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First Taxonomic Inventory of Fishes in Anuas of Barak Valley Region in North-East India Biodiversity Hotspot

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Abstract

Ichthyofaunal surveys in the Anuas of Barak Valley Region in North-East India notably, Salchapra, Fulbari, Rupairbala, Baskandi and Shiv Narayanpur revealed the occurrence of 45 species. These include 23 species under Cypriniformes, 8 species under *Anabantiformes*, 6 species under *Siluriformes*, 2 species each under *Synbranchiformes* and *Cichliformes* and 1 species each under *Osteoglossiformes*, *Clupeiformes*, *Beloniformes*, *Mugiliformes* and *Tetraodontiformes*. The conservation status of *Neolissochilus hexagonolepis*, *Labeo pangusia* and *Ompok bimaculatus* are near threatened. The occurrence of fish species like, *Puntius*, *Gudusia*, *Salmostoma*, *Amblypharyngodon* and *Trichogaster* in almost all the Anuas indicate the similarity in the ichthyospecies composition and reflects the common origin of the Anuas and their fishes from the River Barak.

Keywords: Ichthyofauna; Biodiversity; Taxonomy; Anuas; Barak valley; Assam; Hotspot; Wetlands

Introduction

Aquatic biodiversity has been impacted by human interventions. A number of studies have been done on different aspects of fish and their habitats notably [1-28]. But not much work has been done on the wetlands, particularly, on the `Anua's, or the river-formed oxbow wetlands, specifically with regard to taxonomy of fishes. The present communication, therefore, is a pioneering attempt to take care of the void revealing the taxonomy of the fishes occurring in the `Anuas' in the Barak valley region of Assam.

Fish constitutes almost half of the total number of vertebrates on the earth. India is one of the mega biodiversity countries in the World. The hills and the undulating valley of this region gives rise to a large number of torrential hill streams, which lead to big rivers that finally become part of the Ganga-Brahmaputra-Barak-Chindwin-Kolodyne-Gomati-Meghna system, identifying North-Eastern (NE) region in the Eastern Himalayan (EH) stretch as a hotspot of biodiversity [19,29-36]. Out of 2,500 species of fishes in India, 930 are freshwater (FW) inhabitants and 1,570 are marine [8,11,32]. This bewildering ichthyodiversity of this region has been attracting many ichthyologists from different regions of the world.

According to IUCN (1970), wetlands are natural or artificial masses of water, generally not exceeding 6 meters in depth with little flow such as marsh or fen and may be temporary or permanent. Wetlands are thus, basically areas where the soil is saturated with water for some time during the year. In Assam, Tripura and Bangladesh, three kinds of wetlands are generally found, they are locally known as Beels, Haors and Anuas. Beels are perennial wetlands which contain water throughout the year. Haors are seasonal wetland which contain water only for some periods of the year particularly, during the rainy season. As such, they are also called `floodplain wetlands. Anuas are perennial oxbow-type wetlands formed due to changes in river course which may or may not retain connection with the original river.

The present account is a pioneering ichthyo taxonomic study on the Anuas in Barak Valley region of Assam in North-East (NE) India.

Material and Methods

Fish samples were collected through experimental fishing using cast nets (diameter 3.7m - 1.0m), gill nets (vertical height 1.0m - 1.5m, length 100m - 150m), drag nets (vertical height 2.0m), triangular scoop nets (vertical height 1.0 m) and a variety of traps. Camouflaging technique was also used to catch the fishes. Fish have been preserved at first in concentrated formaldehyde in the field itself and then in 10% formalin. Fishes have been identified after standard literature [29,30,32,37-44] and fishbase. org. The arrangement of classification, followed here, is that of Greenwood et a1. [45], Jayaram [29-32] and Kar & Khynriam [16].

Results and Discussion

Pioneering taxonomic studies of fishes in Anuas of Barak Valley Region in North-East India Biodiversity hotspot revealed the occurrence of 45 species under 35 genera, 22 families and 10 orders. These include 23 species under Cypriniformes, 8 species under *Anabantiformes*, 6 species under *Siluriformes*, 2 species each under *Synbranchiformes* and *Cichliformes* and 1 species each under *Osteoglossiformes*, *Clupeiformes*, *Beloniformes*, *Mugiliformes* and *Tetraodontiformes*. The species composition is highest among the Cypriniformes and lowest among the *Osteoglossiformes*, *Clupeiformes*, *Beloniformes* and *Tetraodontiformes*.

The tropical Asian ichthyofauna constitutes a substantial part of the total lotic and lentic fish community. The Indian Peninsula supports 930 species of native FW fishes, which belong to 87 families. Several of tropical Asian FW fish share the African riverine ecosystems, both regarding the family and the generic level. *Cyprinids*, certain *Siluriform* catfishes, *Channids*, *Mastacembelids* and *Notopterids* are shared between the two regions. At the generic level, Anabas, Clarias, Garra, Labeo, and *Mastacembelus* occur in both African and Asian rivers. Tilapia, which have been introduced into India from Africa, have become widespread all-over southern Asia. They have also replaced the native population in some places due to their dominance. There is a large-scale abundance of *Cyprinids* and *Balitorids* in Asia, in contrast to the predominance of Characids and Cichlids in Africa. Incidentally, research on the taxonomy and associated habitat parameters of the tropical fish communities is limited. Further, there have been studies on fish diets and resource partitioning in specific Sri Lankan hill streams. Niche' segregation is dependent on seasonality, diet, and habitat utilization, as was revealed from their studies. Also, there are morphological segregation and specialization in these fish communities [16,19,46].

The ichthyospecies recorded from different Anuas of Barak valley are summarized in table 1. *Gudusia chapra* and *Salmostoma bacaila* are usually perennial inhabitants in the downstream stretch of River Barak. Their occurrence in the Anuas indicate that the Anuas were portions of the river Barak, and in fact, there are so. Due to tremendous number of tortuous turns in the highly meandering River Barak, there have been always tendencies for the river to make a straight course by cutting-off the meandered portion as oxbow lakes, and these river-formed oxbow lakes are locally called `Anuas' [47-49].

Table 1: Distribution and conservation status of ichthyospecies in different Anuas of Barak valley.

Sl. No.	Systematic List	Baskandi	Fulbari	Rupairbala	Salchapra	Shiv Narayanpur	Conservation Status
	Phylum: Chordata Class: Actinopteri						
	Order: Osteoglossiformes Family: *Notopteridae*						
1	*Notopterus synurus* (Bloch & Schneider, 1801)	+		+			Least Concern
	Order: Clupeiformes Family: *Clupeidae*						
2	*Gudusia chapra* (Hamilton 1822)		+	+	+	+	Least Concern
	Order: Cypriniformes Family: *Danionidae*						
3	*Salmostoma bacaila* (Hamilton, 1822)					+	Least Concern
4	*Laubuka laubuca* (Hamilton, 1822)					+	Least Concern
5	*Danio dangila* (Hamilton, 1822)			+			Least Concern
6	*Devario aequipinnatus* (McClelland, 1839)			+	+		Least Concern
7	*Amblypharyngodon mola* (Hamilton, 1822)				+	+	Least Concern

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	Family: Cyprinidae						
8	*Neolissochilus hexagonolepis* (McClelland, 1839)	+					Near Threatened
9	*Osteobrama cotio* (Hamilton 1822)					+	Least Concern
10	*Puntius chola* (Hamilton, 1822)		+		+		Least Concern
11	*Puntius sophore* (Hamilton, 1822)			+			Least Concern
12	*Pethia ticto* (Hamilton, 1822)	+				+	Least Concern
13	*Cirrhinus mrigala* (Hamilton, 1822)				+		Least Concern
14	*Cirrhinus reba* (Hamilton, 1822)				+		Least Concern
15	*Labeo bata* (Hamilton, 1822)				+		Least Concern
16	*Labeo gonius* (Hamilton, 1822)			+	+		Least Concern
17	*Labeo pangusia* (Hamilton, 1822)					+	Near Threatened
18	*Tariqilabeo latius* (Hamilton, 1822)				+		Least Concern
19	*Garra annandalei* Hora, 1921	+					Least Concern
20	*Garra gotyla* (Gray, 1832)					+	Least Concern
	Family: *Psilorhynchidae*						
21	*Psilorhynchus nudithoracicus* Tilak and Hussain, 1980	+					Least Concern
	Family:*Nemacheilidae*						
22	*Paracanthocobitis botia* (Hamilton, 1822)	+					Least Concern
	Family: *Botiidae*						
23	*Botia dario* (Hamilton, 1822)	+		+			Least Concern
24	*Botia rostrata* Gunther,1868	+					Least Concern
	Family: *Cobitidae*						
25	*Lepidocephalichthys guntea* (Hamilton, 1822)				+		Least Concern
	Order: Siluriformes Family: *Bagridae*						
26	*Mystus cavasius* (Hamilton, 1822)		+	+			Least Concern
27	*Mystus bleekeri* (Day, 1877)				+		Least Concern
28	*Mystus vittatus* (Bloch, 1794)		+		+		Least Concern
	Family: *Ailiidae*						
29	*Clupisoma garua* (Hamilton, 1822)	+					Least Concern
	Family: *Siluridae*						
30	*Ompok bimaculatus* (Hamilton, 1822)			+			Near Threatened
	Family: *Sisoridae*						
31	*Gagata cenia* (Hamilton, 1822)				+		Least Concern
	Order: Beloniformes Family: *Belonidae*						
32	*Xenentodon cancila* (Hamilton, 1822)				+		Least Concern

