

## Article

# On the identity of *Barbus* (= *Hypselobarbus*) *gracilis* Jerdon (1849) and description of a new species of *Hypselobarbus* (Cypriniformes: Cyprinidae) from Western Ghats, peninsular India

Muthukumarasamy ARUNACHALAM<sup>\*1</sup>, Sivadoss CHINNARAJA<sup>2</sup>, Richard L. MAYDEN<sup>3</sup>

<sup>1</sup>Manonmaniam Sundaranar University, Sri Paramakalyani Centre for Environmental Sciences, Manonmaniam Sundaranar University, Alwarkurichi-627 412, Tamil Nadu, India.

<sup>2</sup>Research Department of Zoology, Poompuhar College (Autonomous), Melaiyur-609 107, Sirkali, Nagapattinam dist., Tamil Nadu, India.

<sup>3</sup>Department of Biology, Saint Louis University, Saint Louis, Missouri 63103, USA.

Corresponding author: \*E-mail: arunacm@gmail.com

### Abstract

*Barbus* (= *Hypselobarbus*) *gracilis* is resurrected from synonymy with *Barbus* (= *Hypselobarbus*) *micropogon*. The elevation of this species is based on the original descriptions by Jerdon and Day, and new data provided herein from topotypes. *Hypselobarbus gracilis* is diagnosed from *H. micropogon* in having fewer circumpeduncular and circumferential scale rows and a few morphometric characters. A new species with a long snout is described from Kali River, Karnataka, India. This new “mussullah-like” species, *Hypselobarbus nasutus* is diagnosed from *H. mussullah* in having fewer lateral line and circumferential scale rows and more transverse breast scale rows.

**Keywords:** Cyprinidae, *Hypselobarbus*, *Barbus*, *Hypselobarbus gracilis*, *Hypselobarbus nasutus*.

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### Introduction

*Barbus* (= *Hypselobarbus*) *gracilis* was first described by Jerdon (1849) from the Cauvery River and its tributaries on the basis of 42 scales along lateral line and 12 rows along the sides (transverse rows). Later, Day (1867) identified this species as *Puntius gracilis* from Bhavani River with 40 scale rows on lateral line, 7/4 lateral transverse row scales and a dorsal spine that is smooth and osseous. Subsequently, Day (1878) synonymised *P. gracilis* into *Barbus micropogon* as there was overlap in the lateral line scale counts in both the species as well as the number of lateral transverse scales being 7/4 and 6-7/7. However, Day (1878) provided two images of *B. micropogon*, one from Wynaad (plate CXXXVI, fig. 3) and another from Bhavani River (plate CXXXIII, fig. 4) that prompted us to re-examine the topotype specimens having a strong dorsal spine. This resulted in 3 specimens not showed similar characters as described by Day (1867). Hence, we resurrect *Barbus* (= *Hypselobarbus*) *gracilis* Jerdon (1849) from synonymy with *B. micropogon*.

*Hypselobarbus mussullah* described by Sykes (1841) as “much coarser and infinitely larger fish with the prominence of nose giving to the fish as appearance of Roman-nosed”. Also, he mentioned that the species was different from others by having snout and upper lip tuberculated. The rediscovery of *H. mussullah* from Thunga River (Knight et al. 2013) and subsequently from Krishna River (Knight et al. 2014) raised some reservations that there may be more “mussullah-like” species in the genus *Hypselobarbus* in peninsular India (Arunachalam et al. 2016b). Specimens of *H. mussullah* collected by Knight et al. (2014) were examined and showed that they belong to a new species, *H. pseudomussullah* (Arunachalam et al. 2016b). This lead to the reexamination of the senior author’s collection from Kali River at Dandeli that resulted in two large-sized specimens measuring 390.61 and 398.02 mm SL, that showed distinction from *H. mussullah* and is herein describes as a new species.

### Methods

Fish collections were made between 1996-2005 at river sites. Measurements were made point to point using digital calipers. Methods used for the Meristic and morphometric characters are based Hubbs and Lagler (1964). Morphometric characters from landmarks 9, 18-26, 29-31 and 34-35 (Table 1) were the additional truss

measurements (Strauss and Bookstein 1982). Preanal scales (Jayaram 1991) are the scales from the anus to the isthmus. The meristic character of Lateral transverse scale (Ltr.) rows described by Day (1889) is “number of longitudinal rows of scales between the back and abdomen, usually counted, unless some other part of the side is specified, from the anterior end of the dorsal fin to the ventral”. This character is used to diagnose the two closely related species of *Hypselobarbus*. Body measurements are expressed as percentage of Standard Length (%SL); head measurements are expressed as percentage of Head Length (%HL). Total length (TL) was also used for comparison.

