

***NEMACHEILUS TEBO*, A NEW LOACH FROM SANGKULIRANG KARST, EAST KALIMANTAN, INDONESIA (TELEOSTEI: NEMACHEILIDAE)**

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ABSTRACT. – *Nemacheilus tebo*, new species, is described from Lake Tebo drainage, in the Sangkulirang peninsula karst formation, East Kalimantan, Indonesia. It is distinguished from all other species of *Nemacheilus* by its unique colour pattern: flank with 11–16 bars, those in front of dorsal fin short, close together or fused, forming a kind of large elongate blotch; those below and behind dorsal fin distinct and usually not continuous across dorsum.

KEY WORDS. – *Nemacheilus*, Sangkulirang, limestone, East Kalimantan, Indonesia.

INTRODUCTION

The nemacheiline loaches of the Sundaic area were revised by Kottelat (1984) and nine species of the genus *Nemacheilus* recorded in Indonesia, Malaysia and Singapore. Two species have been described since, *N. elegantissimus* from Danum Valley, Sabah (Chin & Samat, 1992) and *N. tuberigum* from Aceh, Sumatra (Hadiaty & Siebert, 2001). Two species earlier treated as synonyms (*N. pfeifferae*, *N. longipinnis*) have been re-validated by Kottelat et al. (1993), bringing the number of valid species from this region to 13.

The Sangkulirang Peninsula is a section of 1,000 km² of karstic formations in East Kalimantan Province, Indonesia, on the border of the districts Kutai Timur and Berau (Fig. 1). This area has been highlighted as a global priority for karst ecosystem conservation. An expedition in Sangkulirang Peninsula coordinated by The Nature Conservancy and the Indonesian Institute of Sciences conducted a 5 weeks biological survey in Jul.—Aug.2004 at four sites, Suatan/Tabalar, Baai, Marang and Tebo. Several new plant and animal species were discovered. We describe here a new fish species from the Tebo area, *Nemacheilus tebo*.

COLLECTION SITES

Nemacheilus tebo, was collected in Danau Tebo area (danau means lake in Indonesian). The Tebo limestone is the most isolated hill among the investigated stations (Tabalar, Baai, Marang). The expedition team reached this site by helicopter. According to the local people, overland access from the nearest village (Merapun) takes about a three day walk. The southern part of Tebo burned once during the 1997 fires,

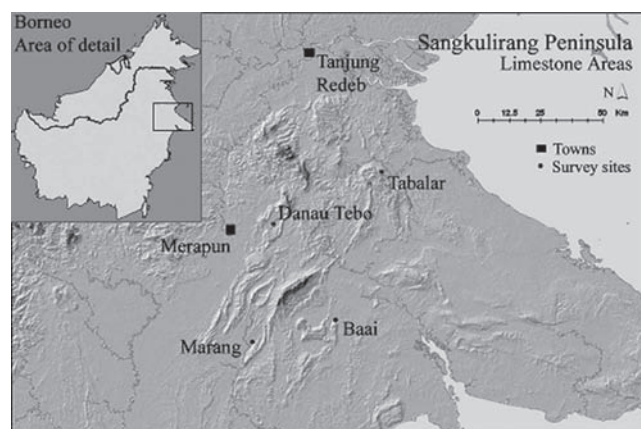


Fig. 1. Sangkulirang Peninsula, with the four limestone formations (Tabalar, Baai, Marang, Tebo) surveyed by The Nature Conservancy and the Research Center for Biology-Indonesian Institute of Sciences (LIPI).

but the area is so remote that other impacts (illegal logging and hunting) are minimal; it currently retains large patches of primary forest (Salas et al., 2005).