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	Order: Synbranchiformes Family: *Mastacembelidae*						
33	*Mastacembelus armatus* (Lacepede, 1800)	+			+		Least Concern
34	*Macrognathus pancalus* Hamilton, 1822			+	+	+	Least Concern
	Order: Cichliformes Family: *Ambassidae*						
35	Chanda nama Hamilton, 1822				+		Least Concern
36	*Parambassis ranga* (Hamilton, 1822)		+	+			Least Concern
	Order: Mugiliformes Family: *Mugilidae*						
37	*Rhinomugil corsula* (Hamilton, 1822)			+			Least Concern
	Order: Anabantiformes Family: *Badidae*						
38	*Badis badis* (Hamilton, 1822)	+		+			Least Concern
	Family: *Gobiidae*						
39	*Glossogobius giuris* (Hamilton, 1822)			+	+		Least Concern
	Family: *Anabantidae*						
40	*Anabas testudineus* (Bloch, 1792)			+			Data Deficient
	Family: *Channidae*						
41	*Channa punctata* (Bloch, 1793)		+		+		Least Concern
42	*Channa gachua* (Hamilton, 1822)	+			+		Least Concern
	Family: *Osphronemidae*						
43	*Trichogaster fasciata* Bloch & Schneider			+	+	+	Least Concern
44	*Trichogaster chuna* (Hamilton, 1822)					+	Least Concern
	Order: Tetraodontiformes Family: *Tetraodontidae*						
45	*Leiodon cutcuti*a (Hamilton, 1822)				+		Least Concern

Notwithstanding the above, the occurrence of *Neolissochilus*, *Garra* and *Psilorhynchus* in the Anuas is noteworthy. These fishes might have swept into the Anuas from the River Barak through the still existing connections with the river. In addition to the above, occurrence of fish species like, *Puntius, Gudusia*, *Salmostoma*, *Amblypharyngodon*, *Trichogaster* etc., in almost all the Anuas indicate the similarity in the ichthyospecies composition and reflects the common origin of the Anuas and their fishes from the river Barak. Distribution and conservation status of the ichthyospecies in different Anuas of Barak valley have been presented in table 1.

Systematic account

Phylum: Chordata

Class: Actinopteri

Order: Osteoglossiformes

Family: *Notopteridae*

Genus: *Notopterus Lacepede*

Notopterus Lacepede (1800) Hist nat Poiss 2 :190 (Type species: *Gymnotus notopterus Pallas*, by absolute tautonomy), Roberts 1992, Ichthyol Explor Freshwaters 2(4): 361-383 (revision), Talwar and Jhingran, 1991, Inland Fishes 1: 62; [30], FW Fishes of the Indian Region: 20, [43], Rec Zool Surv India Occ Paper No. 175: 9.

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Generic Characters: Body oblong, laterally compressed; cranio-dorsal profile straight or

slightly concave. Abdomen with 25-28 pre-pelvic double serrations. Head compressed. Mouth wide, cleft of mouth extending upto or beyond posterior border of eyes. Eyes moderate, dorso-lateral. Gill membranes partly united. Dorsal fin small, tuft-like, inserted near middle of body with 8-10 rays. Anal fin is very long, low, ribbon-like, with 100-135 rays: confluent with the caudal fin. Pelvic fins rudimentary. Caudal fin small. Scales small. The lateral line complete, more or less arched with about 180 scales.

Material examined: Assam, Cachar district, Baskandi Anua, 2 ex., February 2000, Coll Prof

D Kar and Party. First report.

Key to species: Cranio-dorsal profile straight of slightly concave.

Notopterus synurus

Distribution: Throughout India, Bangladesh, Indonesia, Java, Laos, Malaysia, Myanmar, Nepal,

Pakistan, Sumatra and Thailand.

IUCN status: Least Concern (LC).

Order: Clupeiformes

Family: *Clupeidae*

Genus: ***Gudusia Fowler***

Gudusia Fowler, 1911. Proc Acad Nat Sci, Philad 63: 207 (Type species: *Clupanodon chapra* Hamilton-Buchanan, by original designation); Whitehead, 1985, FAO Fish Synopsis (125) 7(1): 228-230, Talwar and Jhingran, 1999, Inland Fishes 1: 95, [43] Rec Zool Surv India, Occ Paper No 175: 7, [30], FW Fishes of the Indian Region: 41; Vishwanath 2002, Fishes of North-East India, NATP Pub 29.

Generic characters: Body well-compressed and oblong. Abdomen serrated with 18 to 19 pre

pelvic and 8 to 10 post-pelvic scutes. Head short and much compressed. Snout rounded. Mouth terminal. Cleft of mouth not extending upto orbit. Eyes large, lateral. With a broad adipose eyelid. The Dorsal fin inserted above pelvic fin origin with 14 to 17 rays. Anal fin with 18 to 29 rays. Caudal fin forked. Scales small. Lateral line absent.

Material examined: Assam, Cachar district, Salchapra Anua, 1 ex., May 2007, 1 ex, 17. 01.

2009; Fulbari Anua, 4 ex, 18. 10. 2000, Rupairbala Anua, 6 ex, 26.01.2000, Shiv Narayanpur Anua, 1ex., 18.10. 2000 and 2 ex, 3.11. 2007. Coll Prof D Kar and Party.

Key to species: Anal fin with 18 to 22 rays. Body with round spots and absence of any cross

bars on sides.

Gudusia chapra

Distribution: Almost throughout India including Salchapra Anua, Fulbari Anua; Rupairbala

Anua, Shiv Narayanpur Anua (all first reports) and also, other water bodies in NE India, India (as a whole), Bangladesh, Indonesia Malaya, Nepal, Pakistan.

IUCN status: Least Concern (LC).

Order: Cypriniformes

Family: *Danionidae*

Genus: ***Salmostoma Swainson***

Salmophasia Swainson, 1839, Nat Hist Fish 2: 184 (Type species, *Cyprinus oblonga* Swainson= Cyprinus bacaila Hamilton-Buchanan, by subsequent designation), Banarescu, 1968, Rev Roum Biol Zool 13: 13-14, Howes, 1979, Bull Br Mus nat Hist (Zool.) 36(3): 190-191; Talwar and Jhingran, 1999, Inland Fishes 1, [30], FW Fishes of the Indian Region: 65, [43] Rec Zool Surv India Occ Paper No. 175: 24, Vishwanath, 2002, Fishes of North-East India, NATP Pub: 51.

Generic characters: Body elongated, compressed. Abdomen keeled from below pectoral fins.

to anus, keel not hardened. Head moderate to long, compressed. Snout blunt. Mouth oblique to body axis; cleft reachin anterior margin of orbit or slightly ahead. Lower jaw longer with a knob (generally present) at the symphysis of the 2 bones. Dorsal fin short; inserted mostly opposite to anal fin (or may be little ahead in some cases) with usually 7 to 10 rays. Pectoral fins long and presence of an elongated axillary scale. Anal fin shaort with 14-20 rays. Caudal fin deeply forked. Ll completes with usually 39 to 112 scales.

Material examined: Assam, Cachar district, Shiv Narayanpur Anua, 1 ex., 18.10. 2000. Coll: Professor D Kar and Party. First report.

Key to species: Presence of 4-6 Ll scales between Ll and pelvic fin base

Salmostoma bacaila

Distribution: Almost throughout India, Bangladesh, Nepal, etc.

IUCN status: Least Concern (LC).

Genus: ***Laubuka Bleeker***

Laubuka Bleeker, 1859, Ichth Archipel Indici Prodr 2: 438,

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Cyprini (Type- species, *Perilampus guttatus* McClelland = Cyprinus (Chela) laubuca (Hamilton), by subsequent monotypy.

