW SPECIES OF BAGRID CATFISH FROM JAVA (TELEOSTEI, SILURIFORMES)

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ABSTRACT

A new genus of the family Bagridae, *Hemileiocassis*, is distinguished from other genera in the following characters: dorsal spine with antrorse serrations, vomerine tooth band relatively small and crescentic, with molariform teeth, prominently protruding snout, 11 branched anal fin rays, and an elongate body (its depth 12.6% in standard length). Its sole species, *H. panjang* n.sp., is known only from the holotype from Bogor, Java.

INTRODUCTION

While revising the bagrid catfish genus *Leiocassis*, the second author examined a specimen collected from Bogor, West Java, deposited in the Zoölogisch Museum Amsterdam (ZMA), which had been labeled *Leiocassis micropogon*. However, the antrorse serrations on the hind edge of the dorsal spine on the specimen contrast with the often indistinct but retrorse serrations of other *Leiocassis* species. These antrorse serrations suggest placement in either *Bagrichthys* or *Bagroides* but the relatively large crescentic mouth and slender snout that is less deep than wide suggest otherwise.

Based on its unique features, this specimen is described in the present paper as a new genus and new species.

MATERIALS AND METHODS

Measurements were made point to point with dial callipers and data recorded to 0.01 mm. 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 and counts were made following Ng & Dodson (1999).

Fin rays were counted under a binocular dissecting microscope using transmitted light. Vertebral counts were taken from radiographs following the method of Roberts (1994). Numbers in parentheses following a particular fin-ray, branchiostegal-ray, gill-raker or vertebral count indicate the number of specimens with that

count. Drawings of the specimens were made with a Nikon SMZ-10 microscope and camera lucida.

Material examined in this study are deposited in the following institutions: Zoölogisch Museum, University of Amsterdam (ZMA), Natural History Museum, London (BMNH), California Academy of Sciences, San Francisco (CAS), Field Museum of Natural History, Chicago (FMNH), and Zoological Reference Collection of the Raffles Museum of Biodiversity Research, National University of Singapore (ZRC).

SYSTEMATICS

Hemileiocassis n.gen.

TYPE SPECIES. - *Hemileiocassis panjang* n.sp.

DIAGNOSIS. - *Hemileiocassis* can be differentiated from other bagrid genera in having the following unique combination of characters: dorsal spine with antrorse serrations, vomerine tooth band relatively small and crescentic, with molariform teeth, prominently protruding snout,

ETYMOLOGY. - From the Greek *hemi*, meaning half and *Leiocassis*, a genus of closely-related bagrid catfish. In reference to the characters the genus shares between *Leiocassis* and *Bagroides*. Gender feminine.

Hemileiocassis panjang n.sp.
Figs. 1, 2A, 3

MATERIAL.- Holotype: ZMA 121.529, 138.7 mm SL; Indonesia, Java, Bogor; collector and date unknown.

DIAGNOSIS. - As for genus. *Hemileiocassis panjang* differs from *Leiocassis* species and *Bagroides melapterus* in having a relatively slender body (12.6 % SL vs. 15.4-18.6 in *Leiocassis* spp. and 17.7-22.9 in *Bagroides melapterus*).

DESCRIPTION. - As for genus. See Table 1 for morphometric and meristic data.

The specimen is uniformly brown and has no discernible colour pattern, although this may have been bleached due to initial poor preservation.

Body long, slender and moderately compressed. Dorsal profile rising evenly but not steeply from tip of snout to origin of dorsal fin, then sloping gently ventrally from there to end of caudal peduncle. Ventral profile flat to anal-fin base, then sloping gently dorsally from there to end of caudal peduncle. Anus and urogenital openings located at vertical through middle of adpressed pelvic fin. Skin smooth. Lateral line complete and midlateral, with long tubular epidermal extensions of sensory pores.

Head somewhat compressed and narrow, anterior part produced into a prominent protruding snout with rounded margin when viewed laterally and from above. Mouth inferior and relatively small, with papillate lips. Gill openings wide, extending from exposed surface of posttemporal to beyond isthmus. Gill membranes free from, and not attached across, isthmus. Eye ovoid, horizontal axis longest; located entirely in dorsal half of head. Orbit with free margin.

