

Additions to the ichthyofauna of Nepal, with a redescription of *Neoeucirrhichthys maydelli* (Teleostei: Cobitidae)

David R. Edds* and Heok Hee Ng**

An increase in ichthyological activity in Nepal over the past 25 years has raised the number of fish species reported for the country. We provide details of the distribution of new records for 10 additional species captured from 25 sites during recent ichthyological exploration throughout Nepal: *Puntius terio*, *Psilorhynchus gracilis*, *Lepidocephalichthys menoni*, *Neoeucirrhichthys maydelli*, *Glyptothorax alaknandi*, *G. botius*, *G. garhwali*, *Nangra assamensis*, *Sisor rheophilus*, and *Anabas cobojius*. Given that these species are relatively rare in Nepal, and that their ecology is poorly understood throughout their range, we also provide notes on their microhabitat use. *Neoeucirrhichthys maydelli*, an inadequately-studied species, is rediagnosed and redescribed from the Nepalese material.

Introduction

Kottelat & Whitten (1996) categorized Nepal as one of the countries in Asia where “some (fish) data are available, but their quality and the existing geographical gaps justify extensive field work.” Here, we provide new records for 10 species captured during recent ichthyological explorations in Nepal that are not included in the previous compilations of fishes known to occur in the country. Among the new records is *Neoeucirrhichthys maydelli*, a poorly-known species of cobitid loach. Since the Nepalese material represents the first collection of this species in thirty years, *N. maydelli* is rediagnosed and redescribed in this study.

Materials and Methods

Fishes were captured by seine, cast net, or electrofisher, and preserved in 10% formalin solution. Voucher specimens were deposited at: KU, University of Kansas Natural History Museum and Biodiversity Research Center, Lawrence; OSUS, Oklahoma State University Collection of Vertebrates, Stillwater; Tribhuvan University Natural History Museum, Swayambhu, Kathmandu, Nepal; and Fisheries Development Division, Balaju, Kathmandu. For each species, data provided include museum collection number, number of specimens, personal collection number, and range of sizes (SL). Where available, habitat data are also presented. Water depth and current speed were measured at 10 points along a transect across the sampled area. Current speed was measured with a Gurley pygmy meter no. 625 (Gurley Precision Instruments, Troy, New York,

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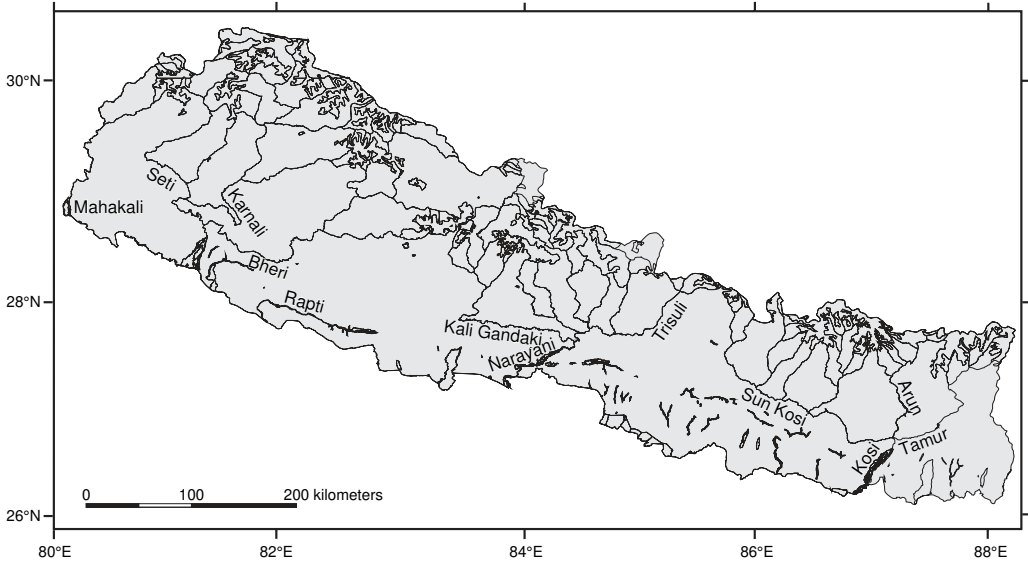


Fig. 1. Map showing major river drainages in Nepal.

