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Original Paper

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

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Abstract

Ichthyofaunal surveys in the River Tlawng 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 48 species of fishes belonging to 37 genera, 9 sub-families, 20 families and 8 orders for the whole stretch of the surveyed river from upstream to downstream region during the entire period of study. These include 25 species under Cypriniformes,11 species under Siluriformes, 3 speices under Synbranchiformes, 4 species under Anabantiformes; and, 1 species each from Osteoglossiformes, Clupeiformes, Belonoformes and Gobiiformes. Conservation status and Distrubution of each species have been dealt with in the present paper.

Keywords

Fish diversity and Taxonomy, River Tlawng, Mizoram, North-East India Himalayan Biodiversity Hotspot, Conservation

1. Introduction

Fish constututes *c* 50 % of the total vertebrate population in the world. They dwell in almost all conceivable aquatic domains. Approximately, 21,723 living species of piscian fauna have been recorded out of *c* 39,900 species of vertebrates (Jayaram, 1999, 2003, 2010; Nelson *et al.,* 2016; Kar, 2025a, b, c, d). Out of these, *c* 8411 are freshwater species and *c*11,650 are marine. India is one of the Megabiodiversity nations in the Globe (Mittermeier and Mittermeier, 1997). There have been reports that, in India, *c* 2500 species of fishes have been known to occur; out of which, *c* 930 live in freshwater (FW) and *c* 1570 are marine (Jayaram, 2010; Kar, 2003, 2007, 2010, 2019). This unparallel fish

diversity of this region had been attracting many ichthyologists both from India and abroad. Concomitantly, 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 rich diversity of this region could be due to certain reasons, like, the geomorphology and the tectonics of this zone. The mountains and the undulating terrains of this area are said to give rise to large number of torrential hill streams, which lead to big rivers; and, finally, become integral component 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 North-Eastern (NE) Himalayan belt, is a hotspot of fish diversity contained in many wetlands and rivers of various kinds including rheophilic hill streams and plainwater rivers and streams. However, the aquatic domain and life in water has been influenced by human interventions.

A little detailed survey 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), 2024(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) have done a detailed study on fish' biodiversity in North-East 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 works on the fish systematics and diversity and other related parameters in many water bodies in NE India.

Kar and Das, BK (2015), Kar and Kumar (2023) 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 Studies 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 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) sudied on zooplankon assemblage. in Assam.

Notwithstanding the above, Kar, D. (2005 b,) deliberated upon 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) dealt with 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 D (2016 a) presented an overview of the Wetlands, Rivers, Fish Resources and Fish Disease in North-East 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 and 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 worked 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 lake in Tanzania for the period from 1965-94.. Bailey and Hickley (1986) had published a recent collection of *Nothobranchius virgatus* Chambers, a new killifish from southern Sudan. Didem *et al.* (2012) published a New Reccord 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 dealt with the ecological structure of Tropical Fish Assemblages in wet-zone streams of Sri Lanka.

River Tlawng in Mizoram

The River Tlawng is said to be one of the longest rivers in Mizoram having a length of *c* 185 km from its origin to end. It originates from the eastern hills of the Province of Mizoram; and, flows northwards. The River Tlawng receives a lot of tributaries in both of its banks in its course. The River Tlawng enters the Barak valley region of Assam in its downstream stretch as the River Dhaleswari around the

village Ramnathpur along Mizoram-Assam (Barak valley) border. Subsequently, the original flow of River Dhaleswari is diverted through a channel called Katakhal around a place callled Katlichhara in Assam. Finally, the so-called River Katakhal joins the River Barak at a place called Katakhal situated *c* 20 km away from Silchar city

The River Tlawng is said to be a vital source of irrigation for the surrounding agricultural lands and supports a diverse ecosystem.

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 and 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).

Geographical positions of the Sampling and Study points in River Tlawng in Mizoram:

(1) Village: Sairong N 23 º 48’ 36.8"-
E 92 º 39’ 9.9"
Altitude: 74.08 m MSL

(2) Village: Kamranga	N 23 o55’ 9"- E 92o 39’ 24.3" Altitude 59.75 m MSL
(3) Village: Venglai	N 23o50’ 20.8"- E 92o 39’ 55"

Altitude: 66.15 m MSL

(4) Village: Pohlrangkai	N 23o53’ 55"- E 92o39’ 21.1"

Altitude: 70.12 m MSL

The diversity of ichthyofauna of River Tlawng along with their seasonal distribution and conservation status have been presented in Table 1 and Table 2.

