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Two new species of *Hampala* from Borneo (Teleostei: Cyprinidae)

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Abstract. Two new species of *Hampala* are described from Borneo Island. *Hampala lupar*, new species, is closely allied to *H. bimaculata* but differs in having three black bars on the body, vs. two bars; with the additional black bar just posterior to head. *Hampala lupar* is distinguished from all congeners by the following combination of characters: lateral line scales 26–27; three black bars on body, even at juvenile stage; upper and lower edges of caudal fin with a black marginal stripe; all fins orange with caudal fin reddish-orange when alive. *Hampala katibas*, new species, is similar to *H. bimaculata* but differs in having two large black blotches on the body, vs. two curved black bars; amongst other characters. Both new species are separated by the Lupar Geological Divide.

Key words. Southeast Asia, Sundaland, taxonomy, freshwater fish, Cypriniformes

INTRODUCTION

The genus *Hampala* was first created by Kuhl & van Hasselt in van Hasselt (1823) to accommodate *H. macrolepidota*, from Bogor in West Java (summarised in Kottelat, 2013). There are currently eight valid species of *Hampala*, distributed in Indochina, the Malay Peninsula, and on the greater Sunda Islands of Sumatra, Borneo, and Java. Bleeker (1852) described *H. ampalong* from Palembang in Sumatra; and Popta (1905) named *H. bimaculata* from several headwater rivers of the Mahakam basin in East Kalimantan and Kayan basin in North Kalimantan (initially as a variant of *H. macrolepidota*, then identified as *Barbus hampal* var. *bimaculata*). Herre (1924) discovered the only *Hampala* endemic to the Philippines and named it *H. lopezi*. Smith (1934) described *H. dispar* from Thailand in Menam Mun. Inger & Chin (1962) in their seminal work on fishes of North Borneo named *H. sabana* from the Kinabatangan River near Deramakot (as *H. macrolepidota sabana*) and also listed an intermediate form. *Hampala salweenensis* was described by Doi & Taki (1994) from the Salween basin in Thailand. Most recently, *H. siamensis* was discovered by Panitvong & Tan in 2025 from southern Thailand.

All *Hampala* species share the common features of a wedge-shaped head with a wide gape and a streamlined body profile with a deeply forked caudal fin. The different species of *Hampala* all differ chiefly by colour pattern, with their biometric characters being highly conservative, i.e., scale counts do not exhibit any distinct modes and morphometric measurements have ranges that overlap (see Doi & Taki, 1994; present study). The singlemost diagnostic feature is the body colour pattern. Of the seven species, only *H. lopezi* has a central black stripe with a short black bar from the dorsal-fin base onto the body. Three species — viz. *H. ampalong*, *H. dispar*, and *H. salweenensis* have one or two black blotches or markings on the body. The remainder three — viz. *H. macrolepidota*, *H. bimaculata*, and *H. sabana* have one to two bars on the body, which can be slender, broad, or wedge-shaped.

Popta (1905) described *Hampala bimaculata* from material collected from the headwater tributaries of the Mahakam (East Kalimantan) and Kayan basins (recently demarcated North Kalimantan). Based largely on the presence of two or more black bars on the body as the distinguishing feature (Inger & Chin, 1962; Kottelat et al, 1993; see below), this species was later documented from all over Borneo island by various authors. Fowler (1905: 486) reported only *H. macrolepidota* from the Baram River in Sarawak, but in his checklist, he mentioned a smaller individual with the body pattern of a juvenile *H. bimaculata* ("… A small example collected by Dr. Furness has a large diffuse dark blotch below dorsal and another on caudal peduncle before base of caudal."). Cramphorn (1978, 1982) reported *H. bimaculata* from the Mulu area in northern Sarawak and Batang Ai in central Sarawak respectively; material of both localities has been re-identified as being from new species in the present study. Watson & Balon (1984: 933) recorded *H. bimaculata* from Baram basin in Sarawak (but they identified both *H. bimaculata* and *H. macrolepidota* as *H. macrolepidota*; as verified from specimens deposited by these authors at ZRC). Roberts (1989) recorded *H. bimaculata* from the Kapuas basin in West Kalimantan. Kottelat & Lim (1995) documented *H. bimaculata* from Sarawak and Brunei

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Darussalam. Rachmatika (2001) recorded *H. bimaculata* from the Mendalam river within Betung Kerihun National Park, Kapuas basin, in West Kalimantan. Abdullah (2004) documented *H. bimaculata* from Lanjak-Entimau Wildlife Sanctuary in central Sarawak. Grinang & Lim (2004) obtained *H. bimaculata* from fast flowing streams in the Sarawak Kanan River in the Bau limestone area. Parenti & Lim (2005) documented the presence of *H. bimaculata* from the Rejang basin in Sarawak. Tan (2012) reported *H. bimaculata* in a fish list from the upper Katingan basin in Central Kalimantan, but the record was based only on sightings. Specimens from headwater/upstream habitats in Central Kalimantan are lacking in this present study.

Herein, two new species are described with distinct bars on the body, both of which have been misidentified as *H. bimaculata* in the past.

MATERIAL AND METHODS

Fish specimens examined are deposited in the following institutions: California Academy of Sciences (CAS), Golden Gate Park, San Francisco, USA; Institute of Biodiversity & Environmental Conservation (IBEC), Universiti Malaysia Sarawak (UNIMAS), Kota Samarahan, Kuching, Sarawak, East Malaysia; Natural History Museum (BMNH), London, United Kingdom; National Museum of Nature and Science (NSMT), Tsukuba, Japan; Lee Kong Chian Natural History Museum, Zoological Reference Collection (ZRC), National University of Singapore, Singapore.

Specimens were fixed in formalin and subsequently stored in 75 % ethanol. Specimens were measured from the left side using dial calipers (up to 0.5 mm accuracy). Meristic information and measurements were taken according to Hubbs & Lagler (1964), following modified methods by Doi & Taki (1994). The last two branched dorsal and anal rays borne by a single pterygiophore (appearing as a single ray branched at the base) are counted as '1½'. The positions of the black bars on the body are numbered from anterior to posterior: bar 0 (= bar just posterior to opercle; which is only present in *Hampala lupar*, new species), bar 1 (= bar below dorsal fin) and bar 2 (= bar located between anal fin and caudal fin).
Abbreviations used: HL = head length, SL = standard length. Biometric data are recorded for specimens larger than 80 mm SL, however, juvenile body pattern is also taken into account.

For colour pattern comparisons used in this present study, only *H. macrolepidota* material from Java is used.

Hampala lupar, new species
(Figs. 1–3)

Hampala bimaculata (non-Popta) – Cramphorn, 1982: 26, 28, 31; Doi & Taki, 1994: 411 (part), fig. 2 (NHM 1983.6.20:4); Kottelat & Lim, 1995: 230 (part); Abdullah, 2004: 20 (Table of fish recorded from Batang Ai National Park).
Hampala bimaculata (3 spots) – Cramphorn, 1982: 29.

Holotype. ZRC 60435, 147.2 mm SL; East Malaysia: Sarawak: Sri Aman Division: Lupar basin; Sungei Engkari mainstream, ca. 500 m–1 km downstream of Nanga Segerak Field Station; 01°24.881′N 111°59.960′E, 388 m asl; colls. Tan HH et al, 23 September 2018.