Nemacheilus tebo was collected at 6 sites in the Danau Tebo drainage (Fig. 2): 1) entrance of cave northwest of camp (17°00'16"N 54°11'59"E); 2) entrance of second cave northwest of camp (17°00'13"N 54°10'54"E); 3) entrance of cave behind camp (16°56'08"N 54°07'35"E); 4) stream Tuba-tubaan inside Gua Keluar (gua means cave in Indonesian) (16°41'01"N 54°04'43"E); 5) stream Tuba-tubaan inside Gua Masuk (16°41'45"N 54°05'23"E); and 6) stream Tuba-tubaan between Gua Keluar and Gua Masuk (16°41'20"N 54°05'02"E) at confluence with a small inlet. Fish were collected with a 12 V electric fish shocker. It was not possible to capture fishes in Danau Tebo itself due to the lack of appropriate equipment, and because the banks of the lake are very steep. The other fish species collected from this drainage were *Anguilla marmorata* (Anguillidae), *Cyclocheilichthys* sp., *Osteochilus* sp. 1, *Osteochilus* sp. 2, *Rasbora* cf. *hubbsi* (Cyprinidae), *Pangio anguillaris* (Cobitidae), *Hemibagrus* cf. *nemurus* (Bagridae), *Channa gachua* (Channidae) and *Clarias* sp. (Clariidae).

MATERIALS AND METHODS

Measurements were made from point to point on the left side of the body whenever possible with a digital caliper and the data recorded to tenth of a millimeter. The measurements and counts follow Kottelat (1990).



Fig. 2. Lake Tebo drainage. *Nemacheilus tebo*, was collected at sites 1–3 at the mouth of the caves, at sites 4 (Gua Keluar) and 5 (Gua Masuk) in a small stream inside the cave, and at site 6 on the same stream at the confluence with a small inlet. Black: Lake Tebo; white: limestone cliffs; pale gray: valley bottom; dark grey: karst uplands and (in valley) remnants of pinnacles.

Material for this study is deposited in the following collections: Academy of Natural Sciences, Philadelphia (ANSP); Natural History Museum, London (BMNH); Collection of second author (CMK); Museum National d'Histoire Naturelle, Paris (MNHN); Museum Zoologicum Bogoriense, Bogor (MZB); Nationaal Natuurhistorisch Museum, Leiden (RMNH); Florida Museum of Natural History, University of Florida, Gainesville (UF); United States National Museum, Washington (USNM); Zoologisch Museum, Universiteit van Amsterdam, Amsterdam (ZMA); and Zoological Reference Collections, National University of Singapore (ZRC).

SYSTEMATICS

Nemacheilus tebo, new species

(Fig. 3)

Holotype. – MZB 13367, 56.1 mm SL (70.8 mm TL); Indonesia: Kalimantan Timur: Berau Regency, Kelai District, Merapun Village, Lake Tebo area, a pond at mouth of west cave, site 2 (17°00'13"N 54°10'54"E); coll. R. Hadiaty, Sokir & Cai, 31 Aug.2004.

Paratypes. – All from Indonesia: Kalimantan Timur: Berau Regency, Kelai District, Merapun Village, Lake Tebo area. BMNH 2007.11.30.1, 1, 43.8 mm SL (58.4 mm TL); CMK 18909, 3, 35.9–45.0 mm SL (46.3–56.2 mm TL); MZB 13380, 2, 37.5–41.1 mm SL (48.8–52.5 mm TL); UF 165707, 1, 38.6 mm SL (49.8 mm TL); USNM 388744, 2, 40.4–40.4 mm SL (52.6–53.8 mm TL); ANSP 187006, 1, 42 mm SL (55.1 mm TL); same data as holotype. – MZB 13359, 3, 36.1–40.7 mm SL (47.7–52.2 mm TL); cave behind camp, site 3 (16°56'08"N 54°07'35"E); coll. R. Hadiaty, Sokir & Cai, 30 Aug.2004. – MZB 13360, 4, 37.1–44.9 mm SL (48.3–56.4 mm TL); ZRC 50728, 1, 40.6 mm SL (51.1 mm TL); entrance of cave northwest of camp, site 1 (17°00'16"N 54°11'59"E); coll. R. Hadiaty, Sokir & Cai, 31 Aug.2004.