**Abbreviations used:** ZSI/SRC (Zoological Survey of India, Southern Regional Centre, Chennai), MSUMNH (Manonmaniam Sundaranar University, Museum of Natural History) and CMA (collections of M. Arunachalam).

#### **Comparative materials**

*Hypselobarbus curmuca*: ZSI/SRC F. 8749/1, 94 mm SL, Thunga River, Holehoddu, collected by Aswin Rai, 16 May 2013. MSUMNH83, 1ex, 219.52 mm SL, Sholaiyar Dam, Chalakudi River, collected by M. Arunachalam, 23 March 2001. CMA32, 5ex, 118.15-199.79 mm SL, Sholaiyar Dam, Chalakudi River, collected by M. Arunachalam, 23 March 2001. CMA33, 1ex, 144.37 mm SL. Upper Kanneri, tributary of Kali River, Karnataka, collected by M. Arunachalam, 10 May 2002.

*Hypselobarbus kolus*: (labeled as *H. curmuca* (neotype)), ZSI/SRC F. 8748/1, 141.20 mm SL, Thunga River, Holehoddu, collected by Aswin Rai, 16 May 2013. ZSI/SRC F. 8057/1, 120 mm SL, Holebagilu, Sharavathi River, Karnataka, collected by Sreekantha, 15 September 2002. ZSI/SRC F. 8751/1, 145.00 mm SL, Mutha River, Pune, Maharashtra, collected by Hemant Ghate, June 2002. MSUMNH84, 1ex, 186.51 mm SL, Sholaiyar Dam, Chalakudi River, collected by M. Arunachalam, 23 March 2001. CMA34, 3ex, 121.44-158.27 mm SL, Sholaiyar Dam, Chalakudi River, collected by M. Arunachalam, 23 March 2001. MSUMNH85, 1ex, 116.46 mm SL, Sharavathi River, Karnataka, collected by M. Arunachalam, 30 May 2003. CMA35, 2 ex, 101.86-105.9 mm SL, Sharavathi River, Karnataka, collected by M. Arunachalam, 30 May 2003. MSUMNH86, 1ex, 190.83 mm SL, Krishna River at Sakthi Nagar, collected by M. Arunachalam, 16 October 2004. CMA36, 2ex, 177.71-180.94 mm SL, Krishna River at Sakthi Nagar, collected by M. Arunachalam, 16 October 2004. MSUMNH87, 1ex, 139.16 mm SL, Thunga River at Shimoga, collected by M. Arunachalam, 20 November 2004. CMA37, 3ex, 112.16-131.85 mm SL, Thunga River at Shimoga, collected by M. Arunachalam, 20 November 2004. CMA38, 5ex, 121.75-144.05 mm SL, Mula Muta River (Pune), collected by M. Arunachalam, 12 June 1998. CMA47, 1ex, 186.40 mm SL, Cauvery River at Basavanahalli village, Karnataka, collected by M. Arunachalam, 11 May 2001.

*Hypselobarbus kurali*: ZSI/SRC F.4003/1, Holotype, 270.00 mm SL, Kumaradhara River, near Nettana, Dakshin Kannada, collected by A.G.K. Menon, 7 January 1992. ZSI/SRC F.4003/1, 258.66 mm SL, Kumaradhara River, near Nettana, Dakshin Kannada, collected by A.G.K. Menon, 7 January 1992. MSUMNH88, 1ex, 166.83 mm SL, Kallada River at Rosemala village, Kerala, collected by M. Arunachalam, 23 January 2003. CMA39, 7ex, 144.55-160.55 mm SL, Kallada River at Rosemala village, Kerala, collected by M. Arunachalam, 23 January 2003.

*Hypselobarbus periyarensis*: MSUMNH103, 1ex, 264.56 mm SL, Periyar River, Bharathapuzha River basin, Kerala, collected by M. Arunachalam and team, 13 September 2002. CMA117, 9ex, 219.86-260.45 mm SL, Periyar River, Bharathapuzha River basin, Kerala, collected by M. Arunachalam and team, 13 September 2002.

*Hypselobarbus mussullah*: MSUMNH93, 258.08 mm SL, Krishna River (Wai), collected by M. Arunachalam, 24 November 1998.

*Hypselobarbus pseudomussullah*: MSUMNH94, Holotype: 222.69 mm SL, Thunga River, collected by M. Arunachalam, 20 November 2004. ZSI/SRC F. 8750, Paratypes: 2ex, 169-185 mm SL, Uppinangudi Nethravathi River, collected by Aswin Rai, 07 April 2013. ZSI/SRC F. 8759, 1ex, 240.57 mm SL, Bhira Dam at

Koland, Maharashtra, India, collected by J.D. Marcus Knight, 2014. CMA44, 4ex, 146.39-207.06 mm SL, Thunga River, collected by M. Arunachalam, 20 November 2004.