River Tlawng: Systematic Fish List and Fish species composition:

Order (I): Osteoglossiformes

Family (A): Notopteridae

Genus (i): ***Notopterus*** Lacepede 1800

Species(1): Notopterus notopterus (Pallas, 1769)

Order (II): Clupeiformes

Family(B): Dorosomatidae

Genus (ii): *Gudusia* Fowler 1911

Species(2): Gudusia chapra (Hamilton, 1822)

Order(III): Cypriniformes

Family (C): **Danionidae**

Sub-family(a): Chedrinae

Genus (iii): ***Salmostoma*** Swainson 1839

Species (3):Salmostoma bacaila (Hamilton, 1822)

Order(III): Cypriniformes

Family (C): **Danionidae**

Sub-family(a): Chedrinae

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

Species(4): Cabdio morar (Hamilton, 1822)

Order(III): Cypriniformes

Family (C): **Danionidae**

Sub-family(a): Chedrinae

Genus (v): ***Barilius*** Hamilton, 1822

*Species(5):****Barilius barila*** (Hamilton, 1822)

Order(III): Cypriniformes

Family (C): **Danionidae**

Sub-family(a): Chedrinae

Genus (v): ***Barilius*** Hamilton, 1822

*Species(6):****Barilius*** *vagra* (Hamilton, 1822)

Order(III): Cypriniformes

Family (C): **Danionidae**

Sub-family(a): Chedrinae

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

Species (7): Opsarius bendelisis (Hamilton, 1807)

Order(III): Cypriniformes

Family (C): **Danionidae**

Sub-family(a): Chedrinae

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

Species (8): Opsarius barna **(Hamilton, 1807)**

Order(III): Cypriniformes

Family (C): **Danionidae**

Sub-family(a): Chedrinae

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

Species (9): Opsarius tileo (Hamilton, 1822)

Order(III): Cypriniformes

Family (C): **Danionidae**

Sub-family (b): Danioninae

Genus: (vii): Devario Heckel, 1843

Species: *(10) Devario aequipinnatus* (McClelland, 1839)

Order(III): Cypriniformes

Family (C): **Danionidae**

Sub-family (b): Danioninae

Genus: (vii):Devario Heckel, 1843

Species:(11) *Devario devario (*Hamilton, 1822)

Order(III): Cypriniformes

Family (C): **Danionidae**

Sub-family(c): Rasborinae

Genus: (viii): *Rasbora* Bleeker, 1860

Species (12):*Rasbora daniconius* (Hailton, 1822)

Order(III): Cypriniformes

Family(D): **Cyprinidae**

Sub-family (d):Torinae

Genus:(ix): Tor **Gray, 1834**

Species: (13): ***Tor tor*** **(Hamilton, 1822)**

Order(III): Cypriniformes

Family(D): **Cyprinidae**

Sub-family (e): Smiliogastrinae

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

Species: **(14)** ***Systomus*** *clavatus (*McClelland, 1845*)*

Order(III): Cypriniformes

Family(D): **Cyprinidae**

Sub-family (e): Smiliogastrinae

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

Species (15): Puntius sophore (Hamilton, 1822)

Order(III): Cypriniformes

Family(D): **Cyprinidae**

Sub-family (e): Smiliogastrinae

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

Species (16): Puntius chola (Hamilton, 1822)

Order(III): Cypriniformes

Family(D): **Cyprinidae**

Sub-family (e): Smiliogastrinae

Genus: (xii) Pethia Pethiyagoda, 2012

Species (17): Pethia conchonius (Hamilton, 1822)

Order(III): Cypriniformes

Family(D): **Cyprinidae**

Sub-family (e): Smiliogastrinae

Genus: (xii) Pethia Pethiyagoda, 2012

Species (18): Pethia ticto (Hamilton, 1822)

Order(III): Cypriniformes

Family(D): **Cyprinidae**

Sub-family(f): Labeoninae

Genus (xiii) Cirrhinus Cuvier, 1817

Species (19): *Cirrhinus mrigala* **(Hamilton, 1822)**

Order(III): Cypriniformes

Family(D): **Cyprinidae**

Sub-family(f): Labeoninae

*Genus: (xiv)****Labeo*** Cuvier, 1816

Species (20) Labeo rohita (Hamilton, 1822)