Paratypes. ZRC 60452, 1 ex., 42.9 mm SL; East Malaysia: Sarawak: Sri Aman Division: Lupar basin; Sungei Engkari mainstream, ca. 500 m–1 km upstream of Nanga Segerak Field Station, just past Sungei Tapayang; 01°24.875′N 112°00.379′E, 289 m asl; colls. Tan HH et al, 22 September 2018. --- ZRC 60393, 1 ex., 160.1 mm SL; East Malaysia: Sarawak: Sri Aman Division: Lupar basin; Sungei Kaup, tributary of Sungei Engkari (downstream of Nanga Segerak Field Station, at main fork); 01°24.084′N 111°59.494′E, 246 m asl; colls. Tan HH et al, 26 September 2018. --- BMNH 1983.6.20:4, 1 ex., 150.8 mm SL; East Malaysia: Sarawak: Sri Aman Division: Lupar basin; Batang Ai; Cramphorn J et al, 1982. --- BMNH 1983.6.20:13-14, 2 ex., 78.7–101.5 mm SL; East Malaysia: Sarawak: Sri Aman Division: Lupar basin; Batang Ai; Cramphorn J et al, 1982. --- BMNH 1983.6.20:97-98, 2 ex., 83.3–162.3 mm SL; East Malaysia: Sarawak: Sri Aman Division: Lupar basin; Batang Ai; Cramphorn J et al, 1982. --- UNIMAS.P.00448-49, 2 ex., 102.0–172.0 mm SL; East Malaysia: Sarawak: Sungei Pedid, upstream area of Sarawak Kanan River; J. Grinang, October 2023. --- UNIMAS.P.00093, 1 ex., 110.0 mm SL; East Malaysia: Sarawak: Sawah River, tributary of Sarawak Kiri River; February 2012. --- UNIMAS.P.00153, 1 ex., 85.0 mm SL; East Malaysia: Sarawak: Sungei Duyuh, tributary of Sarawak Kanan River; September 2016. --- UNIMAS.P.00450, 2 ex., 106–134 mm SL; East Malaysia: Sarawak: Simunjan District; streams in Sabal Forest Reserve; Badiozaman Sulaiman et al., 23–29 November 2024.

Diagnosis. *Hampala lupar* is distinguished from its congeners by the following combination of characters: lateral line scales 26–27; three black bars on body, bar 0 2½–3 scales wide, bar 1 3–3½ scales wide, bar 2 3–4 scales wide, all bars apparent even at juvenile stage; upper and lower edges of caudal fin with a black marginal band; all fins orange when live.

Description. See Table 1 for biometric data and Figs. 1, 2 for general appearance.

Head pointed, wedge-shaped, head large (31.3–34.9 % SL). Mouth terminal, gape oblique and large with posterior edge beyond anterior margin of eye; with a pair of maxillary barbels, each barbel at corner of mouth, as long or longer than eye diameter. Relatively large eye (eye diameter 18.1–24.4 % HL), and long snout (snout length 31.7–34.7 % HL). Body relatively compressed, elongate and deepest at dorsal fin (body depth at dorsal-fin origin 19.7–28.7 % SL; body depth at anus 18.6–21.2 % SL), tapering to narrowest at caudal peduncle (caudal peduncle depth 11.8–13.7 % SL). All fins triangular in outline, except caudal fin which is deeply forked (upper caudal lobe 31.6–34.1 % SL, median caudal 12.0–14.2 % SL, lower caudal lobe 29.6–31.2 % SL). Dorsal fin moderately short with 11 ½ rays (dorsal-fin base length 14.2–16.8 % SL), positioned past mid-body

Table 1. Morphometric data of *Hampala bimaculata*, *Hampala lupar*, new species, and *Hampala katibas*, new species (reading in brackets represents the mean with standard deviation).

Catalogue numbers	***Hampala bimaculata***	***Hampala lupar*, new species**	***Hampala katibas*, new species**
	ZRC65446(1), 65451(1), 45665(2), 56311(1), 64528(2)	BMNH1983.6.20.4(1), 1983.6.20-97-98(2), 1983.6.20.13(1) ZRC60435(1), 60393(H)	ZRC 65740 (H), 60144 (1), 60118(2), 59973(1), 35890(2), 38407(1), 49790(2), 65389(2), 65396(4)
Distribution of specimens examined	Kayan, Mahakam and Kapuas river basins	Lupar and Sarawak river basins	Rejang, Tatau, Baram and Belait river basins
Sample size	7	6	16
Standard length (mm)	87.3–136.0	83.3–162.3	83.7–275.4
Morphometrics - % SL			
Total length	128.7–134.5 (131.2 ±1.94)	128.7–131.5 (130.4 ±0.99)	124.5–136.0 (130.5 ±2.78)
Trunk length	63.9–71.4 (67.7 ±2.68)	65.1–69.9 (68.0 ±1.89)	64.7–70.2 (68.1 ±1.36)
Predorsal length	52.5–56.7 (54.2 ±1.39)	53.3–55.3 (54.2 ±0.91)	53.3–56.0 (54.0 ±0.93)
Preanal length	74.6–78.3 (75.9 ±1.20)	72.8–78.3 (75.5 ±1.76)	74.0–79.4 (76.1 ±1.67)
Prepelvic length	51.0–54.8 (53.1 ±1.36)	51.0–54.5 (53.0 ±1.14)	50.8–55.9 (53.0 ±1.68)
Head length	31.7–37.4 (33.9 ±1.93)	31.3–34.9 (33.5 ±1.23)	32.1–38.2 (33.8 ±1.49)
Body depth at dorsal-fin	19.7–30.6 (26.8 ±3.84)	19.7–28.7 (26.1 ±3.29)	25.1–33.5 (28.4 ±2.49)
Body depth	16.7–22.6 (19.8 ±1.95)	18.6–21.2 (19.3 ±0.98)	17.1–21.6 (19.9 ±1.28)
Caudal peduncle depth	11.2–14.4 (12.8 ±1.07)	11.8–13.7 (12.4 ±0.69)	11.4–13.4 (12.5 ±0.51)
Caudal peduncle length	16.7–19.5 (18.0 ±0.94)	17.6–20.6 (18.8 ±1.09)	15.0–20.4 (18.3 ±1.41)
Dorsal-fin base length	14.2–17.0 (15.8 ±1.04)	14.2–16.8 (15.4 ±0.99)	13.7–17.2 (15.8 ±0.86)
Anal-fin base length	9.1–11.1 (9.9 ±0.64)	8.2–11.1 (9.7 ±0.94)	9.2–11.2 (10.0 ±0.67)
Pelvic fin length	17.2–20.3 (18.8 ±1.10)	16.8–19.8 (18.2 ±1.06)	15.5–19.3 (18.0 ±1.15)
Pectoral fin length	18.1–22.6 (20.0 ±1.52)	18.6–21.1 (19.9 ±0.85)	17.4–21.5 (19.9 ±1.23)
Upper caudal-fin lobe length	31.7–35.7 (33.5 ±1.35)	31.6–34.1 (32.7 ±1.06)	28.1–37.0 (32.9 ±2.08)
Middle caudal-fin length	13.1–15.2 (14.1 ±0.64)	12.0–14.2 (13.3 ±0.84)	11.4–14.9 (13.7 ±0.91)
Lower caudal-fin lobe length	29.3–34.4 (31.7 ±2.01)	29.2–31.2 (30.0 ±0.80)	25.9–36.6 (32.0 ±8.40)
% head length			
Head depth	50.6–58.6 (55.7 ±3.22)	52.1–58.6 (56.0 ±2.46)	50.0–60.8 (56.5 ±2.71)
Head width	42.9–49.0 (45.5 ±2.0)	42.1–46.0 (44.3 ±1.60)	38.1–51.5 (44.8 ±4.49)
Snout length	31.6–35.5 (32.7 ±1.34)	31.7–34.7 (33.1 ±1.30)	30.4–35.6 (33.0 ±1.19)
Eye diameter	18.1–25.9 (21.7 ±3.0)	18.1–24.4 (20.9 ±2.45)	13.8–25.5 (20.7 ±3.27)
Interorbital width	22.4–26.9 (25.0 ±1.59)	23.7–26.7 (25.1 ±1.05)	21.8–26.0 (24.7 ±1.20)

Fig. 1. *Hampala lupar*, new species; First: not preserved, ca. 300 mm SL, showing live colouration from Sarawak: Bau area (image from Mike Lo); Second: not preserved, ca. 60 mm SL, showing live colouration from Sarawak Kanan River population (sides inverted, image from Jongkar Grinang).