*Hypselobarbus dubius*: MSUMNH243, 1ex, 168.32 mm SL, Bhavani River at Athikadavu, collected by M. Arunachalam and team, 03 February 2001. CMA246, 6ex, 105.09-135.10 mm SL, Pillur Dam, Bhavani River collected by M. Arunachalam and team, 30 March 2002. CMA247, 1ex, 115.08 mm SL, Bhavani River at Nellithurai collected by M. Arunachalam and team 30 March 2002. CMA248, 3ex, 215.92-264.09 mm SL, Bhavani River at Athikadavu, collected by M. Arunachalam and team, 03 March 2001. CMA250, 2ex, 195.62-215.02 mm SL, Bhavani River at Athikadavu collected by M. Arunachalam and team, 28 January 2002. CMA251, 3ex, 166.03-197.66 mm SL, Pillur Dam, Bhavani River collected by M. Arunachalam and team, 18 April 2002. CMA252, 5ex, 128.44-153.49 mm SL, Pillur Dam, Bhavani River collected by M. Arunachalam and team, 20 September 2002.

*Hypselobarbus micropogon*: MSUMNH244, 1ex, 136.95 mm SL, Pillur Dam, Bhavani River, collected by M. Arunachalam and team, 10 March 2001. CMA253, 2ex, 130.78-171.35 mm SL, Pillur Dam collected by M. Arunachalam and team, 10 March 2001. CMA254, 2ex, 138-139.88 mm SL, Athikadavu collected by M. Arunachalam and team, 03 February 2001. CMA255, 2ex, 106.77-130.61 mm SL, Bhavani River at Athikadavu, collected by M. Arunachalam and team, 27 March 2001. CMA256, 2ex, 104.84-138.17 mm SL, Bhavani River at Chengal, collected by M. Arunachalam and team, 21 November 2001. CMA257, 3ex, 105.69-146.08 mm SL, Nellithurai, collected by M. Arunachalam and team, 08 March 2002. CMA258, 2ex, 113.39-117.45 mm SL, Nellithurai Dam, Bhavani River, collected by M. Arunachalam and team, 11 October 2001. CMA259, 4ex, 111.94-122.15 mm SL, Pillur Dam, Bhavani River, collected by M. Arunachalam and team, 16 March 2003.

*Hypselobarbus gracilis*: CMA327, 1ex, 138.67 mm SL, Bhavani River at Athikadavu, collected by M. Arunachalam and team, 30 February 2002. CMA328, 1ex, 102.78 mm SL, Nellithurai Dam, Bhavani River, collected by M. Arunachalam and team 19 April 2002. CMA329, 1ex, 117.55 mm SL, Pillur Dam Bhavani River, collected by M. Arunachalam and team, 07 August 2001.

*Hypselobarbus nilgiriensis*: MSUMNH245, Holotype: 202.29 mm SL, Bhavani River at Nellithurai collected by M. Arunachalam and team, 11 October 2001. CMA260, Paratypes: 2ex, 191.09-219.43 mm SL, Bhavani River at Nellithurai, collected by M. Arunachalam and team, 11 October 2001. CMA261, 1ex, 323.25 mm SL, Bhavani River at Nellithurai, collected by M. Arunachalam and team, 10 March 2002. CMA262, 2ex, 176.11-178.34 mm SL, Pillur Dam, Bhavani River, collected by M. Arunachalam and team, 08 March 2002. CMA263, 1ex, 408.71 mm SL, Noolpuzha from Wynaad, Kerala, collected by M. Arunachalam and team, 17 September 2001 (Arunachalam et al. 2016a).