Additional material (non types). – MZB 13341, 43, 18.8–48.2 mm SL (23.6–62.6 mm TL): Tuba-tubaan river, site 6 (16°41'20"N 54°05'02"E); coll. R. Hadiaty, Sokir & Cai, 30 Aug.2004. – MZB 13346, 2, 37.5–41.6 mm SL (48.0–54.2 mm TL); Gua Keluar, site 4 (16°41'01"N 54°04'43"E); coll. R. Hadiaty, Sokir & Cai, 30 Aug.2004. – MZB 13379, 1, 31.8 mm SL (42.3 mm TL); Lake Tebo (16°49'54"N 54°07'43"E); coll. R. Hadiaty, 28 Aug.2004.

Diagnosis. – *Nemacheilus tebo* belongs to the *N. selangoricus* group, diagnosed by the presence of longitudinal rows of elongated scales on the caudal peduncle, each scale with a tubercle at posterior extremity (Fig. 4a). It is distinguished from all other species of *Nemacheilus* by its unique colour pattern: flank with 11–16 dark brown bars, those in front of the dorsal fin short, close together or fused, forming a kind



Fig. 3. *Nemacheilus tebo*, MZB 13367, holotype, 56.1 mm SL; Indonesia: Kalimantan Timur: Lake Tebo area, site 2.

of large elongate dark brown blotch; those below and behind the dorsal fin distinct, usually continuous across dorsum, irregularly shaped, usually wider along the dorsal midline and along lateral line, narrower in-between. *Nemacheilus tebo* is distinguished from the other species of the *N. selangoricus* group by having smaller tubercles, and by the presence (vs. absence) of rows of tubercles on the lower half of the flank. Further, it is distinguished from *N. selangoricus* and *N. spiniferus* in missing the long, acuminate posterior projection on the elongated scales on the caudal peduncle (vs. presence, with the tubercle located at the tip of the projection) and by the absence of the black spot at the base of the anterior dorsal-fin rays and of the rows of black spot on the rays (vs. presence). Morphometric characters distinguishing *N. tebo* from *N. selangoricus* and *N. tuberigum* are mentioned under Discussion.

Description. – See Fig. 3 for general appearance and Table 1 for morphometric and meristic data of holotype and 17 paratypes. An elongate nemacheiline with body depth 11.3–14.8 % SL, slowly increasing from head up to dorsal-fin origin. Behind dorsal fin, body depth decreasing slowly to caudal-fin base. Head slightly depressed; body slightly depressed anteriorly to compressed posteriorly. Pectoral fin reaching about halfway to pelvic-fin base. Axillary pelvic lobe present. Pelvic fin reaching about halfway of distance to anal-fin origin, just reaching anus, which is about one eye diameter in front of anal fin. Origin of anal fin slightly in front of vertical through dorsal-fin origin. Caudal fin forked. Low ventral and dorsal adipose crests on posterior half of caudal peduncle, which is 1.3–2.0 times longer than deep. Distal margin of dorsal fin straight. Largest recorded size 56.1 mm SL, 70.8 mm TL.

Dorsal fin with 4 simple and 9–10½ branched rays. Anal fin with 3 simple and 5½ branched rays. Caudal fin with 9+8 branched rays. Pectoral fin with 12 rays; anterior rays often with a row of small tubercle; in a 44.1 mm SL specimen, tubercles on first ray about 30 µm wide and 20 µm high (Fig. 4c). Pelvic fin with 8 rays.

Vertebrae counts: 23+12=35 (2), 24+12=36 (1), predorsal vertebrae 11 (2), 12 (1).

Body completely covered by small, deeply embedded scales. On a clear and stained specimen, scales on ventral part of head and belly scattered, not embedded as on dorsum and flank. Three to five rows of enlarged scales on flank, from pectoral-fin base to above pelvic fin base. One row above lateral line, other rows below lateral line, 2–4 rows under pectoral fin, 5–6 rows above pelvic fin base, 2–3 rows before end of pelvic-fin base. Each scale bearing a small tubercle on posterior extremity. On caudal peduncle, 7–10 enlarged scales on one row above and one row below lateral line, each with a tubercle at posterior extremity (Fig. 4a, b). Largest specimen (holotype, 56.1 mm SL) with a single tubercle on lateral line scales on caudal peduncle.

