



Research Article

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Further Report on the Systematic, Distribution and Conservation of Ichthyospecies in the Headwaters of River Barak (Assam, Manipur and Mizoram), North East, India



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Abstract

Ichthyofaunal surveys in the headwaters of river Barak at different locations in the provinces of Manipur, Mizoram and Assam, notably, Karong, Chandikhal, Jhakradahar, Katigora, Sartuinek, Teulien, Tuolbung, Patpuihmun, Phulpui, Fulertal, Parbungkai, Tuivai, Taithu, Khowpan, Kornifai, Vitin, Gilgal, Tupidahar, Lakhipur, Kushiara, and Tipaimukh revealed the occurrence of 41 species of fishes belonging into 33 genera, 10 families and 3 orders. Most of the species were reported for the first time from these areas. Detailed taxonomic analysis indicated the highest number of species among the *Cypriniformes* (29 species) followed by *Siluriformes* (10 species) and *Cichliformes* (2 species). The conservation status of *Tor putitora* is Endangered and *Neolissochilus hexagonolepis* is Near Threatened. The remaining species are Least Concern and few species are Data Deficient.

Keywords: Ichthyospecies; Taxonomy; Distribution; Conservation; Barak; Assam; Manipur; Mizoram; India

Introduction

Aquatic biodiversity is under pressure due to human-induced impacts, including effects on fish and their habitats [1-3]. As such, studies regarding fish fauna are needed.

Fish constitute almost half of the total number of vertebrates on the earth. India is one of the mega biodiversity countries in the World [4-6] and the North-Eastern (NE) region in the Eastern Himalayan (EH) stretch has been identified as a hotspot of biodiversity by the World Conservation Monitoring Centre [7]. The hills and the undulating valleys of this region give 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 [1-3,11-15]. Out of 2,500 species of fishes in India, 930 are freshwater (FW) inhabitants and 1,570 are marine [6,9,16,11]. This bewildering ichthyodiversity of this region has been attracting many ichthyologists from different regions of the world.

The fish fauna of the North-East (NE) India mainly features elements of the Indo-Gangetic region; and partly of the Myanmar and South-Chinese regions [17]. There have been a significant

number of works on fish and fisheries. Ghosh & Lipton [18] had reported 172 species. Sen [19] reported 187 species from Assam and its environs. Sinha [20] had compiled a list of 230 species of fishes from NE India. Nevertheless, Nath & Dey [21] recorded 131 species of fishes from the drainages in Arunachal Pradesh alone. Sen [22] comprehensively compiled a list of 267 species of fishes from NE India. Further, according to Sen [22], of the 806 species of fishes inhabiting India's freshwaters [23], the NE region of India is represented by 267 species belonging to 114 genera under 38 families and 10 orders. It is 33.13% of the total Indian FW fishes. Further, of the 267 species, *Cypriniformes* dominates with 145 species, followed by *Siluriformes* (72), *Perciformes* (31), *Clupeiformes* (7), *Anguilliformes* (3), *Cyprinodontiformes* (3), *Osteoglossiformes* (2), *Synbranchiformes* (2), *Syngnathiformes* (1) and *Tetraodontiformes* (1). Kar [9] reported 133 species of fishes through a pilot survey conducted in 19 rivers spread in Barak drainage (Assam), Mizoram, and Tripura. Kar [24] further reported the occurrence of 103 species of fish through an extensive survey conducted in six principal rivers in Barak Valley (Assam), Mizoram, and Tripura. Kar & Sen [16] have carried out a detailed

study on fish' biodiversity in North-East India with particular reference to Barak drainage, Mizoram, and Tripura.

The tropical Asian ichthyofauna constitutes a substantial part of the total lotic fish community. The Indian Peninsula supports 930 species of native FW fishes, which belong to 87 families [16]. Several of tropical Asian FW fish share the African riverine ecosystems, both regarding the family and the generic level. *Cyprinids*, certain Silurid 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 ecology of the tropical fish communities is limited [25]. Further, there have been studies on fish diets and resource partitioning in specific Sri Lankan hill streams [26]. 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.

Material and Methods

Fish samples were collected through experimental fishing using cast nets (diameter 3.7 m - 1.0 m), gill nets (vertical height 1.0 m - 1.5 m; length 100 m - 150 m), drag nets (vertical height 2.0 m), triangular scoop nets (vertical height 1.0 m) and a variety of traps. Camouflaging technique was also used to catch the fishes. Fishes have been preserved at first in concentrated formaldehyde in the field itself and then in 10% formalin. Fishes have been identified after standard literature [6,23,27-36] and fishbase.org. The arrangement of classification, followed here, is that of Greenwood et al. [37] & Jayaram [5,6,35,36], Kar & Khyriam [14].

Systematic account

Order: *Cypriniformes*

Family: Danionidae

Genus: *Securicula* Gunther, 1868

Securicula Gunther, 1868, Cat Fis Brit Mus 7: 332 (type species, *Cyprinus gora* Hamilton-Buchanan, by subsequent designation)-Howes, 1979, Bull Brit Mus nat Hist Zool, 36 (3): 191-Pseudoxygaster Banarescu, 1967, Rev Roum Biologie, Zoologie, 12(5): 306 (type-species, *Cyprinus gora* Hamilton-Buchanan, by original designation)- Mirza, 1970, Biologia, 16(2): 92-Talwar and Jhingran,1999, Inland Fishes, 1: 328- Jayaram, 1999, FW Fishes of the Indian Region: 64.

Generic characters: Body elongate; strongly compressed. Abdomen strongly and sharply

keeled, not covered by scales, extending from below opercle to anal origin. Head moderate; axis somewhat oblique comparatively to body axis. Snout blunts. Mouth oblique; cleft reaching anterior border of the orbit. Eyes moderate. Lips thin. Jaws sub-equal. The Dorsal fin short, very posterior; inserted above anal fin. Pelvic fins inserted nearer to the anal fin than to pectoral. Caudal fin deeply forked. Scales very small.

Material examined: Assam, River Barak at Katigorah, 26.08.2008, 1 ex, Museum No.19, 9(i).

Collector, Professor D Kar and Party: First Report.

Key to species: Anal fin with 11 to 18 rays. Caudal fin deeply forked.

Securicula gora (Hamilton, 1822)

Distribution: Throughout India. Bangladesh, Nepal, Pakistan.

IUCN Status: Least Concern (LC)

Genus: *Salmostoma* Swainson, 1839

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; Jayaram, 1999, FW Fishes of the Indian Region: 65; Menon, 1999, 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 blunts. Mouth oblique to body axis; cleft reaching 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 short with 14-20 rays. Caudal fin deeply forked. Lateral line complete with usually 39 to 112 scales.

Material examined: Assam, River Barak around Lakhipur, 2001, 1 ex, Museum No. 13,8(i),

October 2000, 1 ex., Museum No.18,2(i). Collector, Professor D Kar and Party. First Report.