Generic Characters: Body long, compressed. Abdomen keeled from below pelvic origin to

anus. Head short, compressed. Snout blunt, mouth oblique, cleft reaching below front margin of eye. The Dorsal fin inserted slightly behind anal fin origin with generally 9 to 13 rays. Pelvic fins inserted nearer to pectoral fins rather than to anal; outer pelvic ray elongated. Pectoral fins stout and elongate, considerably longer than head. Anal fin generally with 13 to 26 rays. Caudal lobes equal. Ll generally with 34 to 68 scales.

Material examined: Assam, Cachar district, Shiv Narayanpur Anua at Katigorah, 1 ex., 18.10.

2000. Coll: Prof D Kar and Party. First report.

Key to species: Ll scales 34 to 37. Body depth 22.3 to 28.6 % TL.

Laubuka laubuca

Distribution: Almost throughout India including Shiv Narayanpur Anua at Katigorah in

Cachar, Assam; also in Bangladesh, Myanmar, Nepal, Pakistan, Sri Lanka, etc.

IUCN status: Least Concern (LC).

Genus: *Danio Hamilton*

Generic characters: Body elongate, compressed, abdomen rounded, head moderate, blunt,

snout obtuse, mouth anterior; cleft of mouth shallow and protractile, directed obliquely upwards. The end of lower jaw in line with dorsal profile and with a symphysial knob. Eyes large, centrally placed, not visible from below ventral surface. Lower jaw prominent with a knob at the symphysis. One or two pairs of barbells, rudimentary or none. The Dorsal fin inserted opposite inter-space between anal and pelvic fins, nearer to caudal fin base than to tip of snout, with 10 or 19 rays. Anal fin with nine to 14 rays. Caudal fin emarginated, lunate or forked. Scales moderate. Lateral line concave, complete with 32 to 42 scales. A stripe on the anal fin rays. An anterior lateral extension ventral on the dentary. Two or more pigmented stripes on the caudal fin rays.

Material examined: Assam, Cachar district, Rupairbala Anua, 1 ex., 26.01.2000. Coll. Prof D

Kar and Party.

Key to species: Anterior rim of orbit without spine. Body with dark lateral bands breaking up.

into network anteriorly.

Danio dangila

Distribution: Northeast India, Bihar, Eastern Himalayas, Madhya Pradesh, Uttar Pradesh,

West Bengal in India, Bangladesh, Bhutan, Myanmar, Nepal.

IUCN Status: Least Concern (LC).

Genus: *Devario Heckel*

Devario Heckel, 1843, Ichthyologie (von Syrien) in von Russesa, Ereisen in Europa, Asia and Africa 1(2): 1015 (Type species: *Cyprinus devario* Hamilton monotypy).

Generic characters: Mainly differentiated from Danio by a short and wide pre-maxillary

ascending process, a short maxillary barbel, a "P stripe" extending to median caudal-fin rays. Infraorbital five or not or slightly reduced.

Material examined: Assam, Cachar district, Salchapra Anua, 2 ex, May, 2007. Coll Prof D

Kar and Party. First Report.

Key to species: Lateral line scales, 31-34; dorsal fin with 8-11 branched rays. A lateral band

along the sides of the body with thinner golden bands above and below it.

Devario aequipinnatus

Distribution: Throughout India, Bangladesh, Bhutan, Indochina, Myanmar, Nepal, Pakistan,

Sri Lanka and Thailand.

IUCN Status: Least Concern (LC).

Genus: *Amblypharyngodon Bleeker*

Amblypharyngodon Bleeker, 1860. Natuurkundig Tijdschrift voor Nederlandsch Indië 20(3): 433 (Type species: *Cyprinus* mola Hamilton 1822 by being a replacement name).

Generic characters: Body moderately long, sub-cylindrical. Abdomen round. Head much

compressed. Snout obtusely rounded. Mouth wide, antero-lateral and not protractile. Eyes centrally placed and large; they are not visible from below ventral surface. Upper lip absent. Lower lip with a short labial fold. Lower jaw prominent with a thin sharp edge and a symphysial knob which fits into the upper jaw. Barbells absent. A Dorsal fin inserted little behind insertion of pelvic fins. Anal fin short. Caudal fin forked. Scales minute.

Material examined: Assam, Cachar district, Salchapra Anua, 1 ex, May 2007, 2 ex, 17.01. 2009

Shiv Narayanpur Anua, 3 ex, 3.11. 2007. Coll. Prof D Kar and

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Party. First Report.

Key to species: Lateral line incomplete with 65-91 scales. A silvery lateral band with dark

markings on dorsal, anal and caudal fins present. The observations are given in.

Amblypharyngodon mola

Distribution: Throughout India, Afghanistan, Bangladesh, Myanmar, Nepal, Pakistan, Sri

Lanka, etc.

IUCN status: Least Concern (LC).

Family: *Cyprinidae*

Genus: ***Neolissochilus Rainboth***

Neolissochilus Rainboth, 1985, Beaufortia, 35(3): 26 (Type species, *Barbus stracheyi* Day, 1871, by original designation).

Diagnostic characters: Body deep anteriorly. Trunk and peduncle smoothly tapering from

anterior end to posterior end. Abdomen rounded. Head broad. Snout blunt. Mouth oblique, near terminal to horizontal or inferior. Species with horizontal mouth often have the lobe of snout overhanging the upper lip. Mouth smoothly rounded when the lower jaw is blunt. Eyes in upper half of head; visible both from dorsal and ventral surfaces. Lips thick. Cheeks with many tubercles. Labial fold interrupted. Scales are large and heavy.

Material examined: Assam, Cachar district, Baskandi Anua, 1 ex., February 2000. Coll Prof

D Kar and Party. First Report.

Key to species: Mouth nearly truncates. Edge of lower jaw sharp.

Neolissochilus hexagonolepis

Distribution: Throughout NE India, China, Myanmar, Malaya, Thailand, Vietnam, etc.

IUCN Status: Near Threatened (NT).

Genus: ***Osteobrama Heckel***

Osteobrama Heckel, 1843, Ichth. Russegger's Reisen in Europe, Asia and Africa, 1: 1033 (Type species, *Cyprinus cotio*, Hamilton-Buchanan, by subsequent designation), Silas, 1952, proc nat Inst Sci India, 18 (5): 430, Talwar and Jhingran, 1991, Inland Fishes I: 237, [30], FW Fishes of the Indian Region: 101, [43] Rec Zool Surv. India, Occ Paper No. 175: 62, nath and dey, 2000, Fish and Fisheries of NE India (Arunachal Pradesh): 44; Vishwanath, 2002, Fishes of Northeast India, NATP Pub.: 67.

Generic Characters: Body short, deep, compressed. Abdomen edge sharp, keeled entirely or

only from pelvic fin base to vent. Head short; snout bluntly rounded. Mouth small, somewhat directed upwards. Eyes large, lateral. Upper jaw slightly longer. Barbels, 4 2 or none. The Dorsal fin inserted slightly behind pelvic fins extending over anal fin with 11 to 12 rays and a strong serrated spine. Anal fin long with 14 to 36 rays. Caudal fin deeply forked. Lateral line complete generally with 57 scales.

Material examined: Assam, Cachar district, Shiv Narayanpur Anua at Katigorah, 2 ex, 18.10.

2000. Coll Prof D Kar and Party. First report.

Key to species: Presence of 14 scales between lateral line (Ll) and pelvic fin base. Ll scales 48

to 66. Presence of 33 to 38 rays in anal fin.

Osteobrama cotio

Distribution: Almost throughout India, Bangladesh, Myanmar, Nepal, Pakistan, Sri Lanka, etc.

IUCN status: Least Concern (LC).

Genus: ***Puntius Hamilton***

Puntius Hamilton, 1822, Fish Ganges :310, 388 (Type species, *Cyprinus sophore*, Hamilton-Buchanan, by subsequent designation), [30], rec Zool Surv. India Occ Paper No. 135: 1-178 (revision), Talwar and Jhingran, 1991, Inland Fishes 1: 250, [30], FW Fishes of the Indian Region: 108, [43], Rec Zool Surv. India, Occ. Paper No. 175: 65, Nath and Dey, 2000. Fish and Fisheries of NE India (Arunachlal Pradesh): 39; Vishwanath, 2002, Fish and Fisheries of NE India, NATP Pub: 69.

Generic characters: Body short to moderately long, deep, compressed. Abdomen round. Head

short. Snout obtuse, conical or pointed; sometimes, may be with tubercles. Mouth arched, anterior or inferior. Upper jaw may be protractile. Eyes moderate to large, dorsolateral; they are not visible from below ventral surface. Lips thin, cover the jaws without any horny covering. Jaws simple without any tubercle at the symphysis. Barbels four, two or may be absent. Dorsal fin short inserted nearly opposite to pelvic fins. Anal fin short. Caudal fin forked. Scales small, moderate or large.