Table 2. Descriptor of body bars of *Hampala bimaculata* (n = 12, ZRC 65446 [1], 65451 [1], 65421 [2], 65411 [3], 45665 [2], 56311 [1], 64528 [2]); *H. lupar*, new species (n = 7, BMNH1983.6.20.13-14 [2], 1983.6.20.97-98 [2], 1983.6.20.4 [1], ZRC60435 [1], 60393 [1]); and *H. katibas*, new species (n=23, ZRC 65471 [1], 49790 [2], 35890 [1], 35889 [1], 8407 [1], 35891 [1], 65389 [2], 65396 [4], 60041 [2], 60144 [3], 60118 [2], 59973 [1], 60097 [1]).

Species	Character	Bar 0	Bar 1	Bar 2
Hampala bimaculata	Bar width	0	2½– 6	3–4
	Lateral scale position	–	10th–15th	19th–24th
Hampala lupar, new species	Bar width	2–3	3–3 ½	3–4
	Lateral scale position	2nd–3½th	9½th–12½th	18th–23rd
Hampala katibas, new species	Bar width	0	2–5	1½–4
	Lateral scale position	–	9th–14th	19th–24th

(predorsal length 53.3–55.3 % SL). Anal fin short with 7 ½ rays (anal-fin base length 8.2–11.1 % SL), pre-anal length 72.8–78.3 % SL. Pectoral fin moderately long, with 15 rays (pectoral fin length 18.6–21.1 % SL). Pelvic fin shorter than pectoral fin, with 9 rays (pelvic-fin base length 16.8–19.8 % SL), prepelvic length 51.0–54.5 % SL. Pelvic auxillary scale present, about ⅓ pelvic-fin length.

Lateral line complete, perforating large scales in a continuous series (26–27, mode 27), starting just above opercular opening, gently sloping downwards towards pelvic fin, 3 scales above pelvic-fin origin and running parallel to venter towards middle of caudal peduncle, with additional 2–3 (mode 2) perforated scales on caudal-fin base. Predorsal scales 9–11 (mode 10); 8th lateral-line scale in relation to dorsal-fin origin; 14½–17th (mode 17th) lateral-line scale in

Fig. 2. *Hampala lupar*, new species – First: ZRC 60393, 147.2 mm holotype, showing freshly preserved colouration, Sarawak: Engkari River; Second: ZRC 60393, 147.2 mm SL holotype; Third: BMNH 1983.6.20.4 paratype, 150.8 mm SL, Sarawak: Batang Ai; Fourth: BMNH 1983.6.20.13 paratype, 101.5 mm SL, Sarawak: Batang Ai.

relation to anal-fin origin; 7½–8th (mode 8th) lateral-line scale in relation to pelvic-fin origin. Circumpeduncular scales 13.

Fresh colouration. See Fig. 1. Body silvery-gold, posterior margin of each scale with thin band of melanophores, greyish-brown on dorsum, cream on venter. Opercle with orangish sheen when live. Consistently 3 black bars on the body, even in juveniles. Bar 0 originating just posterior to opercle opening, may appear as a large black blotch or bar, 2–3 scales wide (see Table 2 for descriptors for body bars). Bar 1 originating at dorsal-fin origin (at lateral line scale 9½–12½), bar width may cover entire dorsal-fin base and narrowing downwards from 3½ to 3 scales wide, bar at median of body 3 scales wide. Bar 2 originating at lateral line scale 18–23, wider at dorsum and narrowing downwards from 4 to 3 scales wide, bar at median of body 3 scales wide. In larger specimens, all 3 bars not reaching to venter. In juvenile stage (examined specimen, ZRC 60452, 42.9 mm SL), bars 0 and 2 are rounded black blotches, bar 1 is narrow and continuous to venter, 1–1½ scales wide. All fins orange-red. Both dorsal and pectoral fins with black leading edge. Upper and lower edges of caudal fin with black marginal stripe.

Fig. 3. Juvenile body pattern for — First: *Hampala bimaculata*, ZRC 65421, 39.0 mm SL, North Kalimantan: Kayan River; Second: *Hampala lupar*, new species, ZRC 60452 paratype, 43.4 mm SL, Sarawak: Engkari River; Third: *Hampala katibas*, new species, ZRC 59960, 38.3 mm SL; Sarawak: Ulu Katibas.

Black bars of *H. lupar* exhibit higher colour contrast in habitat than in captivity.

Preserved colouration. See Fig. 2. All bright colours faded or bleached. Older preserved specimens may appear yellowish or brownish. Body and fin patterns as above.

Field observations. The Engkari river flows through V-shaped valleys and consists of high-velocity waters flowing over a rocky bottom. There are occasional deeper water pools, with slower flowing water. The rocks exhibit dark shades of grey, brown, and black. In areas where the canopy cover is good, water visibility is very poor due to insufficient light penetration. Large individuals of *H. lupar* prefer these deeper water bodies. Juveniles are found near river banks in more shallow water, and amongst submerged roots and above leaf litter. Batang Ai is now a man-made reservoir, and the riverine habitats are permanently flooded, but feeder streams and header waters are still intact.

Syntopic fish species include (see Tan, 2021 for a more complete listing): *Barbodes banksi*, *Barbonymus collingwoodii*, *Lobocheilos ovalis*, *Osteochilus sarawakensis*, *O. waandersii*, *Paracrossochilus vittatus*, *Tor tambra*, *Tor tambroides* (Cyprinidae), *Rasbora fasciata* (Danionidae), *Engkaria eubranchus*, *Gastromyzon megalepis*, *G. stellatus*, *Neogastromyzon pauciradiatus*, *Parhomaloptera microstoma* (Gastromyzontidae), *Pangio piperata* (Cobitidae), *Nemacheilus kapuasensis* (Nemacheilidae), *Leiocassis micropogon* (Bagridae), *Clarias planiceps*

(Clariidae), *Glyptothorax major* (Sisoridae), *Macrognathus circumcinctus*, *Mastacembelus unicolor* (Mastacembelidae), and *Channa lucius* (Channidae).

Distribution. *Hampala lupar* appears to have only been observed in southern Sarawak, from the Lupar to the Sarawak River basins (see Fig. 10). The presence of the population at the upper Sarawak River was reported by Michael Lo (pers. comm.) as well as observations by the second author.

Etymology. Named after the Lupar River basin, where it was first recorded in the 1980s. Used as a noun in genitive. Cramphorn (1982: 29) who had misidentified *H. lupar* as "*H. bimaculata* (3 spots)", listed the following local names for this species: Adong Tekalang Maioh (Iban) and Adong Takalang Banyak (Malay).

Comparative notes. For illustrative purposes, topotypic material of *H. bimaculata* from both the Kayan and Mahakam River basins are shown in Fig. 7 and from the Kapuas basin in Fig. 8 for comparison; other *Hampala* species are in Fig. 9. *Hampala bimaculata* appears to have a more robust build and wider black body bars. If morphometric data are compared only between *H. lupar* and *H. bimaculata* from North and East Kalimantan, there are the following differences: *Hampala lupar* has a narrower head than *H. bimaculata* (head width 42.1–46.0, mean 44.3 % HL, vs. 42.9–49.0, mean 45.5); smaller eye than *H. bimaculata* (diameter 18.1–24.4, mean 20.9 % HL, vs. 18.1–25.9, mean 21.7). The distribution of the two new species and *Hampala* within Borneo is illustrated in Fig. 10.