Key to species: Presence of 4-6 scales between Lateral line and pelvic fin base.

Salmostoma bacaila (Hamilton, 1822)

Distribution: Throughout India. Bangladesh, Nepal.

IUCN status: Least Concern (LC).

Genus: *Cabdio* Hamilton 1822

Cabdio Hamilton, 1822, An account of fishes found in the river Ganges: 333, 392.

Generic characters: Body elongate. Abdomen rounded. The head is moderately rounded

anteriorly. Snout obtuse. Mouth small, inferior. Eyes lateral. Lips thin. Lower jaw without any lip and with a sharp crescent bony edge. Barbel absents. The Dorsal fin inserted behind pelvic fins. Caudal fin forked. Lateral line much decurved. Scales of moderate size; eye, 17.2 to 25.3 % Head length.

Material examined: Assam, River Barak at Lakhipur, November 2000, 1 ex, Museum

No.16,9(i). Collector, Professor D Kar and Party. First report.

Key to species: Lateral line scales 38 to 42. Anal fin with 10 to 12 rays. 2.5 to 3 rows of scales

between the lateral line and pelvic fin base.

***Cabdio morar* (Hamilton, 1822)**

Distribution: Throughout Northern India. Bangladesh, Nepal, Pakistan.

IUCN Status: Least Concern (LC)

Genus: *Opsarius* McClelland, 1838

Opsarius McClelland, 1838. Journal of the Asiatic Society of Bengal 7: 944.

Generic characters: Body long, mouth widely cleft and horizontal with symphysial knob

received into a corresponding depression in the apex of the upper jaw. Back straight, dorsal fin placed opposite to anal fin, both fins situated near the caudal extremity.

Material examined: Mizoram, River Tuivai at 20 km upstream from Damsite, 17.04.2008, 1

ex, Museum No.17(B), XIII,1(i). Collector, Professor D Kar and Party: First Report.

Key to species: Anal fin short with 7-8 branched rays. Each scale usually with a black spot.

***Opsarius bendelisis* (Hamilton, 1807)**

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

and Thailand.

IUCN Status: Least Concern (LC).

Material examined: Assam, River Barak at Karong (Nagaland-Manipur Border), 26.10.2004,

1 ex, Museum No.14,4(i). River Barak at Lakhipur, October 2000, 1 ex., Museum No.18,4(i). Collector, Professor D Kar and Party: First Report.

Key to species: Body with 2 or 3 rows of blue spots and blotches along sides of body.

***Opsarius tileo* (Hamilton, 1822)**

Distribution: Northeast India, Eastern Himalayas, West Bengal. Bangladesh, Myanmar, Nepal,

Pakistan.

IUCN Status: Least Concern (LC).

Material examined: Assam, River Barak at Lakhipur, November 2000, 1 ex., Museum

No.16,5(I). River Barak between Patpuihmun and Sartuinek, 25.04.2008, 1 ex., Museum No.17(A), II,1(i). River Barak at Karnifai, 26.04.2008, 1 ex., Museum No.17(A), III,1(i). River Barak at Taithu, 23.04.2008, 1 ex., Museum No.17(A), VIII,1(i). Collector, Professor D. Kar and Party: First Report.

Key to species: Coloured bands usually present on the upper part of Lateral line and

generally, does not extend below the Lateral line. No barbels.

***Opsarius barna* McClelland, 1839**

Distribution: Distribution: Throughout Northeast India, Bihar, Delhi, Jammu and Kashmir,

Madhya Pradesh, Mysore, Orrisa, Rajasthan, Uttar Pradesh, West Bengal. Bangladesh, Myanmar and Nepal.

IUCN Status: Least Concern (LC).

Genus: *Barilius* Hamilton, 1822

Barilius Hamilton, 1822. An account of fishes found in the river Ganges: 266, 384.

Generic characters: Lower jaw shorter or equal to combined length of snout and eye. Pectoral

axillary scale with a fleshy border. Barbels 1 or 2 pairs or absent. The cleft of mouth extending beyond anterior margin of eye. A symphysial knob present on lower jaw.

Material examined: Assam, River Barak at Lakhipur, November 2000, 1 ex., Museum

No.16,4(i), Coll Prof D Kar and Party. First Report.

Key to species: Body with 14 or 15 short vertical bars extending from back to lateral line.

***Barilius barila* (Hamilton, 1822)**

Distribution: Throughout Northeast India, Bihar, Delhi,

Jammu and Kashmir, Madhya

Pradesh, Mysore, Orrisa, Rajasthan, Uttar Pradesh, West Bengal, Bangladesh, Myanmar and Nepal.

IUCN Status: Least Concern (LC).

Genus: *Laubuka* Bleeker, 1859

Laubuka Bleeker, 1859, Ichth. Archipel Indici Prodr 2: 438, 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 blunts, mouth oblique, cleft reaching below front margin of eye. 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, River Barak at Lakhipur, 2001, 1 ex., Museum No. 13,3(i).

Collector, Professor D Kar and Party. First Report.

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

***Laubuka laubuca* (Hamilton, 1822)**

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

IUCN status: Least Concern (LC).

Genus: *Chela* Hamilton, 1822

Chela Hamilton, 1822, An account of fishes found in the river Ganges: 258, 353.

Generic Characters: Body deep, abdomen keeled. Mouth small and opening vertically, barbel

absent. The Dorsal fin inserted near caudal fin. Inter orbital region without scales. No symphyial process on lower jaw. The first ray of pelvic fins considerably longer.

Material examined: Assam, River Barak at Lakhipur, 2001, 1 ex., Museum No. 13,4(i).

Collector, Professor D Kar and Party.

Key to species: Outer ray of pelvic fins strongly produced. Lateral line complete with 51-56

scales. Body shining silvery with a greenish longitudinal band.

***Chela cachius* (Hamilton, 1822)**

Distribution: Throughout India. Bangladesh, Myanmar,

Nepal, Pakistan.

IUCN status: Least Concern (LC).

Genus: *Devario* Heckel, 1843

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, River Barak at Karong (Nagaland-Manipur Border), 26.10.2004,

1 ex., Museum No.14,8(i). River Barak at Khowpan, 25.04.2008, 1 ex., Museum No.17(B), XII, 1(i). Collector, Prof. D. Kar and Party. First Report.

Key to species: A lateral band along the sides of the body with thinner golden bands above

and below it.

***Devario aequipinnatus* (McClelland, 1839)**

Distribution: Throughout India. Bangladesh, Myanmar, Tenasserim provinces, Nepal, Sri

Lanka, and Thailand.

IUCN Status: Least Concern (LC).

Genus: *Amblypharyngodon* Bleeker, 1860

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 the ventral surface. Upper lip absent. Lower lip with a short labial fold. Lower jaw prominent with a thin sharp edge and a symphyial 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, River Barak at Lakhipur, November 2000, 1 ex, Museum

No.16,7(i). Collector, Professor D Kar and 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.

