



# Redescription of *Batasio merianiensis*, a catfish (Teleostei: Bagridae) from northeastern India

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**Abstract:** The bagrid catfish *Batasio merianiensis* was described from only the holotype collected in the Brahmaputra River drainage, Assam, northeastern India. This poorly known catfish is rediagnosed and redescribed on the basis of fresh material in this study. *Batasio merianiensis* is diagnosed from congeners in having a combination of the following characters: length of adipose-fin base 16.9–22.2 % SL, dorsal fin when appressed not reaching anterior origin of adipose fin, body depth at anus 15.2–18.4% SL, caudal peduncle depth 9.7–11.5% SL, eye diameter 18.3–25.9% HL, vertical dark brown bars on head and body, and absence of dark mid-dorsal stripe.

**Keywords:** Brahmaputra River, Siluriformes, South Asia

## INTRODUCTION

Members of the genus *Batasio* are small, laterally compressed bagrid catfishes generally found in fast-flowing streams and rivers throughout South and mainland Southeast Asia. They are diagnosed from other confamilials in possessing large sensory pores on the head, narrow mental region, a pair of prominent posterior processes on the anterior part of the vomer, transversely elongated, bar-like entopterygoid, and the close contact of the metapterygoid with the quadrate (Mo 1991). They have a (sub-Himalayan) distribution ranging from the Indus River drainage to the west, the short, coastal rivers draining the eastern face of the Annam Cordilleras to the east, and the Perak River drainage to the south. Recent studies (Ng 2008) have recognized sixteen valid species of *Batasio*: *B. batasio*, *B. tengana*, *B. affinis*, *B. fluviatilis*, *B. dayi*, *B. merianiensis*, *B. travancoria*, *B. pakistanicus*, *B. tigrinus*, *B. elongatus*, *B. sharavatiensis*, *B. macronotus*, *B. fasciolatus*, *B. spilurus*, *B. feruminatus*, and *B. procerus*. Of these sixteen species, half of them have been described within the last ten years, highlighting the amount of hidden diversity within the group. *Batasio merianiensis* (Chaudhuri 1913) is a species from the Brahmaputra River drainage in Assam (northeastern India) that is known only from the holotype. Recently, I was able to obtain fresh material from the Brahmaputra River drainage in Assam referable to this species. As the original description of this poorly known species is only based on the holotype, I rediagnose and redescribe *Batasio merianiensis* on the basis of this material.

## MATERIAL AND METHODS

Measurements were made point-to-point with dial calipers and recorded to 0.1 mm. All measurements and counts follow Ng & Kottelat (2001). Asterisks after meristic data indicate value for holotype. Institutional codes follow Ferraris (2007). Meristic values with an asterisk indicate those for the holotype.

### *Batasio merianiensis* (Chaudhuri, 1913)

(Image 1 & Fig. 1)

*Macrones merianiensis* Chaudhuri, 1913: 253, Pl. 9 (Figs. 1, 1a–b) [type locality: pond at Mariani Junction]

**Material examined:** holotype, 65.7mm SL; India: Assam, pond at Mariani Junction, Assam, India, ZSI F7781/1. UMMZ 248780 (13) 46.8–75.5mm SL; ZRC 51880 (7), 49.5–59.8mm SL; India: Assam, Gurhula River, approximately 16 km NW of Kokrajhar, in the vicinity of Kumapara.

**Diagnosis:** *Batasio merianiensis* is distinguished from congeners in having a combination of the following characters: length of adipose-fin base 16.9–22.2% SL, dorsal fin when appressed not reaching anterior origin of adipose fin, body depth at anus 15.2–18.4% SL, caudal peduncle depth 9.7–11.5% SL, eye diameter 18.3–25.9% HL, vertical dark



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Image 1. *Batasio merianiensis*, UMMZ 248780, 75.7mm SL; dorsal, lateral and ventral views.

