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BARILIUS KAMJONGENSIS, A NEW BARILIINE FISH SPECIES (DANIONIDAE, DANIONINAE) FROM THE CHINDWIN BASIN OF MANIPUR, INDIA

L. Arunkumar[1], M. Thoibi[1]* & E. Jajo[2]

[1]*Department of Zoology, Mayai Lambi College, Yumnam Huidrom-795009, Imphal West, Manipur, India*
[2]*Department of Zoology, Pettigrew College, Ukhrul-795142, Manipur, India*
**Corresponding author*
E-mail: thoiji@gmail.com

M. Thoibi (https://orcid.org/0000-0002-8223-3240)

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***Barilius kamjongensis,* a New Bariliine Fish Species (Danionidae, Danioninae) from the Chindwin Basin of Manipur, India. Arunkumar, L., Thoibi, M. & Jajo, E.** — A new bariline fish, *Barilius kamjongensis* is decribed from Kamjong District, the Chindwin basin of Manipur, India. It can be distinguished from its congeners in having a body with 2 pairs of barbels, 16–19 predorsal scales, 12–15 body bars, 40–43 perforated lateral line scales, 7.5/2.5 lateral line transverse scales, origin of dorsal-fin closed to base of caudal-fin, pectoral-fin shorter than head length, body depth at dorsal-fin origin 22.8–26.6 % SL, caudal peduncle depth 8.5–10.3 % SL, predorsal length 55.8–57.7 % SL, head length 23.4–25.4 % SL, head length at occiput 12.5–18.4 % SL and 75.7–77.8 % HL, eye diameter 6.4–7.9 % SL and 26.0–33.6 % HL, narrow head 10.4–12.7 % SL and inter bars of body wider than bars respectively. A key to the species genus *Barilius* found from the Chindwin basin of Manipur is provided.
Key words: Danionidae, new species, Chindwin basin, Manipur, India.

Introduction

Manipur is located in the Indo-Burma Region, one of the global biodiversity hot spots (Myers et al., 2000). Howes (1983), Rainboth (1991), Kottelat (2013), and Qin et al. (2019) assigned all the *Barilius* species of South-Eastern Asian to the genus *Opsarius.* Hora (1921) was the first fish systematist who described bariliine fish from the Chindwin basin of Manipur viz., *Barilius dogarsinghi* and reported the occurrence of *B. barila*. 9 species of *Barilius* were reported from the Chindwin basin of Manipur viz., *B. barila, B. chatricensis, B. dogarsinghi, B. kanaensis*, *B. lairokensis*, *B. ngawa*, *B. sajikensis*, *B. torosus* and *B. vittatula* according to Hora (1921), Selim & Vishwanath (2002), Arunkumar & Moyon (2017), Arunkumar & Singh (2000), Vishwanath & Manojkumar (2002), Moyon & Arunkumar (2019) and Devi (2005) respectively. About 72.72 % of bariliine species were recorded from the Chindwin basin of Manipur (Moyon & Arunkumar, 2019). During the survey conducted February 2021 in the Taret-lok, Chindwin basin, Kamjong District of Manipur, we sporadically collected specimens of *Barilius* which we identify as a new species and describe herein as *B. kamjongensis*.

Material and methods

Measurements were made point to point with dial caliper and recorded to the nearest 0.1 mm. Counts and measurements were made on the left side of specimens following standard methods of Hubbs & Lagler (1958) and Tejavej (2010). Subunits of the head were measured as proportions of head length (HL). Head length and body measurements are presented as proportions of standard length (SL). The colour in fresh specimens was noted before fixation and preservation in 10 % formation. The examined specimens are deposited at the Manipur University Museum of Natural History (NH/MUM), Canchipur, Manipur.

Results

Barilius kamjongensis sp. n. (fig. 1)

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Material. Type. Holotype: 125/NH/MUM, 27.II.2021, 24°86′ N & 94°50′ E, 101.1 mm SL, 111.7 mm TL, Taret-lok at Lunbung, Kamjong District, Manipur, India, Coll. Ersilia Jajo & her party.

Paratypes: 125/NH/MUM, 5 exs, 75.5–97.2 mm SL, 96.5–121.6 mm TL, data as for holotype.