***Amblypharyngodon mola* (Hamilton, 1822)**

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

Lanka.

IUCN status: Least Concern (LC).

Order: *Cypriniformes*

Family: Cyprinidae

Genus: *Neolissochilus* Rainboth, 1985

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

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

anterior end to posterior end. Abdomen rounded. Head broad. Snout blunts. Mouth oblique, terminal to horizontal or inferior. Species with horizontal mouths often have the lobe of the snout overhanging the upper lip. The mouth is smoothly rounded when the lower jaw is blunt. Eyes in the 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, River Barak at Karong (Nagaland-Manipur Border), 26.10.2004,

1 ex., Museum No.14,7(i). Collector, Prof. D. Kar and Party. First Report.

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

***Neolissochilus hexagonolepis* (McClelland, 1839)**

Distribution: Throughout NE, Northern India, Darjeeling and Eastern Himalaya. South

and South-Eastern Asia.

IUCN Status: Near Threatened (NT).

Genus: *Tor* Gray, 1834

Tor Gray, 1834, Illustrations of Indian Zoology, 2, Pl. 96 (type-species, *Cyprinus tor* Hamilton, by monotypy).

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

small, broadly pointed. Snout angularly rounded, often with tubercles. Mouth inferior usually arched. Eyes large; not visible from below ventral surface. Lips fleshy, continuous at angles of the mouth. Posterior lip with a median lobe and the post-labial groove continuous. Four barbels; one pair each of maxillary and rostral. Dorsal fin inserted above pelvic fins, with 12 to 13 rays and a strong, stout, smooth spine. Anal fin with seven or eight rays. The caudal fin deeply forked. Scales large. Lateral line complete with

22 to 37 scales.

Material examined: Assam, River Barak at Tuolbung, 23.04.2008, 1 ex., Museum

No.17(A), IV,1(i). Collector, Prof. D Kar and Party. First Report.

Key to species: Head length almost equal to or may be little more than body depth. Dorsal fin

inserted midway between tip of snout and caudal fin base.

***Tor putitora* (Hamilton, 1822)**

Distribution: India (Ganges, Brahmaputra and Barak River systems). Bangladesh, Nepal.

IUCN Status: Endangered (EN)

Material examined: Assam, River Barak at Teulein, 26.04.2008, 1 ex., Museum

No.17(A), IX,2(i). River Barak 20 km downstream from Tipaimukh Dam, 22.04.2008, 1 ex., Museum No.17(A), X,1(i). River Barak at Vitin, 26.04.2008, 1 ex., Museum No.17(A), XI,2(i). River Barak at Gilgal, 03.09.2009, 1 ex., Museum No.17(B), XVIII,1(i). River Barak at Tupidahar, 03.09.2009, 1 ex., Museum No.17(B), IX,1(i). River Barak at Chandikhal, 07.09.2009, 1 ex., Museum No.17(B), XX,1(i). Collector, Prof. D. Kar and Party. First Report.

Key to species: Head length almost equal to or little less than body depth. Lateral line scales 22-27.

***Tor tor* (Hamilton, 1822)**

Distribution: Throughout Northeast India, West Bengal, Bihar, Uttar Pradesh, Madhya

Pradesh, Ganga, and Narmada River system, Eastern Himalayas. Bangladesh, Bhutan, China, Myanmar, Nepal, and Pakistan.

IUCN Status: Data Deficient (DD).

Genus: *Chagunius* H.M. Smith, 1938

Chagunius H.M. Smith, 1938, Proc biol Soc , Washington, 15 :157) Type species: *Cyprinus chagunio* Hamilton-Buchanan, by original designation); Rainboth, 1986, Occ Pap Univ Mich Mus Zool (712): 1-17 (revision); Talwar and Jhingran, 1999, Inland Fishes, 1: 165; Jayaram, 1999, FW Fishes of the Indian Region: 106; Menon, 1999, Rec Zool Surv , India Occ Paper No. 175: 165 (Check list); Nath and Dey, 2000, Fish and Fisheries of NE India (Arunachal Pradesh): 54; Vishwanath, 2002, Fish and Fisheries of NE India, NATP Pub.: 57.

Generic characters: Body elongated. Abdomen broadly rounded. Head compressed, Snout

overhanging, divided into a central and two lateral lobes by a groove extending upward and forward from the base of each rostral barbel. Post-labial groove incomplete. Mouth narrow, sub-

terminal, with two ends directed backwards. Barbels 4, one pair each rostral and maxillary. The Dorsal inserted slightly ahead of pelvic fins with 13 rays and a stout, strong, serrated spine. Anal fin short with 8 or 9 rays. Caudal fin forked. Scales large, Lateral line complete with 40 to 48 scales.

Material examined: River Barak at 10 km downstream from Tipaimukh (Tuivaimukh)

Damsite, 22.04.2008, 1 ex., Museum No.17(B), XIV,1(i). Collector, Professor D. Kar and Party: First Report.

Key to species: Circumferential scales 40 or more. Circumpeduncular scales 23 to 25.

***Chagunius chagunio* (Hamilton, 1822)**

Distribution: India (Barak, Brahmaputra, Ganges drainages). Bangladesh, Myanmar,

Nepal, Thailand.

IUCN status: Least Concern (LC).

Genus: *Puntius* Hamilton, 1822

Puntius Hamilton, 1822, Fish Ganges :310, 388 (Type species, *Cyprinus sophore*, Hamilton-Buchanan, by subsequent designation); Jayaram, 1991, rec.Zool. Surv. India Occ. Paper No.135: 1-178 (revision); Talwar and Jhingran, 1991, Inland Fishes 1: 250; Jayaram, 1999, FW Fishes of the Indian Region: 108; Menon, 1999, Rec Zool Surv India., Occ. Paper No. 175: 65; Nath and Dey, 2000. Fish and Fisheries of NE India (Arunachal Pradesh): 39; Vishwanath, 2002, Fish and Fisheries of NE India, NATP Pub.: 69.

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

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 to moderate.

Material examined: Assam, River Barak at Lakhipur, 2001, 2 exs., Museum No. 13,9(i) and

13,10(i). River Barak at Lakhipur, November 2000, 1 ex., Museum No.16,6(i). Collector, Professor 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* (Hamilton, 1822)**

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

IUCN status: Least Concern (LC).

Genus: *Systemus* McClelland, 1838

Systemus McClelland, 1838, Journal of the Asiatic Society of Bengal, 7: 948 (Masc. *Systemus immaculatus* McClelland 1839. Type by subsequent designation).

Generic characters: Last simple dorsal-fin ray strongly serrated; soft dorsal fin rays usually

eight. The presence of two pairs of well-developed barbels rostral and maxillary; some may have small maxillary barbels. Many of them have a longitudinal stripe extending the length of the body dorsal to the lateral line.