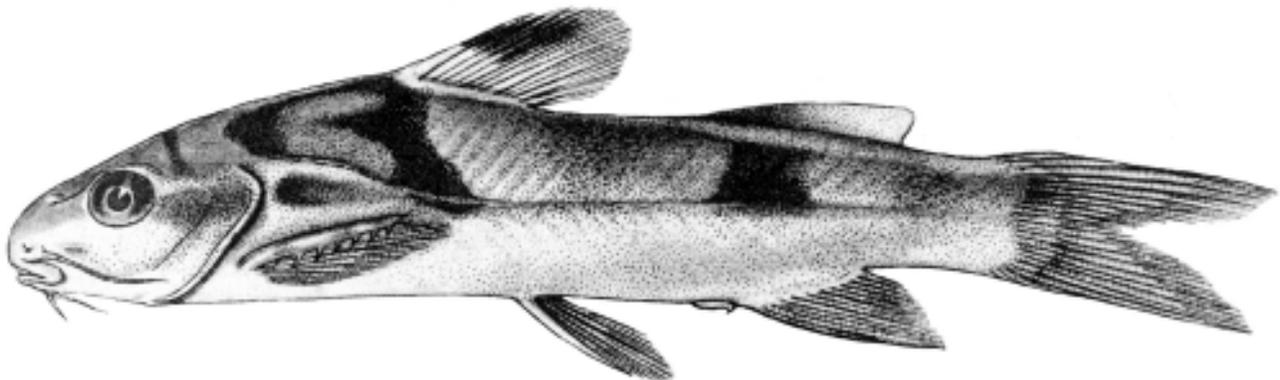


Figure 1. *Batasio merianiensis*: illustration of the holotype from Chaudhuri (1913: Pl. 9, Fig. 1).

**Table 1. Biometric data for *Batasio merianiensis* (n=21)**

	Holotype	Range	Mean±SD
<b>%SL</b>			
Predorsal length	38.8	36.6–40.5	37.7±1.31
Preanal length	67.9	66.3–68.2	67.4±0.60
Prepelvic length	50.2	47.6–51.3	49.9±1.13
Prepectoral length	22.5	21.4–25.7	23.1±1.25
Length of dorsal-fin base	14.8	14.8–17.3	16.2±0.78
Dorsal-spine length	16.6	13.5–16.7	15.2±0.93
Length of anal-fin base	13.5	13.0–18.0	15.2±1.29
Pelvic-fin length	16.9	12.3–16.9	13.9±1.35
Pectoral-fin length	19.1	15.4–19.1	17.2±1.10
Pectoral-spine length	16.3	12.2–16.3	13.9±1.07
Caudal-fin length	Damaged	21.2–25.0	22.6±1.06
Length of adipose-fin base	22.2	16.9–22.2	19.7±1.55
Dorsal to adipose distance	13.9	13.9–17.4	15.9±1.00
Post-adipose distance	14.3	13.4–15.5	14.3±0.69
Caudal peduncle length	17.7	16.4–19.5	17.5±0.85
Caudal peduncle depth	10.5	9.7–11.9	10.7±0.65
Body depth at anus	17.4	15.2–18.4	16.8±1.05
Head length	24	24.0–26.5	25.6±0.63
Head width	15.2	13.5–16.2	15.2±0.77
Head depth	17.2	16.3–19.3	17.3±0.96
<b>%HL</b>			
Snout length	39.2	36.7–40.9	38.5±1.22
Interorbital distance	25.9	25.9–31.5	29.1±1.58
Eye diameter	25.9	18.3–25.9	21.5±1.52
Nasal barbel length	25.9	9.4–25.9	16.2±4.12
Maxillary barbel length	52.5	36.8–54.5	46.4±5.74
Inner mandibular barbel length	10.8	8.4–13.3	11.4±1.68
Outer mandibular barbel length	14.6	14.3–23.2	18.5±2.88

brown bars on head and body, and absence of dark mid-dorsal stripe.

**Description:** Morphometric data as in Table 1. Body moderately compressed. Dorsal profile rising evenly and somewhat 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. Skin smooth. Lateral line complete and midlateral. Vertebrae 18+18=36 (n=1), 18+19=37 (n=1), 19+18=37 (n=14) or 19+19=38 (n=4).