Lateral line complete, reaching to caudal-fin base, with 80–85 pored scales. Cephalic lateral line system with 6 supraorbital, 4 + 9–10 infraorbital, 7 preoperculo-mandibular and 3 supratemporal pores.

Anterior nostril at tip of a short pointed tube. Mouth gape about 1.7 times wider than long. Lips thin but fleshy, with about 5 folds on lower lip (Fig. 5b). A median incision in upper lip. A median interruption in lower lip. Processus dentiformis present. A median notch in lower jaw. Inner rostral barbel reaching to vertical of middle of eye; outer one reaching slightly behind preopercle. Maxillary barbel reaching to middle of opercle.

Colour pattern. – In life: body background beige, with 11–16 dark olive green bars on flank. Bars in front of dorsal fin short, not very distinct, close together or fused, forming a kind of large elongate blotch under pectoral fin. Below and behind dorsal fin, bars distinct, usually continuous across dorsum, irregularly shaped, usually wider along dorsal midline and along lateral line, narrower in-between, and vertical median area slightly paler than margins. Ventral part of body creamy. A conspicuous elliptical black blotch on lower half of caudal-fin base, not reaching ventral midline. A narrow dark olive green bar below middle of eye. Preserved specimens: dark brown bars and dorsum, whitish on belly and between bars.

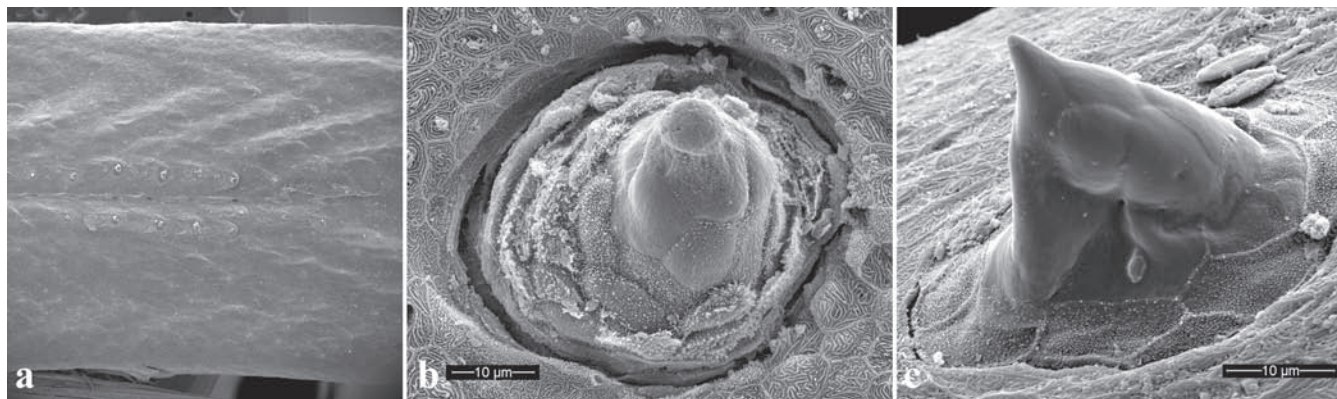


Fig. 4. *Nemacheilus tebo*: a–b. scanning electron micrographs of caudal peduncle of 34.3 mm SL specimen: a, showing elongated scales above and below lateral line; b, close-up view of tubercle; c, scanning electron micrograph of tubercle on first pectoral-fin ray of 44.1 mm SL specimen. Scale bars = 10 µm

Table 1. Morphometric and meristic data of holotype (MZB 13367) and 17 paratypes of *Nemacheilus tebo*.