Hampala lupar has a black blotch or bar just posterior to the gill opening, and presence of this bar 0 is the most obvious difference to *H. bimaculata* and *H. katibas.* See Table 2 for the body bar descriptor. Overall, the black body bars of *H. bimaculata* are slightly wider than *H. lupar*. For the juvenile body pattern, this difference in width is even more obvious (see Fig. 3). Bar 0 in *H. lupar* is a rounded black blotch, which is absent in *H. bimaculata* and *H. katibas*. Bar 1 in *H. lupar* is slender, covering around ⅓ of the dorsal-fin base and continuous from dorsum to venter, but is wide in *H. bimaculata*, covering nearly the whole dorsal-fin base, and does not extend to venter ; bar 1 is narrow in *H. katibas*, covering around half of the dorsal-fin base and does not extend to venter. Bar 2 in *H. lupar* is a rounded black blotch, but a wide black bar in *H. bimaculata* and *H. katibas*.

Based on body pattern alone (see Figs. 2, 3), *H. lupar* can be easily distinguished from the rest of its congeners. With its three bar body pattern, *Hampala lupar* can be differentiated from *H. lopezi*, which has a central black stripe; from *H. ampalong* and *H. salweenensis*, which both have two black spots; from *H. dispar*, which has a single spot; from *H. macrolepidota* which has a single thin black bar from the dorsal-fin origin and an occasional caudal peduncle black spot; and from *H. sabana*, which has a single very wide black triangular bar below the dorsal-fin base.

***Hampala katibas*, new species**
(Figs. 4–6)

Hampala bimaculata (non-Popta) – Cramphorn, 1978: 31, 32, 34; Choy & Chin, 1994: 765; Doi & Taki, 1994: 411 (part); Kottelat & Lim, 1995: 230 (part); Sulaiman & Shahdan, 2003: 62; 2007: 21; Abdullah, 2004: 20 (Table of fish recorded from Batang Ai National Park); Sulaiman et al., 2018: 28; 2023: 59.
Hampala macrolepidota (non-Valenciennes) – Parenti & Meissner, 2003 (in part): 39.

Holotype. ZRC 65740, 128.8 mm SL; Sarawak: Song District: Rejang River basin: Katibas River: Ulu Katibas, Sungei Merating, draining into Sungei Bloh (01°38.045′N 112°17.350′E, 121 m asl); 2018.

Paratypes. ZRC 60144, 2 ex., 79.2–119.2 mm SL; Sarawak: Song District: Rejang River basin: Katibas River: Ulu Katibas, Sungei Merating, draining into Sungei Bloh (01°38.045′N 112°17.350′E, 121 m asl); 2018. --- ZRC 60118, 3 ex., 83.7–125.3 mm SL; Sarawak: Song District: Rejang River basin: Katibas River: Ulu Katibas, Sungei Kemau (01°38.341′N 112°16.118′E, 130 m asl); 2018. --- ZRC 59973, 1 ex., 101.2 mm SL; Sarawak: Song District: Rejang River basin: Katibas River: Ulu Katibas, Sungei Datai, draining into Sungei Bloh, about 5 mins down river of Nanga Bloh Field Station (01°39.015′N 112°16.765′E, 100 m asl); 2018. --- ZRC 60097, 1 ex., 70.5 mm SL; Sarawak: Song District: Rejang River basin: Katibas River: Ulu Katibas, Sungei Jih (01°38.932′N 112°15.735′E, 172 m asl); 2018. --- ZRC 65389, 2 ex., 110.3–119.7 mm SL; Sarawak: Bintulu, tributary of Sungei Kemena; 2007. --- ZRC 65396, 4 ex., 113.3–140.8 mm SL; Sarawak: Bintulu, Kemena, Hulu Sungei Kalabat; 2007. --- ZRC 35870, 1 ex., 172.6 mm SL; ZRC 35889, 1 ex., 129.7 mm SL; Sarawak: Sungei Baram (SS 3A/B); 1980. --- ZRC 38407, 1 ex., 116.1 mm SL; Sarawak: Sungei Baram, Sungei Lawa, Long Pila area; 1981. --- BMNH 1978.3.20.63, 1 ex., 41.1 mm SL; East Malaysia: Sarawak: Baram basin, Sungai Terikan, Lobang Cina; Cramphorn J, 1 January 1977. --- BMNH 1978.3.20.65, 1 ex., 27.4 mm SL; East Malaysia: Sarawak: Baram basin, Sungai Lansat; Cramphorn J et al, 1 January 1977.

Non-type material. ZRC 49790, 2 ex., 232.5–275.4 mm SL; Brunei Darussalam: Belait River, Sungei Ingei camp; 1996. --- ZRC 65471, 1 ex., 76.4 mm SL; Brunei Darussalam: Temburong district: Belalong basin; Sungai Esu, about 15 minutes upstream of Kuala Belalong Field Studies Centre; 2001.

Diagnosis. *Hampala katibas*, new species, can be distinguished from its congeners by the following combination of characters: lateral line scales 25–26 (mode 25); two black bars on body, bar 1 2–5 scales wide more intense black in the middle, bar 2 1½–4 scales wide, all bars apparent even at juvenile stage; upper and lower edges of caudal fin with a black marginal band; all fins orange in life.

Description. See Table 1 for biometric data and Figs. 4–6 for general appearance.

Fig. 4. *Hampala katibas*, new species — First: ca. 350 mm SL, fresh colouration from Sarawak: Katibas, not preserved (image from Low Bi Wei); Second and Third: ZRC 65740, holotype, 127.8 mm SL, Sarawak: Katibas, showing freshly preserved and two years later; Fourth: ZRC 59960, 85.0 mm SL, Sarawak: Katibas; Fifth: ZRC 60065, 55.9 mm SL, Sarawak: Katibas.

Fig. 5. *Hampala katibas*, new species — First: ZRC 35889, 132.0 mm SL, Sarawak: Baram River; Second to Fourth: ZRC 65396, 140.8 mm SL, 115.7 mm SL, 113.3 mm SL, Sarawak: Bintulu.

Head pointed, wedge-shaped, head large (32.1–38.2 % SL). Mouth terminal, gape oblique and large with posterior edge beyond anterior margin of eye; with a pair of maxillary barbels, each barbel at corner of mouth, as long or longer than eye diameter. Relatively large eye (eye diameter 13.8–25.5 % HL), and long snout (snout length 30.4–35.6 % HL). Body relatively compressed, elongate and deepest at dorsal-fin origin (body depth at dorsal-fin origin 25.1–33.5 % SL; body depth at anus 17.1–21.6 % SL), tapering to narrowest at caudal peduncle (caudal peduncle depth 11.4–13.4 % SL). All fins triangular in outline, except caudal fin which is deeply forked (upper caudal lobe 28.1–37.0 % SL, median caudal 11.4–14.7 % SL, lower caudal lobe 25.9–36.6 % SL). Dorsal fin moderately short with 11½ rays (dorsal-fin base length 13.7–17.2 % SL), positioned past mid-body (predorsal length 53.3–56.0 % SL). Anal fin short with 7–8 rays (anal-fin base length 9.2–11.2 % SL), pre-anal length 74.0–79.4 % SL. Pectoral fin moderately long with 15 rays

Fig. 6. *Hampala katibas*, new species — First: ZRC 49790, 275.4 mm SL, Brunei: Belait; Second: not preserved, ca. 160 mm SL, Brunei: Belalong; Third: ZRC uncatalogued, ca. 160 mm SL, Brunei: Belalong; Fourth: ZRC 65471, 76.4 mm SL, Brunei: Belalong; Fifth: not preserved, ca. 50 mm SL, Brunei: Belalong.

(pectoral fin length 17.4–21.5 % SL). Pelvic fin shorter than pectoral fin with 10 rays (pelvic-fin base length 15.5–19.3 % SL), prepelvic length 50.8–55.9 % SL. Pelvic auxillary scale present, about ⅓ pelvic-fin length.