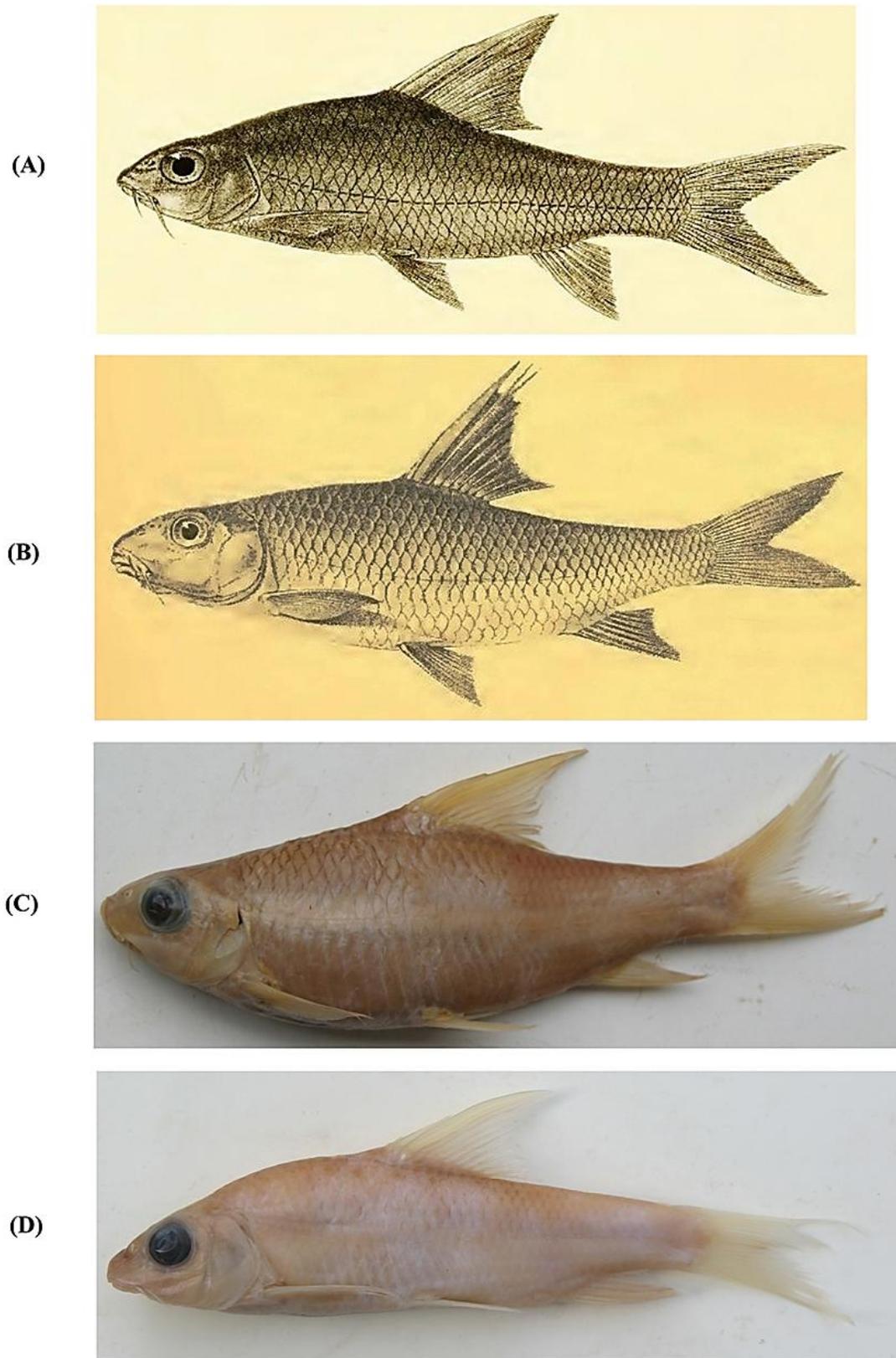
## Results

*Hypselobarbus gracilis* Jerdon (1849)

*Barbus mysorensis*, Jerdon, 1849, M.J.L. and Sci. p. 312.

*Barbus conirostris* Gunther, Catl, 7, p.127.

**Diagnosis** (Fig. 1 A-D and Tables 1-2): *Hypselobarbus gracilis* is distinguished from *H. dubius* in having fewer predorsal scale rows (11 vs. 14), fewer circumpeduncular scale rows (13-14 vs. 18-19), fewer circumferential scale rows (23-24 vs. 30-33), fewer preanal scale rows (30-31 vs. 34-38), and shorter maxillary barbel length (36.25-40.16 vs. 21.23-34.94 %HL). This species is distinguished from *H. micropogon* in having fewer circumpeduncular scale rows (13-14 vs. 16-18), fewer circumferential scale rows (23-24 vs. 26-29) and the morphometric characters postdorsal length (55.20-56.49 vs. 46.99-53.93 %SL) and interorbital width (32.49-



**Figure 1.** *Hypselobarbus micropogon* and *H. gracilis*. (A) Day's illustration of *Barbus micropogon* (plate CXXXVIII, fig. 4), (B) Day's illustration of *Barbus gracilis* (plate CXXXVIII, fig. 3), (C) *Hypselobarbus micropogon* MSUMNH 244. 1ex, 136.95 mm SL, Pillur Dam, Bhavani River collected by M. Arunachalam, and team, 10 March 2001, and (D) *Hypselobarbus gracilis* CMA 327, 1ex, 138.67 mm SL, Bhavani River at Athikadavu, collected by M. Arunachalam and team, 30 February 2002.