Diagnosis. *Barilius kamjongensis* sp. n. differs from its congeners based on the following combination of characters: presence of 2 pairs of barbels, 16–19 predorsal scales, 12–15 lateral body bars, inter-bars wider than bars, 40–43 perforated lateral line scales, 7.5/2.5 lateral line transverse scales, dorsal-fin without a distinct transverse blue-black band, origin of dorsal-fin closed to base of caudal-fin, not equidistant from the middle of eye and base of caudal-fin and far behind the vertical through the origin of pelvic-fin, pectoral-fin shorter than head length, pelvic-fin origin far in front of dorsal-fin origin, caudal-fin unequal lobes, body depth at dorsal-fin origin 22.8–26.6 % SL, caudal peduncle depth depth 8.5–10.3 % SL, predorsal length 55.8–57.7 % SL, head length 23.4–25.4 % SL, head length at occiput 12.5–18.4 % SL and 75.7–77.8 % HL, narrow head 10.4–12.7 % SL, eye diameter 6.4–7.9 % SL and 26.0–33.6 % HL respectively. See detailed comparison in the Discussion below.

Fig. 1. A — *Barilius kamjongensis* sp. n., 125/NH/MUM, 101.1 mm SL (Holotype) before preservation; B — *Barilius kamjongensis* sp. n. 97.2 mm SL (Paratype) after preservation.

Table 1. Morphometric data of *Barilius kamjongensis* sp. n. (No. of specimens = 6)

Characters	Holotype 125/NH/MUM	Paratype Ranges	Mean
Total length (= TL in mm)	111.7	96.5–121.6	
Standard length (= SL in mm)	101.4	106.6–110.7	
In % of SL			
Body depth at dorsal-fin origin	25.0	22.8–26.6	24.7
Body depth at ventral-fin origin	25.7	24.0–27.1	25.7
Body depth at anal-fin origin	21.7	19.7–22.1	20.6
Body width at dorsal-fin origin	11.2	11.1–12.8	11.6
Body width at anal-fin origin	8.1	8.1–10.1	9.2
Caudal-peduncle depth	8.5	8.5–10.1	9.6
Caudal-peduncle length	19.4	14.8–17.6	13.6
Predorsal length	57.7	55.8–57.3	26.6
Post-dorsal length	44.6	41.8–47.8	45.3
Preanal length	69.2	68.1–72.3	70.2
Preanus length	64.1	64.7–68.5	66.0
Prepectoral length	27.0	24.7–28.0	26.0
Prepelvic length	49.4	49.6–51.2	50.5
Pectoral to pelvic-fin length	22.4	22.2–26.2	23.7
Pelvic to anal-fin length	19.9	18.5–21.5	19.7
Anal to caudal-fin base length	30.8	27.6–31.9	29.8
Pelvic to anus length	14.7	14.0–19.4	16.1
Caudal-fin length (upper lobe)	26.3	21.0–26.8	23.8
Caudal-fin length (lower lobe)	29.3	25.1–27.8	27.1
Dorsal fin length	24.3	19.5–23.5	22.2
Pectoral fin length	21.3	17.6–19.2	19.2
Pelvic fin length	14.8	12.8–14.1	13.6
Anal fin length	20.3	20.3–21.9	21.1
Dorsal fin base length	11.9	9.7–12.7	11.3
Anal-fin base length	14.4	11.8–17.0	14.3
Lateral head length	24.4	23.4–25.4	24.1
Head length at occiput	12.5	13.3–18.4	16.5
Head depth at occiput	16.3	13.3–18.8	17.0
Head width at occiput	12.6	10.4–12.7	12.0
Post orbital length	14.8	13.2–14.0	13.8
Pre orbital head depth	11.9	9.5–12.6	11.0
Post orbital head depth	15.6	14.8–16.5	15.5
Upper jaw length	9.9	9.8–10.5	10.1
Snout length	7.8	6.2–8.2	7.1
Eye diameter	6.4	6.6–7.9	7.0
Interorbital width	9.6	8.0-9.7	8.8
Internarial width	4.3	4.1–5.0	4.5

Description. Morphometric data are shown in table 1 and table 2. Body shape is shown in fig. 1. Body laterally compressed, ventral profile slightly rounded Post dorsal region in a slanted straight line. Head length usually longer and larger than head depth. Snout tip nearby blunt. Mouth gape below anterior margin of eye and mouth upturned,