Barbels in four pairs. Maxillary barbel relatively short, extending to posterior margin of orbit. Nasal barbel slender and short, extending to midway between posterior nostril and anterior margin of orbit. Inner mandibular-barbel origin close to midline; barbel thicker and longer than nasal barbel and extending to level of posterior margin of orbit. Outer mandibular barbel originates posterolateral of inner mandibular barbel, extending past pectoral-fin origin.

Oral teeth small and in irregular rows on all tooth-bearing surfaces. Premaxillary tooth band rounded, of equal width throughout. Dentary tooth band much narrower than premaxillary tooth band at symphysis, tapering laterally. Vomerine tooth band unpaired, continuous across midline; smoothly arched along anterior margin, tapering laterally to point extending posteriorly well past level of premaxillary band; band width narrower than premaxillary band at midline, widening laterally and then tapering to a sharp point poterolaterally. Teeth on premaxillary and dentary tooth band conical; teeth on vomerine tooth band molariform.

Dorsal fin located above middle of body; origin nearer tip of snout than caudal flexure. Dorsal-fin margin convex, usually with anterior branch of fin-rays longer than other branches. Last dorsal-fin ray without posterior membranous con-

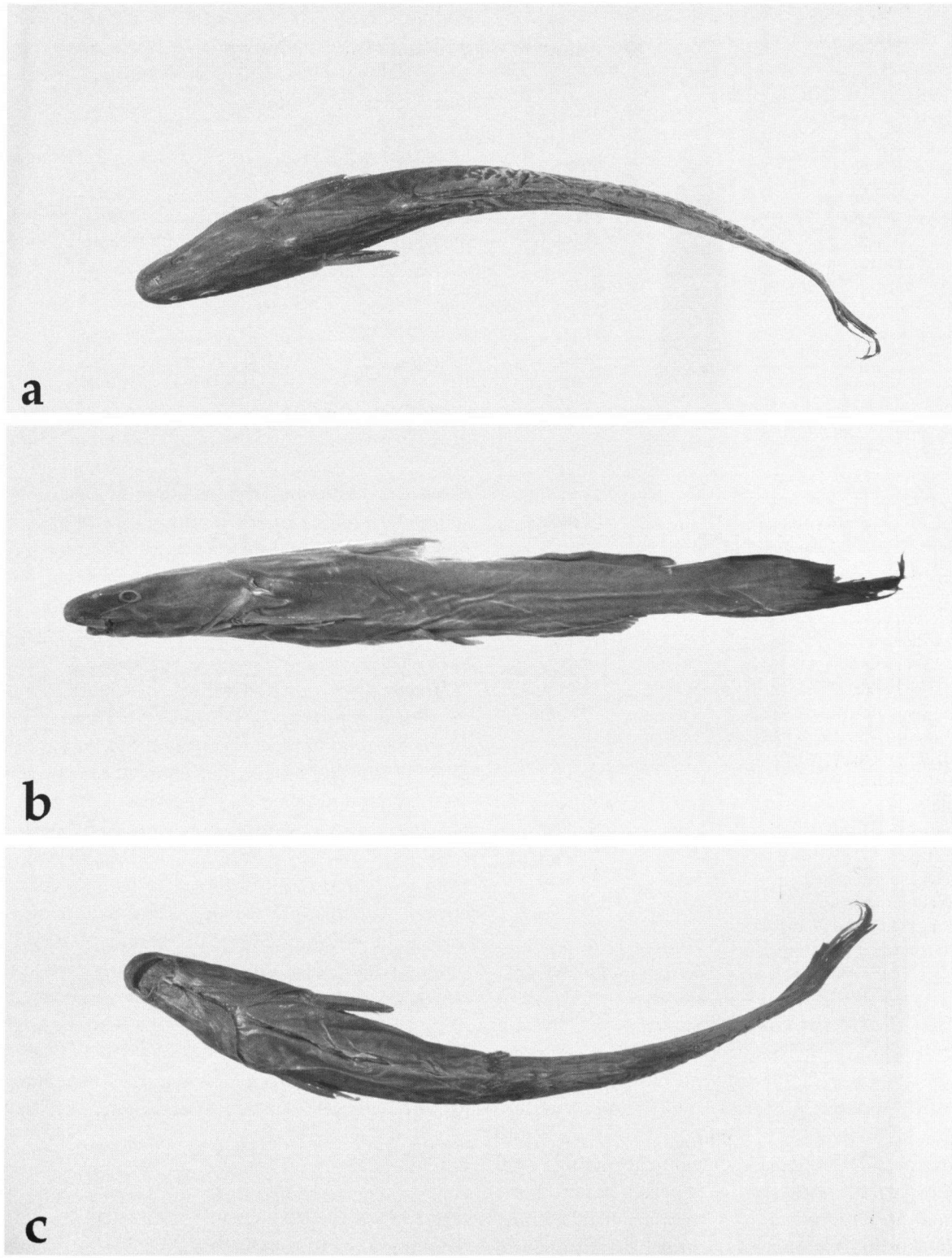

Fig. 1. A, dorsal; B, lateral and C, ventral views of the holotype of *Hemileiocassis panjang* n.sp. (ZMA 121.529, 138.7 mm SL).

Table 1. Morphometric and meristic data from the holotype of *Hemileiocassis panjang* n.sp. (ZMA 121.529).

MORPHOMETRIC DATA:	
Standard length	138.7 mm
In % SL:	
Predorsal length	39.6
Preanal length	64.7
Prepelvic length	50.5
Prepectoral length	22.0
Body depth at anus	12.6
Head length	24.7
Head width	15.1
Head depth	11.0
Pectoral spine length	11.5
Length of anal-fin base	14.1
Maximum height of adipose fin	2.5
Length of adipose-fin base	23.5
Dorsal spine length	12.2
Length of dorsal-fin base	9.2