Order(III): Cypriniformes

Family(D): **Cyprinidae**

Sub-family(f): Labeoninae

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

Species (21): ***Garra annandalei*** **Hora, 1921**

Order(III): Cypriniformes

Family(D): **Cyprinidae**

Sub-family(f): Labeoninae

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

Species (22): *Garra lamta* (Hamilton, 1822)

Order(III): Cypriniformes

Family(E): **Psilorhynchidae**

Genus (xvi): Psilorhynchus McClelland, 1839

Species (23): ***Psilorhynchus balitora*** (Hamilton, 1822)

Order(III): Cypriniformes

Family(F): Nemacheilidae

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

Species (24): Acanthocobitis (*Paracanthocobitis)* ***botia*** (Hamilton, 1822)

Paracanthocobitis botia

Order(III): Cypriniformes

Family(F): Nemacheilidae

Genus (xviii): Schistura **McClelland, 1839**

Species(25): Schistura multifasciata (Day, 1878)

Order(III): Cypriniformes

Family(F): Nemacheilidae

Genus (xviii): Schistura **McClelland, 1839**

Species(26): Schistura *savona* (Hamilton, 1822)

Order(III): Cypriniformes

Family (G): Botiidae

Sub-family: (g): Botiinae

Genus: (xix) Botia **Gray,1831**

Species: (27)Botia dario **(Hamilton, 1822)**

Order(III): Cypriniformes

Family:(H): Cobitidae

Genus: (xx):Lepidocephalichthys **Bleeker, 1858**

Species: (28)Lepidocephalichthys guntea **(Hamilton, 1822)**

Order (IV): Siluriformes

Family: (I):Bagridae

Genus (xxi): *Sperata* Holly, 1939

Species (29): ***Sperata seenghala*** (Sykes, 1839)

Order (IV): Siluriformes

Family:(I): Bagridae

Genus(xxii): *Mystus* **Scopoli, 1777,**

Species (30): ***Mystus*** *tengara* (Hamilton, 1822)

Order (IV): Siluriformes

Family: (J):Siluridae

Genus(xxiii): *Ompok* Lacepede, 1803

Species (31): ***Ompok bimaculatus*** (Bloch, 1794)

Order (IV): Siluriformes

Family (K): Ailiidae

Genus (xxiv): *Ailia* Gray, 1830

Species (32): ***Ailia coila*** (Hamilton, 1822)

Order (IV): Siluriformes

Family (L): Schilbeidae

Genus (xxv): Clupisoma Swainson, 1938

Species(33): ***Clupisoma garua*** (Hamilton, 1822)

Order (IV): Siluriformes

Family: (M): Amblycipitidae

Genus: (xxvi): Amblyceps Blyth, 1858

Species: (34) ***Amblyceps mangois (*****Hamilton, 1822)**

Order(IV): Siluriformes

Family: (N): Sisoridae

Sub-family (h): Sisorinae

Genus: (xxvii):Gagata Bleeker, 1856

Species: (35) ***Gagata cenia*** (Hamilton, 1822)

Order(IV): Siluriformes

Family: (N): Sisoridae

Sub-family: (h): Sisorinae

Genus: (xxvii): Gagata Bleeker, 1856

Species: (36)*Gagata gagata* (Hamilton, 1822)

Order(IV): Siluriformes

Family: (N): Sisoridae

Sub-family:(h): Sisorinae

Genus: (xxviii)*Bagarius* Bleeker, 1853

Species: (37) *Bagarius bagarius* (Hamilton, 1822)

Order(IV): Siluriformes

Family: (N): Sisoridae

Sub-family (h): Sisorinae

Genus: (xxix)Pseudolaguvia. Misra, 1976

*Species: (38) P****seudolaguvia shawi (*** Hora, 1921)*)*

Order(IV): Siluriformes

Family: (N): Sisoridae

Sub-family: (h): Sisorinae

Genus:(xxx) *Glyptothorax* Blyth, 1860

*Species: (39)**Glyptothorax telchitta (*Hamilton, 1822)

Order (V): Beloniformes

Family (O): Belonidae

Genus (xxxi): Xenentodon Regan, 1911

Species (40): ***Xenentodon cancila*** (Hamilton, 1822)