Material examined: Assam, River Kushiara at Tila Bazar, Karimganj, January-March,1998, 1

ex, Museum No.15,1(i). Collector, Prof D Kar and Party. First Report.

Key to species: Body oblong, head, small, barbels 2 pairs. Maxillary pair longer than orbit,

rostral pair shorter.

***Systemus sarana* (Hamilton, 1822)**

Distribution: India. Afghanistan, Pakistan, Nepal, Bangladesh, Bhutan, Sri Lanka,

Myanmar and Thailand.

IUCN Status: Least Concern (LC)

Genus: *Cirrhinus* Oken, 1817

Cirrhinus Oken, 1817, V.KI. Fische. IN: Isis order Encyclopadische Zeituny, 8: 113 (type species, *Cyprinus cirrhusus* Bleeker, by monotypy), 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. The Dorsal fin inserted ahead of pelvic fins. Anal fin short. Scales of varying sizes. Lateral line complete.

Material examined: Assam, River Barak at Lakhipur, October 2000, 1 ex., Museum No.18,5(i).

River Barak at Jhakrahar, 08.05.2009, 1 ex., Museum No.17(B), XVII,1(i). Collector, Professor D Kar and Party: First Report.

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

***Cirrhinus reba* (Hamilton, 1822)**

Distribution: Northeast and Northern India, Darjeeling, Eastern Himalaya. South and

Southeastern Asia.

IUCN Status: Least Concern (LC).

Material examined: Assam, River Barak at Lakhipur, Cachar, October 2000, 1 ex,

Museum No.18,1(i). Collector, 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* (Hamilton, 1822)**

Distribution: Almost throughout India. South and Southeastern Asia.

IUCN Status: Least Concern (LC).

Genus: *Labeo* Cuvier, 1816

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; Jayaram, 1999, FW Fishes of the Indian Region : 132; Menon, 1999, 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; 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, River Barak at Lakhipur, Cachar, October 2000, 2 ex, Museum

No.18,6(i) and 18,7(i). Collector, Prof. D. Kar and Party. First Report.

Key to species: Dorsal finrays 15-18. Pectoral fins as long as head. Body deep and little

blackish in colour. Mouth distinctly inferior and wide. The presence of 1 pair of barbels generally.

***Labeo calbasu* (Hamilton, 1822)**

Distribution: Throughout India. Bangladesh, Myanmar, Nepal, Pakistan, Thailand.

IUCN Status: Least Concern (LC).

Material examined: Assam, River Kushiara at Tila Bazar, Karimganj, January-March,

1998, 1 ex., Museum No.15,5(i). Collector, Prof D Kar and Party. First Report.

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

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

***Labeo gonius* (Hamilton, 1822)**

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

Pakistan.

IUCN Status: Least Concern (LC).

Genus: *Tariqilabeo* Kuhl van Hasselt, 1823

Tariqilabeo Kuhl van Hasselt, 1823, Algem-Konst. Letter-Bode, 2, p:132 (Type species, *Tariqilabeo oblongus* (*Crossocheilus oblongus*) Kuhl and van Hasselt, by monotype); 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; Jayaram, 1999, FW Fishes of the Indian Region: 152; Menon, 1999, 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. The 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, River Barak at Lakhipur, 2001, 1 ex., Museum No. 13,6(i),

November 2000, 1 ex., Museum No.16,1(i). Collector, Professor D. Kar and Party: First Report.

Key to species: Presence of 37-39 Lateral line scales. Diameter of eye 21.3 to 23.8 % of head

length.

***Tariqilabeo latius* (Hamilton, 1822)**

Distribution: Almost throughout NE India. Bangladesh, Nepal.

IUCN status: Least Concern (LC)

Genus: *Garra* Hamilton, 1822

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 blunts; 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.

Material examined: Assam, River Barak at Karong (Nagaland-Manipur Border), 26.10.2004,

2 ex. Museum No.14,1(i) and 14,1(vi). River Barak at Patpuihmun, 22.04.2008, 1 ex., Museum No.17(A), 1,1(i). Collector, Professor D Kar and Party: First Report.

Key to species: Lateral line scales 33-34. Distance between vent and anal fin origin 31.25 to

38.5 % in inter-distance between pelvic and anal fin origin.

***Garra annandalei* Hora, 1921**

Distribution: India (Brahmaputra River basin). Bangladesh, Nepal.

IUCN status: Least Concern (LC)

Family: Psilorhynchidae

Genus: *Psilorhynchus* McClelland, 1839

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. 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 complete with 32-34 scales.

Material examined: Assam, River Barak at Phulpui, 23.04.2008, 1 ex., Museum

No.17(A),V,1(i). River Tuivai at 20 km upstream from Damsite, 17.04.2008, 1 ex., Museum No.17(B), XIII,2(i). Collector, Prof D Kar and Party. First Report.

Key to species: Pectoral fin with 6-7 simple rays. Lateral line scales 30-34.

***Psilorhynchus balitora* (Hamilton, 1822)**

Distribution: India (Ganga-Brahmaputra basin). Bangladesh, Bhutan, Nepal.

IUCN Status: Least Concern (LC).

Family: Nemacheilidae

Genus: *Paracanthocobitis* Peters, 1861

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); Jayaram, 1999, 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, River Barak at Teulein, 26.04.2008, 1 ex., Museum

No.17(A), IX,1(i). River Barak at Vitin, 26.04.2008, 1 ex., Museum No.17(A), XI,1(i). Collector, Prof D Kar and Party. First Report.

Key to species: Dorsal fin with 9-11 branched rays. Body depth about 20 to 23.63 % Standard

length.

***Paracanthocobitis botia* (Hamilton, 1822)**

Distribution: Almost throughout India. Bangladesh, Bhutan, China, Pakistan, Myanmar,

Nepal, Thailand.

IUCN Status: Least Concern (LC).

Genus: *Schistura* McClelland, 1839

Schistura McClelland, 1839, Asiat. Res., 19: 306, 439 (Type species: *Cobitis* (*Schistura*) *rupecula* McClelland by subsequent designation).

Generic characters: Body elongates of almost uniform depth; compressed posteriorly. Head

either depressed or compressed. Snout usually blunt. The posterior nostril may be prolonged as a tube in some species. Lips with a few furrows; medially interrupted. Upper lip slightly furrowed, continuous or with a narrow median interruption. Lower lip interrupted in the middle; moderately furrowed. Processus dentiform of upper jaw present with a corresponding incision on the lower jaw in many species. Dorsal fin short; inserted ahead or opposite to pelvic fins; with seven-eight rays; rarely 10. An auxiliary pelvic lobe may be present. Caudal fin slightly emarginated, forked, or truncate (never rounded) with a black bar. A general absence of adipose crest. If present, mostly in the posterior part of the body. Lateral line complete or incomplete. The presence of scales on the body generally. Usually, the presence of a characteristic color pattern.

