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Original Paper

DISTRIBUTION AND CONSERVATION STATUS OF FISH SPECIES IN RIVER MAT IN MIZORAM: PIONEERING DETAILED TAXONOMIC STUDY AND REPORT

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Abstract

Ichthyofaunal surveys in the River Mat at different locations from the headwaters to the downstream region in the province of Mizoram, done as a pioneering work (since updated), revealed the occurrence of 26 species of fishes belonging to 23 genera, 11 sub-families, 13 families and 6 orders during the entire period of study. These include 17 species under Cypriniformes, 4 species under Siluriformes, 2 species under Anabantiformes; and, 1 speices each under Beloniformes, Synbranchiformes and Gobiiformes. Distrubution and Conservation status of each species of fish have been dealt with in the present paper.

Keywords

Fish taxonomy and Diversity, River Mat, Mizoram, North-East India Himalayan Biodiversity Hotspot, Conservation

1. Introduction

Fish forms approximately half of the total craniate population on the earth . They inhabit almost in all aquatic regimes. *c* 21,723 living species of fishes have been noted out of *c* 39,900 species of craniates. (Jayaram, 1999, 2003, 2010; Nelson *et al.,* 2016, Kar, 2025 a, b, c, d). Of these, *c* 8411 are freshwater (FW) species and *c*11,650 are marine. Concomitantly, India is one of the Megabiodiversity countries in the world (Mittermeier & Mittermeier, 1997). There are reports that, in India, *c* 2500 species of fishes are said to occur; of which, *c* 930 species are freshwater (FW) dwellers and *c* 1570 are marine (Jayaram, 2010; Kar, 2003, 2007, 2010, 2019, 2025 a,b,c,d). This bewilderig piscian biodiversity of this region had been alluring large number of ichthyologists both from India and abroad. Concomitantly,

North-East (NE) region of India has been identified as a `Hotspot' of Biodiversity in the Eastern Himalayan stretch, by the World Conservation Monitoring Centre (WCMC, 1998) This prolific biodiversity of this region could be due to certain causes, like, the geomorphology and the tectonics of this region. The mountains and the undulating terrains of this zone are said to give rise to innumerable torrential hill streams, which lead to big rivers; and, finally, become part and parcel of the Ganga-Brahmaputra-Barak-Chindwin-Kolodyne-Gomati-Meghna system (Kar, 2000, 2007, 2013, 2019, 2021a, b, c, d, 2025a,b, c, d).

There are innumerable lentic and lotic water bodies in India. And, the province of Mizoram, situated in the NE Himalayan belt, is a hotspot of ichthyodiversity contained in many lentic and lotic water bodies of various kinds, including rheophilic hill streams; and, to some extent, plainwater rivers and streams. However, the aquatic regime and life in water bodies have been much affected by human interventions.

A little detailed perusal of literature on Fish taxonomic works depicted that, Menon (1978) had dealt with an appraisal of Satpura Hypothesis of Distribution of the Malayan Fauna and Flora to Peninsiular India.

Concomitant to above, Kar (1990, 1996, 1999, 2000, 2003 a,b, 2005, 2007, 2013, 2015, 2019, 2021 a,b,c,d, 2022, 2024 a, b; 2025a b c d; Kar and Kumar, 2023, Kar and Das (2024) have been doing large-scale studies in NE India on different aspects of fish and their habitats. Kar and Sen (2007) worked on a detailed study on fish' biodiversity in NE India with particular reference to Barak drainage, Mizoram, and Tripura. Of late, Kar and Khynriam (2020, 2022, 2023, 2024; and, Kar *et al.,* 2007, 2008, 2011, 2018, 2020 did extensive and intensive studies on the fish systematics and diversity and other related parameters in many water bodies in NE India.

Kar and Das (2015), Kar and Kumar (2023), Barbhuiya, Singha, and, Kar (2021) perused the present status of water bodies and human impact *vis-a-vis* sustainability of fishes, particularly the endangered mahseer fishes. Kar and Das B (2024) reported the fish diversity in rivers in Karbi Anglong. Kar and Khynriam (2020 a, b) did pioneering taxonomic studies of the fishes of rivers Diyung, Vombadung, Khuolzangvadung, Tuikoi and Mahur; and, in River Jinam in Dima Hasao district of Assam. Kar and Khynriam (2022) reported the fishes of River Barak at Karong. along Manipur-Nagaland border. Kar and Khynriam (2023) did Pioneering Study on Taxonomic Diversity of Fishes in the Headwaters of River Barak in Assam, Manipur and Mizoram in NE India. Kar and Khynriam (2024), in continuation of the reconnaissance pilot survey, did further pioneering works on the Taxonomy, Distribution and Conservation of Ichthyospecies in the Headwaters of River Barak (Assam, Manipur and Mizoram) in NE India . Kar (2015) and Kar and Roy (2021 a, b) worked on the *hitherto* unknown, virulent and enigmatic fish disease called Epizootic Ulcerative Fish Disease Syndrome (EUS). Kar *et al.* (2008 a, b, c, d; 2003, 2007, 2008, 2011, 2018 a, b) worked on various aspects of fishes, including fish taxonomy, fish disease and fish parasites, zooplankton as fish food fauna, fishing gears and fish catching devices; and, so on. Das *et al.* (2018) dealt with zooplankon assemblage. in Assam.

Notwithstanding the above, Kar (2005 b,) presented the Fish Diversity in the Major Rivers in Southern

Assam, Mizoram and Tripura at the 2nd International Symposium on GIS and Spatial Analyses in Fisheries and Aquatic Sciences, held at the University of Sussex at Brighton in the UK. In addition, Kar, D. (2007 b) dwelt upon the Sustainability issues of Inland Fish Biodiversity and Fisheries in Barak drainage (Assam), in Mizoram and in Tripura at the International Symposium on "Improved sustainability of Fish Production Systems and Appropriate Technologies for Utilisation" ("Sustain Fish", held at the Cochin University of Science and Technology(CUSAT) at Cochin in Kerala . Further, Kar (2016 a) dealt with an overview of the Wetlands, Rivers, Piscian Resources and Fish Disease in NE India at the International Symposium on Aquaculture and Fisheries (as part of the International Conference on Environmental Sustainability for Food Security (ENFOSE, 2016), held at Fisheries College and Research Institute (FCRI), Tamil Nadu Fisheries University (TNFU). In addition, Kar, D (2016 b) dwelt upon the Wetlands, Rivers, Fish, Plankton resources and Fish disease and Aquaculture in North-East India as an Overview at the International Symposium, entitled, "Lake 2016 orgaised by the Indian Institute of Science, Bengaluru, and the Alva's Education Foundation, Mengaluru (India).