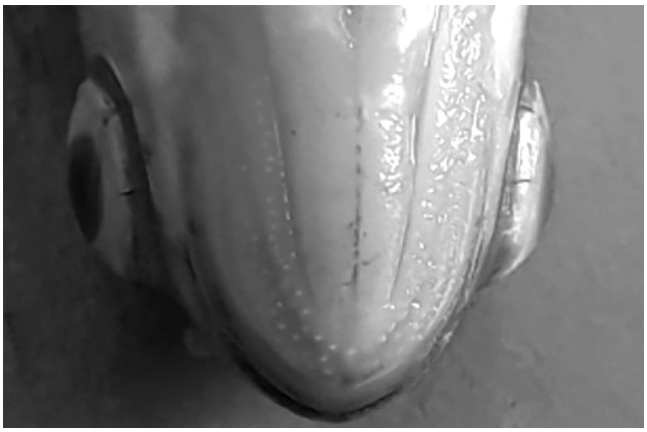

Fig. 2. Dentary tubercles of *Barilius kamjongensis* sp. n.

Table 2. Morphometric data of *Barilius kamjongensis* sp. n. (No. of specimens = 6)

Characters	Holotype 125/NH/MUM	Paratype Ranges	Mean
In % of HL (Head Length)			
Head width at occiput	51.4	44.3–52.5	49.7
Head depth at occiput	66.8	72.9–77.8	74.5
Head length at occiput	75.7	75.1–77.8	76.8
Head depth at anterior eye	48.5	40.2–46.9	45.7
Snout length	32.0	26.3–34.8	29.3
Eye diameter	26.0	26.1–33.6	28.7
Interorbital distance	39.3	33.6–38.2	36.8
Internarial distance	17.4	17.4–20.8	18.8
Post orbital length	60.7	54.4–58.3	57.3
Upper jaw length	17.4	17.4–20.8	18.8

upper and lower jaws more or less same in length. Dentary tubercles of row developed and shown in fig. 2.

Snout slightly longer than eye diameter. Inter-orbital region slightly convex. Nares located closed to eyes than tip of snout. Dorsal margin of eye never reaches to the dorsal profile of head and its lower margin never reaches to the level of angle of mouth. Origin of dorsal-fin closed to the base of caudal-fin, not equidistant from the middle of eye and base of caudal-fin but equal to the post-orbit and base of caudal-fin. Tip end of dorsal-fin straight, with posterior tip surpassing vertical through posterior base of anal-fin. Dorsal-fin with ii, 7 rays. Pectoral-fin shorter than head length and often reaching base of pelvic-fin. Pectoral-fin with i, 11 rays. Pelvic-fin origin far in front of dorsal-fin origin, its tip not reaching origin of anal-fin. Pelvic-fin with I, 7–8 rays Pectoral and pelvic-fins with lobate axial scales. Anal-fin originated far behind vertical through the last posterior origin of dorsal-fin ray with ii, 10 rays. Caudal-fin unequal, lower lobe longer than upper lobe and ii, 8+8. Ii rays. Circumpeduncular scales 14.

Colouration. In fresh specimen, dorsal and dorso-lateral surfaces of head and body faintly greyish green, ventral portion anterior to pelvic-fin origin silver coloured. Belly creamy to light golden yellowish. Lateral body with 12–15 dark blue bars and not touched