Material examined: Assam, Cachar district, Salchapra Anua, 3 ex., May 2007, 1ex, 17. 01.

2009, Fulbari Anua, 1 ex, 18.10.2000. Coll. Prof D Kar and Party. First report.

Key to species: Body marked with two conspicuous dark blotches.

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Puntius chola

Distribution: Throughout India, Bangladesh, Myanmar, Nepal, Pakistan, Sri Lanka, etc.

IUCN status: Least Concern (LC).

Material examined: Assam, Cachar district, Rupairbala Anua, 12 ex., 26.01.2000. Coll.

Prof. D. Kar and Party. First report.

Key to species: Pre-dorsal scales 8-10. Presence of a black spot-on dorsal fin and on caudal peduncle.

Puntius sophore

Distribution: Almost Throughout India, Bangladesh, Myanmar, Nepal, Pakistan, Sri Lanka, etc.

IUCN status: Least Concern (LC).

Genus: *Pethia Pethiyagoda*

Pethia, 2012, Pethiyagoda, Meegaskumbura and Maduwage: 80 (Type species: *Barbus nigrofasciatus* Gunther, 1868. Type by original designation). Pethiyagoda, Meegaskumbura and Maduwage, 2012.

Generic characters: Body short to moderately long, deep, and compressed. Abdomen

rounded. Head short. Snout obtuse, conical, or pointed; sometimes, it may have tubercles. Mouth arched, anterior or inferior. The upper jaw may be protractile. Eyes moderate to large, dorsolateral; they are not visible from below the ventral surface. Lips thin, cover the jaws, without any horny covering. Jaws simple without any tubercle at the symphysis. Barbels four, two or may be absent. Dorsal fin short inserted nearly opposite to pelvic fins. Anal fin short. Caudal fin forked. Scales small, moderate, or large.

Material examined: Assam, Cachar district, Baskandi Anua, 3 ex., February 2000. Shiv

Narayanpur Anua, 2 ex, 18.10. 2000. Coll. Prof D Kar and Party. First report.

Key to species: Presence of 22-25 Lateral line scales. Pre-dorsal scales (PDS) usually 9.

Presence of a long transverse black blotch above pectoral fin and another almost similar on caudal peduncle over the end of anal fin, generally in fresh/live fishes. Usually, presence of a red border in the dorsal fins of males.

Pethia ticto

Distribution: Almost throughout India, Bangladesh, Myanmar, Nepal, Thailand, etc.

IUCN Status: Least Concern (LC).

Genus: *Cirrhinus Cuvier*

Cirrhinus (Oken), Cuvier, 1817, VKI Fische. IN: Isis order Encyclopadische Zeituny, 8: 113 (type species, *Cyprinus cirrhosus* Bleeker, by minotypy), -Banarescu, 1983, Rev Roum Biol (Zool). 28(1): 13-17 (revision).

Generic characters: Body moderate, elongate, compressed. Abdomen rounded. Head

short. Snout obtusely rounded, with thin skin covering it. Mouth wide, transverse. Eyes moderately large. Upper lip fringed or entire, not continuous with lower. Lower jaw sharp with a small tubercle at the symphysis. Barbels four, two or none. Dorsal fin inserted ahead of pelvic fins. Anal fin short. Scales of varying sizes. Lateral line complete.

Material examined: Assam, Cachar district, Salchapra Anua, 2 ex., 17.01.2009. Coll. Prof

D Kar and Party. First Report.

Key to species: Lateral line scales 40 to 45. Dorsal fin with 15 or 16 rays.

Cirrhinus mrigala

Distribution: Almost throughout India including Salchapra Anua, in Cachar, Assam; also

in Bangladesh, Darjeeling, and Eastern Himalaya. South and South-Eastern Asia, etc.

IUCN Status: Least Concern (LC).

Material examined: Assam, Cachar district, Salchapra Anua, 1 ex., 17. 01. 2009. Coll. Prof. D. Kar and Party. First Report.

Key to species: Lateral line scales 34 to 38. Dorsal fin less than body height.

Cirrhinus Reba

Distribution: Almost throughout India, Bangladesh, Pakistan, Punjab, etc.

IUCN Status: Least Concern (LC).

Genus: *Labeo Cuvier*

Labeo cuvier, 1816, Regne Animale, 2 (ed.1): 194 (Type species, *Cyprinus niloticus* Forskal, by subsequent designation); Jayaram and Dhas,1998, Occ Papers Zool Surv. India, No. 183: 1-143, Talwar and Jhingran, 1991, Inland Fishes I: 193, [30] FW Fishes of the Indian Region: 132, [43], Rec Zool Surv India Occ. Paper No. 175: 125; Nath and Dey, 2000, Fish and Fisheries of NE India (Arunachal Pradesh): 45; Vishwanath, 2002, Fish and Fisheries of NE India, NATP Pub: 611.

Generic characters: Body of moderate size; sometimes, could be much big in size,

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elongated, abdomen rounded. Head quite large. Snout more or less swollen, rounded or truncated; often projecting beyond mouth.; covered by a groove across and with or without tubercles; generally overhanging the mouth. Mouth usually semilunar and inferior. Eyes moderately large, generally placed at the commencement of the posterior half of the head. Lips thick, fleshy and fringed; continuous at the angle of the mouth forming a labial fold. Post-labial groove may be continuous or discontinuous. Barbels may be present or absent. Dorsal fin inserted above anterior to origin of pelvic fins with 11 to 26 rays. Anal fin short with 7 or 8 rays. Caudal fins are deeply forked or emarginated. Lateral line complete.

Material examined: Assam, Cachar district, Salchapra Anua, 2 ex., May 2007. Coll. Prof

D Kar and Party. First Report.

Key to species: Snout conical and projecting; lips thin; lower lip fringed. Presence of

generally, 6 to 6.5 scales between lateral line (Ll) and pelvic fin base.

Labeo bata

Distribution: Almost throughout India, Bangladesh, Myanmar, Nepal, Pakistan, Sri Lanka, etc.

IUCN Status: Least Concern (LC).

Material examined: Assam, Cachar district, Salchapra Anua, 1 ex., 17.01.2009, Rupairbala

Anua, 2 ex., 26.01.2000. Coll. Prof D Kar and Party.

Key to species: Barbels two very short pairs, rostral and maxillary. Dorsal fin with 16-18

branched rays. Lateral line with 65 - 84 scales. Lips thick and fringed.

Labeo gonius

Distribution: North and Northeast India, Afghanistan, Bangladesh, Myanmar, Nepal, Pakistan.

IUCN Status: Least Concern (LC).

Material examined: Assam, Cachar district, Shiv Narayan Anua, 1 ex., 18.10.2000. Coll Prof

D Kar and Party. First report.

Key to species: Presence of generally 6 to 6.5 scales between lateral line (Ll) and pelvic fin

base. Eye 17.2-25.3 % HL.

Labeo pangusia

Distribution: Almost throughout India, Bangladesh, Myanmar, Nepal, Pakistan, Sri Lanka, etc.

IUCN Status: Near Threatened (NT).

Genus: *Tariqilabeo Kuhl van Hasselt*

Tariqilabeo Kuhl van Hasselt, 1823, Algem-Konst Letter-Bode, 2, pp: 132 (Type species, *Tariqilabeo oblongus (Crossocheilus oblongus)* Kuhl and van Hasselt, by monotypy), Mukerji 1934, J Bombay nat Hist Soc 37(1): 49-54, Banarescu 1986, Trans Mus Hist natn Gr Antipa 28: 142-154, Kottelat 1987, Jap J Ichthyol, 33(4): 371, Talwar and Jhingran, 1999, Inland Fishes 1: 413, [30], FW Fishes of the Indian Region: 152, [43], Rec Zool Surv, India Occ Paper No. 175: 139.

Generic Characters: Body more or less elongate. Ventral profile horizontal or slightly

curved. Abdomen rounded. Head small. Snout obtusely pointed. Mouth inferior. Eyes large. Post-labial groove generally present. Rostral cap thick; its margin fimbriate. The presence of a pair of rostral and maxillary barbels only; latter may be absent. Dorsal fin inserted midway between pectoral and pelvic fins; considerably nearer to tip of snout than base of caudal fin with 10 or 11 rays and without any spine. Anal fin short with 7 rays. Caudal fin deeply forked. Lateral line scales 33 to 46.

Material examined: Assam, Cachar district, Salchapra Anua, 1 ex , May, 2007. Coll Prof

D Kar and Party. First Report.

Key to species: Presence of 37-39 Ll scales. Diameter of eye 21.3 to 23.8 % of HL.

Tariqilabeo latius

Distribution: Almost throughout NE India, including Salchapra Anua in Cachar, Assam,

Arunachal Pradesh, Bangladesh, Nepal.