33.21 vs. 34.70-41.76 %HL). It is distinguished from *H. nilgiriensis* in having fewer predorsal scale rows (11 vs. 15), fewer circumpeduncular scale rows (13-14 vs. 18-19), and fewer circumferential scale rows (23-24 vs. 34-35).

**Description:** Body moderately deep, its depth 25.75-29.23 %SL, dorsal fin origin anterior to pelvic fin insertion by 1.5 to 2 scale rows; predorsal length 46.68-48.41 %SL; prepelvic length 48.47-49.22 %SL; preanal length 73.83-76.89 %SL. Prepectoral length 23.62-26.04 %SL, distance between pelvic fin insertion and anal origin 21.21-22.67 %SL. Nape slightly convex behind a concavity posterior to occiput. Caudal peduncle moderately deep, depth at narrowest region 9.80-10.40 %SL; caudal peduncle length 11.30-13.63 %SL.

Head long, 24.70-26.50 %SL, with long cranium 17.41-21.14 %SL, head depth at nostril 33.55-35.39, at pupil 49.96-57.68, and at occiput 66.85-73.06 %HL. Preopercle straight and 71.00-74.48 %HL, interorbital concave, interorbital distance 32.49-33.21 %HL. Eyes large, 30.36-32.83 %HL. Snout long, length 35.27-37.17 %HL; mouth subterminal. Upper jaw length 30.55-36.00 %HL; gape width 22.56-23.09 %HL; lower jaw keratinous but not sharp. Two pairs of barbels; maxillary barbel length 36.25-40.16 %HL and rostral barbel length 21.11-27.17 %HL.

Dorsal-fin rays iv-9(3), anal-fin rays iii-5(3), pelvic-fin rays ii-8(2) or 9(1), and pectoral-fin rays i-14(3), and dorsal fin moderately height, 32.98-37.51 %SL. Dorsal spinous ray strong, its length 30.86-32.85 %SL. Anal fin length 19.71-23.13 %SL. Distal margin of anal fin convex, first, second and the third unbranched rays not equal in length. Anal fin base length 7.87-9.46 %SL. Pectoral fin long, 19.00-22.05 %SL and reaching pelvic fin origin; and pelvic fin pointed, its length, 20.59-20.95 %SL. Caudal fin deeply forked 32.22-35.79 %SL, upper and lower lobes 3 times longer than middle rays.

Scales small, lateral-line scale rows 40(2) or 42(1), predorsal scale rows 11(3), upper transverse scale rows 5.5(2) or 6.5(1), lateral line to pelvic scale rows 4(3), lower transverse scale rows 6.5(3), circumpeduncular scale rows 13(1) or 14(2), circumferential scale rows 23(2) or 24(1), transverse breast scale rows 8(1) or 9(2), and preanal scale rows 30(1) or 31(2).