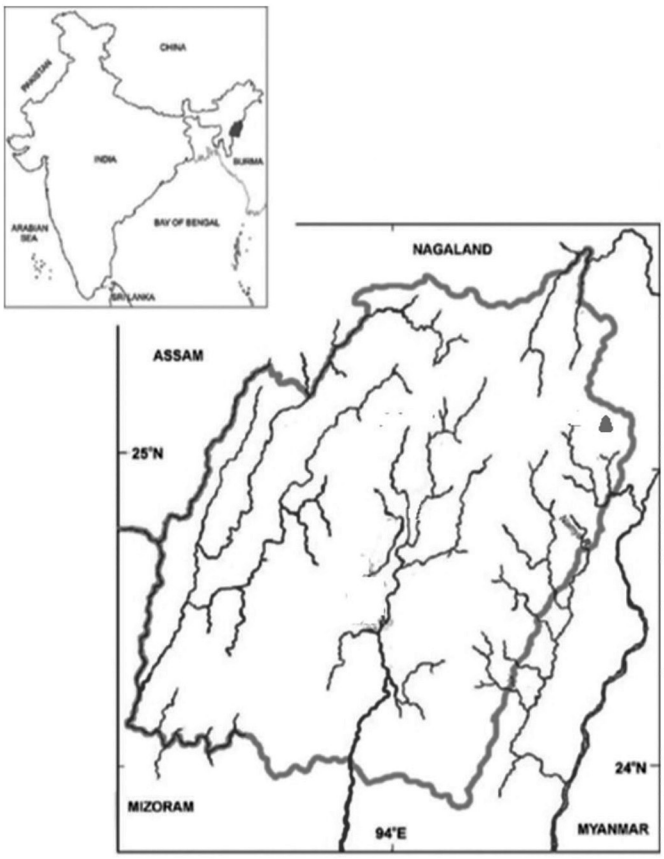

Fig. 3. Distribution and type locality of *Barilius kamjongensis* sp. n. in Manipur, India, indicated as a red triangle.

Fig. 4. Taretlok River at Lunbung, Kamjong District, Manipur, India: habitat and type loclity of *Barilius kamjongjenesis* sp. n.

lateral line scales. Pectoral, pelvic and anal-fins are light orange in colour. Caudal-fin edge yellowish with blackish upper and lower lobe margins.

Local Name. 'Ngapaila' in Tangkhul language and 'Ngawa' in Manipuri language.

Distribution and habitat. *Barilius kamjongensis* sp. n. is presently known only the Taret-lok River, Kamjong District of Manipur (fig. 3–4). Taret-Lok River is originated from Nungshit-Haibi, then it joins the Nungjaopokpi River, southern part of Sita village, Tengnoupal District and flows through Tuyungbi at Yongkhun village which mainly dominated by Maring tribe and then joined to the Maklang River at Nambasi. There are three main hill streams of Nambasi viz., Lungbung, Kartangtak and Lungkuna which are the main hill stream fishing centres of the Taret-lok River of Kamjong District of Manipur. *B. kamjongensis* sp. n. is associated with the following fish species viz., *Garna moyonkhulleni, Neolissochilus hexagonolepis, Poropuntius burtoni, Schistura reticulata, Glyptothorax chivomensis* and *Amblyceps* sp.

Etymology. The species is named after the Kamjong District of Manipur from where it was collected.

Discussion

Barilius kamjongensis sp. n. differs from *B. barila* in having lesser predorsal scales (16–19 vs. 20–22), lesser number of lateral bars (12–15 vs. 15–16), lesser lateral line scales (40–43 vs. 43–46), longer head (23.4–25.4 % SL vs. 20.8–21.6), longer predorsal (55.8–57.3 % SL vs. 55.5–55.6), shorter head at occiput (12.5–18.4 % SL vs. 72.1–78.6), smaller eye diameter (6.4–7.9 % SL vs. 30.4–33.7), narrower head width (10.4–12.7 % SL vs. 14–8), deeper body at dorsal-fin origin (22.8–26.6 % SL vs. 20.8–22.2), slender depth of caudal peduncle (8.5–10.1% SL vs. 43.5–50.5), shorter caudal peduncle (14.8–19.4 % SL vs. 80.5–80.6), head length longer than pectoral-fin vs. equal and origin of dorsal-fin is not equidistant vs. equidistant from the middle of eye and base of caudal-fin respectively.

Barilius kamjongensis sp. n. differs from *B. barnoides* in having lesser predorsal scales (16–19 vs. 19–21), slender body depth at dorsal-fin origin (22.8–26.6 % SL vs. 27.5–29.8), and body depth at pelvic-fin origin (24.0–27.1 % SL vs. 29.6–32.4), shorter head length (23.4–25.4 % SL vs. 26.1–26.4), and at occiput (12.5–18.4 % SL vs. 78.1–79.4), shorter dorsal-fin base (9.7–21.7 % SL vs. 14.4–15.0), shorter pectoral-fin base (17.6–21.3 % SL vs. 21.9–23.6), shorter pelvic-fin (12.8–14.8 % SL vs. 15.0–16.2), longer anal-fin (20.3–21.9 % SL vs. 16.8–17.3), shorter caudal-fin (25.1–29.3 % SL vs. 29.9–30.7), and more number of lateral bars (12–15 % SL vs.9–10) respectively.