USA) at 60 % depth. Water chemistry and visibility were assessed at a single point. Dissolved oxygen (DO) (ppm), pH and total hardness ($\text{mg} \cdot \text{l}^{-1} \text{CaCO}_3$) were measured with a Hach kit model AL-36B (Hach Co., Loveland, Colorado, USA), and visibility was measured with a Secchi disk mounted to a calibrated pole. Substrate composition was assessed visually, using a modified Wentworth scale (Cummins, 1962; Hynes, 1970), by estimating percent mud (< ca. 0.1 mm diameter), sand (0.1-2 mm diameter), gravel (2-16 mm diameter), pebble (16-64 mm diameter), cobble (64-256 mm diameter), and boulder (> 256 mm diameter).

Twenty-five site localities where these fishes were captured are listed by collection numbers (DE-N-# = D. Edds-Nepal-#); a copy of corresponding field notes is deposited at KU and OSUS. For reference, the major rivers in Nepal from which the material was collected are labeled on the map in Figure 1.

DE-N-16: Kali Gandaki River at Nimaa, Palpa/Syangja districts, $27^{\circ}55'12''\text{N}$ $83^{\circ}40'48''\text{E}$; 4 May 1984. Large river of the central Middle Hills (ca. 60 m width), in large, shallow riffle 60 % covered by filamentous algae attached to primarily cobble (approx. 64-256 mm diameter) substrate in strong current. Mean water depth 8.5 ± 2.4 cm (range 6-13 cm); mean current speed $0.73 \pm 0.29 \text{ m} \cdot \text{s}^{-1}$ (range 0.48-1.44 $\text{m} \cdot \text{s}^{-1}$); DO 9 ppm; pH 8.25; water temperature 24 °C; total hardness $154 \text{ mg} \cdot \text{l}^{-1} \text{CaCO}_3$; Secchi disk visibility 25 cm.

DE-N-17: Kali Gandaki River at Ridi Bazar, Gulmi/Syangja districts, $27^{\circ}56'06''\text{N}$ $83^{\circ}26'30''\text{E}$; 22 May 1984. Large riffles on large (ca. 90 m width) river of the central Middle Hills, in strong current over rocky substrate 30 % covered by attached filamentous algae and 20 % covered with woody debris. Substrate 80 % cobble, 10 %

pebble, 10 % gravel. Mean water depth 9.6 ± 3.3 cm (range 4-14 cm); mean current speed $0.92 \pm 0.28 \text{ m} \cdot \text{s}^{-1}$ (range 0.55-1.42 $\text{m} \cdot \text{s}^{-1}$); DO 9 ppm; pH 8.0; water temperature 21.5 °C; total hardness $154 \text{ mg} \cdot \text{l}^{-1} \text{CaCO}_3$; Secchi disk visibility 47 cm.

DE-N-146: Narayani River just downstream from Tribeni Barrage, Nawalparasi district, $27^{\circ}26'36''\text{N}$ $83^{\circ}54'18''\text{E}$; 7 Aug 1985. Large (800 m width) sandy river of the central Tarai. Substrate 50 % sand, 5 % gravel, 30 % pebble, 10 % cobble, and 5 % boulder, in moderate current. Mean water depth 22.9 ± 0.02 cm (range 18-24 cm); mean water current $0.24 \pm 0.04 \text{ m} \cdot \text{s}^{-1}$ (range 0.19-0.30 $\text{m} \cdot \text{s}^{-1}$); DO 12 ppm; pH 8.0; water temperature 23.5 °C; total hardness $120 \text{ mg} \cdot \text{l}^{-1} \text{CaCO}_3$; Secchi disk visibility 47 cm.