Head compressed and narrow. Bony elements of dorsal surface of head covered with thin skin. Anterior nostrils tubular, separated from posterior nostrils by distance of two-thirds eye diameter. Eye ovoid, horizontal axis longest; located entirely in dorsal half of head.

Mouth inferior, premaxillary tooth band not exposed when mouth is closed. Oral teeth small and villiform, 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.

Barbels in four pairs. Maxillary barbel short and slender, extending to half of distance between its base and base of pectoral spine. Nasal barbel slender, extending to anterior orbital margin. Inner mandibular-barbel origin close to midline, extending to vertical through anterior orbital margin. Outer mandibular barbel originating posterolateral of inner mandibular barbel, extending to vertical through middle of orbit.

Dorsal fin with spinelet, spine, and 7 (n=21) rays. Origin of dorsal fin at point through anterior two-fifths of body. Dorsal-fin margin convex. Dorsal-fin spine short, straight and slender, posterior edge with low irregular serrations.

Pectoral fin with stout spine, sharply pointed at tip, and 7\* (n=2) or 8 (n=19) rays. Anterior spine margin smooth; posterior

spine margin with 6–7 large serrations along entire length. Pectoral-fin margin straight anteriorly, convex posteriorly.

Pelvic-fin origin at vertical through posterior end of dorsal-fin base, with i,5 (n=21) rays and slightly convex margin; tip of appressed fin not reaching anal-fin origin. Anus and urogenital openings located at vertical through middle of appressed pelvic fin.

Adipose fin with slightly convex margin for entire length, fin base approximately same length as anal-fin base. Origin of anal-fin base slightly posterior to origin of adipose-fin base, with iii,9 (n=1), iv,8\* (n=8), iv,9 (n=10), iv,10 (n=1) or v,8 (n=1) rays and convex distal margin.

Caudal peduncle of moderate depth. Caudal fin deeply forked, with i,7,8,i (n=21) principal rays; upper and lower lobes slightly rounded. Procurrent rays extend only slightly anterior to fin base.

**Coloration:** In 70% ethanol: body and head light grayish brown, with four vertical dark brown bars: one on head passing through eye; second running obliquely anterior to dorsal fin, terminating just below lateral line; third below adipose-fin origin, terminating at lateral line; last at base of caudal fin. Faint dark, saddle-shaped patches present between dorsal- and adipose-fin bases, and on caudal peduncle immediately below posterior end of adipose-fin base. Ventral surfaces paler in color. Humeral region in area of swimbladder with scattered melanophores, conferring a slightly darker appearance. Pectoral, pelvic and anal fins hyaline, with scattered melanophores on fin rays. Dorsal fin hyaline, with dark brown subdistal ovoid patch covering spine and parts of first 3–4 branched dorsal rays.

**Distribution:** Known from the Brahmaputra River drainage in Assam, northeastern India.

## DISCUSSION

Four other species of *Batasio* are recorded from the Brahmaputra River drainage (Ng 2006): *B. batasio*, *B. fasciolatus*, *B. spilurus*, and *B. tengana*. *Batasio merianiensis* is distinguished from all of these species except *B. fasciolatus* in having dark vertical bars on the head and body (vs. such marks absent). It differs from *B. fasciolatus* in having a shorter adipose-fin base (16.9–22.2% SL vs. 24.5–25.3; dorsal fin when appressed not reaching vs. overlapping the anterior origin of the adipose fin) and fewer vertical bars (four vs. six) on the body. Other characters that may be useful in distinguishing the two species include a more slender body (depth at anus 15.2–18.4% SL vs. 18.1–20.3) and larger eye (diameter 18.3–25.9% HL vs. 16.5–18.8) for *B. merianiensis*, although these two characters are slightly overlapping and may not be useful all the time. *Batasio merianiensis* further differs from *B. batasio* in having a shorter adipose-fin base (16.9–22.2% SL vs. 24.8–26.5) and deeper caudal peduncle (9.7–11.5% SL vs. 8.2–8.8), and from both *B. spilurus* and *B. tengana* in having the adipose-fin base longer than (vs. shorter than) the anal-fin base (16.9–22.2% SL vs. 12.6–17.5) and the absence (vs. presence) of a dark mid-dorsal stripe.