Notwithstanding the above, some of the other important works on the fishes and water bodies in India in general and NE India, in particular are those of Ghosh. and Lipton,1982; Barman, 1984, 1992, 1994; Jayaram, 1981, 1999, 2003, 2010; Sen, 1985; Kar *et al.,* 2007, 2008, 2011, 2018, 2020; Menon, 1974,1999; Yadava *et al.* (1994); Nath & Dey, 1989,1997; Sinha, 1994; Sen, 2000; Sen and Khynriam, 2014; Arunachalam, *et al.* 2013; Das *et al.,* 2015; Dey, *et al.,* 2015; Lalramliana *et al.*, 2018; Lokeshwor *et al.,* 2013; Khynriam & Sen, 2014; Bănăduc *et al*., 2020).

In addition to above, Bailey (1994) had done much research works on the fishes of River Nile in the Republic of Congo. Bailey (1996) had dwelt upon the changes in the Fish and Fisheries Ecology of a large man-masde lentic system in Tanzania for the period from 1965-94. Bailey and Hickley (1986) had reported a recent collection of *Nothobranchius virgatus* Chambers, a new killifish from southern Sudan. Didem *et al.* (2012) published a New Record of occurrence of *Symphodus bailloni* (Osteichthuyes: Perciformes: Labridae) in the Western Black Sea Cooast of Turkey. Kullander, Sven O and Ralf Britz (2008) had reported a new species of cyprinid fish from Myanmar. Kevin W. Conway and Maurice Kottelat (2007) had published a new species of *Psilorhynchus* from thr Ataran River Basin, Myanmar, with comments on the generic name *Psilorhynchoides.* Wikramanayake, and Moyle (1989) had dwelt upon the ecological structure of Tropical Fish Assemblages in wet-zone streams of Sri Lanka.

River Mat in Mizoram

The River Mat is said to be one of the longest rivers in Mizoram having a length of *c* 90 kilometers and flows through the southern part of Mizoram. It is said to originate from around Serchip region of Mizoram; and, is said to join the River Kolodyne (Chhimtuipui) around Longtlai. The River Mat receives a number of tributaries in both of its banks along its course. The River Mat is a vital source of irrigation and fishing and is said to be a lifeline for the surrounding tribal people who largely depend on

agriculture and fishing for their livelihood.

Geographical position of the Sampling and Study point in River Mat in Mizoram

Village: bridge	Mat	N 22 º 53’ 42.3"
		E 92 º 52’ 15.7"

Altiiude: 464 m MSL

2. Method

Fish samples had been 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 by using different types of traps. The technique of Camouflaging was also used to catch the fishes. Fishes had been preserved at first in concentrated formaldehyde in the field itself and then in 10% formalin. Fishes have been identified after standard literature (Day, 1873, 1885, 1878, 1889; Shaw and Shebbeare, 1937; Misra, 1959; Menon, 1974, 1999; Talwar & Jhingran, 1991; Jayaram, 1981, 1999, 2010) and fishbase.org. The arrangement of classification, followed here, is that of Greenwood *et a1*. (1966) and Jayaram (1981, 1999, 2003, 2010); Kar & Khynriam, 2022, 2024).

The diversity of ichthyofauna of River Mat along with their global and regional conservation status have been presented in Table 1

Further, **Total Systematic list of Fish Species for all Collections for the entire surveyed duration of the River Mat is given below:**

Order: 6

Family: 13

Sub-family:11

Genus:23

Species:26

Order(I): Cypriniformes

Family (A): **Danionidae**

Sub-family(a): Chedrinae

Genus: (i)*Cabdio* ***Hamilton*** **1822**

Species(1): Cabdio morar (Hamilton, 1822)

Order(I): Cypriniformes

Family (A): **Danionidae**

Sub-family(a): Chedrinae

Genus (ii): Opsarius **McClelland, 1838**

Species (2): Opsarius bendelisis (Hamilton, 1807)

Order(I): Cypriniformes

Family (A): **Danionidae**

Sub-family(a): Chedrinae

Genus (ii): Opsarius **McClelland, 1838**

Species (3): Opsarius barna (Hamilton, 1807)

Order (I): Cypriniformes

Family (A): **Danionidae**

Sub-family: (b): Esoninae

Genus:(iii): *Esomus* Swainson, 1839

Species:(4): *Esomus danrica* (Hamilton, 1822)

Order(I): Cypriniformes

Family (A): **Danionidae**

Sub-family (c): Danioninae

Genus: (iv):Devario Heckel, 1843

Species: (5) *Devario aequipinnatus* (McClelland, 1839)

Order(I): Cypriniformes

Family (A): **Danionidae**

Sub-family(d): Rasborinae

Genus: (v) *Rasbora* Bleeker, 1860

Species:(6) *Rasbora daniconius* (Hailton, 1822)

Order(I): Cypriniformes

Family(B): **Cyprinidae**

Sub-family (e): Torinae

Genus (vi): *Neolissochilus* Rainboth, 1985

Species (7): ***Neolissochilus hexagonolepis (*****McClelland, 1839)**

Order(I): Cypriniformes

Family(B): **Cyprinidae**

Sub-family (f): Smiliogastrinae

Genus (vii) ***Systomus*** McClelland, 1838

Species: **(8) *Systomus sarana*** (Hamilton, 1822)

Order(I): Cypriniformes

Family (B): **Cyprinidae**

Sub-family (f): Smiliogastrinae

Genus: (viii) Pethia Pethiyagoda, 2012

Species (9): Pethia conchonius (Hamilton, 1822)

Order(I): Cypriniformes

Family(B): **Cyprinidae**

Sub-family (f): Smiliogastrinae

Genus: (viii) Pethia Pethiyagoda, 2012

Species (10): Pethia ticto (Hamilton, 1822)

Order(I): Cypriniformes

Family (B): **Cyprinidae**

Sub-family (g): Barbinae

Genus: (ix) Cyprinion Heckel, 1843

Species (11): Cyprinion semiplotum(McClelland, 1839*)*

Order(I): Cypriniformes

Family(B): **Cyprinidae**

Sub-family(h): Labeoninae

Genus (x) ***Tariqilabeo*** Kuhl van Hasselt, 1823

Species(12): Tariqilabeo latius (Hamilton, 1822)