Barilius kamjongensis sp. n. differs from *B. chatricensis* in having more lateral line scales (40–43 vs. 36–38), more predorsal scales (16–19 vs.15), more lateral bars (12–15 vs. 7–8), presence vs. absence of barbels, shorter head length (23.4–25.4 % SL vs. 25.2–27.1), and at occiput (12.5–18.4 % SL vs. 73.8–82.2), longer predorsal (55.8–57.7 % SL vs. 51.4–55.5), smaller eye diameter (6.4–7.9 % SL vs. 25.7–29.8), shorter caudal peduncle (14.6–19.4 % SL vs. 71.8–79.8) and its depth (8.5–10.3 % SL vs. 38.0–43.6), shorter pelvic-fin (12.8–14.8 % SL vs. 15.5–18.2), shorter head length at occiput (75.1–77.8 % HL vs. 73.8–82.2), and narrower interorbital width (33.6–39.3 % HL vs. 45.3–53.1) respectively.

Barilius kamjongensis sp. n. differs from *B. dogarsinghi* in having dorsal-fin without vs. with a distinct transverse blue black band, lesser predorsal scales (16–19 vs. 20), more lateral vertical bars (12–15 vs. 9) and lesser body depth at dorsal-fin origin (22.8–26.6 % SL vs. 24.8–30.0) respectively.

Barilius kamjongensis sp. n. differs from *B. lairokensis* in having lesser predorsal scales (16–19 vs. 21), lesser lateral line scales (40–43 vs. 44), lesser lateral transverse scales (7.5/2.5 vs. 9.5/3.5), slender body depth at dorsal-fin origin (22.8–26.6 % SL vs. 25.9–29.9), shorter preanal-fin (68.1–72.3 % SL vs. 71.9–75.2) and larger eye diameter (26.0–33.6 % HL vs. 26.8–27.4), respectively.

Barilius kamjongensis sp. n. differs from *B. ngawa* in having lesser predorsal scales (16–19 vs. 21–22), lesser lateral transverse scales (7.5/2.5 vs. 8/1/2), lesser circumpeduncular scales (14 vs. 16–17), longer predorsal (55.8–57.7 % SL vs. 52.7) shorter head length (23.4–25.4 % SL vs. 26.2–26.8), longer head at occiput (75.1–77.8 % HL vs. 73.2–73.6), wider interorbital space (33.6–39.3 % HL vs. 31.9–36), larger eye diameter (26.0–33.6 % HL vs. 21.5–22.6), snout length shorter vs. equal to interorbital space, pectoral-fin shorter than head length vs. as long as head, pelvic-fin not reaching vs. reaching anal-fin origin, tip of pelvic-fin not reaching vs. reaching origin base of anal-fin, caudal-fin lobes unequal vs. equal, and inter bars are wider than bars vs. equal respectively.

Barilius kamjongensis sp. n. differs from *B. kanaensis* in having more pair of barbels (2 vs. 1), more lateral bars (12–15 vs. 8–10), more lateral line scales (40–43 vs. 38–40), lesser predorsal scales (40–43 vs. 38–40), lesser predorsal scales (16–19 vs. 20–22), shorter post-dorsal length (41.8–47.8 % SL vs. 72.1–78.5), wider body at dorsal-fin origin (11.1–12.8 % SL vs. 6.6–8.8) and at anal-fin origin (8.1–10.1 % SL vs. 5.5–6.7) respectively.

Barilius kamjongensis sp. n. differs from *B. sajikensis* in having lesser predorsal scales (16–19 vs. 23–24), lesser lateral line scales (40–43 vs. 43–45), lesser lateral transverse scales (7.5/2.5 vs. 8/1/2.5–3), shorter post dorsal length (41.8–47.8 % SL vs. 65.6–71.1), shorter anal-fin length (20.3–21.9 % SL vs. 22.5–23.8), smaller eye diameter (26.0–33.6 % HL vs. 26.4–35.0), and pectoral-fin shorter vs. longer than head length respectively.