Lateral line complete, perforating the large scales in a continuous series (25–26, mode 25), starting just above opercular opening, gently sloping downwards towards pelvic fin, 2–3 scales (mode 3) above pelvic-fin origin and running parallel to venter towards middle of caudal peduncle, with additional 2–3 (mode 3) perforated scales on caudal-fin base. Predorsal scales 9–10; 8th lateral-line scale in relation to dorsal-fin origin; 15–17th (mode 15th) lateral-line scale in relation to anal-fin origin; 7½–8th (mode 7½th) lateral-line scale in relation to pelvic-fin origin. Circumpeduncular scales 12–13.

Fresh colouration. See Fig. 4. Body silvery-gold, posterior margin of each body scale with thin band of melanophores, greyish-brown on dorsum, cream on venter. Opercle with orangish sheen when live. There are consistently 2 black bars on the body. Bar 1 originating at dorsal-fin origin (lateral line scale 9–14), bar width may cover entire dorsal-fin base and narrowing downwards from 5 to 2 scales wide, bar at median of body 3–4 scales wide. Bar 2 originating at lateral line scale 19–24, wider at dorsum and narrowing downwards from 4 to 1½ scales wide, bar at median of body 2–2 ½ scales wide. In larger specimens, both bars are not continuous to venter. In juvenile stage, bars 0 and 2 are rounded black blotches, bar 1 is narrow and not continuous to venter, 1–1 ½ scales wide. All fins orange-red in colour. Both dorsal and pectoral fins with black leading edge. Upper and lower edges of caudal fin with a black marginal band.

Preserved colouration. See Figs. 4–6. All bright colours are faded or bleached. Older preserved specimens may appear yellowish or brownish. Body and fin patterns as above.

Field notes. From the two locations within Lanjak Entimau Widlife Sanctuary in Sarawak, the following fish species were syntopic with *Hampala katibas*:

Nanga Bloh field station: Cyprinidae: *Barbodes banksi*, *B. kuchingensis*, *B. sealei*, *Barbonymus balleroides*, *B. collingwoodi*, *B. schwanefeldii*, *Cyclocheilichthys apogon*, *C. repasson*, *Hampala macrolepidota*, *Labiobarbus leptocheilus*, *Lobocheilos ovalis*, *Lobocheilos* cf. *erinaceus*, *Luciosoma setigerum*, *Osteochilus kahajanensis*, *O. sarawakensis*, *O. waandersii*, *Paracrossocheilus acerus*, *P. vittatus*, *Schismatorhynchos holorhynchos*, *Tor tambra*, *Tor tambroides*; Xenocyprididae: *Oxygaster anomalura*; Danionidae: *Rasbora* cf. *agyrotaenia*, *R. hosii*, *R. fasciata*; Balitoridae: *Homalopteroides avii*, *H. nebulosus*; Gastromyzontidae: *Gastromyzon fasciatus*, *G. katibasensis*, *G. megalepis*, *G. punctulatus*, *Katibasia insidiosa*, *Neogastromyzon chini*, *Parhomaloptera microstoma*; Nemacheilidae: *Nemacheilus kapuasensis*; Bagridae: *Hemibagrus bongan*, *H. fortis*, *Leiocassis micropogon*, *Pseudomystus inornatus*; Sisoridae: *Glyptothorax major*; Clariidae: *Clarias planiceps*; Syngnathidae: *Doryichthys martensii*; Mastacembelidae: *Macrognathus circumcinctus*, *Mastacembelus unicolor*; Osphronemidae: *Osphronemus septemfasciatus*; Channidae: *Channa lucius*; Tetraodontidae: *Auriglobus silus*.

Mujok base camp: Cyprinidae: *Barbodes banksi*, *B. kuchingensis*, *Barbonymus collingwoodi*, *Cyclocheilichthys repasson*, *Hampala macrolepidota*, *Lobocheilos ovalis*, *Osteochilus kahajanensis*, *O. sarawakensis*, *Paracrossocheilus acerus*, *P. vittatus*, *Tor tambra*; Xenocyprididae: *Oxygaster anomalura*; Danionidae: *Rasbora* cf. *agyrotaenia*, *R. fasciata*, *R. sarawakensis*; Cobitidae: *Acantopsis* cf. *octoactinotos*, *Pangio piperata*; Balitoridae: *Balitoropsis zollingeri*, *Homaloptera orthogoniata*, *Homalopteroides avii*, *H. weberi*; Gastromyzontidae: *Gastromyzon fasciatus*, *G. megalepis*, *G. punctulatus*, *Katibasia insidiosa*, *Neogastromyzon chini*; Nemacheilidae: *Nemacheilus kapuasensis*; Bagridae: *Hemibagrus bongan*, *H. fortis*, *Leiocassis micropogon*, *Mystus singaringan*, *Pseudomystus inornatus*; Sisoridae: *Glyptothorax major*; Clariidae: *Clarias planiceps*; Belonidae: *Xenentodon canciloides*; Zenarchopteridae: *Hemirhamphodon kuekanthali*; Mastacembelidae: *Macrognathus circumcinctus*, *Mastacembelus unicolor*; Channidae: *Channa lucius*, *C. melasoma*; Tetraodontidae: *Auriglobus silus*.

Distribution. *Hampala katibas* appears to be distributed only from central Sarawak and northwards, from the Rejang River to the Tatau River (in Bintulu), the Baram River; and to Tasik Merimbun in Tutong, as well as the Belait and Temburong Rivers in Brunei Darussalam (see Fig. 10). Likely to be in river drainages in southwestern Sabah (as listed in Inger & Chin, 1962).

Etymology. Named after the Katibas River sub-basin draining into the Rejang River. Used as a noun in genitive.

Comparative notes. *Hampala katibas* has only two black blotches or bars on lateral of the body vs. three of *H. lupar*. See Table 2 for the body bar descriptor. Overall the black body bars of *H. katibas* are slightly narrower than *H. bimaculata*. For the juvenile body pattern, this difference in width is even more obvious (see Fig. 4). Bar 1 is narrow in *H. katibas*, covering around half of dorsal-fin base and does also not extend to the venter. Bar 2 in *H. katibas* is a narrower black blotch, but a wider black bar in *H. bimaculata*.

Based on body pattern alone (see Figs. 4, 5), *H. katibas* can be easily distinguished from the rest of its congeners. With its two bar body pattern, *Hampala katibas* can be differentiated from *H. lopezi* which has a central black stripe; from *H. ampalong* and *H. salweenensis*, which both have two black spots; from *H. dispar*, which has a single spot; from *H. macrolepidota* which has a single thin black bar from the dorsal-fin origin and an occasional caudal peduncle black spot; and from *H. sabana*, which has a single very wide black triangular bar below the dorsal-fin base.

Remarks. Doi & Taki (1994) described *H. salweenensis* on the basis of three specimens, with distinct differences. In their paper, they listed comparative data on the then five recognised species. In their comparative material,

Fig. 7. *Hampala bimaculata* — First: not preserved, juvenile, ca. 75 mm SL, East Kalimantan: Kelian (Mahakam); Second: ZRC 45665, 120.5 mm SL, North Kalimantan: Kayan; Third: ZRC 56311, 87.3 mm SL, East Kalimantan: Mahakam, Boh river; Fourth: ZRC 45665, 41.0 mm SL, North Kalimantan: Kayan basin (all from type locations in East and North Kalimantan).

they actually examined *H. lupar* deposited in London (Doi & Taki, 1994: 411, BMNH 1983.6.20:4 [1 ex.], BMNH 1983.6.20:13-14 [1 ex.], BMNH 1983.6.20:97-98 [1 ex.]) amongst the material of *H. bimaculata* listed. Their figure (Doi & Taki, 1994: fig. 2) of *H. bimaculata* actually depicts *H. lupar*, which clearly shows three bars on the body.