Order(I): Cypriniformes

Family(B): **Cyprinidae**

Sub-family(h): Labeoninae

Genus (xi) ***Garra*** **Hamilton, 1822**

Species (13): ***Garra annandalei*** **Hora, 1921**

Order(I): Cypriniformes

Family(B): **Cyprinidae**

Sub-family(h): Labeoninae

Genus (xi): ***Garra*** **Hamilton, 1822**

Species (14): ***Garra gotyla*** **(Gray, 1830)**

Order(I): Cypriniformes

Family(C): **Psilorhynchidae**

Genus (xii): Psilorhynchus McClelland, 1839

Species (15): ***Psilorhynchus balitora*** (Hamilton, 1822)

Order (I): Cypriniformes

Family:(D): Balitoridae

Genus:(xiii) Balitora Gray, 1830

Species (16):*Balitora brucei* Gray, 1830

Order(I): Cypriniformes

Family(E): Nemacheilidae

Genus (xiv): Acanthocobitis (*Paracanthocobitis)* Peters, 1861

Species (17): Acanthocobitis (*Paracanthocobitis)* ***botia*** (Hamilton, 1822)

Paracanthocobitis botia

Order:(II): Siluriformes

Family: (F):Bagridae

Genus (xv): *Sperata* Holly, 1939

Species (18): *Sperata seenghala* **(Sykes, 1839)**

Order:(II): Siluriformes

Family (G): Schilbeidae

Genus (xvi): Eutropiichthys Bleeker, 1862

Species (19): ***Eutropiichthys vacha*** (Hamilton, 1822)

Order(II): Siluriformes

Family: (H): Sisoridae

Sub-family:(i) Sisorinae

Genus: (xvii): *Glyptothorax* Blyth, 1860

Species: (20) ***Glyptothorax telchitta*** *(*Hamilton, 1822)

Order(II): Siluriformes

Family:(H): Sisoridae

Sub-family: (j) Glyptosterninae

Genus: (xviii):Pseudecheneis Blyth, 1860

Species: (21) *Pseudecheneis sulcata* (McClelland, 1842)

Order (III): Beloniformes

Family (I): Belonidae

Genus (xix): Xenentodon Regan, 1911

Species (22): ***Xenentodon cancila*** (Hamilton, 1822)

Order (IV): Synbranchiformes

Family(J): Mastacembelidae

Genus(xx): *Mastacembelus* Scopoli, 1777

Species (23): ***Mastacembelus armatus*** (Lacepède, 1800)

Order (V): Anabantiformes

Family (K): Ambassidae

Genus (xxi): C*handa* Hamilton, 1822

Species (24): *Chanda nama* Hamilton, 1822

Order (VI): Gobiiformes

Family(L): Gobiidae

Sub-family (k):: Gobiinae

Genus (xxii): Glossogobius Gill, 1859

Species(25): ***Glossogobius giuris*** (Hamilton, 1822)

Order: (V): Anabantiformes

Family (M): Channidae

***Genus (xxiii): Channa* Scopoli, 1777**

Species(26): ***Channa gachua (***Hamilton, 1822)

Concomitantly, species composiiton of the ichthyospecies colleted from River Mat from different sites on different dates have been presented in the following running table:

Collectns. From River Mat in Mizoram	23 6 2001 2000 Sl 86	31 3 2001 Sl 87	**June, 2001 Sl. 88**	**24 10 2002 Sl 89**
Species	8	10	6	13
Genus	8	9	5	13
Sub-family	4	6	3	6
Family	7	6	3	7
Order	5	4	2	4

The diversity of ichthyofauna in River Mat along with their global and regional conservation status have been presented in Table 1.

3. Result

Systematic account of the Fishes of River Mat

Genus: *Cabdio Hamilton* 1822

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

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

Material examined:

(a) River Mat in Mizoram; Collection: June,2001; 4 Ex.; *Museum No., 88/ 1(i) to 1(iv);* Coll. and First Report by Professor D. Kar and Party.

(b) River Mat in Mizoram; Collection: 24 10 2002; 22 Ex.; *Museum No., 89/ 7(i) to 7(xx), 11(i) to 11(ii);* Coll. and First Report by Professor D. Kar and Party.

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

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

Distribution: In many water bodies in India (including River Barak at Lakhipur and at Khangbor in NE India; River Gomati in Tripura; Rivers Tlawng and Mat in Mizoram: In all these collections: First Reports by Professor D. Kar and Party), also, in Bangladesh, Nepal, Pakistan, etc.

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.

1. *Material examined*:

(a) River Mat in Mizoram; Collection: June,2001; 6 Ex.; *Museum No., 88/6(i) to 6(iv),7(ii),8(i);* Coll. and First Report by Professor D. Kar and Party.

(b) River Mat in Mizoram; Collection: 24 10 2002; 1 Ex.; *Museum No., 89/1(i);* Coll. and First Report by Professor D. Kar and Party.

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

O*psarius bendelisis*(Hamilton, 1807)

Distribution: In many water bodies in India (including River Barak at Karong,Tamenglong, Vangai, Thinghmun-Patpuihmun, Thingkal, Liben (Joining Barak) in North-East India; Rivers Tuirial, Tlawng, Mat in Mizoram: In all these collections: First reports by Professor D. Kar and Party); also, in Bangladesh, Bhutan, Myanmar, Nepal, Pakistan, Sri Lanka, Thailand, etc.

IUCN Status: Least Concern (LC)

2. *Material examined*:

(a) River Mat in Mizoram; Collection: 23 6 2001; 2 Ex.; *Museum No., 86/9(i),9(ii);* Coll. and First Report by Professor D. Kar and Party.

(b) River Mat in Mizoram; Collection: June, 2001; 12 Ex.; *Museum No.,,88/2(i), 2(ii); 4(i) to 4(x);* Coll. and First Report by Professor D. Kar and Party.

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: In many water bodies in India (including River Barak between Patpuihmun and Sartuinek, River Barak at Karnifai; River Barak at Taithu in North-East India; in Rivers Tuirial, Tlawng and Mat in Mizoram: In all these collections, First reports by Prof. D. Kar and Party); also found in Bihar, Delhi, Jammu and Kashmir, Madhya Pradesh, Mysore, Orrisa, Rajasthan, Uttar Pradesh, West Bengal. Bangladesh, Myanmar, Nepal, etc.

IUCN Status: Least Concern (LC)

Genus: ***Esomus*** Swainson, 1839

Esomus Swainson, 1839, *Nat.Hist. Fishes,* 2: 285 (Type species: *Esomus vittatus* Swainson= *Cyprinus*

danrica Hamilton-Buchanan by monotypy); Ahl,1923, *Mitt.Zool. Mus.Berlin,* 11: 38-43 (revision); Talwar and Jhingran, 1999, *Inland Fishes* I: 373; Jayaram, 1999, *FW Fishes of the Indian Region: 76;* Menon, 1999, *Rec. Zool. Surv. India Occ. Paper* No.175;.

