

HEMIBAGRUS CAVEATUS, A NEW SPECIES OF BAGRID CATFISH (TELEOSTEI: SILURIFORMES) FROM NORTHERN SUMATRA

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ABSTRACT. – *Hemibagrus caveatus*, new species, is described from the Alas River drainage in Aceh province, northern Sumatra. It can be distinguished from congeners in having a unique colour pattern consisting of 11-13 dark vertical stripes on the sides of the body and a dark horizontal stripe along the lateral line. It further differs from congeners in possessing the combination of the following characters: maximum height of adipose fin 5.3-6.2 % SL, length of caudal peduncle 17.6-19.1 % SL, eye diameter 13.8-15.6 % HL.

KEY WORDS. – *Hemibagrus*, Sumatra, Aceh province, new species.

INTRODUCTION

Hemibagrus are bagrid catfishes that attain standard lengths of up to 800 mm and are found in large rivers throughout the Indian subcontinent, Southeast and East Asia. This taxon was established by Bleeker (1862) to include species with depressed heads, rugose head shields not covered by skin, slender occipital process, and moderately long adipose fins. Subsequent authors since Günther (1864) have synonymised *Hemibagrus* with *Mystus* and only recently has the genus *Hemibagrus* been rediagnosed (Mo, 1991) by having a depressed head with a thin, plate-like metapterygoid.

While carrying out an ichthyological survey of the Alas River drainage in Aceh province (northern Sumatra), the second author obtained specimens of a *Hemibagrus* with a unique colour pattern consisting of 11-13 dark vertical stripes on the sides of the body and a dark horizontal stripe along the lateral line. This colour pattern is unknown for any previously described *Hemibagrus* species and the specimens from the Alas River are described as *H. caveatus*, new species, in this study.

MATERIALS AND METHODS

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 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. Institutional codes follow Eschmeyer (1998).

TAXONOMY

Hemibagrus caveatus new species

(Fig. 1)

Material examined. – Holotype – MZB 8714, 186.3 mm SL, Sumatra: Aceh province, Sungai Soraya, a tributary of Sungai Alas, coll. S. Wirjoatmodjo, 27 Feb.1999.

Paratypes – MZB 5625, 1 ex., 195.5 mm SL, Sumatra: Aceh province, Sungai Alas, coll. S. Wirjoatmodjo & Ali, 21 Feb.1984;

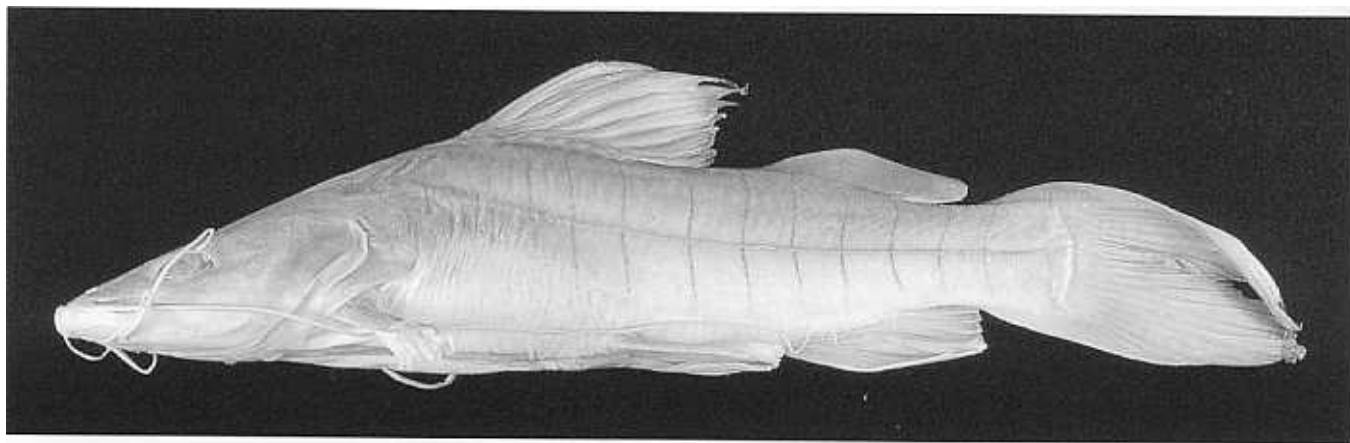


Fig. *Hemibagrus caveatus*, paratype, MZB 8708, 130.7 mm SL.