Order (VI): Synbranchiformes

Family(P): Mastacembelidae

Genus (xxxii): Macrognathus Lacepede, 1800

Species (41): ***Macrognathus aral*** (Bloch & Schneider, 1801)

Order (VI): Synbranchiformes

Family(P): Mastacembelidae

Genus (xxxii): Macrognathus Lacepede, 1800

Species (42): ***Macrognathus pancalus*** Hamilton, 1822

Order (VI): Synbranchiformes

Family(P): Mastacembelidae

Genus(xxxiii): *Mastacembelus* Scopoli, 1777

Species (43): ***Mastacembelus armatus*** (Lacepède, 1800)

Order (VII): Anabantiformes

Family (Q): Ambassidae

Genus(xxxiv): Parambassis Bleeker, 1874

Species (44): ***Parambassis ranga*** (Hamilton, 1822)

Order (VII): Anabantiformes

Family (R): Badidae

Genus(xxxv): Badis Bleeker, 1853

Species (45): ***Badis badis*** (Hamilton, 1822)

Order (VIII): Gobiiformes

Family(S): Gobiidae

Sub-family (i):: Gobiinae

Genus (xxxvi): Glossogobius Gill, 1859

Species(46): ***Glossogobius giuris*** (Hamilton, 1822)

Order (VII): Anabantiformes

Family (T): Channidae

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

Species(47): ***Channa gachua (***Hamilton, 1822)

Order: (VII): Anabantiformes

Family (T): Channidae

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

Species(48): ***Channa punctata*** (Bloch, 1793)

Total Fish Record of River Tlawing in MZ

Order: 8

Family: 20

Sub-family: 9

Genus: 37

Species: 48

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

Collectns. From River Tlawng	23 10 2000 Sl 83	25 10 02, Sl 84	**26,27 Oct 02** Sl 85	**24 3 2002 Sl 109**	**20 12 2014** Sl 117	**30 5 2001 Sl 119**
Species	2	13	20	3	10	18
Genus	2	13	20	3	9	17
Sub-family	1	6	8	2	3	6
Family	2	12	14	2	9	12
Order	2	6	5	1	5	5

Further, species composiiton of the fishes `**further'** colleted from River Tlawng from different sites on different dates have been presened in the following second running table:

Collectns. From River Tlawng	**Sl 49 Coll:** 15 8 2001 **(Bag A)** (i)	**Sl 50 Coll:** 17 8 2002 **(Bag A)** (ii)	**Sl 62 Coll:** June 2001 **(Bag B)** (iii)	**Sl 68: Coll:** July 2001 **(Bag C)** (iv)	**Sl 70: Coll:** 30 5 2001 **(Bag D),** (v)	**Sl 71: Coll:** 6 11 2001 **(Bag D) (vi)**	**Sl 73: Coll 28** 10 2006 **(Bag E) (vii)**	**Sl 75:** Coll: 1 6 2001 **(Bag E) (viii)**
Species	1	1	1	4	4	3	4	3
Genus	1	1	1	3	4	3	4	3
Sub-family	1	1	1	2	3	2	1	0
Family	1	1	1	3	4	3	4	3
Order	1	1	1	3	3	2	3	2

3. Result

Systematic account of the Fishes

*Genus**: Notopterus*** Lacepede (1800)

Notopterus Lacepede (1800). *Hist.nat. Poiss.,* 2:190 (Type species: *Gymnotus notopterus* Pallas, by absolute tautonomy); Roberts, 1992, *Ichthyol. Explor. Freshwaters,* 2 (4):361-383 (revisioin); Talwar and Jhingran, 1991, *Inland Fishes* 1: 62; Jayaram, 1999, *FW Fishes of the Indian Region:* 20; Menon, 1999, *Rec. Zool. Surv. India Occ Paper* No. 175: 9

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

Material examined:

(a)River Tlawng in Mizoram; Collection date::25 10 2002; 1 Ex.; *Museum No. 84/5(i);* Coll. and First Report by Professor D. Kar and Party.

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

Notopterus notopterus (Pallas, 1769)

Distribution: In many water bodies in India (including Baskandi Anua, Sone Beel, etc.: First Report by Professor D. Kar and Party; River Tlawng in Mizoram: In all these collections,: First Report by Professor D. Kar Party); also, in Bangladesh, Indonesia, Java, Laos, Malaysia, Myanmar, Nepal, Pakistan, Sumatra, Thailand. etc.