	Holotype	Paratypes	Mean	Standard Deviation
Standard length (mm)	56.1	35.9–45.0	–	–
Total length (mm)	70.8	46.3–58.4		
In percent of standard length				
Total length	126.2	124.9–133.3	129.8	2.6
Lateral length of head	24.1	21.9–26.5	24.1	1.1
Dorsal length of head	18.4	17.2–21.1	18.8	1.1
Predorsal length	48.5	43.9–49.6	47.0	1.5
Prepelvic length	52.9	48.8–52.4	50.6	0.9
Preanal length	77.5	72.2–78.8	75.7	1.7
Preanus length	69.0	64.2–69.6	66.7	1.4
Head height (at eye)	10.9	9.4–11.7	10.5	0.6
Head height (at nape)	13.4	11.4–14.0	12.3	0.7
Body height (at dorsal origin)	13.7	11.3–14.8	13.2	0.8
Caudal peduncle depth	10.3	8.8–10.0	9.4	0.4
Length of caudal peduncle	16.2	13.1–18.1	16.4	1.4
Snout length	8.7	7.1–8.6	7.9	0.5
Head width at nares	7.3	6.1–8.3	7.3	0.5
Maximal head width	14.4	12.5–14.8	13.4	0.7
Body width (at dorsal-fin origin)	11.4	7.1–10.9	8.9	0.8
Body width (at anal-fin origin)	7.3	5.0–6.7	5.8	0.5
Eye diameter	5.5	4.6–6.4	5.7	0.5
Height of dorsal fin	23.5	20.9–26.9	24.6	1.6
Length of upper caudal fin lobe	25.3	27.3–35.6	31.5	2.3
Length of lower caudal fin lobe	23.7	19.0–30.7	27.1	2.5
Length of middle caudal fin rays	16.2	15.3–30.3	18.7	3.4
Length of anal fin	18.2	15.9–21.4	19.2	1.2
Length of pelvic fin	13.9	15.1–19.4	17.0	1.1
Length of pectoral fin	19.4	18.9–27.4	23.8	2.0
In percent of dorsal HL				
Lateral length of head	131	118–139	128.4	7.0
Head height (at eye)	59	51–60	55.7	2.7
Head height (at nape)	73	59–78	65.7	4.5
Body height (at dorsal origin)	75	63–82	70.3	5.8
Caudal peduncle depth	56	43–57	50.3	3.7
Length of caudal peduncle	88	66–103	87.5	10.2
Snout length	48	37–49	41.9	2.8
Head width at nares	40	32–46	38.8	3.8
Maximal Headwidth	79	65–78	71.1	3.7
Body width (at dorsal origin)	62	38–57	47.3	4.4
Body width (at anal origin)	40	25–36	30.7	3.2
Eye diameter	30	26–36	30.1	2.7
Interorbital width	33	26–42	31.9	4.3

Fin membranes hyaline, rays dusky. Dorsal fin with a short faint mark on lower third of last simple ray.

Sexual dimorphism. – Male with suborbital flap (Fig. 5a) and much more tubercles on flank (from pectoral-fin base to above pelvic fin base) than female. In the largest specimen (holotype) the flap is reduced in size.

Distribution and habitat. – *Nemacheilus tebo* is currently known only from Lake Tebo drainage, Kalimantan Timur, Indonesia. Lake Tebo area was densely covered by big trees, which made the area very green and lush, but the area was burnt in 1997's Borneo fires. The expedition was conducted during the dry season and the area was very dry. The water level of Lake Tebo was low (depth unknown, reported by locals to be "more than 5 meters"; Fig. 6a) and we could find only few water bodies inhabited by fishes, usually in front of the entrance of caves. These apparently are the normal dry season conditions, especially after burning. In the rainy season, the water level increases and covers all of the valley area.

All the specimens of *N. tebo* collected in Tuba-tubaan stream were very emaciated. The stream had very little running water, the depth was only about 10–20 cm and the width about 1–2 m (Fig. 6b). The fishes were usually observed in small groups of about 1–20 individuals in shallow water, but in deeper spots several thousands of fish trapped by the low waters formed large dark masses. In both Tuba-tubaan and Lake Tebo we observed many fish dying. In Lake Tebo, the fishes were very crowded in the drying water bodies, and

small fish dying were also observed there. Some of them were not able to swim, and were preyed upon by swarming insects (water beetles, Dysticidae).