IUCN status: Least Concern (LC)

Genus: *Garra Hamilton*

Garra Hamilton, 1822, Fish Ganges: 343, 393 (Type species: *Cyprinus (Garra)* lamta by later designation).

Generic characters: Body short, sub-cylindrical. Ventral surface flat. Head little

depressed anteriorly. Snout blunt; smooth or with pores; with or without a deep, transverse groove-like depression. Mouth inferior, transverse, semi-circular. Eyes small; in the posterior half of the head; lateral; not visible from below ventral surface. Lips thick and fleshy. Upper and lower lips are continuous without any lateral lobes. A proboscis may or may not be present. A suctorial disc of semi-cartilaginous pad present on the chin. Scales moderate.

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Material examined: Assam, Cachar district, Baskandi Anua, 1 ex., February 2000. Coll

Prof D Kar and Party. First Report.

Key to species: Ll scales33 - 34. Distance between vent and anal fin origin 31.25-38.5 %

in inter-distance between pelvic and anal fin origin.

Garra annandalei

Distribution: Almost throughout NE India, including Baskandi Anua in Cachar, Assam;

Darjeeling Himalayas, Arunachal Pradesh, Bangladesh, Nepal, Pakistan, Sri Lanka, Thailand, and Yunan.

IUCN status: Least Concern (LC)

Material examined: Assam, Cachar district, Shiv Narayanpur Anua at Katigorah, 1 ex., 18.10.

2000. Coll Prof D Kar and Party. First report.

Key to species: A well-developed median proboscis and a transverse lobe at tip covered with

spiny tubercles.

Garra gotyla

Distribution: Throughout North-East (NE) India, including Shiv Narayanpur Anua at

Katigorah in Cachar, Assam; The Himalayas, Chotanagpur plateau, and mountains of the Indian Peninsula area. Afghanistan, Bangladesh, Bhutan, Myanmar, Nepal, and Pakistan.

IUCN status: Least Concern (LC).

Family: *Psilorhynchidae*

Genus: *Psilorhynchus McClelland*

Psilorhynchus McClelland, 1839, Asiatic Research, 19: 300, 428 (Type species: *Cyprinus sucatio* Hamilton, by subsequent designation).

Generic characters: Body spindle-shaped, arched dorsally and flattened ventrally; anteriorly

depressed. The ventral surface markedly flattened. Snout flat obtusely pointed anteriorly. A shallow depression may be present on the cheek. Mouth small, inferior, transverse. Eyes large, dorsolateral in the posterior half of the head; not visible from below ventral surface. Lips entire, fleshy, continuous at the angle of mouth; reflected off from both the jaws; and, with glands and folds. The presence of a distinct lateral groove on either side passing along the sides of the snout. The upper jaw overhangs the mouth. Absence of barbels. Dorsal fins inserted ahead of pelvic fins with 10-12 rays. Pectoral fins simple with four-six rays. Anal fin short with seven rays. Caudal fin forked, upper lobe longer. Scales are relatively large along the lateral line. The lateral line is complete with 32-34 scales.

Material examined: Assam, Cachar district, Baskandi Anua, 2 ex., February 2000. Coll Prof

D Kar and Party. First Report.

Key to species: Pectoral fin with 4-5 simple rays. Caudal fin deeply forked. Lateral line scales

33-36. Body with a series of 6-10 dark lateral blotches

Psilorhynchus nudithoracicus

Distribution: India (Assam, Meghalaya, Mizoram), Bangladesh, Nepal.

IUCN Status: Least Concern (LC).

Family: *Nemacheilidae*

Genus: *Paracanthocobitis Peters*

Paracanthocobitis Peters, 1861, Monats Akad. Wiss. Berlin for 1861 : 712 (Type species: *Acanthocobitis longipinnis* Peters = Cobitis pavonaceus McClelland, by monotypy); Menon, 1987, Fauna India 4(1): 140, Kottelat 1990, Verlag Dr. Friedrich Pfeil, Munchen: 18 (as a valid genus), Banarescu and Nalbant, 1995, Trav Mus Hist nat "Grigore Antipa", 35 : 430 (as a valid genus), [30] FW Fishes of the Indian Region: 173; Vishwanath, 2002, Fish and Fisheries of NE India, NATP Pub. : 101.

Generic characters: Body deep and strongly compressed posteriorly. Head slightly

compressed. Nostrils close together. The presence of a slight indication of an adipose keel. Upper lip covered by 2 or 3 rows of papillae. Lower lip interrupted in the middle and with numerous papillae. Dorsal fin usually with 10 to 18 branched rays. Caudal fin slightly emarginated. The presence of conspicuous black spot at upper extremity of caudal fin.

Material examined: Assam, Cachar district, Baskandi Anua, 2 ex., February 2000. Coll. Prof.

D. Kar and Party. First report.

Key to species: Dorsal fin with 9-11 branched rays. Body depth about 20.00 to 23.63 % SL.

Paracanthocobitis botia

Distribution: Almost throughout India including Baskandi Anua in Cachar, Assam; other

parts of NE India and also rest of India, Manipur, Myanmar, etc.

IUCN Status: Least Concern (LC).

Family: *Botiidae*

Genus: *Botia Gray*

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Botia Gray, 1831, Zool Misc 8 (Type species, *Botiaalmorhae Gray*, by monotype), - Hora, 1922, Rec India Mus, 24: 313-321 (revision)- Banarescu and Nalbant, 1968, Mitt Hamburg Zool Mus Inst, 65: 341 (revision)-Taki, 1972, Jap J Ichthyol, 19(2): 63-81(review)-Menon, 1992, Fauna India, 4(2): 31 (revision)-[30] Freshwater Fishes of the Indian Region: 209, [43] Rec Zool Surv India, Occ Paper No 175: 155 (Check list).

Generic characters: Body oblong, short, moderately deep. Abdomen rounded. Head long,

pointed. Snout conical, ventrally flat. Mouth small. Eyes moderately large, superior, in mid-part of head without any skin covering them. Anterior nostrils tubular. Lips thick, fleshy. Presence of a bifid erectile sub-orbital spine below or in front of eyes. Dorsal fin inserted above origin of pelvic or slightly ahead. Anal fin short. Caudal fin deeply forked. Scales absent on head.

Material examined: Assam, Cachar district, Baskandi Anua, 3 ex., February 2000. Baskandi

Anua, 12 ex, 18.04.2000. Coll. Prof D Kar and Party. First reports.

Key to species: Eye diameter 33.3 % snout length.

1.1. ***Botia dario***

Distribution: Almost Throughout India including Baskandi Anua in Cachar, Assam; also in Bangladesh, Myanmar, Nepal, Pakistan, Sri Lanka, etc.

IUCN status: Least Concern (LC).

Material examined: Assam, Cachar district, Baskandi Anua, 1 ex, February 2000. Coll.

Prof D. Kar and Party. First report.

Key to species: Body with brown cross bands of irregular pattern which may form rings or blotches.

Botia rostrata Gunther

Distribution: Almost Throughout India including Baskandi Anua in Cachar, Assam; also in Bangladesh, etc.

IUCN status: Least Concern (LC).

Family: *Cobitidae*

Genus: ***Lepidocephalichthys***

Lepidocephalichthys, Bleeker, 1858, NaTijdschr Ned Indet 16: 3: 303 (Type species, *Cobitis macrochir* Bleeker; Tilak and Hussain,1981, rec Zool Surv India Occ Paper No. 32: 3-28 (revision); Menon, Fauna India, 4(2), p. 52 (revision); Talwar and Jhingra 1999, Inland Fishes,1: 520, [30] FW Fishes of the Indian Region: 216, [43], rec Zool Surv. India Occ Paper No. 175: 159.

Generic characters: Body elongate; caudal peduncle laterally compressed. Abdomen

rounded. Head short, conical. Snout blunt. Mouth inferior, narrow, slightly arched. Eyes small. Lower lip interrupted in the middle. Barbels six; one pair each rostral, mandibular and maxillary. Presence of a large erectile bifid sub-orbital spine below or in front of eyes. Origin of dorsal fin variable with 8 or 9 rays. Anal fin short with 7 to 8 rays. Caudal fins truncate or slightly emarginated. Scales small. Lateral line absent.

Material examined: Assam, Cachar district, Salchapra Anua, 2 ex., 17.01. 2009. Coll Prof D

Kar and Party. First report.

Key to species: Depth of body <16.7 % SL. Presence of a dark lateral band or dark grey spots

on the body.

Lepidocephalichthys guntea

Distribution: Throughout India including Salchapra Anua in Assam, also in Bangladesh,

Myanmar, Nepal, Pakistan, etc.