IUCN status: Least Concern (LC).

Genus: ***Gudusia*** Fowler, 1911

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

Generic characters: Body well-compressed and oblong. Abdomen serrated with 18 to 19 pre-pelvic and 8 to 10 post-pelvic scutes. Head short and much compressed. Snout rounded. Mouth terminal. Cleft of mouth not extending upto orbit. Eyes large, lateral. With a broad adipose eyelid. Dorsal fin inserted above pelvic fin origin with 14 to 17 rays. Anal fin with 18 to 29 rays. Caudal fin forked. Scales small. Lateral line absent.

Material examined:

(a)River Tlawng in Mizoram; Collection date: 25 10 2002; 2 Ex.; *Museum No. 84/2(i), 2(ii);* Coll. and First Report by Professor D. Kar and Party.

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

Gudusia chapra (Hamilton 1822)

Distribution In many water bodies in India (including Sone Beel, Chatla Haor, Salchapra Anua, Fulbari Anua; Rupairbala Anua, Shiv Narayanpur Anua in Assam; River Tlawng in Mizoram:In all these collections: First reports by Prof. D. Kar and Party); also, in Bangladesh, Indonesia Malaya, Nepal, Pakistan, etc.

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.

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

Material examined:

(a)River Tlawng in Mizoram; Collection: 26,27 Oct,2002; 6 Ex.; *Museum No., 85 /* 13(i) to 13 (vi)*;* Coll. and First Report by Professor D. Kar and Party.

(b)River Tlawng in Mizoram; Collection: 30 5 2001; 3 Ex.; *Museum No., 119/10(i) to 119/10 (iii);* Coll. and First Report by Professor D. Kar and Party.

(c) River Tlawng in Mizoram; Collection: 17 8 2002 **(Bag A);** 7 Ex.; *Museum No., 50/*1(i) to 1 (vii)*;* Coll. and First Report by Professor D. Kar and Party.

(d) River Tlawng in Mizoram; Collection: 30 5 2001 **(Bag D),**; 7 Ex.; *Museum No., 70/*1(i), 2(i) to 2(iii), 6(i) to 6(iii). Coll. Professor D. Kar and Party.

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

Salmostoma bacaila (Hamilton, 1822)

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

IUCN status: Least Concern (LC).

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 Tlawng in Mizoram; Collection: 25 10 2002; 2 Ex.; *Museum No., 84/6(i), 6(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; River Tlawng 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 *Barilius* Hamilton, 1822

Barilius Hamilton, 1822, Fish Ganges, 266, 384 (Type species: *Cyprinus barila* Hamilton).

Generic characters: Body moderately elongate and compressed. Abdomen rounded. Head sharply pointed; might have “peral organs” and tubercles. Mouth anterior or obliquely directed upwards. Eyes large and superior in the anterior half of the head, not visible from below the ventral surface. Upper jaw longer than lower. Characteristic muscular pads present in front of the bases of the pectoral fins. Dorsal fin inserted opposite the inter-space between pelvic and anal fins, nearer to caudal-fin base than to the tip of the snout. Caudal fin forked. Scales moderate. Lateral line concave. The body usually covered with vertical bands.

Material examined:

(a)River Tlawng in Mizoram; Collection date: 26,27 Oct,2002; 6 Ex.; *Museum No., 85 / 3(I) to 3 (vi);* Coll. and First Report by Professor D. Kar and Party.

(b)River Tlawng in Mizoram; Collection date: 20 12 2014; 1 Ex.; *Museum No.,* 117/6(i)*;* Coll. and First Report by Professor D. Kar and Party.

(c)River Tlawng in Mizoram; Collection date: July 2001 **(Bag C)**; 1 Ex.; *Museum No., 68/1(i);* Coll. and First Report by Professor D. Kar and Party.

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

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

Distribution: In many water bodies in India (including River Barak at Thingkal, NE India; Rivers Tuirial and Tlawng in Mizoram: In all these collections: First reports by Prof. D. Kar and Party); also,

in Bihar, Delhi, Jammu and Kashmir, Madhya Pradesh, Mysore, Orrisa, Rajasthan, Uttar Pradesh, West Bengal. Bangladesh, Myanmar, Nepal, etc.