Material examined: Assam, River Barak at Lakhipur, 2001, 1 ex., Museum No. 13,15(i).

Collector, Professor D. Kar and Party: First Report.

Key to species: Presence of 11-13 dark brown transverse bars on body, 3 black spots on base

of dorsal fin.

***Schistura fasciata* Lokeshwor & Vishwanath, 2011**

Distribution: India (Barak-Surma-Megna river basin, Manipur).

IUCN status: Not Evaluated

Material examined: Assam, River Barak at Karong (Nagaland-Manipur Border),

26.10.2004, 2 ex. Museum Nos. 14,5(i), 14,6(i). River Barak at Phulpui, 23.04.2008, 1 ex, Museum No.17(A), V,2(i). Collector, Professor D. Kar and Party: First Report.

Key to species: Body marked with 14 -16 vertical bands often bands split up particularly

in front of dorsal fin into several narrower bands. Lateral line complete.

***Schistura multifasciata* (Day, 1878)**

Distribution: India (Northeast, Eastern Himalayas). Bhutan, Nepal, Myanmar, Thailand.

IUCN status: Least Concern (LC)

Family: Botiidae

Genus: *Botia* Gray, 1831

Botia Gray, 1831, Zool.Misc. 8 (Type species, *Botia almorhae* Gray, by monotypy), 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), p. 31 (revision), -Jayaram, 1999, Freshwater Fishes of the Indian Region: 209, Menon, 1999, 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. The Dorsal fin inserted above origin of pelvics or slightly ahead. Anal fin short. Caudal fin deeply forked. Scales absent on head.

Material examined: Assam, River Barak at Fulertal, 06.06.2009, 1 ex., Museum

No.17(B), XVI,4(i). River Barak at Katigorah, 26.08.2008, 1 ex., Museum No.19,6(i). Collector, Prof. D. Kar and Party. First Report.

Key to species: Body with 7 or 8 brownish oblique vertical bands.

***Botia dario* (Hamilton, 1822)**

Distribution: India (Northeast, Bihar, North Bengal, Punjab, UP). Bangladesh, Bhutan,

Pakistan.

IUCN status: Least Concern (LC)

Family: Cobitidae

Genus: *Canthophrys* Swainson, 1838

Canthophrys Swainson, 1838, Nat.Hist. Fishes: 364 (Type species *Canthophrys albescens*, said to be an unnecessary replacement name for *Cobitus gongota* Hamilton-Buchanan: as in Jayaram, 2010); Vishwanath, 2002, Fish and Fisheries of NE India, NATP Pub.:123.

Generic characters: Body cylindrical, stout, elongated. Abdomen rounded. Head swollen,

wider than deep. Nostrils are close together. Snout long, straight, broadly anteriorly with soft warty tubercles. Mouth small, inferior, horseshoe shaped. Eyes bulging, fairly large, superior, situated in the middle of the head. Presence of a sub-orbital bifid spine below the eyes. Presence of 6 barbels; one pair each of rostral and maxillary. The Dorsal fin inserted behind the pelvic origin with 11 rays and without a spine. Anal fin short with 7 rays. Lateral Line distinct and complete.

Material examined: Assam, River Barak around Lakhipur, 2001, 1 ex., Museum No. 13,16(i).

Collector, Professor D. Kar and Party. First Report.

Key to species: Dorsum dark, with indications of 7 or 8 broad dark vertical bands; prominent

large dark patch on cheek.

***Canthophrys gongota* (Hamilton, 1822)**

Distribution: India (Himalaya foothills). Bangladesh, Nepal, Myanmar, Pakistan.

IUCN status: Least Concern (LC)

Order: *Siluriformes*

Family: Bagridae

Genus: *Sperata* Holly, 1939

Sperata Holly, 1939, Zool. Anzeiger 125: 14, 1939 (type species, *Sperata vittatus* (Bloch), -Ferraris and Runge, 1999, Proc Acad Nat Sci Philad 51(10): 400 (revision), Jayaram, 2006, Catfishes of India: 23, -Ferraris, 2007, Zootaxa, 1418: 106 (Check list). Macrones Dumeril, 1856, Ichthyologie analytique: 484 (type species, *Bagrus lamarrii* Valenciennes, 1840. AoriaJordan, 1856, Proc.Acad.Nat.Sci. Philad. 70: 341.

Generic characters: Dorsal profile arched. Head large, elongate, slightly depressed. Snout

spatulate or rounded. Mouth moderately large. A distinct inter-neural shield present in between the basal bone of dorsal fin and occipital process. Gill membranes free from each other and

also from the isthmus. Adipose dorsal fin low; its margin slightly convex. Pectoral spine serrated along inner margin of antrose teeth. Caudal fin deeply forked. A large round or avoid dark spot is present near the posterior margin of the adipose dorsal fin.

Material examined: Assam, River Barak at Fulertal, 06.06.2009, 1 ex., Museum No.17(B),

XVI,1(i). Collector, Prof. D. Kar and Party. First Report.

Key to species: Anterior margin of snout broad and spatulate.

***Sperata seenghala* (Sykes, 1839)**

Distribution: Large rivers of India upto Krishna River system in South India. Bangladesh,

Nepal, Pakistan, Afghanistan.

IUCN status: Least Concern (LC)

Genus: *Mystus* Scopoli, 1777

Mystus Scopoli, 1777, Introduction historiam natural 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 head mostly smooth with one or two median longitudinal grooves of varying length. The occipital process long or short, situated superficially concealed under skin. Four pairs of barbels; 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, River Barak around Lakhipur, 2001, 1 ex., Museum No. 13,1(i).

Collector, 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* (Bloch, 1794)**

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

IUCN status: Least Concern (LC)

Family: Ailiidae

Genus: *Eutropiichthys* Bleeker, 1862

Eutropiichthys Bleeker, 1862, versl. Akad. Amsterdam, 14: 398 (Type species: *Pimelodus vacha* Hamilton-Buchanan, by original description); Hora, 1937, J. Bonmbay nat Hist Soc, 39: 431-446 (review); Jayaram, 2006, Catfishes of India: 132; Ferraris, 2007, Zootaxa 1418: 358.

Generic characters: Body elongated, compressed. Abdomen rounded. Head of moderate size,

conical, snout pointed or blunt. The cleft of mouth reaching below orbit or slightly beyond. Eyes moderately large, lateral. Presence of 4 pairs of barbells; one pair each maxillary, nasal and two pairs mandibular. Rayed dorsal fin inserted above half of pectoral fins with 7 rays and a spine. Adipose dorsal fin short, posteriorly free. Pectoral fins with 10 to 16 rays and a spine. Pelvic fins with six rays. Anal fin long with 38 to 54 rays. Caudal fin deeply forked.