Ryan & Esa (2006) and Esa et al. (2012) compared the mitochondrial cytochrome B of four species/forms of *Hampala* from West and East Malaysia (states of Sarawak and Sabah). Their analyses were based on 396 base pairs from 110 samples. Their conclusion was that there were two forms of *H. bimaculata* — Type A from south and central

Fig. 8. *Hampala bimaculata* — First: ZRC 66623, 180.0 mm SL, East Kalimantan: Mahakam River; Second: ZRC 66623, 144.3 mm SL, East Kalimantan: Mahakam River; Third: ZRC 64528, 136.3 mm SL, West Kalimantan: Kapuas, Sibau river; Fourth: ZRC 64527, 63.3 mm SL; West Kalimantan: Kapuas, Sibau river.

Sarawak, Type B from north Sarawak and west Sabah; the *H. sabana* intermediate form from Tawau is indeterminate (for more details on this intermediate form, refer to Inger & Chin, 1962); *H. macrolepidota* from West Malaysia shares haplotypes with material from the south and central Sarawak populations. Both the above results are supportive of this current work though the sequences used are short and they lack topotypic material of *H. bimaculata* (from East and North Kalimantan) and *H. macrolepidota* (from Java), which would have made the anlaysis more taxonomically robust. Ryan & Esa's (2006) and Esa et al.'s (2012) study also suffers from an apparent absence of deposited voucher specimens. Their set of molecular data lends support to the recognition of a northern and a southern population in Sarawak, with a Lupar geological divide; i.e., Type A likely corresponds to *H. lupar* and Type B to *H. katibas*.

The Lupar geological divide has previously been recognised by geologists as an important geological break (e.g., Moss & Wilson, 1998; Breitfeld et al., 2018). The maximal deposition age for the Lubok Antu Mélange in the Lupar Valley (divide) is ca. 115 to 105 Ma; and this may have caused the rapid uplift and exhumation of the Schwaner Mountains which also implies the arrival and collision of the southwestern part of Borneo with the rest of the island at this time (Zhao et al., 2021). Several other freshwater fish species pairs (north/south) also support this biogeographic hypothesis (*Rasbora kottelati*/*R. kalochroma* by Lim (1995), *Betta akarensis*/*B. ibanorum* by Tan & Ng (2004), *Hemirhamphodon kuekenthali*/ *H. byssus* by Tan & Lim (2013); *Rasbora marinae*/*R. cephalotaenia* by Tan & Kottelat (2020)).

It is possible at this juncture to differentiate the Bornean populations of *H. bimaculata* into three distinct species, based on a respectable series of fresh material from the type locality of *H. bimaculata* (Mahakam and Kayan river basins; see Fig. 10), and from south and north of the Lupar divide in Sarawak. What remains in doubt are the other populations of *Hampala bimaculata* sensu lato from Central Kalimantan and the intermediate form *H. sabana* × *bimaculata* (sensu Inger & Chin, 1962: 82, fig. 37). Pending availability of fresh material, no further conjecture can be made.

Among the Iban communities in Sarawak, the genus *Hampala* has two varieties, with the larger size having a single large bar and with the vernacular name 'Adung', most likely referring to *H. macrolepidota*. The smaller size is called 'Juak', referring to the other type with more than one bar, which could consist of other species including the two new species in this study. *Hampala* has significance in Iban parables and poems, indicating *Hampala* has cultural value to the community (Ensiring et al., 2011). The other local name is 'Sebarau' which is broadly applied in Peninsular Malaysia and some indigenous communities in Sarawak and Sabah without referring to any specific species.

Panitvong & Tan (2025) described *H. siamensis* recently from southern Thailand. This taxon is not dealt with in detail herein, but can be easily distinguished from the two presently described species by having no distinct bars on the body vs. three and two body bars (*H. lupar* and *H. katibas* respectively), and their distributional ranges.

Comparative material examined:

***Hampala ampalong*:** ZRC 60059, 9 ex., 80.2–97.1 mm SL; Sumatra: Jambi; 2018.

***Hampala bimaculata*:** ZRC 45665, 10 ex., 20.1–136.0 mm SL; North Kalimantan: Kayan River basin; Sungai Seba Ai, tributary to Kayan River (01°59.86′N 115°06.77′E, 550 m asl); 1999. --- ZRC 65451, 6 ex., 15.3–91.9 mm SL; North Kalimantan: Kayan River basin; Iwan; Sungai Panan, tributary to Iwan river, ca. 60 mins upstream from Data Dian; 1999. --- ZRC 65446, 8 ex., 26.5–109.5 mm SL; North Kalimantan: Kayan River basin; Sungai Nah, tributary to Kayan river, ca. 20 mins upstream of fork to Iwan river; 1999. --- ZRC 65421, 4 ex., 38.9–79.5 mm SL; North Kalimantan: Kayan River basin; Sungai Belanyan Tekan, tributary to Kayan river; 1999. --- ZRC 65411, 3 ex., 66.3–74.0 mm SL; North Kalimantan: Kayan River basin; Sungai Pingai, next to air strip, ca. 10 mins downstream of Data Dian; 1999. --- ZRC 65457, 3 ex., 28.9–61.3 mm SL; North Kalimantan: Kayan River basin; Sungai Busang Matu, tributary to Kayan river ca. 500 m upstream of Data Dian; 1999. --- ZRC 65463, 11 ex., 21.2–61.8 mm SL; North Kalimantan: Kayan River basin; Sungai I'sau, ca. 15 mins upstream of Data Dian; 1999. --- ZRC 65420, 3 ex., 27.2–31.3 mm SL; North Kalimantan: Kayan River basin; Sungai Nga'ha, tributary to Kayan river; 1999. --- ZRC 66624, 2 ex., 144.3–180.0 mm SL; East Kalimantan: Long Iram subdistrict; Mahakam River basin; Sungai Lomi and feeder streams (0°00.05′S 114°55.23′E, 180 m asl); 2000. --- ZRC 56311, 1 ex., 87.3 mm SL; East Kalimantan: Mahakam River basin; SLJ Jaya II logging concession, km 84, Anak Sungei Bakung, feeding into Boh River (00°58.758′N 115′06.395′E, 134 m asl); 2017. --- ZRC 64528, 2 ex., 128.6–136.6 mm SL; West Kalimantan: Kapuas River basin; Sungei Sekedam Besar, Sibau River; 1998. --- ZRC 64527, 1 ex., 63.8 mm SL; West Kalimantan: Kapuas River basin; Sibau River; 1998.

***Hampala dispar*:** ZRC 39329, 3 ex., 95.4–122.3 mm SL; Thailand: Buri Ram, Amphoe Muang; 1994. --- ZRC 40888, 1 ex., 184.4 mm SL; Thailand: Nakhon Rachasima (Korat) province, outskirts of town near Wat Leab, ditch near padi and vegetable fields, access via Soi Monkan Tree (14°59′46.9″N 102°03′02.8″E); 1997.

***Hampala lopezi*:** CAS 138090, 4 ex., 54.3–190.0 mm SL; Philippines: Palawan, Busuanga Island, Barrio San Nicolas, Wayan creek; 1940.

***Hampala macrolepidota*:** ZRC 43847, 1 ex., 91.5 mm SL; Java: West Java Province: Cipipang, Ciliwong River; 1997. --- ZRC 44089, 1 ex., 155.0 mm SL; Java: West Java Province: Banjar Pasar; 1997. --- ZRC 65888, 4 ex., 63.3–112.0 mm SL; ZRC 66162, 1 ex., 185 mm SL; Java: West Java Province: Tasikmalaya, Cibalung basin; 2024. --- ZRC 66246, 1 ex., 121.8 mm SL; Java: East Java Province: Surabaya, Brantas basin; 2024.