IUCN Status: Least Concern (LC)

Material examined:

(a) River Tlawng in Mizoram; Collection date: July 2001 **(Bag C)**; 2 Ex.; *Museum No.,* 68/*2(i),2(ii);* Coll. and First Report by Professor D. Kar and Party.

Key to species: Body Depth 20.9 to 22.3 % SL.

Barilius vagra (Hamilton, 1822)

Distribution: In water bodies in India (including River Tlawng in Mizoram: First report by Prof. D. Kar and Party: adults generally live in hill streams with gravelly bottom); also in Rivers Brahmaputra, Ganges, Indus, Yamuna river systems; Bangladesh, Nepal, 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 Tlawng in Mizoram; Collection date: 30 5 2001; 5 Ex.; *Museum No., 119/3(i), 3(iii) to 3 (vi);* 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 and Tlawng 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 Tlawng in Mizoram; Collection date: 26,27 Oct,2002; 22 Ex.; *Museum No., 85 / 3(vii) to 3 (xii); 7(i) to 7(xvi);* Coll. and First Report by Professor D. Kar and Party.

(b) River Tlawng in Mizoram; Collection date: June 2001 **(Bag B)**; 16 Ex.; *Museum No.,,62/* 1(i) to 1 (xvi)*;* 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; Rivers Tuirial and Tlawng in

Mizoram: In all these collections: First reports by Prof. D. Kar and Party); also in Bihar, Delhi, Jammu and Kashmir, Madhya Pradesh, Mysore, Orrisa, Rajasthan, Uttar Pradesh, West Bengal. Bangladesh, Myanmar, Nepal, etc.

IUCN Status: Least Concern (LC).

3. Material examined:

(a) River Tlawng in Mizoram; Collection date::23 10 2000; 4 Ex.; *Museum No., 83 /* 2(1) to 2 (iv)*;* Coll. and First Report by Professor D. Kar and Party.

(b) River Tlawng in Mizoram; Collection date: 30 5 2001; 1 Ex.; *Museum No., 119/3(ii);* Coll. and First Report by Professor D. Kar and Party.

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

Opsarius tileo (Hamilton, 1822)

Distribution: In many water bodies in India (including River Barak at Karong (Nagaland-Manipur Border); River Barak at Lakhipur; Rivers Tuirial and Tlawng in Mizoram: In all these collections: First reports by Prof. D. Kar and Party); also in West Bengal, Bangladesh, Myanmar, Nepal, Pakistan, 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 Tlawng in Mizoram; Collection date: 26,27 Oct,2002; 2 Ex.; *Museum No., 85 / 15(i), 18(i);* Coll. and First Report by Professor D. Kar and Party.

(b) River Tlawng in Mizoram; Collection date: 30 5 2001; 2 Ex.; *Museum No., 119/5(i),5(ii);* 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 and Tlawng 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).

Material examined:

(a) River Tlawng in Mizoram (MZ); Collection date: 25 10 2002; 1 Ex.; *Museum No., 84/8(i);* Coll. and First Report by Professor D. Kar and Party.

*Key to species:*Body with 13 - 17 bands on dorsal fin rays

***Devario devario (*Hamilton,1822)**

Distribution: In water bodies in India (including River Tlawng in Mizoram: First Report by Professor D Kar and Party); also in Krishna-Godavari river systems, Bangladesh, Nepal, 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 Tlawng in Mizoram; Collection date: 30 5 2001; 2 Ex.; *Museum No., 119/4(i) to 4(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: First report by Professor D. Kar and Party; River Tlawng in Mizoram: First report 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: *Tor* Gray, 1834

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

Generic characters: Body elongate, 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:

(a) River Tlawng in Mizoram**;** Collection date**:** 26,27 Oct,2002**;** 13 Ex.; *Museum No.*, *85 /2(i),2(ii), 6 (viii) to 6 (xviii);* Coll. and First Report by Professor D. Kar and Party.