Barilius kamjongensis sp. n. differs from *B. torosus* in having slender body depth at dorsal-fin origin (22.8–26.6 % SL vs. 28.6–29.3), slender depth of caudal peduncle (8.5–10.3 % SL vs. 14.7–15.4), shorter anal-fin base (11.8–17.0 % SL vs. 17.0–17.8), larger eye diameter (26.0–33.6 % HL vs. 24.0–25.5), lesser number of predorsal scales (16–19 vs. 21), lesser number of transverse scales (7.5/2.5 vs. 8.5/3.5), lesser number of lateral body bars (12–15 vs. 18–19), absence vs. presence of dorsal-fin with a broad and black sub-marginal stripe and lesser circumpeduncular scales (14 vs. 16) respectively.

Barilius kamjongensis sp. n. differs from *B. vittatula* in having slender body depth at dorsal-fin origin (22.8–26.6 % SL vs. 28.8–29.3) and deeper at anal-fin origin (19.7–22.1 % SL vs. 11.4–12.3), lesser body width at dorsal-fin origin (11.1–12.8 % SL vs. 13.5–14.0), shorter head length at occiput (12.5–18.4 % SL vs. 77.4–79.5), narrower head at neck (10.4–12.7 % SL vs. 54.4–55.3), lesser number of lateral transverse scales (7.5/2.5 vs. 8.5/3.5) and longer caudal peduncle vs. equal with anal-fin base length respectively.

Barilius kamjongensis sp. n. differs from *Opsarius putaoensis* in having presence vs. absence of barbels, more number of lateral bars (12–15 vs. 6–7), more perforated lateral line scales (40–43 vs. 35–38), more predorsal scales (16–19 vs. 15), narrower head width (10.4–12.7 % SL vs. 13.7–15.2), slender depth of head at occiput (12.5–18.9 % SL vs. 21.6–25.8), shorter pelvic-fin (12.8–14.8 % SL vs. 15.0–19.0) and longer anal-fin (20.3–21.9 % SL vs. 13.9–18.2) respectively.

Conclusion

The new species, *B. kamjongensis* has body depth at dorsal fin (22.8–26.6 % SL), compressed body with rounded belly, vertical bars on flank and 2 pairs of barbels, important characters to be considered as *Barilius* Kumari et al. (2019) and lobate or fleshy pelvic axial scales, a single or absence of barbels, presence of parallel rows of tubercles on the dentary, a key character to be considered as *Opsarius* Kumari et al. (2019). So, *Barilius kamjongensis* sp. n. shows dual morphological characters of *Barilius* and *Opsarius*. Despite of dual characters, *Barilius kamjongensis* sp. n. belongs to *B. barna* group and *B. barnoides* sub-group due to the fewer number of branched anal-fin rays and presence of one or two pairs of barbels respectively.

Identification key to species the genus *Barilius* of the Chindwin basin of Manipur

1.	Barbel absent. Body bars with 7–8.	*B. chatricensis*
—	Barbel present.	2
2.	Barbel with 1 pair, Body bars with 8–10 lateral line scales 38–40, Predorsal scales 20–22.	*B. kanaensis*
—	Barbel with 2 pairs. Other characters variable.	3
3.	Dorsal-fin with a distinct transverse blue-black band.	*B. dogarsinghi*
—	Dorsal-fin without a distinct transverse blue-black band.	4
4.	Caudal-fin lobes equal in length. Pre-dorsal scales 21–22, lateral line scales 42–43, lateral transverse scales 8.5/1/2.5, body bars 13–14.	*B. ngawa*
—	Caudal-fin lobes unequal in length.Other characters variable.	5
5.	Lateral line scales 43–46. Body bars 15–16	*B. barila*
—	Lateral line scales 40–43. Body bars either less or more than 16.	6
6.	Body bars 18–19.	*B. torosus*
—	Body bars 11–15.	7
7.	Predorsal scales 21–24.	8
—	Predorsal scales 16–19.	9
8.	Lateral transverse scales 9.5/3.5. Preanal length 71.9–75.5 % SL.	*B. lairokensis*
—	Lateral transverse scales 8.5/1/2.5–3. Preanal length 65.7–70.7 % SL.	*B. sajikensis*
9.	Lateral transverse scales 8.5/3.5, body depth at dorsal-fin origin 28.8–29.3 % SL.	*B. vittatula*
—	Lateral transverse scales 7.5/2.5, body depth at dorsal-fin origin 22.8–26.6 % SL.	*B. kamjongensis* sp. n.