Generic Characters: Body elongate, strongly compressed, Abdomen rounded. Head and snout small, obliquely directed upwards. Presence of two pairs of barbels. Maxillary pair very long extending upto anal fin. Dorsal fin inserted in the interspace between anal and pelvic fins, nearer to anal fin than pelvic with 6 branched rays and no spine. Anal fin with five branched rays. Caudal fin forked. Lateral line, when present, is strongly arched anteriorly and runs in the lower half of caudal peduncle with 27 to 34 scales.

Material examined:

(a) River Mat in Mizoram; Collection: 24 10 2002; 6 Ex.; *Museum No., 89/9(i) to 9(vi);* Coll. and First Report by Professor D. Kar and Party.

Key to species: Absence of pre-caudal spot. Presence of broad lateral bands on sides. Presence of 14 scales around caudal peduncle.

Esomus danrica (Hamilton, 1822)

Distribution: In many water bodies in India (including Karbhala Beel, Cachar; Assam: First report by Prof. D. Kar and Party; River Mat in Mizoram: First report by Prof. D. Kar and Party); also in Afghanistan, Bangladesh, Myanmar, Nepal, Pakistan, and Sri Lanka, etc.

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:

(a)River Mat in Mizoram; Collection: 31 3 2001; 6 Ex.; *Museum No., 87/10(i) to 10(vi);* Coll. and First Report by Professor D. Kar and Party.

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 (McClelland, 1839)

Distribution: In many water bodies in India (including Anuas in Barak valley;` River Gomati in Tripura, River Barak at Karong, Khowpan in North-East (NE) India; Rivers Tuirial, Tlawng and Mat in Mizoram: In all these collections: First reports by Professor D. Kar and Party); also in Bangladesh, Bhutan, Indo-China, Myanmar, Nepal, Pakistan, Sri Lanka, Thailand, etc.

IUCN Status: Least Concern (LC)

Genus: Rasbora Bleeker 1860

Rasbora Bleeker, 1860, *Acta Soc. Sci. Indo-Neerl. 7: 435* (Type species, *Leuciscus cephalotaenia* Bleeker, 1859, by subsequent designation by Bleeker, 1863: 28); Brittan, 1954, *Monog. Inst. Sci & Techn.,Manila,* 3: 134 (revision); owes,1941, *Bull Brit. Mus.Nat.Hist.,* 37: 183; Kottelat, 1999, *The Raffles Mus.*47 (2): 597; Talwar and Jhingran, 1999, *Inland Fishes* I: 386; Jayaram, 1999, *FW Fises of the Indian Region:* 82; Menon, 1999, *Rec.Zool.Surv.India,Occ.Paper* No.175: 52; Nath and Dey, 2000, *Fish and Fisheries of NE India* (Arunachal Pradesh): 24.

Generic characters: Body elongate, compressed; Abdomen rounded. Head large, pointed. Snout slightly pointed. Mouth large; cleft oblique. Lower jaw prominent with one central and two internal prominences, one on each side, fitting into corresponding emargination on upper jaw. Barbel absent. Dorsal fin inserted behind origin of pelvic fins with eight rays. Caudal fin emarginated or forked. Ll concave, complete with 25 to 37 scales

Material examined:

(a) River Mat in Mizoram; Collection: June,2001; 3 Ex.; *Museum No., 88/5(i) to 5(iii);* Coll. and First Report by Professor D. Kar and Party.

Key to species: 32 to 34 Ll scales. A black lateral stripe present along centre of the body.

***Rasbora daniconius* (Hamilton, 1822)**

Distribution: In many water bodies in India (including River Gomati in Tripura; Rivers Tlawng and Mat in Mizoram: In all these collections: First reports by Professor D. Kar and Party); also in West Bengal, Bihar, Delhi, Jammu and Kashmir, Madhya Pradesh, Mysore, Orrisa, Rajasthan, Uttar Pradesh; also in Bangladesh, Myanmar and Nepal, etc.

IUCN Status: Least Concern (LC).

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 blunt. Mouth oblique, terminal to horizontal or inferior. Species with horizontal mouth often have the lobe of the snout overhanging the upper lip. Mouth 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 large and heavy.

Material examined:

(a) River Mat in Mizoram; Collection: 31 3 2001; 1 Ex.; *Museum No., 87/6(i);* Coll. and First Report by Professor D. Kar and Party.

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

Neolissochilus hexagonolepis (McClelland, 1839)

Distribution: In many water bodies in India, particularly, in the rheophilic hill streams (including River Barak at Karong (Nagaland-Manipur Border); River Gomati in Tripura; Rivers Tuirial, Mat in

Mizoram: First Reports by Professor D.Kar and Party); also, in Darjeeling and Eastern Himalayas; South and South-Eastern Asia; etc.

IUCN Status: Near Threatened (NT).)

Genus: *Systomus* McClelland, 1838

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

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

(a) River Mat in Mizoram; Collection: 24 10 2002; 1 Ex.; *Museum No., 89/2(i);* Coll. and First Report by Professor D. Kar and Party.

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

***Systomus sarana* (**Hamilton, 1822)

Distribution: In water bodies in India (including River Kushiara at Tila Bazar, Karimganj; River Mat in Mizoram: In all these collections: First Reports by Professor D.Kar and Party); also,in Afghanistan, Pakistan,, Nepal, Bangladesh, Bhutan, Sri Lanka, Myanmar, Thailand, etc.

IUCN Status: Least Concern (LC)

Genus: ***Pethia*** Pethiyagoda, 2012

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, dorso-lateral; 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.

(1) *Material examined*:

(a) River Mat in Mizoram; Collection: 31 3 2001; 1 Ex.; *Museum No*, *87/9(ii);* Coll. and First Report by Professor D. Kar and Party.

(b) River Mat in Mizoram; Collection: 24 10 2002; 8 Ex.; *Museum No*, *89/8(i) to 8 (viii);* Coll. and First Report by Professor D. Kar and Party.

Key to species: Barbel absent, lateral line incomplete, and caudal peduncle with a black blotch.