DE-N-210: Narayani River at Taadi Ghat pier #5, Nawalparasi district, $27^{\circ}24'00''\text{N}$ $83^{\circ}52'12''\text{E}$; 13 Apr 1986. Large sandy-bottomed river of the central Tarai. Substrate 100 % sand, 10 % covered by filamentous algae, in moderate current. Mean water depth 19.2 ± 0.04 cm (range 12-23 cm); mean water current $0.15 \pm 0.05 \text{ m} \cdot \text{s}^{-1}$ (range 0.02-0.19 $\text{m} \cdot \text{s}^{-1}$); DO 9 ppm; pH 8.0; water temperature 29 °C; total hardness $137 \text{ mg} \cdot \text{l}^{-1} \text{CaCO}_3$; Secchi disk visibility 61 cm.

DE-N-221: Kosi River, just upstream from Kosi Barrage, Saptari/Sunsari districts, $26^{\circ}31'30''\text{N}$ $86^{\circ}56'06''\text{E}$; 8 Feb 1996. Large river of the eastern Tarai (1100 m width), sand and mud substrate upstream from dam, in moderate to no flow, fairly clear water. DO 8 ppm; pH 8.25; water temperature 15 °C; total hardness $137 \text{ mg} \cdot \text{l}^{-1} \text{CaCO}_3$.

DE-N-222: Kosi River, purchased at Kosi Barrage, Saptari/Sunsari districts, $26^{\circ}31'30''\text{N}$ $86^{\circ}56'00''\text{E}$; 9 Feb 1996.

DE-N-223: Kosi River, just downstream from Kosi Barrage, Saptari/Sunsari districts, 26°31'06"N 86°55'36"E; 9 Feb 1996. Large river of the eastern Tarai (1100 m width), sand and gravel substrate in braided channel downstream from dam, fairly clear water. DO 8 ppm; pH 8.0; water temperature 14 °C; total hardness 86 mg · l⁻¹ CaCO₃.

DE-N-225: Kosi River seepage at Bhandabari, Sunsari district, 26°31'30"N 86°58'24"E; 11 Feb 1996. Wetland backwaters with mud and sand substrate, fairly clear water. DO 8 ppm; pH 8.0; water temperature 15 °C; total hardness = 86 mg · l⁻¹ CaCO₃.

DE-N-229: Mahakali River at Brahmadev, Kanchanpur district, 29°04'54"N 80°08'30"E; 24 Feb 1996. Large river of the far western Tarai. Sand, gravel, and pebble riffles upstream from dam, fairly clear water. DO 10 ppm; pH 8.5; water temperature 12.5 °C; total hardness = 205 mg · l⁻¹ CaCO₃.

DE-N-230: Chaudhar, Bahuni, and Gobraiya rivers at Shukla Phanta Wildlife Reserve, Kanchanpur district, 28°43'00"N 80°12'00"E; 25 Feb 1996. Small rivers of the western Tarai, fairly clear water. Shallow water over a sand/mud and rocky bottom.

DE-N-232: Chaudhar River at Raj-Marg highway, 9 km east of Mahendranagar, Kanchanpur district, 28°57'06"N 80°15'18"E; 27 Feb 1996. Sand and gravel riffles in small river of the western Tarai.

DE-N-233: Chaumala River, Ghodaa Ghodi Lake, and Mudaa River, along Raj-Marg highway, Kailali district, 28°42'00"N 80°54'00"E; 27 Feb 1996. Small rivers of western Tarai, and old lake with clear water and abundant submerged vegetation and woody debris.

DE-N-248B: Narayani River, purchased at Tribeni Barrage, Nawalparasi district, 27°27'00"N 83°55'00"E; 14 March 1996.

DE-N-265: Kali Gandaki River at Modi River confluence at Kusma, Parbat/Baglung districts, 28°12'18"N 84°40'18"E; 17 May 1996. Rocky and sandy substrate in moderate current and depth at tributary confluence with large river of the central Middle Hills.