IUCN status: Least Concern (LC)

Order: Siluriformes

Family: *Bagridae*

Genus: ***Mystus Scopoli***

Mystus Scopoli, 1777, Introduction and historiam naturalem: 451 (Type by subsequent designation: Masc *Bagrus halepensis* Valenciennes 1840).

Generic characters: Body short or moderately elongated. Head short, flattened. Snout obtuse

or rounded. Mouth sub-terminal, transverse. Eyes anteriorly situated, moderately large. Teeth numerous. The upper surface of the head is mostly smooth with one or two median longitudinal grooves of varying length. The occipital process is long or short, situated superficially concealed under skin. Four pairs of barbells; one each of maxillary, nasal and two mandibular, two dorsal fins; an anterior rayed dorsal with seven or eight rays and a spine; a posterior smooth low adipose fin of varying lengths. Pectoral fins with seven to 11 rays and a strong spine serrated along the inner edge. Pelvic fins with six rays. Anal fin with nine to 14 rays. Caudal fin forked, bilobed with unequal lobes; lobes may be rounded, pointed or prolonged into filamentous extensions. Lateral line simple, complete.

Material examined: Assam, Cachar district, Fulbari Anua, 2 ex., 18.10.2000, Rupairbala Anua,

1 ex, 26.01.2000. Coll. Prof D Kar and Party. First report.

Key to species: Maxillary barbels reach caudal fin base or even beyond. A mid-lateral stripe

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along Ll may sometimes be seen and another faint one above. The presence of a faint spot at base of dorsal spine.

Mystus cavasius

Distribution: Almost throughout India, including wetlands in Assam, notably, Fulbari

Anua, Rupairbala Anua, other parts of North-East (NE) India, different parts of rest of India, Myanmar, Pakistan, Sri Lanka, etc.

IUCN status: Least Concern (LC)

Material examined: Assam, Cachar district, Salchapra Anua, 1 ex, May, 2007. Coll Prof.

D Kar and Party. First report.

Key to species: Maxillary barbels reach base of anal fin. Presence of three broad

conspicuous dark bands separated two pale lines on each side of lateral line.

Mystus bleekeri

Distribution: Almost throughout India, including wetlands in Assam, notably, Salchapra Anua

in Assam; etc., other parts of North-East (NE) India, different parts of rest of India, Bangladesh, Nepal, etc.

IUCN status: Least Concern (LC)

Material examined: Assam, Cachar district, Salchapra Anua, 1 ex., 17. 01. 2009, Fulbari Anua,

2 ex, 18.10.2000. Coll Prof D Kar and Party. First report.

Key to species: Body with two parallel stripes on each side of lateral line. There may also be

a dark humeral spot.

Mystus vittatus

Distribution: Almost throughout India, including wetlands in Assam, notably, Salchapra Anua

and Fulbari Anua, other parts of North-East (NE) India, different parts of rest of India, Bangladesh, Myanmar, Sri Lanka, etc.

IUCN status: Least Concern (LC)

Family: *Ailiidae*

Genus: *Clupisoma Swainson*

Clupisoma Swaison, 1838, Nat Hist Animal Fish 2: 347, 351, 354 (Type species, *Pimelodus argentea* Swainson = *Silurus garua* Hamilton, by monotypy), Hora, 1937, J Bombay nat Hist Soc 39(4): 659-678, Jayaram, 2006, Catfishes of India: 121, Ferraris, 2007, Zootaxa 1458: 357.

Generic characters: Body elongate, compressed with the portion between pelvic fins and vent

keeled. Head of moderate size. Snout rounded. The cleft of mouth does not reach front edge of eyes. Presence of 4 pairs of barbels: one pair each of maxillary, nasal, and two pairs of mandibular. Rayed dorsal fin inserted above near base of pectoral fins with 6-9 rays and a spine. Pelvic fin with 6 rays. Anal fin moderately long with 29 to 54 rays. Caudal fin deeply forked.

Material examined: Assam, Cachar district, Baskandi Anua, 1 ex., February 2000. Coll Prof D Kar and Party. First report.

Key to species: Maxillary barbels generally extend beyond pectoral fins or just reach pelvic fins. Anal fin with 29-36 fin rays.

Clupisoma garua

Distribution: Almost throughout India, including Baskandi Anua wetlands in Assam, other

parts of North-East (NE) India, different parts of rest of India, Bangladesh, Myanmar, Nepal, etc.

IUCN status: Least Concern (LC)

Family: *Siluridae*

Genus: ***Ompok Lacepede***

Ompok Lacepede, 1803. Hist Nat Poiss 5: 49 (Type species: *Ompok siluroides Lacepede*), Haig 1950, Rec Indian Mus 48: 103, Prameswaram 1968, J Zool Soc. India 19(1 & 2): 90, Jayaram 2006, Catfishes of India: 104, Ferrris 2007, Zootaxa 1418: 371.

Generic characters: Body elongated, compressed. Abdomen rounded. Head small, broad.

Snout bluntly rounded. Mouth superior, its cleft oblique not extending to front border of eyes. Presence of 2 pairs of barbels; one pair each of maxillary and mandibular. Rayed dorsal fin inserted above last half of pectoral fin, with 3 or 5 rays and spine absent. Adipose dorsal fin absent. Pectoral fins with 11-14 rays and a feebly serrated or smooth spine.

Material examined: Assam, Cachar district, Repairbala Anua, 1 ex, 26.01.2000. Coll Prof D

Kar and Party. First report.

Key to species: Presence of a very long anal fin with 52 to 75 rays, and free from caudal fin.

Caudal fin forked. Lateral line complete.

Ompok bimaculatus

Distribution: Throughout India, Afghanistan, Bangladesh, Borneo, China, Java, Myanmar,

Nepal, Pakistan, Srilanka, Sumatra, Thailand.

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IUCN Status: Near Threatened (NT)

Family: *Sisoridae*

Genus: ***Gagata Bleeker***

Gagata Bleeker, 1858. Ichthyol Archipel Indici Prodr 1: 204 (type species: *Pemelodusgagata* Hamilton-Buchanan, by absolute tautonymy), - Hora and Law 1941, Rec Indian Mus 43 (10): 9 (revision), - Roberts and Ferraris 1998. Proc Calif Acad Sci 50(14): 317, Jayaram 2006, Catfishes of India: 187, Thompson ad Page 2006, Zootaxa 1345: 29 (Check list)- Ferraris, 2007, Zootaxa 1418: 385 (Check list).

Generic characters: Dorsal profile rising not very sharply upto dorsal fin base; thereafter,

slopes very gently; nearly straight. Head and body compressed. Head short. Snout obtusely rounded. Mouth inferior, small and narrow. Median longitudinal groove on head distinct. Eyes large, dorso-lateral. Maxillary barbels with an osseous base and lying in a groove anteriorly. Nasal pair of barbels with broad flaps, separating the 2 nostrils. Mandibular barbels inserted in a transverse row but at the same level. Rayed dorsal fin inserted above middle of pectoral fins. Caudal fin deeply forked. Lateral line complete with pores on anterior half.

Material examined: Assam, Cachar district, Salchapra Anua, 1 ex., May 2007. Coll Prof

D Kar and Party. First report.

Key to species: Tip of snout acutely pointed in lateral profile with a distinct notch

anteriorly. Maxillary barbels shorter than head length.

Gagata cenia

Distribution: Many places in India, including Salchapra Anua in Cachar, Assam, Manipur,

Bangladesh, Myanmar, Nepal, Pakistan, Thailand.

IUCN Status: least Concern (LC)

Order: Beloniformes

Family: *Belonidae*

Genus: ***Xenentodon Regan***

Xenentodon Regan, 1911, Ann Mag nat Hist (8)7: 332 (type-species, Belone cancila Hamilton-Buchanan, by subsequent designation), Roberts, 1989, Mem Calif Acad Sci No 14: 152 (review).

Generic characters: Body very elongate, compressed. Abdomen rounded. Head pointed.

Snout sharply pointed. Mouth superior, wide, cleft extending to orbit. Eyes moderate. Both the jaws prolonged into a beak. Presence of a deep longitudinal groove along upper surface of the head. Dorsal fin usually inserted above anal fin. Caudal fins truncate. Scales small. A lateral line is present on posterior half of the body, without a keel.

Material examined: Assam, Cachar district, Salchapra Anua, 2 ex, May 2007. 1 ex,

17.01.2009. Coll Prof D Kar and Party. First report.

Key to species: Dorsal fin rays 15 - 18. Anal fin rays 16 - 18. Pre-dorsal scales >200.

1.2. ***Xenentodon cancila***

Distribution: Many places in India, including Salchapra Anua in Cachar, Assam, Manipur,

Nepal, etc.