In previous comparisons with only the holotype of *B. merianiensis*, the length of the pectoral-fin spine was used as a diagnostic character in distinguishing this species from *B. fasciolatus* (16.3% SL vs. 12.7–14.3; Ng, 2006). However, data from the fresh material of *B. merianiensis* (12.2–15.0% SL) does

not support the diagnostic value of this character.

Although the locality from which the fresh material was obtained is nearer the type locality of *B. fasciolatus* (160 km to the west-northwest) than that of *B. fasciolatus* (400 km to the east), it is diagnosable as being conspecific with *B. merianiensis* when compared to the illustration in the original description (Fig. 2), as the color pattern and size of the adipose fin indicates. Among congeners outside of the Brahmaputra River drainage, the color pattern of *B. merianiensis* is most similar to *B. affinis* (from the Irrawaddy, Sittang and Ataran River drainages in Myanmar) and *B. tigrinus* (from the Mae Klong River drainage in western Thailand). However, *B. merianiensis* can be distinguished from both species in having a shorter adipose-fin base (16.9–22.2% SL vs. 23.9–29.1). The appressed dorsal fin in *B. merianiensis* also does not reach (vs. overlapping in *B. affinis*) the anterior origin of the adipose fin. *Batasio merianiensis* further differs from *B. tigrinus* in having a more slender body (depth at anus 15.2–18.4% SL vs. 18.4–20.8).

### Comparative material

*Batasio batasio*: CAS-SU 34847 (3), 58.2–69.0 mm SL; India: West Bengal, Mahananda River at Siliguri. UMMZ 209009 (1), 54.8mm SL; Bangladesh: Chittagong, Koilla Khal (creek), 9.7km E of Feni-Chittagong highway on road to Ramgarh, 22°55'N & 91°36'E. ZRC 40570 (10), 53.4–67.8mm SL; India: Assam, Dibrugarh.

*B. fasciolatus*: UMMZ 244798 (holotype), 67.0mm SL; UMMZ 244799 (1 paratype), 70.6mm SL; India: West Bengal, market at Malbazar, 26°32'30"N & 88°44'17"E. BMNH 1988.4.11.14 (1 paratype), 50.1mm SL; India: West Bengal, Balason River at Digana, near Panighata, 20km from Siliguri. UMMZ 244797 (1 paratype), 57.5mm SL; India: West Bengal, Tista River at Tista barrage, 26°45'10"N & 88°34'11"E.

*B. tengana*: UMMZ 244796 (neotype), 43.4 mm SL; India: West Bengal, Tista River at Tista barrage; 26°45'10"N & 88°34'11"E. KU 28534 (1), 31.5 mm SL; KU 35240 (5), 30.4–39.4 mm SL; KU 35256, 53.5mm SL; Nepal: Saptari/Sunsari, purchased at Kosi barrage, 26°31'30"N & 86°56'00"E. KU

28685 (1), 36.0mm SL; Nepal: Kanchanpur, Chandhar River, confluence of three rivers (Chaudhar, Bahuri, Gobraiya) at Royal Shuklaa Phantaa Wildlife Reserve, 28°43'00"N & 80°12'00"E. OSUS 17365 (2), 35.8–36.6mm SL; Nepal: Nawalparasi, Narayani River at Toadi Ghat. OSUS 15812 (2), 43.8–45.9mm SL; Nepal: Nawalparasi, borrow ditch west of Tribeni.

*B. spilurus*: ZRC 49133 (holotype), 42.0 mm SL; ZRC 50201 (1 paratype), 40.5 mm SL; India: Assam, Dibrugarh district, 27°29'N & 94°54'E.

Additional material examined is listed in Ng (2006), Ng & Kottelat (2007) and Ng (2008).

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