The Tuba-tubaan is named so because some of local peoples (who harvest edible birds' nest inside the caves surrounding the lake) used tuba (*Derris* sp., Fabaceae), a plant from which is extracted rotenone, an effective ichthyocide. The stream and the lake are the only water sources available for most of the local vertebrates.

Etymology – Named after the Lake Tebo. A noun in apposition.

DISCUSSION

Nemacheilus tebo belongs to a group of species, which we call here the *N. selangoricus* group (comprising *N. selangoricus*, *N. spiniferus* and *N. tuberigum*). The group is characterised by the presence of two rows of elongate scales on the caudal peduncle, one above and one below the lateral line, each of them bearing a tubercle near the posterior extremity. These scales were called acuminate scales by Kottelat (1984, 1990) in *N. selangoricus* and *N. spiniferus*, to refer to the long posterior projection (acumen) at whose tip the tubercle is located. In *N. tebo* and *N. tuberigum*

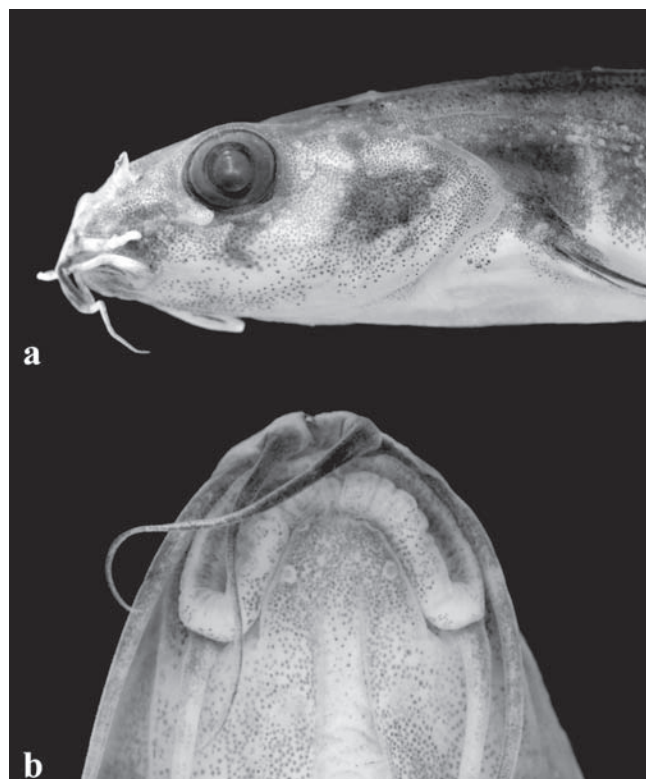


Fig. 5. *Nemacheilus tebo*: a, CMK 18909, paratype, male, 45.0 mm SL; head showing suborbital flap; b, MZB 13367, holotype, 56.1 mm SL; mouth, ventral view.



Fig. 6. a, Lake Tebo; b, Tuba-tubaan river, a small stream flowing out of Gua Keluar ('Exit Cave') and entering Gua Masuk ('Entrance Cave'; on picture).

these scales are elongated, with a broad and short extension along the posterior edge, but without the acumen, but the structure is clearly homologous. The members of the *N. selangoricus* group are further distinguished by their colour pattern made of numerous dark bars on the body, while most other species of the genus have a colour pattern made of a more or less regular stripe, or a row of blotches on the flank, usually alternating with saddles along the dorsal mid-line. *Nemacheilus tebo* is distinguished from all other species of the *N. selangoricus* group as well of the genus *Nemacheilus* by its unique colour pattern of many narrow bars on the flank, those in front of dorsal-fin origin not reaching the dorsal midline, and set very closely or fused, forming an elongated blotch.

Nemacheilus tebo and *N. tuberigum* are distinguished from *N. selangoricus* and *N. spiniferus* by the absence of the black spot at the base of the anterior dorsal-fin rays and of the rows of black spot on the rays.