IUCN status: Least Concern (LC)

Order: Synbranchiformes

Family: *Mastacembelidae*

Genus: *Mastacembelus Scopoli*

Mastacembelus Scopoli, 1777, Introd Hist Nat: 458 (type –species, *Ophidium mastacembelus* Banks and Solander, by subsequent monotype), Travers, 1984, Bull Brit Mus Nat Hist (zool.) 47(2): 141-145 (review), Roberts, 1986, Jap J Ichthyol 23(2): 103-107 (review), - Sufi 1956, Bull Raffles Mus No. 27: 105-143 (systematic review).

Generic characters: Body eel-like, elongated, compressed, long, pointed. Snout long,

conical. Mouth inferior, cleft narrow. Eyes small, superior. Rim of anterior nostrils with two finger-like fimbriae and two flaps. Dorsal fin inserted above middle of pectoral fins. Pelvic fins absent. Caudal fin rounded. Dorsal and anal fins may or may not be confluent with caudal fin. Pelvic fins absent.

Material examined: Assam, Cachar district, Baskandi Anua, 1 ex., February 2000,

Salchapra Anua, 1 ex, May 2007. Coll Prof D Kar and Party. First report.

Key to species: Dorsal fin with 32 - 40 detached, depressible spines and 67 to 90 rays.

Anal with three spines and 46 to 90 rays. Caudal fin merged and continuous with dorsal and anal fins, Caudal fin rays 14 to 17.

Mastacembelus armatus

Distribution: Many water bodies in India and NE India including Baskandi Anua in Cachar,

Assam; also in Bangladesh, South China, Malaya, Java, Myanmar, Nepal, etc.

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IUCN status: Least Concern (LC)

Genus: *Macrognathus Lacepede*

Macrognathus Lacepede, 1800, Hist Nat Poiss 2: 283 (Type species: *Ophidium aculeatum* Bloch by subsequent designation), Sufi, 1953, Bull Raffles Mus No. 27: 99-105; Roberts, 1980, Copeia, No 3: 385-391, Travers, 1984, Bull Brit Mus Nat Hist (Zool.) 47(2): 141-145, Roberts 1986, jap J Ichthyol 33(2): 97-103, Rhyncohdella Bloch and Schneider, 1801, Syst Ichth: 478.

Generic characters: Body deep, eel-like, long, compressed. Head long pointed. Snout long

fleshy, accommodating a concave prolongation of the upper jaw consisting of a paired series of tooth plates. Mouth inferior. Cleft narrow. Eyes, small, superior, in middle of head. Dorsal fin inserted far behind end of pectoral fins with 13 to 32 detached, depressible spines and 42 to 58 rays. Anal fin with 3 spines and 42 to 58 rays. Caudal fin rounded; and, distinctly separated from dorsal and anal fins. Pelvic fins absent.

Material examined: Assam, Cachar district, Salchapra Anua, 1 ex, 17.01.2009, Shiv

Narayanpur Anua at Katigorah, 1 ex, 18.10. 2000. Coll Prof D Kar and Party. First report.

Key to species: Dorsal fin with 24 to 26 spines and 30 to 42 soft rays. Anal with three

spines. Caudal fin distinctly separated from dorsal and anal fins.

Macrognathus pancalus

Distribution: Many water bodies in India and NE India including Salchapra Anua, Shiv

Narayanpur Anua, in Cachar, Assam, also in Bangladesh, Pakistan, etc.

IUCN status: Least Concern (LC)

Order: Cichliformes

Family: *Ambassidae*

Genus: Chanda Hamilton

Chanda Hamilton,1822, An account of the fishes found in the river Ganges: 103, 370 (type species: Chanda nama Hamilton 1822 by designation of ICZN)

Generic characters: Body ovate, deep compressed. Abdomen rounded. Head short,

compressed with sharp snout. Mouth wide, protractile; extended up to border of orbit or slightly beyond. Eyes large, superior. Pre-orbital edge with four serrae. Lower jaw strongly projecting. Lower limb of pre-opercle with a double-serrated edge. Opercula without a prominent spine. Two dorsal fins; 1st with seven spines and 2nd with 15-17 rays, the two dorsal fins continuous. A forwardly directed recumbent spine present in the dorsal fin. Anal fin with three spines and 17 rays. Caudal fin forked. Body with cycloid scales. Lateral line complete with 125 scales.

Material examined: Assam, Cachar district, Salchapra Anua, 1 ex., 17.01.2009. Coll. Prof

D Kar and Party. First report.

Key to species: Lower jaw strongly projecting; thus, differ from all other ambassids.

The presence of three prominent canine teeth on either side of lower jaw.

Chanda nama

Distribution: Almost throughout India including Salchapra Anua and Baskandi Anua in

Cachar, Assam, also, in Bangladesh, Nepal, Pakistan, etc.

IUCN Status: Least Concern (LC).

Genus: ***Parambassis Bleeker***

Parambassis Bleeker, 1874, Nat Verh Holland Maatsch Wetensch 2(2): 102 (Type species, *Ambassis apogonoides* Bleeker by original designation), Guha and Talwar 1975, J Inland Fish Soc India 8: 76, Roberts, 1994, Nat Hist Brit Siam Soc 42: 271-289.

Diagnostic characters: Body elongated, compressed. Abdomen round. Head short,

compressed. Snout pointed. Mouth large; gape oblique; extending to anterior border of orbit. Eyes large, superior, not visible from below ventral surface of head. Jaws straight or only slightly upturned. Supra-orbital ridge smooth or serrated, with one or two spines posteriorly. Pre-orbit serrated on both ridge and edge. Sub-orbit also serrated. Cheek with four to seven transverse scale rows.

Material examined: Assam, Cachar district, Rupairbala Anua, 3 ex., 26.01.2000. Coll.

Prof D Kar and Party. First report.

Key to species: Body transparent with a silvery broad lateral stripe on sides. Body depth

41.7 to 43.4 % of SL

Parambassis ranga

Distribution: Almost throughout India including Rupairbala Anua in Cachar, Assam; also

Bangladesh, Mayanmar, many parts of SE Asia; also, Australian region including New Guinea, etc.

IUCN Status: Least Concern (LC).

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Order: Mugiliformes

Family: *Mugilidae*

Genus: ***Rhinomugil Gill***

Rhinomugil Gill, 1863. Proceedings of the Academy of Natural Sciences of Philadelphia 15: 169 (Type species: *Mugil corsula* Hamilton 1822 by monotypy).

Generic Characters: Body moderately elongated, cylindrical or slightly compressed.

Head broad and depressed; snout obtuse and short; interorbital space broad. Mouth small, terminal or inferior. Two shorts widely separated spinous and soft dorsal fins present. Pectoral fins placed rather high on body; pelvic fins sub abdominal. Caudal fin moderately forked, emarginated or truncated. Scales fairly large on head and body. Lateral line absent.

Material examined: Assam, Cachar district, Repairbala Anua, 1 ex., 26.01.2000. Coll Prof

D Kar and Party.

Key to species: Body rather stout, head moderate. Operculum without spine. Mouth

ventral, protrusible. The first dorsal fin inserted nearer to caudal fin base than to tip of snout. Caudal fin slightly emarginate, scales in lateral series 48-52.

1.3. *Rhinomugil corsula*

Distribution: India: Assam, Meghalaya, Tripura, Uttar Pradesh, Bihar, Orissa, Tamil Nadu,

West Bengal, Bangladesh, Myanmar, Nepal.

IUCN Status: Least Concern (LC)

Order: Anabantiformes

Family: *Badidae*

Genus: ***Badis Bleeker***

Badis Bleeker, 1853, Verh Bat Genootsch 25: 106 (Type species, *Labrus buchanani* Bleeker = *Labrus badis* Hamilton-Buchanan, by autonomy).

Generic characters: Body moderately elongated, compressed. Abdomen rounded. Head

usually large, compressed. Snout bluntly rounded. Mouth relatively small, slightly upturned, terminal, and slightly protractile; cleft does not extend to the eyes anterior margin. Eyes large, not visible from below ventral surface. Lips thin. Lower jaw longer. Opercle with one sharp spine. A single dorsal fin inserted above the base of pectoral fins; the spiny portion more extended than the soft portion, with 16-18 spines and seven-10 rays. Anal fin with three spines and six-eight rays. Caudal fin rounded. Scales ctenoid and are of moderate size. Lateral line interrupted or absent with 26-33 scales, when present. Some of the unique characters include black stripe along the middle of the dorsal fin, dark bars on the trunk, modified in adults, displayed as two narrow vertical lines, dark pigment on the caudal-fin base differentiated into three vertically aligned blotches.

Material examined: Assam, Cachar district, Baskandi Anua, 2 ex, February 2000. Coll.

Prof D Kar and Party. First report,

Key to species: Scales in lateral row 26-28. Presence of a row of dark spots along the base

of the dorsal fin.