Material examined: Assam, River Barak at Fulertal, 06.06.2009, 1 ex., Museum

No.17(B), XVI,2(i). Collector, Prof D Kar and Party. First Report.

Key to species: Nasal barbels reach hind border of head or slightly beyond

***Eutropiichthys vacha* (Hamilton, 1822)**

Distribution: Throughout India. Bangladesh, Myanmar, Thailand.

IUCN status: Least Concern (LC)

Family: Horabagridae

Genus: *Pachypterus* Swainson, 1838

Pachypterus Swainson, 1838, The Natural History and Classification of fishes, amphibians and reptiles, or monocardian animals, 1: 346 (Type by subsequent designation: Masc. *Silurus atherinoides* Bloch, 1794).

Generic characters: Barbels four pairs. Part of abdomen more or less keeled. Eyes large and

ventro lateral. Dorsal fin with 5-6 rays and a spine. Adipose fin short.

Material examined: Assam, River Barak around Lakhipur, 2001, 1 ex., Museum No.13,19(i).

Collector, Prof. D. Kar and Party.

Key to species: Mouth terminal, its cleft does not extend to anterior border of orbit. A pale

golden stripe along lateral line ending in a dusky spot at base of caudal fin.

***Pachypterus atherinoides* (Bloch, 1794)**

Distribution: Throughout India (except Kerala). Bangladesh, Myanmar, Nepal, Pakistan.

IUCN status: Least Concern (LC)

Family: Sisoridae

Genus: *Gagata* Bleeker, 1858

Gagata Bleeker, 1858. Ichthyol. Archipel Indici Prodr 1: 204 (type species: *Pemelodus gagata* 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 barbells 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 deeply forked. Lateral line complete with pores on anterior half.

Material examined: Assam, River Barak at Lakhipur, 2001, 2 exs., Museum No. 13,17(i) and

13,18(i). River Barak at Katigorah, 26.08.2008, 1 ex., Museum No.19, 4(i). River Barak at Fulertal, 06.06.2009, 1 ex., Museum No.17(B), XVI,3(i). Collector, 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* (Hamilton, 1822)**

Distribution: India (Ganga-Brahmaputra River systems). Bangladesh, Bhutan, Nepal,

Pakistan.

IUCN status: Least Concern (LC)

Genus: *Conta* Hora, 1951

Conta Hora, 1951, Rec. Indian Mus. 47: 194 (Type species:

Pimelodus conta Hamilton by absolute tautonomy); Tilak, 1967, Matsya 12 and 13: 85; Jayaram, 2006, Catfishes of India: 277; Thompson and Page, 2006, Zootaxa, 1345 (Check list); Ferraris, 2007, Zootaxa, 1418: 38.

Generic characters: Body long, not much depressed for flat. Head small, oval. Mouth small.

Snout bluntly pointed. Eyes small. Median longitudinal groove shallow, extending to base of occipital process and does not reach base of dorsal fin. Barbels 4 pairs; one pair each of maxillary, nasals; and outer and inner mandibular; all shorter than Head Length; and all annulated with alternate white and black rings. Abdomen rounded; its surface plaited in the middle forming an elongated adhesive apparatus extending from gill opening to pelvic fins.

Material examined: Assam, River Barak at Lakhipur, 2001, 1 ex., Museum No. 13,5(i).

Collector, Prof D Kar and Party. First Report.

Key to species: Serrations on pectoral spine distally directed (antrorse); Caudal peduncle.

21.9-23.4 % in standard length.

***Conta conta* (Hamilton, 1822)**

Distribution: India (Ganga-Brahmaputra River). Bangladesh, Nepal.

IUCN status: Data Deficient (DD)

Genus: *Erethistes* Muller and Troschel, 1849

Erethistes Muller and Troschel, 1849, Horae Ichthy., 3: 12. Pl.,1; Fig. 3, 1849 (Type species: *Erethistes pussilus* Muller and Troschel by monotypy); Guenther, 1864, Cat Fis Brit Mus 5: 233; Hora, 1950, Rec Indian Museum, 47: 183 (revision); Rossel, 1964, Mitt. Hamburg Zool Mus Inst., 61: 152; Kottelat, 1965, Hydrobiologia, 107: 71-74; 1963 (Teview); Nath and Dey, 2000, Fish and Fisheries of NE India: 108) Arunachal Pradesh); Jayaram, 2006; Catfishes of India: 280); Thompson and Page, 2006: Zootaxa, 1345: 13; Ferraris, 2007, Zootaxa, 1417 : 384 (check list)

Generic character: Dorsal profile sharp upto occiput, steeply rising upto base of dorsal fin;

thereafter, slpes down to caudal base. Head elongated depressed, covered with backwardly directed spines. Snout conical. Mouth small, inferior, nostrils close together, separated by a flap of skin bearing the nasal barbel. Four pairs of barbells; one pair each of maxillary, nasals, outer and inner mandibular; all annulated with black rings. No thoracic adhesive apparatus. A rayed dorsal fin inserted almost above pelvic fins, with a strong serrated spine. Adipose dorsal fin short, free. Pectoral fins with 5

rays and a spine separated along both edges; serrations along the outer edge arranged in the form of divergent spines; pectoral fins not reaching pelvics, also, pelvic fins may or may not reach anal fin. Anal fin short not reaching caudal base. Lateral line complete, may be with tubercles.

Material examined: Assam, River Barak at Parbungkai, 22.04.2008, 2 exs., Museum

No.17(B), XV,1(i) and 17(B),XV,1(ii). Collector, Prof. D. Kar and Party. First Report.

Key to species: Occipital process reaching basal bone of dorsal fin. Skin smooth.

***Erethistes jerdoni* (Day, 1870)**

Distribution: India (Ganges and Brahmaputra drainages). Bangladesh, Nepal.

IUCN status: Least Concern (LC)

Material examined: Assam, River Barak around Lakhipur, 2001, 1 ex., Museum No.

13,7(i). Collector, Prof D Kar and Party. First Report.

Key to species: Pectoral spine shorter than head length (66.7-95.3 % of head length), fin

not extending to pelvic fin base.

***Erethistes hara* (Hamilton, 1822)**

Distribution: India (Ganges and Brahmaputra drainages). Bangladesh.

IUCN status: Least Concern (LC)

Genus: *Glyptothorax* Blyth, 1860

Glyptothorax Blyth, 1860, J.Asiat.Soc., Bengal, 29: 154 (Type species: *Glyptothorax trilineatus* Blyth); Hora, 1923, rec.Indian Maa.,25 : 8 (revision); Prashad and Mukerji, 1929, Rec. Indian Mus., 31: 164, 183, 185)Burmese species0; hora and Gupta, 1941, Bull. Raffles Mus., 17 : 33, Pl. 3 (Malayan species); Menon, M.A.S., 1954, Rec.Indian Mus., 62 : 30 (revision); Li, 1986, Indo-Paific Fish Biology: 521-528; nath and Dey, 2000, Fish and Fisheries of NE India : 111; Jayaram, 2006, Catfishes of India : 256; Thompson and Page, 2006, Zootaxa, 1345 : 40 (Check list); Ferraris, 2007, Zootaxa, 1418 : 387 (Check list).