DE-N-268: Kali Gandaki River at Andhi River confluence at Andhi Mohan, Gulmi/Syangja districts, 27°58'42"N 83°35'06"E; 20 May 1996. Rocky and sandy substrate in moderate to swift current at tributary confluence with large river of the central Middle Hills.

DE-N-285: Kosi River, collected near Kosi Barrage, under contract with local fishermen, Saptari/Sunsari districts, 26°31'30"N 86°56'00"E; 10 Feb-20 Jun 1996.

DE-N-287: Mechi River at Bhadrapur, Jhapa district, 26°32'18"N 88°06'06"E; 22 Jun 1996. Medium-sized river of the eastern Tarai. Good flow over substrate of sand, gravel, pebble, and mud; DO 6 ppm; pH 7.5; water temperature 30 °C; total hardness 17 mg · l⁻¹ CaCO₃.

DE-N-289: Kankai River at Raj-Marg highway, Jhapa district, 26°39'30"N 87°52'12"E; 24 Jun 1996. Medium-sized river of the eastern Tarai. Moderate flow over substrate of sand, gravel, pebble, and mud. DO

7 ppm; pH 8.0; water temperature 30 °C; total hardness 34 mg · l⁻¹ CaCO₃.

DE-N-290: Lohandra River at Belbari, Morang district, 26°39'36"N 87°24'42"E; 25 Jun 1996. Medium-sized river of the eastern Tarai. Moderate flow over substrate of sand, gravel, pebble, and mud. DO 4 ppm; pH 8.0; water temperature 28 °C; total hardness 188 mg · l⁻¹ CaCO₃.

DE-N-295: Kamalpur Pokhari (pond), oxbow lake 1 km east of Kamalpur, Saptari district, 26°41'18"N 86°57'36"E; 28 Jun 1996. Oxbow lake in Kosi River floodplain. Clear, quiet water over muddy substrate with submerged vegetation.

DE-N-296: Trijuga River, just downstream from irrigation dam at Phattepur, Udayapur district, 26°44'24"N 86°55'54"E; 28 Jun 1996. Medium-sized river of the eastern Tarai. Moderate flow over substrate of gravel, pebble, cobble, and sand downstream from dam.

DE-N-303: Babai River at Chapang, Bardiya district, 28°21'24"N E 81°42'48"E; 9 Jul 1996. Medium-sized river of the western Tarai. Moderate flow over sand and gravel substrate. DO 6 ppm; pH 8.0; water temperature 27 °C; total hardness 86 mg · l⁻¹ CaCO₃.

DE-N-309: Narayani River just downstream from Tribeni Barrage, Nawalparasi district, 27°26'36"N 83°54'18"E; 4 Aug 1996. Large (800 m width) sandy river of the central Tarai. Sand and mud substrate, with moderate current at moderate depth.

DE-N-310: Narayani River, purchased at Tribeni Barrage, Nawalparasi district, 27°27'00"N 83°55'00"E; 4 Aug 1996. Dip-netted by fishermen below dam.

DE-N-335: Kosi River, purchased at Kosi Barrage, Saptari/Sunsari districts, 26°31'30"N 86°56'00"E; 7 Oct 1996.

Results

Cyprinidae

Puntius terio (Hamilton)

KU 28540 (6: DE-N-222), KU 28680 (2: DE-N-230), KU 28738 (20: DE-N-233): 20-41 mm SL.

Remarks. All specimens were collected in quiet waters of the lowland Tarai, including in the Kosi River in the east and rivers of Shukla Phanta Wildlife Reserve in the Far West.

Psilorhynchidae

Psilorhynchus gracilis Rainboth

KU 29143 (11: DE-N-287), Fisheries Development Division, Balaju, Kathmandu, Nepal (3: DE-N-289), KU 29461 (1: DE-N-303), KU 29505 (1: DE-N-309): 16-35 mm SL.