Comparative material

Barilius barila: MUMF 5049, 5051, 83.2–89.5 mm SL, Khuga River, Churachandpur, Manipur, India. Additional data from Dishma & Vishwanath (2012).

Barilius barnoides: CMK 4052, 4280, 2exs; Mae Hong Son Province, Thailand. (CMK = Collections of Maurice Kottelat, Switzerland). Data from Nath et al. (2010). Talwar & Jhingran (1991) and Vishwanath & Manojkumar (2002).

Barilius chatricensis: Holotype: MUMF 530/1, 86. 4 mm (SL) Chatrikong River, Ukhrul District, Manipur, India, 150 km from Imphal. Coll. Keishing Selim, 16. XI. 1995. paratype: MUMF 531/9, 58.6–89.00 mm (SL). Data from Selim & Vishwanath (2002).

Barilius dogarsinghi: Type Specimen — F9983/1.Zoological Survey of India (Ind. Mus.). Data from Hora (1921), ZSI/F 2208/2, n = 3; MUMF 360/n = 10. Data from Selim & Vishwanath (2002). Additional data from Talwar & Jhingran (1991), Jayaram (1999), Nath et al. (2010), Tejavej (2012).*Opsarius kanaensis:* 75/NH/MUM, 53.6 mm SL, 68.5 mm TL, India: Manipur from Kana Rivers at Sajik Tampak, located in Chakpikarong of Chandel District and data from Arunkumar and Moyon (2017).

Barilius lairokensis: Holotype MUMF 3700/1A, TL 110 mm; SL.87 mm; from Lairok Maru, Moreh, Chandel District, Manipur, 17. X. 1992. coll. Laifrakpam Arunkumar. MUMF 27075, 105.0 mm SL, Moreh Bazar, Moreh, Chandel District, Manipur, India. Data from Arunkumar & Singh (2000. Additional data from Dishma & Vishwanath (2012).

Barilius ngawa: Holotype: MUFM 149,84.8 m Sherou River (tributary of Manipur River), 83 km south of Imphal, Manipur, W. Manojkumar, 20. iii. 1993. Paratype: MUFM 150, 61.5–134.3 mm. Data from Vishwanath & Manojkumar (2002). Additional data from Dishma & Vishwanath (2012).

Opsarius putaoensis: Data from Qin et al. (2019).

Opsarius sajikensis. Holotype: 80/NH/MUM,99.0 mm SL; 127.8 mm TL; from Kana River at Sajik- Tampak near Molnaum village, Yu river basin, about 43 km towards South from district headquater, Chandel, from Chandel Bazar, Chandel District, Co-ordinate: Latitude 24°0′ N-24°15′ N and longitude 93°45′ E–94°0′ E, collected by the fishermen of Sajik-Tampak & Moyon along with L. Arunkumar, 7th April 2017.

Barilius torosus: Holotype: MUMF 6232, 90.4 mm SL. Iril River at Keibi, Imphal, January 20, (2002) ID. Paratype: MUMF 6263/6234,2,100.0–115.7 mm SL, I, 86.7 mm SL same data as holotype.

Barilius vittatula: Holotype: MUMF 6235, 36.2 mm SL. Iril River at Keibi, Imphal, January 20, (2002) I L. Paratype: MUMF 6263, I, 86.7 mm SL same data as holotype. Uncat. 4, 88.2–89.4 mm SL.

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References

Arunkumar, L. & Moyon, W. A. 2017. *Opsarius kanaensis*, a new species of bariliine fish (Cypriniformes: Cyprinidae) from Manipur, Northeastern India. *Species*, **18** (61), 160–169. http://www.discoveryjournals.org/species/current_issue/2017/A14.pdf

Arunkumar, L. & Singh, H. T. 2000. Barilline fishes of Manipur, India, with description of a new species: *Barilius lairokensis. Journal of the Bombay Natural History Society*, **92** (2), 247–252.

Devi, I. L. 2005. *Fish diversity of Iril river and biology of endemic food fishes*. Ph.D. Thesis submitted to Manipur University, Canchipur, 1–215.