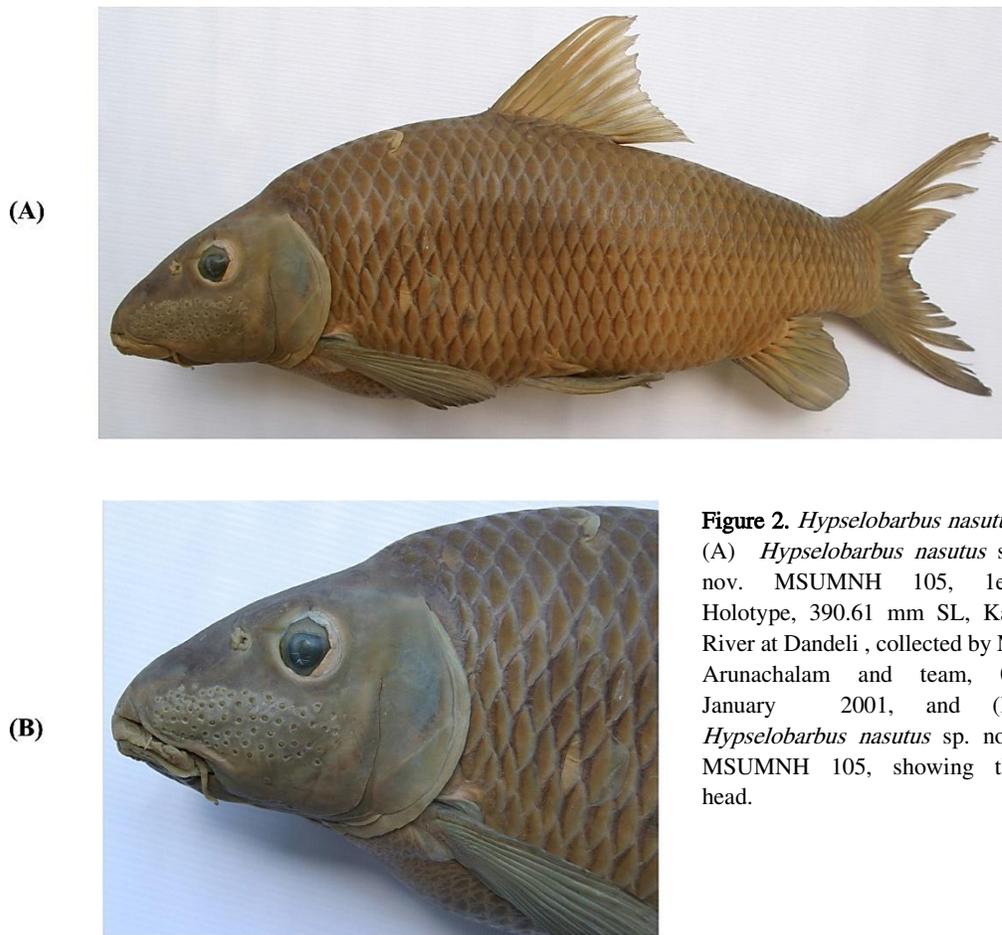
***Hypselobarbus nasutus* sp. nov.**

**Holotype:** MSUMNH105, 390.61 mm SL, (N: 15°16'0.01", E: 74°37'0.01") Kali River at Dandeli, collected by M. Arunachalam and team, 09 January 2001.

**Paratypes:** CMA48, 1ex, 398.02 mm SL, Kali River at Dandeli, collected by M. Arunachalam and team, 09 January 2001.

**Diagnosis** (Fig. 2. A-B, and Tables 1-2): *Hypselobarbus nasutus* sp. nov. is distinguished from *H. mussullah* in having fewer lateral-line scale rows (41 vs. 44), fewer circumferential scale rows (31 vs. 36), and more transverse breast scale rows (17-18 vs. 14). It is distinguished from *H. pseudomussullah* in having more transverse breast scale rows (17-18 vs. 11-12), and the morphometric characters of preanal length (72.68-73.63 vs. 74.94-77.16 %SL), snout length (50.14-51.51 vs. 41.42-47.83 %HL), prenasal length (40.33-40.78 vs. 28.12-37.64 %HL), and length of lower jaw to isthmus (54.54-57.91 vs. 62.23-75.97 %HL). It is distinguished from *H. periyarensis* in having lower lateral-line scale rows (41 vs. 43-44), fewer predorsal scale rows (12-13 vs. 17-18), fewer circumferential scale rows (31 vs. 32-34), more transverse breast scale rows (17-18 vs. 10-13), and the morphometric characters of pectoral fin insertion to pelvic fin insertion (24.53-25.76 vs. 27.55-30.62 %SL), pelvic fin insertion to anal fin origin (19.35-21.96 vs. 26.43-29.78 %SL). It is distinguished from *H. kurali* in having fewer circumferential scale rows (31 vs. 32-33), fewer transverse breast scale rows (17-18 vs. 21-23), fewer preanal scale rows (39-40 vs. 43-46), and the morphometric characters of predorsal length (49.22-51.04 vs. 45.53-47.43 %SL), occiput to pectoral fin insertion (20.44-21.60 vs. 17.69-18.85 %HL) and snout length (50.14-51.51 vs. 43.09-45.59 %HL). It is distinguished from *H. curmuca* by two pairs of barbels (vs. one pair),

fewer upper



**Figure 2.** *Hypselobarbus nasutus*. (A) *Hypselobarbus nasutus* sp. nov. MSUMNH 105, lex, Holotype, 390.61 mm SL, Kali River at Dandeli, collected by M. Arunachalam and team, 09 January 2001, and (B) *Hypselobarbus nasutus* sp. nov. MSUMNH 105, showing the head.

transverse scale rows (7.5 vs. 9.5-10), fewer circumpeduncular scale rows (18 vs. 20-21), fewer circumferential scale rows (31 vs. 39-40), more transverse breast scale rows (17-18 vs. 10-11), and the morphometric characters of predorsal length (49.22-51.04 vs. 45.62-46.42 %SL), snout length (50.14-51.51 vs. 38.85-43.05 %HL), and length prenasal (40.33-40.78 vs. 26.57-31.48 %HL). It is distinguished from *H. kolus* by having two pairs of barbels (vs. one pair), fewer upper transverse scale rows (7.5 vs. 9.5-10), fewer circumpeduncular scale rows (18 vs. 20-21), fewer circumferential scale rows (31 vs. 35-37) and the morphometric characters of predorsal length (49.22-51.04 vs. 42.59-47.04 %SL) and snout length (50.14-51.51 vs. 34.3-42.76 %HL).