Remarks. This species was found in sand and



Fig. 2. *Neoeucirrichthys maydelli*, KU 29132, 35.2 mm SL; Nepal: Mechi River at Bhadrapur.

gravel riffles of rivers of the Tarai, including the Mechi and Kankai in the east, the Narayani in central Nepal, and the Babai in the Midwest.

Cobitidae

Lepidocephalichthys menoni Pillai & Yazdani

KU 28517 (1: DE-N-221), Fisheries Development Division, Balaju, Kathmandu, Nepal (1: DE-N-223), KU 28610 (2: DE-N-225), KU 28654 (2: DE-N-229), Fisheries Development Division, Balaju, Kathmandu, Nepal (1: DE-N-287), KU 29154 (5: DE-N-287), KU 29192 (1: DE-N-290), KU 29354 (8: DE-N-295), KU 29367 (3: DE-N-296): 23-45 mm SL.

Remarks. This species was found in sand and gravel riffles of rivers in the Tarai, including the Mahakali (Nepal's western border) in the far western region and the Mechi (Nepal's eastern border) and Kosi in the East; also found in wetlands adjacent to the Kosi River.

Neoeucirrichthys maydelli Banarescu & Nalbant (Fig. 2)

KU 28516 (4: DE-N-221), Fisheries Development Division, Balaju, Kathmandu, Nepal (1: DE-N-223), KU 28902 (1: DE-N-248B), KU 29132 (1: DE-N-287), KU 29366 (4: DE-N-296): 18-36 mm SL.

Diagnosis. *Neoeucirrichthys maydelli* is distinguished from other cobitid loaches by the complete absence of barbels.

Description. Morphometric and meristic values as given in Table 1. Overall morphology as in Figure 2. Head and body strongly compressed. Head in lateral view triangular, with gently convex dorsal and ventral margins. Eye ovoid, horizontal axis longest; located high and entirely in dorsal half of head. Gill openings restricted, extending from just below posttemporal to just below base of first pectoral-fin ray. Slit for erectile suborbital spine extending from vertical through midway between posterior margin of posterior nares to anterior orbital margin to below vertical through middle of eye. Suborbital spine bifid, with medial point longest and extending to vertical through anterior third of eye. Mouth horse-shoe-shaped (Fig. 3). Very shallow rostral groove present along anterior margin of upper lip. Upper and lower lips moderately thick, slightly papillate; lower lip with fleshy lobe at rictus. Lower jaw with a weak symphyseal knob. Post-labial groove present along posterior margin of lower lip. Groove interrupted medially by narrow frenum between skin of throat and of lower jaw. Barbels absent.

Body deepest at origin of first dorsal-fin ray. Dorsal profile rising gently from tip of snout to

nape, horizontal from nape to origin of dorsal fin and sloping gently ventrally from origin of dorsal fin to end of caudal peduncle. Ventral profile convex to anal-fin base, then sloping dorsally to end of caudal peduncle. Dorsal-fin origin located slightly behind pelvic-fin origin, at approximately halfway along SL. Caudal fin emarginate, upper and lower lobes subequal. Pectoral fin sexually dimorphic, with extension and ramification of distal portion of first branched pectoral-fin ray in males. Dorsoposterior surface of first three or four and dorsal surfaces of last three or four branched pectoral-fin rays thickened, with elongate tubercles arranged in oblique striae (Fig. 4).