Compared to the other three species of the *N. selangoricus* group, in *N. tebo* the tubercles are much smaller and can be observed only with magnification, while in the others the tubercles are visible without magnification, even in the live fish. A tubercle on the caudal peduncle of a 34.3 mm SL specimen is about 40 µm wide and about 35 µm high (Fig. 4b). In *N. tebo* there are also 2–5 rows of elongated scales on the lower half of the flank from behind the pectoral fin to the caudal-fin base; in the other species elongated scales are present only on the caudal peduncle. There are small tubercles at the posterior extremity of these elongated scales on the flank; they are much smaller than the tubercles in similar position in the other species (not quantified).

Besides the characters mentioned above, *N. tebo* is distinguished from *N. tuberigum* by a shorter snout (length 37–49 % HL, vs. 47–55), a smaller eye (diameter 26–35 % HL, vs. 38–46), a shorter predorsal length (43.9–49.6 % SL, vs. 47.4–51.2), and a more slender caudal peduncle (length 13.1–18.1 % SL, vs. 12.0–17.3; depth 8.8–10.0 % SL, vs. 10.2–11.9; ratio length/depth 1.3–2.0, vs. 1.1–1.5).

Nemacheilus tebo is distinguished from *N. selangoricus* by a slightly shorter predorsal length (43.9–49.6 % SL, vs. 45.7–53.8), and a more slender caudal peduncle (length 13.1–18.1 % SL, vs. 13.2–16.3; depth 8.8–10.0 % SL, vs. 10.0–11.7; ratio length/depth 1.3–2.0, vs. 1.1–1.5).

Nemacheilus tebo is known only from Tebo limestone area. There is no information on the fish fauna of the adjacent water bodies and it is not known whether *N. tebo* is endemic to Lake Tebo area, or might occur outside. The subterranean course of the Tuba-tubaan stream is not known but local people report that they threw small oranges in the cave and that they re-appeared in a stream near the village.

The lake is quite far from the village, but bird's nest collectors frequently come to this area and there had been occasional clashes between different groups, to the point that our team

had to be escorted by policemen. These collectors partly rely on local resources for their subsistence including fish, which they obtain by traditional tools (nets, traps) as well as ichthyocides like *Derris* roots or potassium. The use of poisons affects all fish indiscriminately, even those too small to be consumed, and present a very high threat to the local fish populations.

Comparative material. – *Nemacheilus selangoricus*: MZB 3551, 3, 28.3–29.4 mm SL; Indonesia, Kalimantan Barat, Sungai Kapuas basin, small forest stream flows to Sungai Mandai upstream from its confluence with Kapuas mainstream; T. R. Roberts, 10 Aug.1976. MZB 2395, 3, 29.3–41.4 mm SL; Indonesia, Kalimantan, Lempake, Tanah Merah, M. Siluba; 27 Feb.1978. RMNH 28879, 5, 41.1–44.1 mm SL; Indonesia, Borneo, Sungai Mandai Kecil, 18 km south west of Putussibau; T. R. Roberts, 11 Aug.1975. ZMA 112.829, lectotype of *N. kuiperi*, 50.2 mm SL; ZMA 102.145, 21 paralectotypes of *N. kuiperi*, 28.2–65.8 mm SL; Indonesia, Biliton; F. J. Kuiper, 1936. RMNH 24995, 1, 47.1 mm SL; Singapore, Sungei Seletar, north of Seletar reservoir; E. R. Alfred, 4 Apr.1963.

Nemacheilus spiniferus: all from Indonesia, Kalimantan Tengah, MZB 6807, 6, 32.2–37.5 mm SL; Sungai Tarusan, a tributary of S. Laung, a tributary of Sungai Barito; D. J. Siebert et al., 16 Jul.1992. MZB 6877, 11, 29.5–38.0 mm SL; Sungai Karingian, a tributary of Sungai Laung, a tributary of Sungai Barito; D. J. Siebert et al., 7 Jul.1992. MZB 6928, 2, 38.7–40.0 mm SL; Sungai Laung, a tributary of Sungai Barito, Laung Tuhup, Barito Utara; D. J. Siebert et al., 15–18 Jul.1992. MZB 6948, 2, 34.1–34.5 mm SL; Sungai Mata, a tributary of Sungai Barito below Muara Laung, Laung Tuhup, Barito Utara; D. J. Siebert et al., 8 Jul.1992.