Pethia conchonius (Hamilton, 1822)

Distribution: In many water bodies in India (including River Vomvadung and River Khuolzangvadung

in Dima Hasa District, Assam; River Kopili: **at Panimur** in Assam; River Monu in Tripura; Rivers Tuirial, Tlawng and Mat in Mizoram: In all these collections, First reports by Professor. D. Kar and Party); also in Bihar, Uttar Pradesh, Punjab, Maharashtra, Orissa, Eastern, and western Himalaya, Deccan, Afghanistan, Bangladesh, Myanmar, Nepal, Pakistan, and Sri Lanka, etc.

IUCN Status: Least Concern (LC).

(2) Material examined:

(a) River Mat in Mizoram; Collection: 31 3 2001; 2 Ex.; *Museum No., 87/9(i), 9(iii);* Coll. and First Report by Professor D. Kar and Party.

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 (Hamilton, 1822)

Distribution: In many water bodies in India (including Baskandi Anua, Shiv Narayanpur Anua, in Cachar Assam; River Monu in Tripura; Rivers Tuirial, Tlawng and Mat in Mizoram: In all these collections, First reports by Prof. D. Kar and Party); also, in Bangladesh, Myanmar, Nepal, Thailand, etc.

IUCN Status: Least Concern (LC).

Genus: ***Cyprinion*** Heckel

Cyprinion Heckel*;Semiplotus* Bleeker, 1860, *Nat. Tijdschr. Ned. Indel.,* 20 (3): 424 (Type spcies. *Cyprinus semiplotus* McClelland, by subsequent monotypy.

Generic characters: Body short, deep and compressed. Abdomen rounded. Snout thick and overhanging the mouth. Mouth inferior and wide. Eyes large; situated in the middle of head. Lower jaw with a knob at the symphysis. No barbels. Dorsal fin inserted above posterior third of pectoral fins. Anal fin short with 5-7 branched rays. Caudal fin forked. Lateral line complete with 27 to 34 scales.

Material examined:

(a) River Mat in Mizoram; Collection: 23 6 2001; 4 Ex.; *Museum No., 86/2(i).2(ii),6(i),6(ii);* Coll. and First Report by Professor D. Kar and Party.

(b) River Mat in Mizoram; Collection: 31 3 2001; 1 Ex.; *Museum No., 87/5(i);* Coll. and First Report by Professor D. Kar and Party.

(c) River Mat in Mizoram; Collection: 24 10 2002; 1 Ex.; *Museum No., 89/3 (i);* Coll. and First Report by Professor D. Kar and Party.

Key to species: Dorsal spine smooth. Lateral line scales 27. Anal fin short with 7 rays.

Cyprinion semiplotum (McClelland, 1839)

Distribution: In water bodies in India (including River Kopili at Kalighat in Assam; River Mat In Mizoram: In all these Collections: First reports by Prof. D. Kar and Party); also, in Arunachal Pradesh, Meghalaya, Tripura, North Bengal), Bhutan, Myanmar, Nepal, Pakistan, Sri Lanka, etc.

IUCN Status: Vulnerable (VU)).

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 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; 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. 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:

(a) River Mat in Mizoram; Collection: 24 10 2002; 1 Ex.; *Museum No., 89/6(i);* Coll. and First Report by Professor D. Kar and Party.

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

Tariqilabeo latius (Hamilton, 1822)

Distribution: In many water bodies in India (including Salchapra Anua in Cachar, Assam;; River Monu in Tripura; Rivers Tuirial, Mat in Mizoram: In all these collections: First Reports by Professor D Kar and Party); also, in Arunachal Pradesh, Bangladesh, Nepal, etc

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 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.

(1) *Material examined*:

(a) River Mat in Mizoram; Collection: 31 3 2001; 7 Ex.; *Museum No., 87/1(i) to 1 (vii);* Coll. and First Report by Professor D. Kar and Party.

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: In many water bodies in India (particularly in the hill streams including River Barak at Chotrikhal along Manipur, Mizoram, Assam border in North-East India: **River Gomati in Tripura**; Rivers Tuirial, Tlawng, Mat in Mizoram: In all these collections: First Reports by Prof. D. Kar and Party); also, in Darjeeling Himalayas, Arunachal Pradesh, Bangladesh, Nepal, etc.

IUCN status: Least Concern (LC))

(2) *Material Examined*:

(a) River Mat in Mizoram; Collection: 23 6 2001; 1 Ex.; *Museum No., 86/3(i);* Coll. and First Report by Professor D. Kar and Party.

(b)River Mat in Mizoram; Collection: 24 10 2002; 2 Ex.; *Museum No., 89/4(i),4(ii);* Coll. and First Report by Professor D. Kar and Party.

Key to species: A well develop median proboscis and a transverse lobe at tip covered with spiny tubercles

Garra gotyla (Gray, 1832)

Distribution: In many water bodies in India, particularly in the hill syteams (including River Diyung in Dima Hasao district, Assam: First report by Professor D Kar and Party; Rivers Tuirial and Mat in Mizoram: First report by Professor D Kar and Party); also, in Chotanagpur plateau and mountains of the Indian Peninsula. Afghanistan, Bangladesh, Bhutan, Myanmar, Nepal, Pakistan, etc.

IUCN Status: Least Concern (LC)

Genus: *Psilorhynchus* McClelland, 1839

Psilorhynchus McClelland, 1839, Asiatic Researches, 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. 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 relatively large along the lateral line. Lateral line complete with 32-34 scales.

Material examined:

(a) River Mat in Mizoram; Collection: June, 2001; 1 Ex.; *Museum No., 88/7(i);* Coll. and First Report by Professor D. Kar and Party.

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

Psilorhynchus balitora (Hamilton, 1822)

Distribution: In many water bodies in India, particularly, in the hill streams (including upstream rheophilic stretch of River Barak at Phulpui, Collection: 23.04.2008: and also, in the upstream hilly

stretch of River Tuivai at 20 km upstream from Damsite, collection, 17.04.2008; also, in Rivers Tuirial, Tlawng and Mat in Mizoram; also, in **River Gomati in Tripura**: In all these collections, First reports by Professor D. Kar and Party); also, in the Ganga-Brahmaputra basin. Bangladesh, Bhutan, Nepal, etc., IUCN Status: Least Concern (LC).

Balitora Gray,1830

Balitora Gray,1830, *Ill.Ind.Zool.,* I, pl. 88, Fig. 1 (Type species, *Balitora brucei* Gray, by monotypy); Silas, 1953, *Rec.Indian Mus.,* 50: 205 (revision); Menon, *Fauna India,* 4(1): 228 (revision); Talwar and Jhingran, 1999, *Inland Fishes,* 1: 445; Jayaram, 1999, *FW Fishes of the Indian Region:* 170.