General characteristics of color pattern as given in Figure 2. Body dark yellow in 70 % ethanol. Series of 8-9 small dark spots on dorsal midline of body; dark spots interspersed with fainter dark melanophores forming irregular reticulate pattern and extending to dorsal third

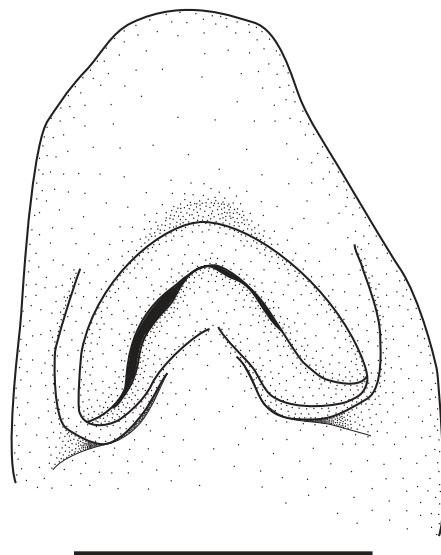


Fig. 3. *Neoeucirrhichthys maydelli*, KU 28902, 29.4 mm SL; ventral view of mouth. Scale bar 1 mm.

Table 1. Morphometric and meristic data for *Neoeucirrhichthys maydelli* (n=4).

| | KU 28902 | KU 29132 | KU 29366 | KU 29366 |
|-----------------------------------|-------------|-------------|-------------|-------------|
| SL (mm) | 29.4 | 35.2 | 30.7 | 36.2 |
| Morphometrics | | | | |
| In percent standard length | | | | |
| Predorsal length | 54.4 | 51.1 | 53.1 | 51.1 |
| Preanal length | 74.5 | 73.9 | 72.6 | 69.6 |
| Prepelvic length | 53.4 | 50.6 | 49.8 | 48.6 |
| Prepectoral length | 20.7 | 20.2 | 21.5 | 20.4 |
| Length of dorsal-fin base | 12.6 | 9.7 | 11.1 | 11.0 |
| Length of anal-fin base | 9.5 | 10.5 | 8.1 | 8.6 |
| Pelvic fin length | 12.9 | 13.9 | 14.7 | 14.6 |
| Pectoral fin length | 13.3 | 15.1 | 12.4 | 12.7 |
| Caudal fin length | 21.8 | 18.2 | 18.6 | 21.5 |
| Body depth at dorsal origin | 12.6 | 10.8 | 11.1 | 10.8 |
| Caudal peduncle depth | 7.1 | 6.5 | 5.9 | 6.4 |
| Caudal peduncle length | 14.6 | 17.0 | 17.9 | 19.6 |
| Head length | 20.4 | 18.2 | 20.2 | 19.9 |
| Head width | 6.5 | 4.8 | 4.2 | 5.0 |
| In percent head length | | | | |
| Snout length | 28.3 | 31.3 | 32.3 | 31.9 |
| Intraorbital distance | 10.0 | 9.4 | 9.7 | 8.3 |
| Eye diameter | 15.0 | 15.6 | 16.1 | 15.3 |
| Meristics | | | | |
| Dorsal-fin rays | iii,7 | iii,7 | iii,7 | iii,7 |
| Anal-fin rays | ii,5 | ii,5 | ii,5 | ii,5 |
| Pelvic-fin rays | i,5 | i,5 | i,5 | i,5 |
| Pectoral-fin rays | i,7 | i,7 | i,7 | i,7 |
| Caudal-fin rays | i,7,8,i | i,7,8,i | i,7,8,i | i,7,8,i |

of body. Series of 11-12 horizontally elongate dark spots on sides of body along horizontal myosepta. Prominent dark ovoid spot at dorsal half of caudal-fin base. All fins hyaline, with dark melanophores forming series of transverse bands.

Distribution. *Neoeucirrhichthys maydelli* is also known from the Brahmaputra River drainage in Assam (Janali River at Raimona) and Bangladesh (Tangan River at Thakurgaon), and the Meghna River drainage (Dharla River at Kurigram, Sari River at Jaintapur, Surma River at Lubachara; Rahman, 1990). In Nepal, the species was found in gravel riffles of rivers in the Tarai, including the Mechi and Kosi in the East and the Chaudhar in the Far West.