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

Tor tor (Hamilton, 1822)

Distribution: In many water bodies in India, particularly, in the hill streams (including River Barak at Teulein, River Barak at 20 km downstream from Tipaimukh Dam, Vitin, Gilgal, Tupidahar, Chandikhal in North East India: Rivers Tuirial and Tlawng in Mizoram: In all these collections, First reports by Professor D. Kar and Party); also in West Bengal, Bihar, Uttar Pradesh, Madhya Pradesh, Ganga, and Narmada river systems, Eastern Himalayas. Bangladesh, Bhutan, China, Myanmar, Nepal, Pakistan, etc.

IUCN Status: Data Deficient (DD).

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 Tlawng in Mizoram; Collection date**:** 30 5 2001**;** 3 Ex.; *Museum No.*, *119/6(i).6(ii),6(iv);* Coll. and First Report by Professor D. Kar and Party.

Key to species: Lateral Line (Ll) scales: 40-42; pre-dorsal scales: 14; Body Depth 29.5-32.9 % of SL Upper and lower lobes of caudal fin with sub-marginal black stripes.

Systomus clavatus (McClelland, 1845)

Distribution: In water bodies in India, particularly, streams and rivers at foot hills; notably, Assam, Mizoram (River Tlawnig in Mizoram: First report by Professor D. Kar and Party); also, in Manipur, Naga Hills, Sikkim Himalayas, etc.

IUCN Status: **Near Threatened** (NT)

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 (Arunachlal Pradesh):* 39.

Generic characters: Body short to moderately long, deep, compressed. Abdomen round. Head short. Snout obtuse, conical or pointed; sometimes, may be with tubercles. Mouth arched, anterior or inferior.

Upper jaw may be protractile. Eyes moderate to large, dorso-lateral; they are not visible from below ventral surface. Lips thin, cover the jaws; without any horny covering. Jaws simple without any tubercle at the symphysis. Barbels four, two or may be absent. Dorsal fin short inserted nearly opposite to pelvic fins. Anal fin short. Caudal fin forked. Scales small, moderate or large.

Material examined:

(a) River Tlawng in Mizoram; Collection date**:** 25 10 2002; 7 Ex.; *Museum No.,,84/ 12 (i) to 12 (vii);* Coll. and First Report by Professor D. Kar and Party.

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: In many water bodies in India (including Rupairbala Anua in Cachar, Assam; Javda Beel and Karbhala Beel in Assam; Rivers Tuirial and Tlawng 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).

Material examined:

(b) River Tlawng in Mizoram; Collection date**:** 30 5 2001 **(Bag D);** 2 Ex.; *Museum No., 70/*4(i), 4(ii)*;* Coll. Professor D. Kar and Party.

(c) River Tlawng in Mizoram; Collection date: 6 11 2001 **(Bag D)**; 3 Ex.; *Museum No., 71/*(i) to 71 (iii)*;* Coll. and First Report by Professor D. Kar and Party.

Key to species: Pre-dorsal scales 8-10. Presence of 2 conspicuous dark blotches on the body black spot on dorsal fin and on caudal peduncle. Presence of one pair of barbels.

Puntius chola (Hamilton, 1822)

Distribution: In many water bodies in India (including Anuas in Cachar, Assam; Sone Beel, Javda Beel, Sat Beel, Rani Meghna Beel in Assam; Chatla Haor in Assam; River Tlawng in Mizoram.: In all these collectoons: First Reports by Professor D. Kar and Party); also in Bangladesh, Myanmar, Nepal, Pakistan, Sri Lamka, 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.

Material examined:

(a) River Tlawng in Mizoram; Collection date: 24 3 2002; 1 Ex.; *Museum No., 109/3(i);* Coll. and First Report by Professor D. Kar and Party.

(b) River Tlawng in Mizoram; Collection date: 30 5 2001; 1 Ex.; *Museum No., 119/11(i).;* 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 Hasao District, Assam; River Kopili: **at Panimur in Assam**; River Monu in Tripura; Rivers Tuirial and Tlawng 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).

Material examined:

(a) River Tlawng in Mizoram; Collection date: 26,27 Oct,2002; 7 Ex.; *Museum No., 85 / 6(i) to 6 (vii);* 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 and Tlawng in Mizoram: In all these collection: First reports by Prof. D. Kar and Party); also in Bangladesh, Myanmar, Nepal, Thailand, etc.

IUCN Status: Least Concern (LC).

Genus: ***Cirrhinus*** Cuvier, 1817

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

Material examined:

(a) River Tlawng in Mizoram; Collection date: 30 5 2001; 1 Ex.; *Museum No., 119/6(iii);* Coll. and First Report by Professor D. Kar and Party.