Generic characters: Anterior part of body, head and abdomen greatly depressed; ventral surface of the body fkattened. Snout broad and rounded. Mouth inferior inferior and small. Rostral flap divided into 3 lobes; the median one being the largest lying between the rostral barbels. Barbels 3 pairs: 2 pairs of short thick rostral barbels and 1 pair of maxillary barbels. Dorsal fin inserted above or slightly ahead of pelvic fins with 11-12 rays. Presence of broad and horizontal paired fins. Pectoral fins with 19 to 21 rays. Adhesive pads present of the venteral surface of the 8 to 11 anteriormost pectoral fin rays and 3 or 4 pelvic fin rays. Anal fin short with 7 fin rays. Caudal fin forked. Lateral line (Ll) complete with 62-70 scales.

Material examined:

(a) River Mat in Mizoram; Collection: 31 3 2001; 1 Ex.; *Museum No., 87/3(i);* Coll. and First Report by Professor D. Kar and Party.

(b) River Mat in Mizoram; Collection: 24 10 2002; 1 Ex.; *Museum No., 89/5(ii);* Coll. and First Report by Professor D. Kar and Party.

Key to species: Maximum head width 83.3 to 105.7 % HL. Eyes small.

***Balitora brucei* Gray, 1830)**

Distribution: In water bodies in India, particularly, in the hill streams (including River Gomati in Tripura near its origin at Tirthamukh, Mandirghat: First Report by Professor D. Kar and Party; River Tuirial in Mizoram: First Report by Professor D. Kar and Party); also, in the Ganga-Brahmaputra basin. Bangladesh, Bhutan, Nepal, etc.

IUCN status: Near Threatened (NT))

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.

Generic characters: Body deep and strongly compressed posteriorly. Head slightly compressed. Nostrils close together. 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. Presence of conspicuous black spot at upper extremity of caudal fin.

Material examined:

(a)River Mat in Mizoram; Collection: 24 10 2002; 1 Ex.; *Museum No., 89/14 (i);* Coll. and First Report by Professor D. Kar and Party.

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

Paracanthocobitis botia (Hamilton, 1822)

Distribution: In many water bodies in India, particularly, in the hill streams (notably, in Rivers Tuirial, Tlawng and Mat in Mizoram; Monu and Gomati in Tripura; also in wetlands in Barak valley like Baskandi Anua in Cachar, Assam: In all these collecions, First reports by Prof. D. Kar and Party); also, said to occur in Manipur, Myanmar, etc.

IUCN Status: Least Concern (LC).)

Genus: ***Sperata*** Holly, 1939

Sperata Holly, 1939, *Zool. Anzeiger* 125:14, 1939 (replacement name for *Macrones* Dumeril, 1856; therefore, taking the same type species *Bagrus lamarii* Valenciennes, 1840 (Type species: *Sperata vittatus* (Bloch) in error); Ferraris and Runge, 1999, *Proc.Acad. Nat. Sci. Philad.* 51 (10): 400 (Revision); Jayaram, 2006, *Catfishes of India*: 23; Ferraris, 2007, *Zootaxa,* 1418: 106. *Macrones* Dumeril, 1856, *Ichthyologie analytique:* 484 (Type species *Bagrus lamarrii* Valenciennes, 1840, by original designation; preoccupied by *Macrones* Newman, 1841, Insecta (Coleoptera). *Aoria* Jordan, 1856, *Proc Acad. Nat. Sci. Philad.* 70: 341 (substitute name for *Macrones* Dumeril, 1856, preoccupied by *Aoria* baly, 1863).

Generic characters: Dorsal profile arched. Head large elongate, slightly depessed. Snout spatulate or rounded. Mouth moderately wide. Presence of a distinct inter-neural shield in between basal bone of dorsal fin and occipital process. Presence of 4 pairs of barbels; one each maxillary and nasal and two mandibular. Gill membranes free from each other and also from isthmus. Rayed dorsal fin generally with 7 rays and a robust spine. Adipose dorsal fin low with slightly convex margin. Pectoral fins with 9 or 10 rays and a spine. Pelvic fins generally with 6 rays. Anal fin short with 11 to 15 rays. Caudal fin deeply forked. Presence of a large round or ovoid dark spot near the posterior margin of the adipose fin.

Material examined:

(a)River Mat in Mizoram; Collection: 23 6 2001; 1 Ex.; *Museum No.,,86/1(i);* Coll. and First Report by Professor D. Kar and Party.

***Key to species*:** Snout spatulate. Pectoral fin with 8 or 9 rays.

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

Distribution: In many water bodies in India (including Sone Beel, Chatla Haor and Bakri Haor in Assam; **River Gomati in Tripura; Rivers Tuirial, Tlawng and Mat in Mizoram**: In all these collections, First Reports by Professor D. Kar and Party); also in Bangladesh, Myanmar, Nepal, Pakistan, Sri Lanka, etc.

IUCN status: Least Concern (LC)

Genus: *Eutropiichthys* Bleeker, 1862

Eutropiichthys Bleeker, 1862, *versl. Akad. Amsterdam,* 14: 398 (Type spcies: *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 elongate, compressed. Abdomen rounded. Head of moderate size, conical, snout pointed or blunt. Cleft of mouth reaching below orbit or slightly beyond. Eyes moderately large, lateral. Presence of 4 pairs of barbels; 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:

(a) River Mat in Mizoram; Collection: 23 6 2001; 3 Ex.; *Museum No. 86/5(i),5(ii),5(iii);* Coll. and First Report by Professor D. Kar and Party.

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

Eutropiichthys vacha (Hamilton, 1822)

Distribution: In many water bodies in India (including Sone Beel, Chatla Haor in Assam; River Barak at Fulertal in Assam; River Mat in Mizoram: In all these collections, First Reports by Professor D. Kar and Party); also in Bangladesh, Myanmar, Thailand, etc.

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 Mua.,*25: 8 (revision); Prashad and Mukerji, 1929, *Rec. Indian Mus.*, 31: 164, 183, 185)Burmese species0; hora and Gpta, 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. 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 pectotal 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. Adipose dorsal fin short and posteriorly free. Pectotal 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:

(a) River Mat in Mizoram; Collection: 31 3 2001; 2 Ex.; *Museum No. 87/2(i). 4(i);* Coll. and First Report by Professor D. Kar and Party.

Key to species: Thoracic adhesive apparatus with narrow folds of skin, incomplete osteriorly. Nostrils separated from the snout by a distance equal to eye diameter.