Generic characters: Body of small to moderate size. The Dorsal profile not much arched. Head

small, depressed, covered with thick skin. Mouth conical but not pointed. Upper jaw longer. Mouth inferior, transverse, narrow. Presence of an adhesive organ on the ventral surface of thorax; which is confined to the abdomen immediately between the pectoral fins; and, further, it may be of varying lengths and may be

with or without a pit or depression. Barbels: 4 pairs; 1 pair each of maxillary and nasal; and 2 pairs of mandibular. Rayed dorsal fin with 5 to 7 rays and a spine. The adipose dorsal fin is short and posteriorly free. Pectoral fins inserted laterally with 6 to 11 rays and a flat strong spine. Pelvic fins with 6 rays. Anal fin short with 7 to 14 rays. Caudal fin deeply forked. Lateral line simple and complete.

Material examined: Assam, River Barak at Lakhipur, 2001, 1 ex., Museum No. 13,2(i). River

Barak at Katigorah, 26.08.2008, 1 ex., Museum No.19, 5(i). Collector, Prof D Kar and Party. First Report.

Key to species: Thoracic adhesive apparatus with narrow folds of skin, incomplete posteriorly.

Nostrils separated from the snout by a distance equal to eye diameter.

***Glyptothorax telchitta* (Hamilton, 1822)**

Distribution: India (Ganga-Brahmaputra basin). Bangladesh, Nepal.

IUCN status: Least Concern (LC)

Material examined: Assam, River Barak at Karong (Nagaland-Manipur Border),

26.10.2004, 1 ex., Museum No.14,3(i). Collector, Prof. D Kar and Party. First Report.

Key to species: Presence of six branched rays in rayed dorsal fin. Adhesive apparatus on

thorax with a central pit.

***Glyptothorax cavia* (Hamilton, 1822)**

Distribution: Assam, River Barak at Karong (Nagaland-Manipur Border), 26.10.2004. Collector, Prof. D. Kar and Party. First Report.

IUCN status: Least Concern (LC)

Order: *Cichliformes*

Family: *Ambassidae*

Genus: *Chanda* Hamilton, 1822

Chanda Hamilton, 1822, An account of fishes found in the river Ganges: 109, 371.

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

compressed with a 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, River Barak at Lakhipur, 2001, 1 ex., Museum No. 13,20(i).

Collector, Prof D Kar and Party. First Report.

Key to species: Presence of three prominent canine teeth on either side of lower jaw.

***Chanda nama* Hamilton, 1822**

Distribution: Throughout India. Bangladesh, Nepal, Pakistan.

IUCN Status: Least Concern (LC).

Genus: *Parambassis* Bleeker, 1874

Parambassis Bleeker, 1874, Nat Verh Holland Maatsch Wetensch 2(2): 86 (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.

Generic Characters: Body elongate, 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, River Barak around Lakhipur, 2001, 2 ex., Museum No. 13,11(i)

and 13,11(ii). River Barak at Katigorah, 26.08.2008, 1 ex., Museum No.19,10(i).

Key to species: Body transparent with a silvery broad lateral stripe on sides. Caudal peduncle depth 10.9 to 12.0 % of standard length

***Parambassis ranga* (Hamilton, 1822)**

Distribution: Throughout India. Bangladesh, Nepal, Myanmar, Pakistan.

IUCN status: Least Concern (LC).

Results and Discussion

Ichthyofaunal surveys in the headwaters of river Barak at different locations in the provinces of Manipur, Mizoram and Assam, notably, Karong, Chandikhal, Jhakrahar, Katigorah,

Sartuinek, Teulien, Tuolbung, Patpuihmun, Phulpui, Fulertal, Parbungkai, Tuivai, Taithu, Khowpan, Kamifai, Vitin, Gilgal, Tupidahar, Lakhipur, Kushiara, and Tipaimukh revealed the occurrence of 41 species of fishes belonging into 33 genera, 10 families and 3 orders. Most of the species were reported for the first time from these areas. Detailed taxonomic analysis indicated

the highest number of species among the *Cypriniformes* (29 species) followed by *Siluriformes* (10 species) and *Cichliformes* (2 species). The conservation status of *Tor putitora* is Endangered and *Neolissochilus hexagonolepis* is Near Threatened. The remaining species are Least Concern, and a few species are Data Deficient (Table 1) [38-43].

Table1: Diversity, Conservation statuses and Distribution of Ichthyospecies in Barak River and its tributaries.

| Sl.no | Species | IUCN Status | Distribution | Code | Examples |
|-------|--|-------------|--|-------------------|----------|
| | Phylum: Chordata Class: Actinopteri Order: Cypriniformes Family: Danionidae | | | | |
| 1 | <i>Securicula gora</i> (Hamilton, 1822) | LC | River Barak, Katigorah, | 19, 9(i). | 1 |
| 2 | <i>Salmostoma bacaila</i> (Hamilton, 1822) | LC | River Barak, Lakhipur, | 13,8(i), 18,2(i). | 2 |
| 3 | <i>Cabdio morar</i> (Hamilton, 1822) | LC | River Barak, Lakhipur | 16,9(i). | 1 |
| 4 | <i>Opsarius bendelisis</i> (Hamilton, 1807) | LC | River Tuivai, 20 km upstream of Damsite, | 17(B), XIII,1(i). | 1 |
| 5 | <i>Opsarius tileo</i> (Hamilton, 1822) | LC | River Barak at Karong | 14,4(i), | 1 |
| | | | River Barak at Lakhipur | 18,4(i). | 1 |
| 6 | <i>Opsarius barna</i> McClelland, 1839 | LC | River Barak at Lakhipur | 16,5(I) | 1 |
| | | | River Barak at Sartuinek and Patpuihmun | 17(A), II,1(i) | 1 |
| | | | River Barak at Karnifai | 17(A), III,1(i) | 1 |
| | | | River Barak at Taithu | 17(A), VIII,1(i) | 1 |
| 7 | <i>Barilius barila</i> (Hamilton, 1822) | LC | River Barak at Lakhipur | 16,4(i) | 1 |
| 8 | <i>Laubuka laubuca</i> (Hamilton, 1822) | LC | River Barak at Lakhipur | 13,3(i) | 1 |
| 9 | <i>Chela cachius</i> (Hamilton, 1822) | LC | River Barak at Lakhipur | 13,4(i) | 1 |
| 10 | <i>Devario aequipinnatus</i> (McClelland, 1839) | LC | River Barak at Karong | No14,8(i) | 1 |
| | | | River Barak at Khowpan | 17(B), XII,1(i) | 1 |
| 11 | <i>Amblypharyngodon mola</i> (Hamilton, 1822) | LC | River Barak at Lakhipur | 16,7(i) | 1 |
| | Family: Cyprinidae | | | | |
| 12 | <i>Neolissochilus hexagonolepis</i> (McClelland, 1839) | NT | River Barak at Karong | 14,7(i) | 1 |