***Hampala sabana*:** ZRC 43960, 1 ex., 126.7 mm SL; Sabah: Danum Valley, stream at km 105 on main line west after turnoff to Borneo Rainforest Lodge (5°03′02.9″N 117°34′34.1″E); 1996. --- ZRC 44001, 1 ex., 122.0 mm SL; Sabah: Danum Valley, stream at km 113 on main line west (logging road) after turnoff to Borneo Rainforest Lodge (5°00′37.6″N 117°31′43.88″E); 1996. --- ZRC 43936, 8 ex., 22.5–111.5 mm SL; Sabah: Danum Valley, Sungai Palum Tambun, tribut. of Sg. Segama, upstream of Danum Valley Field Centre; 1996. --- ZRC 40406, 2 ex., 80.7–91.0 mm SL; Sabah: Danum Valley, Sungai Bilong at ca. km 83 on main line west after turnoff to Borneo Rainforest Lodge; 1996. --- ZRC 45455, 4 ex., 52.7–65.2 mm SL; Sabah: Danum Valley, Cabin stream right, km 50 on road to Danum Valley Field Centre; 1996. --- ZRC 43987, 7 ex., 24.3–53.5 mm SL; Sabah: Danum Valley, small tributary of Sg. Bole; 1996. --- ZRC 65705, 2 ex., 92.6–110.6 mm SL; Sabah: Danum Valley Conservation Area, Tembeling stream; 2015. --- ZRC 65621, 2 ex., 61.0–111.4 mm SL; Sabah: Danum Valley Conservation Area, Rhino-pool stream; 2015.

Fig. 9. First: *Hampala ampalong*, ZRC 60059, 95.0 mm SL, Central Sumatra; Second: *Hampala dispar*, ZRC 39329, 110.5 mm SL, Thailand (right side reversed); Third: *Hampala lopezi*, CAS-SU 38090, 190 mm SL, Philippines; Fourth: *Hampala macrolepidota*, ZRC 66162, 185 mm SL, West Java; Fifth: *Hampala sabana*, ZRC 43560, 126.7 mm SL, Sabah; Sixth: *Hampala salweenensis*, NSMT-P 35838, 200.6 mm SL holotype, Thailand.

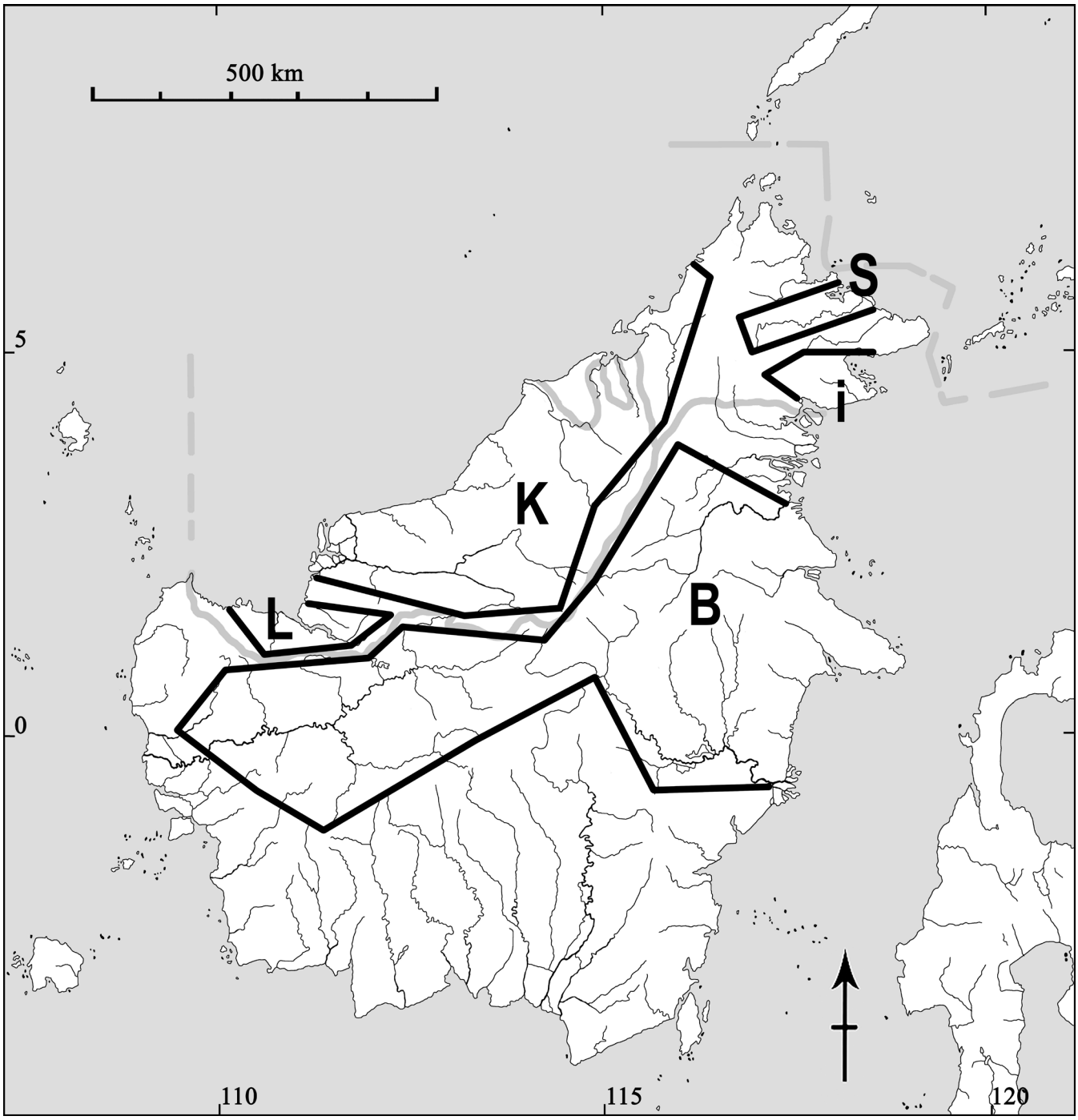

Fig. 10. Map of Borneo showing distribution of *H. bimaculata* (B); *H. katibas*, new species (K); *H. lupar*, new species (L); *H. sabana* (S); *H.* 'intermediate population' (i). Note that *H. macrolepidota* is syntopic with all other taxa in Borneo (partly adapted from Inger & Chin, 1962: 80, Fig. 35). Populations from Central Kalimantan are not sufficiently known.

***Hampala* intermediate form fide Inger & Chin, 1962**: ZRC 65626, 3 ex., 103.0–127.3 mm SL; Sabah: Kalabakan Forest Reserve, 30 m stream; 2015. --- ZRC 65648, 3 ex., 105.6–131.9 mm SL; Sabah: Kalabakan Forest Reserve, 0 m stream; 2015. --- ZRC 65682, 2 ex., 54.5–68.3 mm SL; Sabah: Kalabakan Forest Reserve, Gaharu Estate stream; 2015. --- ZRC 65647, 1 ex., 106.9 mm SL; Sabah: Kalabakan Forest Reserve, 120 m stream; 2015. --- ZRC 65653, 1 ex., 108.2 mm SL; Sabah: Kalabakan Forest Reserve, Virgin Jungle Rainforest stream; 2015. --- ZRC 65802, 2 ex., 31.4–35.0 mm SL; Sabah: Kalabakan Forest Reserve, 30 m stream; 2017.

***Hampala salweenensis*:** NSMT-P 35838, holotype, 200.6 mm SL; Thailand: Mae Hong Son, Ban Phuei Phan, Mae Surin River (only photograph examined).

***Hampala siamensis*:** see Panitvong & Tan (2025).

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LITERATURE CITED

Abdullah I (2004) Development of Lanjak Entimau Wildlife Sanctuary as a totally protected area. Fish resources assessment study of Lanjak Entimau Wildlife Sanctuary and Batang Ai National Park. International Tropical Timber Organization, Sarawak Forestry Department, Sarawak, Malaysia. ITTO project PD16/99 REV. 2(F) Phase III, 70 pp.