Glyptothorax telchitta (Hamilton, 1822)

Distribution: In many water bodies in India (particularly, in the hill streams. Also, found in the plain water mid-stream and downstream stretches of Rivers, like River Barak at Lakhipur and Katigora; also, found in Rivers Tuirial, Tlawng and Mat in Mizoram: In all these collections: First Reports by Professor D. Kar and Party). Also, found in Bangladesh, Nepal, etc.

IUCN status: Least Concern (LC)

***Pseudecheneis* Blyth**

***Pseudecheneis* Blyth,** *J. Asiat. Soc., Bengal,* 29: 154, 1860 (Type species: *Glyptosternon sulcatus* McClelland); Jayaram, 1999, *The Freshwater Fishes of the Indian Region,* 300; Jayaram, 2006, *Catfishes of India: 275;* Thompson and Page, 2006, *Zootaxa, 1345:58;* Ferraris, 2007, *Zootaxa,* 1418: 400.

Generic characters: Small-sized fish living usually in the hill streams. Dorsal profile gently rising upto base of dorsal fin; thereafter, slowly descending to caudal peduncle, from where, it slopes sharply. Ventral surface of thead and anterior part of the trunk region flattened. Eyes small, covered by a thin membrane. Mouth inferior. Nostrils are adjacent to each other and separated by the nasal barbel. Presence of a broad, oval adhesive apparatus on the chest composed of a series of transverse ridges. Presence of 4 pairs of barbels: one pair each of maxillary and nasal and 2 pairs of mandibular. Maxillary barbels have broad bases. Rayed dorsal fins inserted above posterior half of pectoral fins with a moderately strong spine. Adipose dorsal fin well-developed; not cofluent with the caudal. Pectoral fins with weak artiiculated spine. Pelvic fins with oblique base. Anal fin does not reach caudal base. Caaudal fin deeply forked.

Material examined:

(a)River Mat in Mizoram; Collection: 24 10 2002; 1 Ex.; *Museum No. 89/5(i);* Coll. and First Report by Professor D. Kar and Party.

Key to species: Presence of a button-like structure internal to the inner mandibular pair of barbels.

Pseudecheneis sulcata (McClelland, 1842)

Distribution: In water bodies in India (particularly, in the hill streams; notably, in River Mat in Mizoram: First Report by Professor D. Kar and Party); also, found in Bangladesh, Nepal, etc.

IUCN status: Least Concern (LC)

Genus: ***Xenentodon*** Regan, 1911

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. Lateral line present on posterior half of the body, without a keel.

Material examined:

(a)River Mat in Mizoram; Collection: 24 10 2002; 3 Ex.; *Museum No. 89/ 13(i) to 13(iii);* Coll. and First Report by Professor D. Kar and Party.

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

Xenentodon cancila (Hamilton, 1822)

*Distribution***:** In many water bodies in India (including wetlands in Assam, notably, Salchapra Anua in Cachar, Assam; River Gomati in Tripura; Rivers Tuirial and Mat in Mizoram: In all these collecions, First Reports by Professor D. Kar and party); also in Manipur, Nepal, etc.

*IUCN status***:** Least Concern (LC)

Genus: ***Mastacembelus*** Scopoli, 1777

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:

(a)River Mat in Mizoram Collection: 23 6 2001; 1 Ex.; *Museum No. 86/4(i);* Coll. and First Report by Professor D. Kar and Party.

(b)River Mat in Mizoram (MZ); Collection: 31 3 2001; 1 Ex.; *Museum No. 87/9(i);* Coll. and First Report by Professor D. Kar and Party.

(c)River Mat in Mizoram (MZ); Collection: 24 10 2002; 3 Ex.; *Museum No. 89/ 10(i),12(i), 12(ii);* Coll. and First Report by Professor D. Kar and Party.

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 rays14 to 17.

Mastacembelus armatus (Lacepede, 1800)

Distribution: **In** many water bodies in India (including Baskandi Anua in Cachar, Assam; **River Gomati in Tripura around its origin at Tirthamukh, Mandirghat; Rivers Tuirial and Mat in Mizoram**: In all these collections: First reports by Prof. D. Kar and Party); also in Bangladesh, South

China, Malaya, Java, Myanmar, Nepal, etc.

IUCN status: Least Concern (LC)

Genus: ***Chanda*** Hamilton, 1822

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:

(a)River Mat in Mizoram; Collection: 23 6 2001; 1 Ex.; *Museum No. 86/8(i);* Coll. and First Report by Professor D. Kar and Party.

Key to species: Lower jaw strongly projecting; thus, differ from all other ambassids. Presence of three prominent canine teeth on either side of lower jaw.

Chanda nama Hamilton, 1822

Distribution: **In** many water bodies in India (including **Sone Beel, Chatla Haor,** Baskandi Anua, Salchapra Anua in Assam; River Mat in Mizoram: In all these collections: First reports by Prof. D. Kar and Party); also in Bangladesh, Nepal, Pakistan., etc.

IUCN Status: Least Concern (LC).

Genus: ***Glossogobius*** Gill, 1859

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 elongate, 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:

(a)River Mat in Mizoram; Collection: 23 6 2001; 1 Ex.; *Museum No. 86/7(i);* Coll. and First Report by Professor D. Kar and Party.

(b)River Mat in Mizoram; Collection: June, 2001; 1 Ex.; *Museum No. 88/3(i);* Coll. and First Report by Professor D. Kar and Party.

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

Glossogobius giuris (Hamilton, 1822)

Distribution: **In** many water bodies in India (including Karbhala Beel, Sone Beel, Chatla Haor, etc., in Assam; Rivers Tlawng and Mat in Mizoram: In all these collections: First Reports by Professor D. Kar and party); also, in Bangladesh, Myanmar, Sri Lanka, etc.

IUCN status: Least Concern (LC)

Genus: ***Channa*** Scopoli, 1777

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:

(a)River Mat in Mizoram; Collection: 31 3 2001; 1 Ex.; *Museum No. 87/7(i);* Coll. and First Report by Professor D. Kar and Party.

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

Channa gachua (Hamilton, 1822)

Distribution: **In** many water bodies in India (including wetlands in Assam like Salchapra Anua, Baskandi Anua in Cachar, Assam; Rivers Tuirial and Mat in Mizoram: in In all these collections: First reports by Professor D Kar and party); also, in Bangladesh. China, Malaya, Myanmar, etc.