MZB 5664, 1 ex., 130.4 mm SL, Sumatra: Aceh province, Sungai Alas, 5 km upstream of Gelombang, coll. S. Wirjoatmodjo & D. Hartono, 3 Feb.1983; MZB 8708, 1 ex., 130.7 mm SL, Sumatra: Aceh province, Sungai Sembelin, a tributary of Sungai Alas, coll. S. Wirjoatmodjo, 27 Feb.1999.

Diagnosis. – *Hemibagrus caveatus* can be distinguished from its congeners by the unique colour pattern consisting of 11-13 dark vertical stripes on the sides of the body and a dark horizontal stripe along the lateral line, as well as a combination of the following characters: length of caudal peduncle 17.6-19.1 % SL, maximum height of adipose fin 5.3-6.2 % SL and eye diameter 13.8-15.6 % HL.

Description. – Head depressed and broad, body 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 horizontal to origin of anal, then sloping dorsally to end of caudal peduncle. In % SL: head length 29.7-30.9, head width 18.2-21.4, head depth 15.8-17.2, predorsal distance 42.3-44.4, preanal length 68.5-71.2, prepelvic length 52.1-53.8, prepectoral length 25.2-30.7, body depth at anus 13.2-17.3, length of caudal peduncle 17.6-19.1, depth of caudal peduncle 8.4-9.5, pectoral-spine length 14.9-18.1, pectoral-fin length 16.2-17.7, dorsal-spine length 16.1-18.8, length of dorsal-fin 26.4-31.3, length of dorsal-fin base 14.6-19.2, pelvic-fin length 16.2-17.7, length of anal-fin base 12.0-13.6, caudal-fin length 23.6-26.8, length of adipose-fin base 12.7-16.1, maximum height of adipose fin 5.3-6.2, dorsal to adipose distance 10.0-17.7, post-adipose distance 17.1-17.4; in % HL: snout length 36.2-39.1, interorbital distance 29.9-34.3, eye diameter 13.8-15.6, nasal barbel length 33.9-42.6, maxillary barbel length 181.4-270.1, inner mandibular barbel length 47.0-60.1, outer mandibular barbel length 83.0-101.5. Branchiostegal rays 11 (3) or 12 (1). Gill rakers 4+13 (1) or 5+14 (1). Vertebrae 21+21=42 (1) or 22+22=44.

Fin ray counts: dorsal II,7 (4); pectoral I,8 (2) or I,9 (2); pelvic i,5 (4); anal iv,9 (4); caudal 8/9 (4). Dorsal origin nearer tip of snout than caudal flexure. Dorsal spine stout, with 5-8 serrations on posterior edge. Pectoral spine stout, with 12-17 serrations on posterior edge. Anal origin slightly posterior to adipose origin. Depressed dorsal not reaching adipose fin. Caudal fin forked; upper lobe rounded with upper

simple principal ray produced into a filament, lower lobe rounded.

Colour. – Preserved specimens have dorsal surface of head and body grey, gradually fading to dirty white on ventral surface. Lateral surface of body with 11-13 dark vertical stripes and a dark horizontal stripe running along lateral line. Dorsal, pectoral, pelvic and anal fins grey, with scattered melanophores on fin rays and interradiation membranes. Caudal fin grey, with lighter hue along posterior edge, and on procurrent and outer principal caudal rays.

Distribution. – Only known from the Alas River drainage in northern Sumatra.

Etymology. – From the Latin *cavea*, meaning cage; in allusion to the pattern of dark vertical and horizontal stripes on the sides of the body, which resembles that of a cage.

Ecology. – *Hemibagrus caveatus* is found primarily in large rivers, although smaller individuals have been found in smaller tributary streams.