Dishma, M. & Vishwanath, W. 2012. Fish diversity of the genus *Barilius* Hamilton (Teleostei: Cyprinidae) of north east India. *Symposium Proceedings: Biodiversity Status and Conservation Strategies with Reference to NE India*. ISBN: 978-81-923343-1-8. 310–317.

Hora, S. L. 1921. Fish and Fisheries of Manipur with some observations on those of Naga hills. *Records of the Indian Museum*, **22** (3), 165–214. https://doi.org/10.5962/bhl.part.1473

Howes, G. J. 1983. Additional Notes on *Bariliine cyprinid* Fishes. *Bulletin of British Museum (National History) Zoology*, 45, 95–101.

Hubbs, C. L. & Lagler, K. F. 1958. Fishes of the Great Lakes Region. *Cranbook Institute of Science*, Bulletin 26, Bloomfield Hills, Michigan, 1–213.

Jayaram, K. C. 1999. *The Freshwater Fishes of the Indian Region.* Narendra Publishing House, Delhi. xxvii+551 pp. 18 pls.

Kottelat, M. 2013. The fishes of the inland waters of the Southeast Asia: A catalogue and core bibliography of the fishes known to occur in freshwater, mangroves and estuaries. *Raffles Bulletin of Zoology.* (Supplement) 27, 1–663.

Kumari, K., Munivenkatappa, M. H., Sinha, A., Borah, S. & Das, B. K. 2019. *Barilius torsai* (Teleostei: Cypriniformes: Cyprinidae), a new fresh water fish from the Brahmaputra drainage, India. *Journal of Threatened Taxa*, **11** (14), 14808–14815.

Moyon, W. A. & Arunkumar, L. 2019. *Opsarius sajikensis*, a new Bariliine Fish (Cyprinidae: Danioninae) from the Yu River basin of Manipur, North eastern India. *International Journal of Fisheries and Aquatic Studies*, **7** (6), 01–06.

Myers, N., Mittermier, R. A., Mittermier, C. G., da Fonseca, G. A. & Kent, J. 2000. Biodiversity Hotspots for conservation priorities. *Nature*, 403 (24) 853-858.

Nath, P., Dam, D. & Kumar, A. 2010. A new fish species of the genus *Barilius* (Cyprinidae: Rasborinae), from River Siang, D'Ering Memorial Wildlife Sanctuary, Arunachal Pradesh, India. *Records of the Zoological Survey of India*, **110** (3), 19–33. https;//doi.org/10.26515/rzsi/v110/i3/2010/158930

Qin, T, Maung, K. W. & Chen, X-Y. 2019. *Opsarius putaoensis*, a new species of Subfamily Danioninae (Actinopterygii, Cyprinidae) from the Irrawaddy River basin in northern Myanmar. *Zootaxa*, **4615** (3), 585–593. https://doi.org/10.11646/zootaxa.4615.3.11

Rainboth, W. J. 1991. Cyprinids of South East Asia. *In*: Winfield, I. J. & Nelson, J. S., eds. *Cyprinid Fishes, Systematics, Biology and Exploitation.* Chapman & Hall, London, 156–210.

Selim, K. & Vishwanath, W. 2002. A new cyprinid fish species of *Barilius* Hamilton from the Chatrickong River, Manipur, India. *Journal of the Bombay Natural History Society*, **99** (2), 267–270. https://biostor.org/reference/151876

Talwar, P. K. & Jhingran, A. G. 1991. *Inland Fishes of India and Adjacent countries.* Oxford & IBH publishing Co. Pvt. Ltd., New Delhi, Bombay, Calcutta. Vol. 1, xix+542 pp.

Tejavej, A. 2010. *Taxonomic review of the cyprinid fish genus Barilius Hamilton, 1822 from Indochina (Cypriniformes: Cyprinidae)*. Master of science (Fishery science), Kasetsart University, Bangkok, 1–148.

Tejavej, A. 2012. *Barilius signicaudus*, a new species of cyprinid fish from Mekong basin, Western Thailand (Cypriniformes: Cyprinidae). *Zootaxa*, 3586, 138–147. https://doi.org/10.11646/zootaxa.3586.1.13

Vishwanath, W. & Manojkumar, W. 2002. A new bariline cyprinid fish of the genus *Barilius* Hamilton, from Manipur, India. *Journal of the Bombay Natural History Society*, **99** (1), 86–89.

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