Remarks. *Neoeucirrhichthys maydelli* is diagnosed from other cobitid loaches by the complete absence of barbels and an unusual lip structure in which Banarescu & Nalbant (1968) stated that the lower lip is "... in continuation not with the upper, but with the skin on the snout ..." (this is described in greater detail in a preceding paragraph as "... skin in front of upper lip thickened, forming like a parallel doublure on the upper lip ... lower lip is in continuation not with the upper, but with its doublure ..."). Close examination of the material from Nepal agrees with the former character (lack of barbels) but not the latter

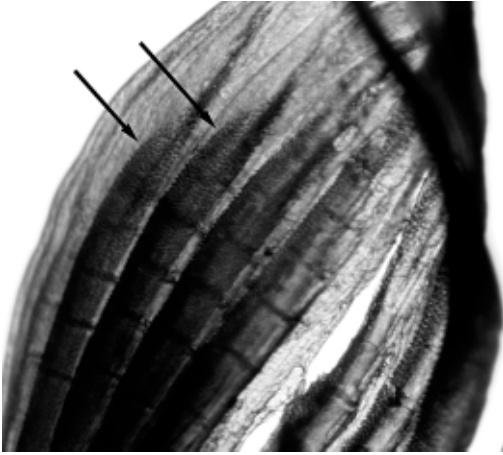


Fig. 4. *Neoeucirrhichthys maydelli*, KU 29132, 35.2 mm SL; left pectoral fin (anterior rays to right) showing elongate tubercles arranged in striae on thickened skin over fin rays (indicated by arrows) in males. Photograph taken with Nikon D200 DSLR using Nikon LV-TV TV tube on a Nikon SMZ-800 binocular dissecting microscope.

(lower lip not joined to upper lip but to skin on snout). We surmise that what Banarescu & Nalbant referred to as the “doublure” (a flap of skin fringing the upper lip to which the lower lip is ostensibly attached instead of to the upper lip) is actually part of the upper lip proper. In some of the material we have examined, the upper lip is readily damaged, with the damage taking the form of a deep fissure in the middle of the upper lip running along the entire width of the gape. This gives the impression that there is a flap of skin parallel to the upper lip to which the lower lip is attached (compare Banarescu & Nalbant, 1968: fig. 14 (1) with our Fig. 3). Banarescu & Nalbant also did not mention any tubercles on the thickened pectoral-fin rays of the (male) holotype (although they noted the presence of sexual dimorphism in pectoral-fin ray morphology in this species). Our examination of the Nepalese material indicates that elongate tubercles are arranged in oblique striae and cover the dorsoposterior or dorsal surfaces of the pectoral-fin rays in males (Fig. 4).

The species has been recorded from the Meghna and Brahmaputra river drainages by Rahman (1990); the data published there agrees largely with that in the original description (see below), so we consider the Bangladesh specimens to be conspecific with the holotype. We could not

directly compare the Nepalese material (from the Ganges River drainage) with material from the Brahmaputra or Meghna river drainages to verify if the two populations are conspecific. However, our comparison with data published in the original description, Rahman (1990) and Menon (1992) indicates no significant differences between the two, although Banarescu & Nalbant (1968) and Menon (1992) report a larger eye for the holotype than either the Nepalese material or that reported by Rahman (1990; ca. 20 % HL vs. 15-16). With a small difference in a single morphometric, it is difficult to definitively conclude that more than one species is involved and we consider all material from the Brahmaputra, Ganges and Meghna river drainages to be conspecific.

Sisoridae

Glyptothorax alaknandi Tilak

OSUS 15716 (1: DE-N-17), Fisheries Development Division, Balaju, Kathmandu, Nepal (2: DE-N-229), KU 28653 (4: DE-N-229): 28-70 mm SL.

Remarks. This species was found in the Mahakali River in the Tarai of the Far West and the Kali Gandaki River in the hills of central Nepal, in shallow riffles with rocky substrate in strong current. This species occurred syntopically with *G. garhwali*.

Glyptothorax botius (Hamilton)

KU 38561 (1: DE-N-285): 79 mm SL.