Dorsal to adipose distance	12.3
Length of caudal peduncle	20.8
Depth of caudal peduncle	7.3
In % HL:	
Snout length	33.3
Interorbital distance	26.6
Eye diameter	11.4
Nasal barbel length	9.6
Maxillary barbel length	32.7
Inner mandibular barbel	13.7
Outer mandibular barbel	18.4
MERISTIC DATA:	
Branchiostegal rays	8
Gill rakers	2+8
Dorsal fin rays	II, 7
Pectoral fin rays	I, 9
Pelvic fin raysi,	5
Anal fin rays	v, 11
Principal caudal fin rays	9/9
Vertebrae	10 + 27 = 37

nection to body. Dorsal-fin spine short, straight and robust, with 10 antrorse serrations on posterior margin. Adipose fin with margin convex for entire length; posterior end deeply incised. Caudal fin deeply forked; upper lobe pointed and lower lobe rounded. Procurrent rays symmetrical and extend only slightly anterior to fin base. Anal-fin base ventral to posterior half of adipose fin. Fin margin curved or straight. Last anal-fin ray without posterior membranous connection to body. Pelvic-fin origin at vertical through posterior end of dorsal-fin base. Pelvic-fin margin slightly convex, tip of adpressed fin not reaching anal-fin origin. Pectoral fin with stout spine, sharply pointed at tip. Anterior spine margin smooth; posterior spine margin with 16 strong serrations along entire length. Pectoral-fin margin straight anteriorly, convex posteriorly.

DISTRIBUTION. - Known only from western Java.

ETYMOLOGY. - From the Indonesian word *panjang*, meaning long. A reference to its elongate body shape.

DISCUSSION

In his revision of the Bagridae, Mo (1991) considered *Leiocassis*, *Bagrichthys* and *Bagroides* a monophyletic group easily differentiated from all other bagrids in possessing the following synapomorphies: a prominently protruding snout, long tubular epidermal extensions of the sensory pores, a hypertrophied posterior cleithral process, and long, thin hair-like epithelial projections on the skin. As these characters are also present in *Hemileiocassis*, we consider *Hemileiocassis* to belong to this clade.