**Description:** Body moderately deep, 26.50-30.78 %SL, dorsal and ventral margins almost convex. Dorsal fin origin anterior to the pelvic fin origin by 1-1.5 scales, predorsal length 49.22-51.04 %SL, and prepelvic length 48.90-50.03 %SL, and preanal length 72.68-73.64 %SL. Distance from pectoral fin insertion to pelvic fin insertion 24.53-25.76 %SL, and the pelvic insertion to anal origin 19.36-21.96 %SL. Nape slightly convex, posterior to slight concavity to occiput, providing a “roman-nose” appearance laterally. Lateral line concave. Peduncle moderately deep, 10.11-11.63 %SL at its narrowest region and of moderate length 12.43-13.49 %SL.

Head long, 27.53-27.67 %SL, with moderately long cranium, length 22.81-25.14 %SL; head depth 44.96-46.56 at nostril, 56.10-57.51 at pupil and 67.06-68.76 %HL at occiput and preopercle length 76.69-78.43 %HL. Interorbital space concave and distance between orbits 39.64-40.18 %HL. Eyes large, 18.60-18.85 %HL; snout conical and long, length 50.14-51.51 %HL; mouth subterminal. Upper jaw length 29.47-31.49 %HL, gape width 23.41-26.33 %HL; lower jaw keratinous but not sharp. Barbels in two pairs, the visible maxillary barbel as long as orbit.

**Table 1.** Morphometric character variation in *Hypselobarbus gracilis* and *Hypselobarbus nasutus* sp. nov.

Measurements from point to point (identified by numbers and names)	<i>Hypselobarbus gracilis</i> CMA 327, 328, 329. n=3	<i>Hypselobarbus nasutus</i> sp. nov.	
		Holotype MSUMNH 105. n=1	Paratype CMA 48. n=1
Standard length	102.78-138.67	390.61	398.02
<b>% of standard length</b>			
Snout to urocentrum	93.24-97.12	93.89	94.83
Preanal length	73.83-76.89	73.64	72.68
Predorsal length	46.68-48.41	51.04	49.22
Prepelvic length	48.47-49.22	50.03	48.90
Prepectoral length	23.62-26.04	25.55	25.47
Preoccipital length	17.41-21.14	22.81	25.14
Caudal peduncle length	11.30-13.63	13.49	12.43
Dorsal origin to pelvic insertion	25.19-26.26	31.21	26.19
Dorsal spinous height	30.86-32.85	22.40	22.92
Anal fin height	19.71-23.13	21.14	20.02
Depth of caudal peduncle	9.80-10.40	11.63	10.11
Caudal fin length	32.22-35.79	27.04	26.64
Dorsal fin height	32.98-37.51	25.66	23.75
Pectoral fin length	19.00-22.05	21.36	22.17
Pelvic fin length	20.59-20.95	17.10	18.22
Pelvic auxiliary scale length	4.75-7.87	8.01	7.78
Occiput to dorsal fin origin	27.23-31.58	34.07	26.27
Occiput to pectoral fin insertion	17.70-20.28	21.60	20.44
Occiput to pelvic fin insertion	39.31-40.82	41.58	40.55
Dorsal origin to pelvic fin insertion	21.71-24.89	27.92	22.53
Dorsal origin to pectoral fin insertion	25.58-30.06	34.29	27.95
Dorsal origin to anal fin origin	37.69-39.14	40.75	35.71
Dorsal insertion to caudal base	30.93-35.92	35.94	34.92
Dorsal origin to anal fin origin	21.65-23.04	29.13	24.66
Dorsal origin to anal fin insertion	25.74-28.04	30.23	27.22
Dorsal fin base length	17.60-18.83	16.03	13.85
Anal fin base length	7.87-9.46	8.54	8.45
Pectoral insertion to pelvic fin insertion	23.57-26.81	24.53	25.76
Pectoral insertion to anal fin origin	45.98-49.84	43.64	46.65
Pelvic insertion to anal fin origin	21.21-22.67	21.96	19.35
Postdorsal length	55.20-56.49	50.23	49.81
Body depth	25.75-29.23	30.78	26.50
Distance between pectoral fin and vent	48.21-49.37	47.90	47.60
Distance between pelvic fin and vent	23.43-24.76	24.46	22.06
Head length	24.70-26.50	27.53	27.67
<b>% of head length</b>			
Snout to opercle	71.00-74.48	76.69	78.43
Snout length	35.27-37.17	50.14	51.51
Upper jaw length	30.55-36.00	31.49	29.47
Prenasal length	23.79-26.55	40.33	40.78
Orbit width	30.36-32.83	18.60	18.85
Interorbital width	32.49-33.21	39.64	40.18
Internasal width	23.22-25.04	25.63	24.68
Head width	50.51-59.33	56.79	51.77
Gape width	22.56-23.09	26.83	23.41
Lower jaw to isthmus	58.53-59.77	54.54	57.91
Head depth at nostril	33.55-35.39	46.56	44.96
Head depth at pupil	49.96-57.68	57.51	56.10
Head depth at occiput	66.85-73.06	67.06	68.76
Maxillary barbel length	36.25-40.16	22.85	18.48
Rostral barbel length	21.11-27.17	9.55	8.92