Remarks. This species was found in the Kosi River in the lowland eastern Tarai. Because this fish was collected by local fishermen, no specific habitat information is available.

Glyptothorax garhwali Tilak

OSUS 15706 (11: DE-N-16), OSUS 15716 (16: DE-N-17), KU 29016 (5: DE-N-265), KU 29029 (1: DE-N-268): 35-109 mm SL.

Remarks. This species was found in the Kali Gandaki River in the hills of central Nepal. In shallow riffles over rocky substrate in strong current.

Nangra assamensis Sen

KU 29089 (6: DE-N-285), KU 29511 (1: DE-N-310), KU 29566 (1: DE-N-335): 71-76 mm SL.

Remarks. This species was found in the Kosi River in the eastern Tarai and the Narayani River in central Nepal. Because these fish were collected by local fishermen, no specific habitat

information is available. In northeastern India (West Bengal state), HHN collected material identified as juvenile *N. assamensis* from the Bhagirathi River, a tributary of the Hooghly River (Ganges River drainage). The habitat from which the fish were collected was a turbid, fairly swift flowing river with a bottom of very fine sand; the water was cool (ca. 22–24 °C).

Sisor rheophilus Ng

OSUS 16870 (1: DE-N-146), OSUS 17344 (1: DE-N-210), KU 29109 (4: DE-N-285), KU 29503 (1: DE-N-309): 82–142 mm SL.

Remarks. This species was found in the Kosi River in the eastern Tarai and the Narayani River in central Nepal, over areas with mainly sand and some rock, in moderate flow. Ng (2003) described this species from specimens collected from the Ganges River drainage in Bihar and Uttar Pradesh, India, where it can be found over sand in swiftly-flowing rivers.

Anabantidae

Anabas cobojius (Hamilton)

KU 28546 (1: DE-N-222), KU 29567 (1: DE-N-335): 81–102 mm SL.

Remarks. These specimens were purchased from fishermen contracted to collect fishes around the Kosi River Barrage in eastern Nepal, thus no specific habitat data are available.

Discussion

The ichthyology of Nepal is replete with varying accounts of the total number of fish species recorded for the country. Following early papers by Regan (1907), Hora (1937), Menon (1949), and DeWitt (1960), J. Shrestha (1981) produced her landmark monograph, which recorded 120 species. Rajbanshi (1982) gathered reports from the literature to list 171 fishes, including seven non-indigenous species. J. Shrestha (1994) increased her treatment to 129 species, and compiled literature to list 179 indigenous fishes, plus nine exotic species. T. K. Shrestha (1995) listed 183 species, including 10 non-indigenous fishes. J. Shrestha (1999) noted 186 species, including 11 non-natives. Rajbanshi (2005) listed 187 indigenous fish species for Nepal. Reasons for the varying accounts of number of fish species re-

corded for Nepal include the continued introduction of non-indigenous species for aquaculture and “improvement” of native fisheries, listing of synonyms, misidentifications, and an increase in ichthyological activity over the past 25 years, including published descriptions of new species (Terashima 1984; Ng & Edds 2004, 2005a,b; Ng 2006a) plus new records for species discovered to occur in the country (Edds 1985; Roberts 1994; Subba 1995; Subba & Ghosh 1996; Ng 2005, 2006b). The fact that seven of the 10 fishes recorded here are wide-ranging species collected from east to west across the Tarai implies that more sampling in Nepal will likely yield more fish species. This is especially likely in the lowlands, where habitat diversity and fish species richness is much greater than in the hills (Edds 1993). However, Terashima’s (1984) discovery of three endemic species of *Schizothorax* from Lake Rara in the hills of midwestern Nepal, plus recent descriptions of three new species of *Pseudecheneis* from the hills of eastern, midwestern, and western Nepal (Ng & Edds 2005b, Ng 2006a) suggest that additional fish species could also be discovered in the uplands.

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