Bleeker P (1852) Diagnostische beschrijvingen van nieuwe of weinig bekende vischsoorten van Sumatra. Tiental I–IV. Natuurkundif Tijdschrift voor Nederlandsch Indië, 3: 569–608, 1 pl.

Breitfeld HT, Hall R, Galin T & BouDagher-Fadel MK (2018) Unravelling the stratography and sedimentation history of the uppermost Cretaceous to Eocene sediments of the Kuching zone in Wesy Sarawak (Malaysia), Borneo. Journal of Asian Earth Sciences, 160 (2018): 200-223.

Choy SC & Chin PK (1994) Freshwater fishes from the headwaters of the Belalong-Temburong river system, Brunei Darussalam, Borneo. Raffles Bulletin of Zoology, 42(4): 757–774.

Cramphorn J (1978) A preliminary survey of the freshwater fishes in Gunung Mulu National Park, Sarawak 1977/1978. Unpublished report, 38 pp.

Cramphorn J (1982) Batang Ai fish survey, Sarawak, May to August, 1982. Unpublished report, 52 pp.

Doi A & Taki Y (1994) A new cyprinid fish, *Hampala salweenensis*, from the Mae Pai River system, Salween basin, Thailand. Japanese Journal of Ichthyology, 40(4): 405-412.

Ensiring J, Umbat J & Saleh RM (2011) Bup Sereta Reti Jaku Iban. The Tun Jugah Foundation, Kuching, Sarawak, Malaysia, 1359 pp.

Esa YB, Japning JRR, Rahim KAA, Siraj SS, Daud SK, Tan SG & Sungan S (2012) Phylogenetic relationships among several freshwater fishes (Family: Cyprinidae) in Malaysia inferred from partial sequencing of the Cytochrome b mitochondrial DNA (mtDNA) gene. Pertanika Journal of Tropical Agricultural Science, 35(2): 307–318.

Fowler HW (1905) Some fishes from Borneo. Proceedings of the Academy of Natural Sciences of Philadelphia, 57: 455–523.

Grinang J & Lim KKP (2004) Fishes. In: HS Yong, FSP Ng & EEL Yen (eds.) Sarawak Bau Limestone Biodiversity. Sarawak Museum Journal, 59(80): 285–298.

Herre AWCT (1924) Distribution of the true fresh-water fishes in the Philippines. I. The Philippine Cyprinidae. Philippine Journal of Science, 24: 249–306, pls. 1–2.

Hubbs CL & Lagler KF (1964) Fishes of the Great Lakes Region. The University of Michigan Press, Ann Arbor, 213p.

Inger RF & Chin PK (1962) The fresh-water fishes of North Borneo. Fieldiana, Zoology, 45: 1–268.

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

Kottelat M, Whitten AJ, Kartikasari SN & Wirjoatmodjo S (1993) Freshwater Fishes of Western Indonesia and Sulawesi. Periplus Editions, Hong Kong. 221 pp. + 84 pl.

Kottelat M & Lim KKP (1995) Freshwater fishes of Sarawak and Brunei Darussalam: a preliminary annotated checklist. Sarawak Museum Journal, 48(69): 227–256.

Lim KKP (1995) *Rasbora kottelati*, a new species of cyprinid fish from northwestern Borneo. Raffles Bulletin of Zoology, 43(1): 65–74.

Moss SJ & Wilson MEJ (1998) Biogeographic implications of the Tertiary palaeogeographic evolution of Sulawesi and Borneo. In: Hall R & Holloway JD (eds.) Biogeography and Geological Evolution of Southeast Asia. Backhuys Publishers, Leiden, pp. 133–163.

Panitvong N & Tan HH (2025) A new species of *Hampala* (Teleostei: Cyprinidae) from the Lower Tenasserim basin of Thailand. Raffles Bulletin of Zoology, 73: 67–72.

Parenti LR & Lim KKP (2005) Fishes of the Rajang basin, Sarawak, Malaysia. Raffles Bulletin of Zoology, Supplement 13: 175–208.

Parenti LR & Meisner ALD (2003) Fishes of the Belait river. Brunei Museum Journal, 10: 17–54.

Popta CML (1905) Suite des descriptions préliminaires des nouvelles espèces de poisons recueillies au Bornéo central par M le Dr AW Nieuwenhuis en 1898 et en 1900. Notes from the Leyden Museum, 25(4): 171–186.

Rachmatika I (2001) Biodiversitas ikan di das Mendalam, Taman Nasional Betung Kerihun Kalimantan Barat [Freshwater fishes of Mendalam river system, Betung Kerihun National Park, West Kalimantan]. Jurnal Iktiologi Indonesia, 1(1): 19–26.

Roberts TR (1989) The freshwater fishes of Western Borneo (Kalimantan Barat, Indonesia). Memoirs of the California Academy of Sciences, San Francisco, 14: 1–210.

Ryan JRJ & Esa YB (2006) Phylogenetic analysis of *Hampala* fishes (subfamily Cyprininae) in Malaysia inferred from partial mitochondrial cytochrome B DNA sequences. Zoological Science, 23(10): 893–901.

Smith HM (1934) Contributions to the ichthyology of Siam. IX-XIX. Journal of the Siam Society, Natural History Supplement, 9(3): 287–325, pls. 10–14.

Sulaiman ZH & Shahdan HRH (2003) Aquatic fauna from Tasek Merimbun and its tributaries: a preliminary account on its diversity. Bruneiana, 4: 55–73.

Sulaiman ZH & Shahdan HRH (2007) A Guide Book to Wild Aquatic Fauna of Tasek Merimbun. Second reprint with revised content. Brunei Museums Department, Bandar Seri Begawan, 55 pp.

Sulaiman ZH, Tan HH & Lim KKP (2018) Annotated checklist of freshwater fishes from Brunei Darussalam, Borneo. Zootaxa, 4379(1): 24–46.

Sulaiman ZH, Tan HH & Lim KKP (2023) Freshwater Fishes of Brunei Darussalam, Borneo. Brunei Press Commercial Printing Services, Bandar Seri Begawan, 140 pp.

Tan HH (2012) *Systomus navjotsodhii*, a new cyprinid fish from Central Kalimantan, Borneo. Raffles Bulletin of Zoology, Supplement 25: 285–289.

Tan HH (2021) *Hypergastromyzon* revisited, with descriptions of a new genus and two new species (Teleostei: Gastromyzontidae). Raffles Bulletin of Zoology, 69: 336–363.

Tan HH & Kottelat M (2020) *Rasbora marinae*, a new species of cyprinid fish from northwestern Borneo. Raffles Bulletin of Zoology, 68: 750–758.

Tan HH & Lim KKP (2013) Three new species of freshwater halfbeaks (Teleostei: Zenarchopteridae: *Hemirhamphodon*) from Borneo. Raffles Bulletin of Zoology, 61: 735–747.

Tan HH & Ng PKL (2004) Two new species of freshwater fish (Teleostei: Balitoridae, Osphronemidae) from southern Sarawak. Sarawak Museum Journal, 59(80) Special Issue no. 6: 267–284.

Watson DJ & Balon EK (1984) Structure and production of fish communities in tropical rain forest streams of northern Borneo. Canadian Journal of Zoology, 62(5): 927–940.

van Hasselt JC (1823) Uittreksel uit enn' brief van den Heer JC van Hasselt, aan den Heer CJ Temminck, geschreven uit Tjecande, Residentie Bantam, den 29sten December 1822. Algenneme Konsten Letter-Bode voor het Jaar 1823, 2: 130–133.

Zhao Q, Yan Y, Zhu Z, Carter A, Clift PD, Hassan MHA, Yao D & Aziz JHA (2021) Provenance study of the Lubok Antu Mélange from the Lupar valley, West Sarawak, Borneo: Implications for the closure of eastern Meso-Tethys? Chemical Geology, 581: 120415.