| | | | | | |
|-----------------------|---|----------------|--|----------------------------|---|
| 13 | <i>Tor putitora</i> (Hamilton, 1822) | EN | River Barak at Tuolbung | 17(A), IV,1(i) | 1 |
| 14 | <i>Tor tor</i> (Hamilton, 1822) | DD | River Barak at Teulein | 17(A), IX,2(i) | 1 |
| | | | River Barak at 20 km downstream of Tipaimukh Dam | 17(A), X,1(i) | 1 |
| | | | River Barak at Vitin | 17(A), XI,2(i) | 1 |
| | | | River Barak at Gilgal | 17(B), XVIII,1(i) | 1 |
| | | | River Barak at Tupidahar | 17(B), IX,1(i) | 1 |
| | River Barak at Chandikhal, | 17(B), XX,1(i) | 1 | | |
| 15 | <i>Chagunius chagunio</i> (Hamilton, 1822) | LC | River Barak, 10 km downstream of Tipaimukh Dam | 17(B), XIV,1(i) | 1 |
| 16 | <i>Puntius sophore</i> (Hamilton, 1822) | LC | River Barak at Lakhipur | 13,9(i),13,10(i), 16,6(i). | 3 |
| 17 | <i>Systomus sarana</i> (Hamilton, 1822) | LC | River Kushiara at Tila Bazar, Karimganj | 15,1(i) | 1 |
| 18 | <i>Cirrhinus reba</i> (Hamilton, 1822) | LC | River Barak at Lakhipur | 18,5(i) | 1 |
| | | | River Barak at Jhakradahar | 17(B), XVII,1(i) | 1 |
| 19 | <i>Cirrhinus mrigala</i> (Hamilton, 1822) | LC | River Barak at Lakhipur | 18,1(i) | 1 |
| 20 | <i>Labeo calbasu</i> (Hamilton, 1822) | LC | River Barak at Lakhipur | 18,6(i), 18,7(i) | 1 |
| 21 | <i>Labeo gonius</i> (Hamilton, 1822) | LC | River Kushiara at Tila Bazar, Karimganj | 15,5(i) | 1 |
| 22 | <i>Tariqilabeo latius</i> (Hamilton, 1822) | LC | River Barak at Lakhipur | 13,6(i), 16,1(i). | 2 |
| 23 | <i>Garra annandalei</i> Hora, 1921 | LC | River Barak at Karong | 14,1(i), 14,1(vi) | 2 |
| | | | River Barak at Patpuihmun | 17(A), I,1(i) | 1 |
| 24 | <i>Psilorhynchus balitora</i> (Hamilton, 1822) | LC | River Barak at Phulpui | 17(A), V,1(i) | 1 |
| | | | River Tuivai, 20 km upstream of Damsite | 17(B), XIII,2(i) | 1 |
| Family: Nemacheilidae | | | | | |
| 25 | <i>Paracanthocobitis botia</i> (Hamilton, 1822) | LC | River Barak at Teulein | 17(A), IX,1(i) | 1 |
| | | | River Barak at Vitin | 17(A), XI,1(i) | 1 |
| 26 | <i>Schistura fasciata</i> Lokeshwor & Vishwanath, 2011 | DD | River Barak at Lakhipur | 13,15(i) | 1 |
| 27 | <i>Schistura multifasciata</i> (Day, 1878) | LC | River Barak at Karong | 14,5(i), 14,6(i) | 2 |
| | | | River Barak at Phulpui | 17(A), V,2(i) | 1 |

| | | | | | |
|----|---|----|-----------------------------|---------------------------------|---|
| | Family: Botiidae | | | | |
| 28 | <i>Botia dario</i> (Hamilton, 1822) | LC | River Barak at Fulertal | 17(B), XVI,4(i) | 1 |
| | | | River Barak at Katigorah | 19,6(i) | 1 |
| | Family: Cobitidae | | | | |
| 29 | <i>Canthophrys gongota</i> (Hamilton, 1822) | LC | River Barak around Lakhipur | 13,16(i) | 1 |
| | Order: Siluriformes Family: Bagridae | | | | |
| 30 | <i>Sperata seenghala</i> (Sykes, 1839) | LC | River Barak at Fulertal | 17(B), XVI,1(i) | 1 |
| 31 | <i>Mystus vittatus</i> (Bloch, 1794) | LC | River Barak around Lakhipur | 13,1(i) | 1 |
| | Family: Ailiidae | | | | |
| 32 | <i>Eutropiichthys vacha</i> (Hamilton, 1822) | LC | River Barak at Fulertal | 17(B), XVI,2(i) | 1 |
| | Family: Horabagridae | | | | |
| 33 | <i>Pachypterus atherinoides</i> (Bloch, 1794) | LC | River Barak around Lakhipur | 13,19(i) | 1 |
| | Family: Sisoridae | | | | |
| 34 | <i>Gagata cenia</i> (Hamilton, 1822) | LC | River Barak at Lakhipur | 13,17(i),13,18(i) | 2 |
| | | | River Barak at Katigorah | 19, 4(i) | 1 |
| | | | River Barak at Fulertal | 17(B), XVI,3(i) | 1 |
| 35 | <i>Conta conta</i> (Hamilton, 1822) | DD | River Barak at Lakhipur | 13,5(i) | 1 |
| 36 | <i>Erethistes jerdoni</i> (Day, 1870) | LC | River Barak at Parbungkai | 17(B), XV,1(i), 17(B), XV,1(ii) | 2 |
| 37 | <i>Erethistes hara</i> (Hamilton, 1822) | LC | River Barak around Lakhipur | 13,7(i) | 1 |
| 38 | <i>Glyptothorax telchitta</i> (Hamilton, 1822) | LC | River Barak at Lakhipur | 13,2(i) | 1 |
| | | | River Barak at Katigorah | 19, 5(i) | 1 |
| 39 | <i>Glyptothorax cavia</i> (Hamilton, 1822) | LC | River Barak at Karong | 14,3(i) | 1 |
| | Order: Cichliformes Family: Ambassidae | | | | |
| 40 | <i>Chanda nama</i> Hamilton, 1822 | LC | River Barak at Lakhipur | 13,20(i) | 1 |
| 41 | <i>Parambassis ranga</i> (Hamilton, 1822) | LC | River Barak around Lakhipur | 13,11(i), 13,11(ii) | 2 |
| | | | River Barak at Katigorah | 19,10(i) | 1 |

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