Remarks. – Four species of *Hemibagrus* have been reported from Sumatra to date (Tan & Ng, 2000), viz. *H. hoevenii* (Bleeker, 1846), *H. cf. nemurus* (Valenciennes in Cuvier & Valenciennes, 1840), *H. velox* Tan & Ng, 2000 and *H. wyckii* (Bleeker, 1858). *Hemibagrus caveatus* is the third species of *Hemibagrus* known from Sumatra, and can be distinguished from the other two species (as well as all other species of *Hemibagrus*) in having a unique colour pattern consisting of 11-13 dark vertical stripes on the sides of the body and a dark horizontal stripe along the lateral line. The only other species of *Hemibagrus* with a colour pattern vaguely resembling that of *H. caveatus* are the South Asian species *H. menoda* (from northern India) and *H. peguensis* (from Myanmar). In the two South Asian species, however, the colour pattern consists of 9 vertical columns of black spots on the sides of the body and lacking the dark horizontal stripe along the lateral line. *Hemibagrus caveatus* also has a longer caudal peduncle than *H. menoda* (length of caudal peduncle 17.6-19.1 % SL vs. 15.2-17.0), and a taller adipose fin (maximum height of adipose fin 5.3-6.2 % SL vs. 3.7-4.9) and larger eye (eye diameter 13.8-15.6 % HL vs. 11.2-

13.5) than both *H. menoda* and *H. peguensis*.

COMPARATIVE MATERIAL

Hemibagrus hoevenii

ZRC 29513-29515 (3), 271.6-317.4 mm SL, ZRC 29519 (1), 266.6 mm SL, Sumatra: Jambi; ZRC 39130 (1), 143.3 mm SL, Sumatra: Jambi province, Batang Berbak at Telogolima; ZRC 41526 (2), 232.7-244.4 mm SL, Sumatra: Jambi, Pasar Angso Duo (fish market).

H. menoda

ANSP 85796 (1), 113.0 mm SL, India: Bombay, MNHN 1191 (1), 285.4 mm SL, India: Bengal [syntype of *Bagrus trachacanthus*]; UMMZ 208726 (1), 202.6 mm SL, Bangladesh: Surma (Meghna) drainage, Sharighat bazaar, 22 miles NE of Sylhet on Sylhet-Shillong highway (said to be from Shari River).

H. cf. nemurus

CMK 11221 (2), 89.6-113.8 mm SL, ZRC 38663 (1), 113.9 mm SL, Sumatra: Jambi, Batang Hari near Tanjung Johor; FMNH 15749 (1), 210.5 mm SL, Sumatra: Ogan River; NRM 24986 (1), 349.7 mm SL, Sumatra: Pladju fish market, 5 km downstream from Palembang; ZMA 121.626 (2), 146.2-191.3 mm SL, ZMA 121.817 (1), 168.1 mm SL, Sumatra: Deli (=Medan); ZMA 121.816 (2), 147.4-156.8 mm SL, Sumatra: Palembang; ZMA 121.810 (10), 130.0-296.0 mm SL, Sumatra: Batang Hari at Jambi; ZRC 29513-29531 (19), 204.0-380 mm, Sumatra: Jambi; ZRC 38975 (4), 136.6206.0 mm, ZRC 40534 (3), 230.8-247.9 mm SL, ZRC 42554 (17), 33.5-70.0 mm SL, Sumatra: Jambi, Pasar Angso Duo (fish market); ZRC 39032 (7), 122.6-227 mm SL, Sumatra: Riau, Sungai Bengkwan, tributary of Indragiri (Batang Kuantan), 4 hrs downstream from Rengat; ZRC 39151 (1), 115.2 mm SL, Sumatra: Jambi, Berbak Nature Reserve, Sungai Air Hitam Dalam; ZRC 39181 (1), 132.4 mm SL, Sumatra: Jambi, Sungai Alai at 19.5 km Muara Bungo-Muara Tebo road; ZRC 42261 (10), 71.7-123.2 mm SL, Sumatra: Jambi, ca. 15 min after Kampung Rantau Panjang along Batang Hari confluence.