IUCN Status: Least Concern (LC)

4. Discussion

An overall review of the habitat inventory features of the River **Mat** reveals that the long range of microhabitat of the river consists of mainly three types of mirohabitats, *viz.,* Fall, Cascade, and Riffle-pool. Run-sheet type of microhabitat almost conspiculously absent; in view of the fact that, River Mat having its complete course, from origin to end, mostly in the hills. Out of these three types of microhabitats, the most common and frequenntly- observed microhabitat is the riffle-pool type followed by cascade. Falls are seen generally in the upper reach of the river when the river falls down from a hill top. Cascades are usually found in the mid-reach region of the river; and, are not often found elsewhere. Riffle-pools are generally seen in various regions of the entire length of the river, depending on the type of the substratum. Interestingly, as already stated above, the river Mat does not

much display run-sheet type of microhabitat; as the river flows mostly through the hills in its entire course.

Concomitant to above, three different types of substrata are generally found in the entire length of the River Mat. These are: (i)Bedrocks, (ii) Boulders and (iii) Cobbles and Gravels. Fines (silt, sand clay)are not much found; as the river does not have much plainwater stretch. In River Mat, bedrocks are rarely seen; and, that too, if seen, are, generally, in the upper hilly region. Boulders are usually seen in the upper mid-reach region of the river; generally, having cascade type of microhabitat; while cobbles and gravels are usually seen in the lower mid-reach of the river with riffle-pool type of microhabitat.

In continuation of the above, there seems to be a differential trend in fish diversity and ichthyo- species composition in different microhabitats and substrata of the River Mat.. Highly rheophilic fishes like *Balitora brucei, Garra* species, *Glyptothorax* species are usually found in the fall and cascade types of microhabitats; while the upper midreach region of the river was found to be inhabited mainly by the *Opsarius* species, *Tariquilabeo* species, *Psilorhynchus* species, etc. However, the lower midreach region was found to be inhabited mainly by *Devario* species, *Pethia* spp, *Cabdio* species; and, so on.

Further, the status of the ichthyospecies based on locally estimated information (but, corroborating with IUCN criteraia) has been ascertained in order to develop locally tailored species-specific conservation measures.

Notwithstanding the above, Bailey, R.G.(1994,1996) and Bailey and Hickley (1986) had worked on the water bodies and fishes in Africa. Concomitantly, Didem *et al.* (34)studied the fishes of Western Black Sea Coast of Turkey; while, Kullander and Britz (109) and. Conway and Kottelat (110) had dealt with the fishes of Myanmar.

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Table 1. Ichthyo-Species Composition, Their Seasonal Distribution and Their Conservation Status in River Mat in Mizoram

Fish name	Collection date:23 6 2001 & River Coll No. 86, +(No.of Fishes),River No/Fish No. =Museum No.	Collection date:31 3 2001 & River Coll No. 87, +(No.of Fishes), River No/Fish No. =Museum No.	Collection date: June,2001 & River Coll No. 88, +(No.of Fishes), River No/Fish No. =Museum No.	Collection date 24 10 2002 & River Coll No. 89, +(No.of Fishes),River No/Fish No. =Museum No.	Total No. of Fish collected	Conservation Status (Global) Conservation Status (Global) Conservation Status (Global) Conservation Status (Global) IUCN Conservationstatus (Global) LC=Least Concern VU= Vulnerable EN= Endangered NT=NearThreatened NE=Not Evaluated DD-Data Deficient	Conservation Status (Local) Conservation Status (Local) Conservation Status (Local) Conservation status (Local) (based on occurrence of Fish species in 1 or >1 locations 1 Location: of Concern(C) 2 Locations :Less

							Concern(LC) >2Locations:No Concern(NC)
1	*Cabdio morar*			+(4),*88/1(i) to 1(iv)*	+(22),*89/7(i) to 7(xx), 11(i) to 11(ii)*	26	LC	LC
2	*Opsarius bendelisis*			+(6), *88/6(i) to 6(iv),7(ii),8(i)*	+(1),*89/1(i)*	7	LC	LC
3	*Opsarius barna*	+(2), *86/9(i),9(ii)*		+(12),*88/2(i), 2(ii); 4(i) to 4(x)*		14	LC	LC
4	*Esomus danrica*				+(6), *89/9(i) to 9(vi)*	6	LC	C
5	*Devario aequipinnatus*		+(6), *87/10(i) to 10(vi)*			6	LC	C
6	Rasbora *daniconius*			+(3),*88/5(i) to 5(iii)*		3	LC	C
7	*Neolissochilus hexagonol*		+(1), *87/6(i)*			1	NT	C

	epis							
8	*Systomus sarana*				+(1),*89/2(i)*	1	LC	C
9	*Pethia conchonius*		+(1),*87/9(ii)*		+(8), *89/8(i) to 8 (viii)*	9	LC	LC
10	*Pethia ticto*		+(2),*87/9(i), 9(iii)*			2	LC	C
11	*Cyprinion semiplotum*	+(4), *86/2(i).2(ii),6(i),6(ii)*	+(1), *87/5(i)*		+(1),*89/3(i)*	6	VU	NC
12	*Tariquilabeo latius*				+(1),*89/6(i)*	1	LC	C
13	*Garra annandale*		+(7),*87/1(i) to 1(vii)*			7	LC	C
14	*Garra gotyla*	+(1), *86/3(i)*			+(2),*89/4(i),4(ii)*	3	LC	LC
15	*Psilorhynchus balitora*			+(1), *88/7(i)*		1	LC	C
16	*Balitora brucei*		+(1),*87/3(i)*		+(1),*89/5(ii)*	2	NT	LC
17	*Paracanthocobitis botia*				+(1),*89/14 (i)*	1	LC	C
18	*Sperata seenghala*	+(1),*86/1(i)*				1	LC	C
19	*Eutropiichthys vacha*	+(3),*86/5(i),5(ii),5(iii)*				3	LC	C
20	*Glyptothorax telchitta*		+(2), *87/2(i). 4(i)*			2	LC	C
21	*Pseudecheneis*				+(1),*89/5(i)*	1	LC	C

	sulcata							
2	*Xenentodo*				+(3),*89/*	3	LC	C
2	*n cancila*				*13(i) to*			
					13(iii)			
2	*Mastacem*	+(1),*86/4(i)*	+(1),*87/*		+(3), *89/*	5	LC	NC
3	*belus*		*9(i)*		*10(i),12(i*			
	armatus				*), 12(ii)*			
2	*Chanda*	+(1),*86/8(i)*				1	LC	C
4	*nama*							
2	*Glossogobi*	+(1),*86/7(i)*		+(1),		2	LC	LC
5	*us giuris*			*88/3(i)*				
2	*Channa*		+(1),			1	LC	C
6	*gachua*		*87/7(i)*					