Nemacheilus tuberigum: all from Indonesia, Sumatra, Aceh. MZB 9356, holotype, 48.5 mm SL; MZB 10565, 1 paratype, 43.0 mm SL; MZB 9357, 12 paratypes, 39.6–53.2 mm SL; BMNH 2000.4.10.1–5, 5 paratypes, 42.2–50.5 mm SL; Kecamatan Kluet Selatan, Desa Pucuk Lembang, Gunung Leuser National Park, tributary of Sungai Lembang; R. K. Hadiaty & A. Mun'im, 2 Sep.1997. MZB 9358, 4 paratypes, 44.8–53.4 mm SL; same data as holotype; 31 Aug.1997. MZB 9359, 1 paratypes, 42.6 mm SL; same data as holotype, 1 Sep.1997. MZB 9360, 4 paratypes, 42.6–49.2 mm SL; Desa Pucuk Lembang, Alur Betung, a tributary of Sungai Lembang; R. K. Hadiaty & A. Mun'im, 2 Sep.1997. MZB 9361, 2 paratypes, 31.9–37.2 mm SL; Suaq Balimbing Research Station, a muddy forest stream, tributary of Sungai Lembang; R. K. Hadiaty & A. Mun'im, 4 Sep.1997. ZMA 112.875. 1, 49.1 mm SL; ZMA 113.744, 4, 34.3–48.7 mm SL; Pageralem; P. A. Ouwens, 22 Nov.1918. ZMA 116.645, 1, 46.7 mm SL; no collector and date.

Nemacheilus fasciatus: MNHN B 2798, holotype, 54.1 mm SL; Indonesia, Java; Kuhl & van Hasselt. MNHN 3930, holotype of *Cobitis suborbitalis*, 59.1 mm SL; Indonesia, Java; no collector and date. ZMA 109.262, 2, 41.9 mm SL, 1 specimen without head; Indonesia, Java, Yogya, stream in Gremeng cave, Gunung Sewu; E. Jacobson, Feb.1911.

Nemacheilus chrysolaimos as above: MNHN 3961, lectotype, 1, 46.7 mm SL; Indonesia, Java; coll. Kuhl & van Hasselt, no date. MNHN B 2972, paralectotype, 1, 46.7 mm SL; Indonesia, Java; Kuhl & van Hasselt, no date.

Nemacheilus longipectoralis: RMNH 7641, lectotype, 1, 34.4 mm SL; RMNH 27350, 2 paralectotypes, 28.9–36.7 mm SL; Indonesia, Borneo, Mahakam; A. W. Nieuwenhuis, Nov.1898.

ACKNOWLEDGMENTS

The first author thanks the following: The Nature Conservancy for funding the fieldwork in Sangkulirang Peninsula limestone area and the use of maps; especially Leo A Salas, expedition coordinator, for various information and support; the Research Center for Biology, LIPI, for permission to participate to the expedition; the other team members, Woro Noerdjito, M. Noerdjito, Y. R. Suhardjono, C. Rachmadi, Rofik, H. Wiriadinata, for the nice cooperation on site; Tan Heok Hui and Ng Heok Hee (ZRC) for the x-rays and Tan Heok Hui for photographs in Fig. 5. RH visited European museums with the support of the All Catfish Species Inventory project (principal investigator Larry M Page). Ralf Britz (BMNH), Martien van Oijen (RMNH), Ronald Vonk (ZMA), and Guy Duhamel (MNHN) allowed access to material under their care. RH visited the Smithsonian Institution with support of a grant (Schultz Funds) managed by Lynne R Parenti. At USNM, RH benefitted from the help of Scott Whittaker (SEM manager) and D. Lumbantobing. This work was completed while RH was a RMBR SPRINT visitor and MK a Visiting Senior Research Fellow at the National University of Singapore.

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