H. peguensis

BMNH 1894.5.21:25-26 (2), syntypes, 168.8, 185.1 mm SL, Myanmar: Taungoo; BMNH 1891.11.30:200-209 (16), 168.7-285.6 mm SL, Myanmar: Sittoung (Sittaung) River; CAS 89005 (1), 261.9 mm SL, Myanmar: Bago division, Sittaung River at Taungoo; CAS 93201 (1), 148.0 mm SL, Myanmar: Ayeryawaddy River drainage, Mandalay markets; CAS 133789 (1), 212.7 mm SL, Myanmar: Yangon division, Bago River drainage, 9 miles NW of Hlegu; NRM 15064 (2), 116.8, 138.9 mm SL, Myanmar: Sagaing division, Ayeryawaddy River drainage, Shweli River; NRM 15105 (1), 166.8 mm SL, Myanmar: Mandalay division, Mandalay; NRM 31068 (1), 186.1 mm SL, Myanmar: Kachin state, Ayeryawaddy River drainage, Myitkyina; NRM 39397 (1), 290.6 mm SL, Myanmar: Bago division, Bago; ZRC 43511 (1), 243.3 mm SL, Myanmar: Yangon Division, Win Paw Hta River, near border between Bago & Yangon divisions.

H. velox

MZB 9305, holotype, 175.0 mm SL, ZRC 41505 (23), paratypes, 68.7-162 mm SL, Sumatra: Sumatera Barat, Sungai Dareh, Pulau Punjung market; CMK 9038 (1), paratype, 132.3 mm SL, Sumatra: Riau, Kecamatan Seberida, Sungai Gangsal; UMMZ 155684 (2), paratypes, 183.7, 194.8 mm SL, Sumatra: Sumatera Barat, Danau Singkarak; UMMZ 155685 (4), paratypes, 191.4-263.6 mm SL, UMMZ 155717 (2), paratypes, 240.3, 276.9 mm SL, UMMZ

155718 (3), paratypes, 261.8-277.0 mm SL, Sumatra: Sumatera Selatan, Danau Ranau; ZMA 121.627 (5), paratypes, 162.0-185.0 mm SL, Sumatra: Sumatera Barat, highlands of Padang, Batang Pangian; ZMA 121.628 (3), paratypes, 238.0-357.0 mm SL, Sumatra: Sumatera Barat, highlands of Padang, Batang Pangian, from the cave of Buo; ZMA 121.629 (1), paratype, 264.0 mm SL, Sumatra: Sumatera Barat, highlands of Padang, Batang Sario near Puntian (Kumanis); ZRC 40549 (1), paratype, 269.0 mm SL, ZRC 40550 (2), paratypes, 236.0, 249.0 mm SL, ZRC 41503 (3), paratypes, 145.2-199.0 mm SL, Sumatra: Jambi, Kerinci, Sungaipenuh market; BMNH 1889.11.12:61 (1), 224.0 mm SL, Sumatra: Sumatera Utara, Deli (=Medan); BMNH 1915.8.24:12 (1), 212.0 mm SL, Sumatra: Jambi: Korinche (=Kerinci) Lake; CMK 4441 (1), 187.4 mm SL, CMK 4455 (1), 75.3 mm SL, Sumatra: Sumatera Utara, Sungai Seruai at Biru Biru; CMK 4625 (3), 78.1-143.0 mm SL, Sumatra: Sumatera Barat, market at Solok; ZMA 121.812 (2), 179.8, 223.2 mm SL, Sumatra: Sumatera Barat, Danau Singkarak; ZMA 121.813 (1), 129.0 mm SL, Sumatra: Sumatera Utara, Serdang, Sungai Ular.

H. wyckii

ZMA 121.811 (1), 106.0 mm SL, Sumatra: Jambi, Batang Hari; ZRC 41900 (5), 270.7-564 mm SL, Sumatra: Jambi, Pasar Angso Duo (fish market).

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