Badis badis

Distribution: Almost throughout India, including Baskandi Anua in Cachar, Assam; also,

Bangladesh, Nepal, etc.

IUCN Status: Least Concern (LC)

Family: *Gobiidae*

Genus: ***Glossogobius Gill***

Glossogobius Gill, 1859, Proc Acad nat Sci Philad: 46 (Type species, *Gobius platycephalus* Richardson, by monotypy), Akihito, In: Masuda et. al 1984, Fish Jap Archipel: 274, Rema Devi, 1992, Rec zool Surv. India, 90(1-4): 174 (Ennore estuary).

Generic Characters: Body elongated, anteriorly cylindrical, compressed. Abdomen

rounded. Head depressed, little pointed. Snout obtusely rounded or pointed. Mouth a little oblique. Cleft not extending to eyes. Eyes large, superior, almost in middle of head. Gill openings continued far below the eyes. Presence of 2 dorsal fins, separated by a short interspace first dorsal inserted above half or three-fourth of pectoral fins with six rays. Second dorsal fin with 6 to 10 rays. Pelvic fins united, oblong. Anal fin with 8 or 9 rays. Caudal fin oblong to rounded. Scales ctenoid on body; cycloid on head.

Material examined: Assam, Cachar district, Salchapra Anua, 3 ex., May 2007, 1 ex,

17.01.2009. Coll Prof D Kar and Party. First report.

Key to species: First dorsal fin with one black spot or without it. Gill membranes

connected to isthmus.

1.4. *Glossogobius giuris*

Distribution: Wetlands in Assam, like Salchapra Anua, Cachar, Assam, etc, other parts of

North-East (NE) India, different parts of rest of India,

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Bangladesh, Myanmar, etc.

IUCN Status: Least Concern (LC)

Family: *Anabantidae*

Genus: ***Anabas Cuvier***

Anabas Cuvier, 1816. Le Regne Animal 2: 339 (Type species: *Perca scandens* Daldorf, by monotypy).

Generic Characters: Body oblong, compressed. Abdomen rounded. Head moderate,

compressed. Snout slightly conical or bluntly rounded. Mouth relatively terminal, oblique; cleft not wide. Eyes large, lateral, in anterior part of head. Upper jaw weakly protrusible. Presence of a sigle dorsal fin, inserted above pectoral fin base with 16 to 18 spines and 8 to 10 rays number of spines variable. Anal fin with 8 to 11 spines and 9 to 11 rays. Number of spines variable. Caudal fin rounded.

Material examined: Assam, Cachar district, Repairbala Anua, 2 ex., 26.01.2000. Coll Prof

D Kar and Party. First Report.

Key to species: Body depth 28.6 to 33.3 % SL. Dorsal fin with 8 to 10 rays.

Anabas testudineus

Distribution: Naturally available in India, Bangladesh, Myanmar, Borneo, Philippines,

Singapore, Sri Lanka.

IUCN Status: Data Deficient(DD).

Family: *Channidae*

Genus: ***Channa Scopoli***

Channa Scopoli, 1777, Introd. Hist. Nat.: 459 (Type species, *Channa orientalis* Bloch and Schneider, by subsequent designation).

Generic characters: Body elongated, sub-cylindrical anteriorly. Abdomen rounded. Head

large depressed with plate-like scales. Snout somewhat obtuse. Mouth reasonably large; opening moderate to wide; may extend to below orbit. Eyes lateral, moderate; in the anterior part of the head. The lower jaw protrudes beyond the upper. Gill openings wide. Membranes of two sides connected beneath the isthmus. Dorsal fin long; inserted almost above the pectoral fins with 29-55 rays and no spine. Anal fin long with 21 to 36 rays. Both dorsal and anal fins are free from caudal fin. Caudal fin rounded; scales small; cycloid or ctenoid; scales on the head are more extensive than those on the body. Lateral line abruptly curved or almost interrupted with 37 to 110 scales.

Material examined: Assam, Cachar district, Salchapra Anua, 3 ex., 17.01.2009, Fulbari Anua,

1 ex., 18.10 2000. Coll Prof D Kar and Party. First report.

Key to species: Dorsal fin with 28-33 rays. A number of dark blotches on flanks; some with

many black spots on the body and also on dorsal and caudal fins. The ventral side of body usually white or pale yellow.

Channa punctata

Distribution: Wetlands in Assam like Salchapra Anua, Fulbari Anua in Cachar, Assam,

other parts of North-East (NE) India, different parts of rest of India, Bangladesh. China, Malaya, Myanmar, etc.

IUCN Status: Least Concern (LC)

Material examined: Assam, Cachar district, Baskandi Anua, 1 ex, February 2000,

Salchapra Anua, 1 ex, 17.01.2009. Coll. Prof D Kar and Party. First report.

Key to species: Presence of generally 80 Lateral line scales and 22 anal fin rays.

Channa gachua

Distribution: Wetlands in Assam like Salchapra Anua, Baskandi Anua in Cachar, Assam, other

parts of North-East (NE) India, different parts of rest of India, Bangladesh. China, Malaya, Myanmar, etc.

IUCN Status: Least Concern (LC)

Family: *Osphronemidae*

Genus: *Trichogaster Bloch and Schneider*

Trichogaster Bloch and Schneider, 1801, Syst Ichth p. 164 (Type species, *Trichogaster fasciatus*, *Trichopodus Lacepede*, 1801 Hist Nat Poiss 3, pp. 125 (Type species: *Labrus trichopterus* Pallas, by subsequent designation; Colisa Cuvier, 1831. In: Cuvier and Valenciennes, Hist Nat Poiss 7: 359 (Type species, *Colisa vulgaris* Cuvier = *Trichopodus colisa* Hamilton-Buchanan (by absolute tautonymy).

Generic characters: Body elevated, compressed. Head moderate, compressed. Snout

blunt. Mouth upturned, terminal, cleft small. Eyes large, lateral, in middle of head, not visible from below ventral surface of head. Jaws are a little protractile. The ventral border of pre-opercle usually serrated. Number of spines in dorsal and anal fins variable. Pelvic fins in the form of single long filiform ray, and a rudimentary adnate spine. Caudal fin slightly emarginated or truncate. Lateral Line (Ll) may be interrupted with 6-29 scales.

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Material examined: Assam, Cachar district, Salchapra Anua, 2 ex., 17.01.2009, Shiv

Narayanpur Anua, 1 ex, 18.10. 2000. Coll Prof D Kar and Party. First report.

Key to species: Bands on body 14 or more. Caudal fin may be slightly notched or cut-

square.

Trichogaster fasciata Bloch & Schneider

Distribution: Wetlands in Assam like Salchapra Anua, Shiv Narayanpur Anua, other parts of

North-East (NE) India, different parts of rest of India, Bangladesh, Myanmar, Nepal, etc.

1.4.1.IUCN Status: Least Concern (LC)

Material examined: Assam, Cachar district, Shiv Narayanpur Anua, 1 ex., 18.10. 2000. Coll

Prof D Kar and Party. First report.

Key to species: Body oblong, mouth strongly protrusible. A blackish longitudinal band from

eye to caudal fin.

Trichogaster chuna

Distribution: Wetlands in Assam, Arunachal Pradesh, Assam, Manipur, Meghalaya,

Nagaland, Tripura, Gangetic province in India, Bangladesh.

IUCN Status: Least Concern (LC)

Order: Tetraodontiformes

Family: *Tetraodontidae*

Genus: *Leiodon Swainson*

Leiodon Swainson,1839. Natural history and classification 2: 194 (Type species: *Tetrodon marmoratus Swainson* 1839 by monotypy).

Generic Characters: Body broadly rounded in cross-section, heavy and blunt. Head large,

broad. Eyes widely separated, located high on head. Dorsal and anal fins placed far posteriorly, no spines on fin. Pelvic fins absent. Caudal fins truncate, rounded or emarginated. Lateral line, when present, indistinct. Body covered with numerous spinules on back/belly, sometimes on sides.

Material examined: Assam, Cachar district, Salchapra Anua, 1 ex., May 2007. Coll Prof

D Kar and Party. First Report.

Key to species: Mouth terminal, no prominent chin. Body dark green to olive green on

back with dark cloudy or reticulated markings; sides mostly with a dark meshwork, and with a dark ocellus just in front of dorsal and anal fins; Caudal fin dusky or bordered with a red band, other fins yellowish grey to olive green.

Leiodon cutcutia

Distribution: India: Arunachal Pradesh, Assam, Manipur, Meghalaya, Tripura, Bihar, Orissa,

West Bengal. Bangladesh, Malay Archipelago, Myanmar, Srilanka.

IUCN Status: Least Concern (LC).

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