Hemileiocassis possesses antrorse serrations on the dorsal spine (Fig. 2) and molariform vomerine teeth (Fig. 3), characters considered synapomorphic for *Bagroides* (the former character is considered synapomorphic for *Bagrichthys* as well). However, the overall morphology of *Hemileiocassis* resembles *Leiocassis* more than it does *Bagroides*. Characters that *Hemileiocassis* share with *Leiocassis*, but not with *Bagroides* (or *Bagrichthys*) include separate gill membranes, large crescentic mouth (vs. small circular mouth in *Bagroides* and *Bagrichthys*), and a slender snout less deep than wide (vs. as deep as or deeper than wide in *Bagroides* and *Bagrichthys*).

Based on the morphological evidence we have to date, we consider *Hemileiocassis* to be a sister group of *Leiocassis*.

COMPARATIVE MATERIAL

Bagroides melapterus: ZRC 39002 (1), 161.1 mm SL; ZRC 40471 (1), 233.3 mm SL; ZRC 41535 (10), 154.2-201.2 mm SL; ZRC 41901 (5), 206.7-252.7 mm SL; Sumatra: Jambi, Pasar Angso Duo; ZRC 45832 (4), 91.0-94.4 mm SL; no data: aquarium specimens.

Leiocassis poecilopterus: ZRC 41455 (7), 76.3-114.2 mm SL; Sumatra: market at Sungai Dareh.

Leiocassis micropogon: CAS/SU 31005 (1), 148.8 mm SL;

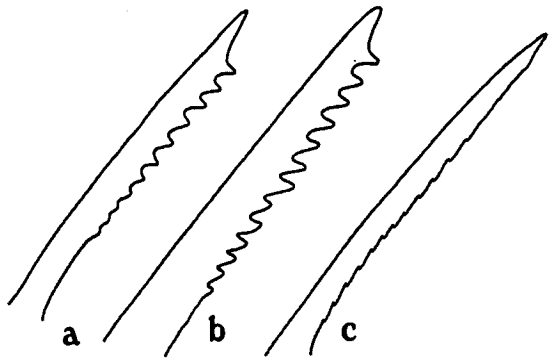

Fig. 2. Dorsal spines of A, *Hemileiocassis panjang* n.sp. (holotype). B, *Bagroides melapterus* (ZRC 39002, 161.1 mm SL). C, *Leiocassis micropogon* (BMNH 1863.12.14:106, 117.6 mm SL).

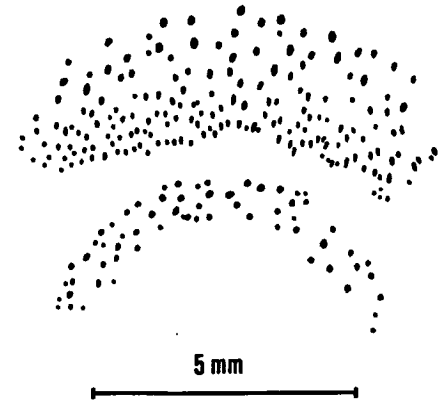

Fig. 3. Premaxillary and vomerine tooth patches of the holotype of *Hemileiocassis panjang* n.sp.

Malaysia: Malacca, Lake Chin Chin; BMNH 1863.12. 14:106 (1), 117.6 mm SL; Sumatra; FMNH 68005 (1), 91.3 mm SL; Borneo: Sabah, Tawau.

Leiocassis doriae: BMNH 1868.1.28.30 (holotype); Borneo: Sarawak.

Leiocassis baramensis: BMNH 1898.11.14:1 (holotype); Borneo: Sarawak, Baram.

Leiocassis merabensis: BMNH 1893.3.6:170-171 (2 syntypes); Borneo: Merabeh.

ACKNOWLEDGEMENTS

We thank Isaäc J.H. Isbrücker (ZMA) for the loan of the *Hemileiocassis* specimen, Darrell Siebert (BMNH), David Catania (CAS) and Mary Ann Rogers (FMNH) for permission to examine comparative material, Tan Heok Hui for the photographs, and Peter K. L. Ng for his support and encouragement.

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Received: April 4, 2000