**Table 2.** Meristic characters of *Hypselobarbus gracilis* and *Hypselobarbus nasutus* sp. nov.

Meristic characters	<i>Hypselobarbus gracilis</i>	<i>Hypselobarbus nasutus</i> sp. nov.	
	CMA 327, 328, 329. n=3	Holotype MSUMNH 105. n=1	Paratype CMA 48. n=1
Dorsal-fin rays	iv,9	iv,9	iv,9
Anal-fin rays	iii,5	iii,5	iii,5
Pelvic-fin rays	ii,8-9	ii,9	ii,9
Pectoral-fin rays	i,14	i,14	i,15
Caudal-fin rays	10+9	10+9	10+9
Upper transverse rows	5.5-6.5	7.5	7.5
Lower transverse scale rows	6.5	6.5	6.5
Lateral line to pelvic scale rows	4	4.5	4.5
Lateral line scales	40-42	41	41
Predorsal scales	11	13	12
Circumpeduncular scale rows	13-14	18	18
Circumferential scale rows	23-24	31	31
Transverse breast scale rows	8-9	17	18
Preanal scale rows	30-31	39	40

Dorsal-fin rays iv-9(2), anal-fin rays iii-5(2), pelvic-fin rays ii-9(2), and pectoral-fin rays i-14(1) or 15(1). Anal fin length 20.02-21.14 %SL; pelvic fin length 17.10-18.22 %SL; pectoral fin length 21.36-22.17 %SL; length of caudal fin 26.64-27.04 %SL. Dorsal fin straight with concave; last unbranched spine weak and articulated; length of spine 22.40-22.92 %SL. Small tubercles present anal fin, fin tip reaches first procurrent ray of caudal. Distal margin convex; first, second and third unbranched rays unequal in length. Length of anal fin base 8.45-8.54 %SL. Pectoral fin moderately falcate; depressed fin extending to 2.5 scales anterior to pelvic fin origin. Pelvic auxiliary scales well developed. Caudal fin long, deeply forked and with small tubercles on rays; median caudal rays 4.5 times smaller, relative to upper and lower lobes that are nearly equal. Scales small, lateral-lines scale rows 41(2), predorsal scale rows 12(1) or 13(1), upper transverse scale rows 7.5(2), scale rows from lateral line to pelvic fin origin 4.5(2), lower transverse scale rows 6.5(2), circumpeduncular scale rows 18(2), circumferential scale rows 31(2), transverse breast scales 17(1) or 18(1) and preanal scale rows 39(1) or 40(1).

**Etymology:** Because of the long snout it is named as *nasutus* (Latin adj.)

**Distribution:** This species is known only from Kali River, Karnataka

### Discussion

Jerdon (1849) described *Barbus* (= *Hypselobarbus*) *gracilis* with lateral-line scale rows of 42 and with 12 rows along the transverse. However, Day (1867) described *Puntius* (= *Hypselobarbus*) *gracilis* with 40 lateral-line scale rows with lateral transverse (Ltr.) as 7/4. The topotypes also showed the lateral-line scale rows as 40-42 and the lateral transverse as 7/5. Another distinguishing character of this species is the pectoral fin reaching the origin of the pelvic fin as per Day (1867); all three specimens exhibit this character. Though *H. gracilis* shared the character of a strong dorsal spine with *H. micropogon*, it can be distinguished from by having fewer circumpeduncular and circumferential scale rows.

The major distinguishing character between *H. nasutus* and *H. mussullah* is in having fewer lateral-line and circumferential scale rows and more transverse breast scale rows. It is distinguished from *H. pseudomussullah* in having more transverse breast scale rows, and the morphometric characters of shorter preanal, longer predorsal, longer snout, and longer prenasal distances. *Hypselobarbus nasutus* belongs to the group of *H. jerdoni*, *H. dobsoni*, and *H. pulchellus* by having its simple dorsal fin ray weak and articulated versus the group of species,

*H. micropogon*, *H. dubius*, *H. nilgiriensis* and *H. periyarensis*, with the strong and osseous dorsal fin rays.

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