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

Cirrhinus mrigala (Hamilton, 1822)

Distribution: In many water bodies in India (including Salchapra Anua, in Cachar, Assam; River Tlawng 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: ***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.

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 haead. 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 fin deeply forked or emarginated. Lateral line complete.

Material examined:

(a) River Tlawng in Mizoram; Collection date∶∶ 20 12 2014; 1 Ex.; *Museum No., 117/1(i);* Coll. and First Report by Professor D. Kar and Party.

Key to species: Presence of 14-16 rays in dorsal fin. Pectoral fin as long as head excluding snout.

Labeo rohita (Hamilton, 1822)

Distribution: In many water bodies in India (including Sone Beel in Assam, India; River Tlawng in Mizoram: In all these collections: First Reports by Professor D. Kar and Party); also in Bangladesh, Pakistan, Myanmar, nepal, Sri Lanka, 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.

Material examined:

(a) River Tlawng in Mizoram; Collection date: 26,27 Oct, 2002; 2 Ex.; *Museum No., 85 / 8(i),8(ii).;* Coll and First Report by. Professor D. Kar and Party.

(b) River Tlawng in Mizoram; Collection date: 30 5 2001; 6 Ex.; *Museum No., 119/9(i),9(ii),9(iv) to 9(vii).;* Coll. Professor D. Kar and Party.

(c) River Tlawng in Mizoram; Collection date: **28** 10 2006 **(Bag E)**; 2 Ex.; *Museum No., 73/*1(i), 1(ii)*;* 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 and Tlawng in Mizoram: In all these collections: First Reports by Professor D. Kar and Party); also in Darjeeling Himalayas, Arunachal Pradesh, Bangladesh, Nepal, etc.

IUCN status: Least Concern (LC)

Material examined:

(a) River Tlawng in Mizoram; Collection date: 24 3 2002; 1 Ex.; *Museum No., 109/2(i);* Coll. and First Report by Professor D. Kar and Party.

Key to species: Snout rounded and smooth with a deep, transverse groove at the tip.

Garra lamta (Hamilton, 1822)

Distribution: In many water bodies in India, particularly in the hill streams (including rivers Diyung, Vomvadung, Khualzangvadung in Dima Hasao District, Assam; Rivers Tuirial and Tlawng in Mizoram: In all these collections: First reports by Prof D Kar and party), also, in other regions of the Eastern Himalayas, and in the Western Ghats. Myanmar, Nepal, 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 Tlawng in Mizoram; Collection date**:** 26,27 Oct,2002; 11 Ex.; *Museum No., 85 /19(i) to 19 (xi);* Coll. and First Report by Professor D. Kar and Party.

(b) River Tlawng in Mizoram; Collection date 1 6 2001 **(Bag E)**; 2 Ex.; *Museum No., 75/*2(i), 2(ii)*;* 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 and Tlawng 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).

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 Tlawng in Mizoram; Collection date**:** 25 10 2002; 2 Ex.; *Museum No., 84/7(i),7(ii);* Coll. and First Report by Professor D. Kar and Party.

(b) River Tlawng in Mizoram; Collection date**:** 26,27 Oct, 2002; 8 Ex.; *Museum No., 85 / 12 (i) to 12 (viii);* Coll. and First Report by Professor D. Kar and Party.

(c) River Tlawng in Mizoram; Collection date**:** 24 3 2002; 1 Ex.; *Museum No., 109/1(i);* Coll. and First Report by Professor D. Kar and Party.

(d) River Tlawng in Mizoram; Collection date**:** 30 5 2001 2 Ex.; *Museum No., 119/13(i), 13(ii);* Coll. and First Report by Professor D. Kar and Party.

(e) River Tlawng in Mizoram; Collection date**: 28** 10 2006 **(Bag E)**; 2 Ex.; *Museum No., 73/*2(i), 2(ii)*;* Coll and First Report by**.** Professor D. Kar and Party.

(f) River Tlawng in Mizoram; Collection date**:** 1 6 2001 **(Bag E)**; 2 Ex.; *Museum No., 75/*1(i), 1(ii)**;** 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 and Tlawng 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: *Schistura* McClelland, 1839

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

Generic characters: Body elongate 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 auxillary 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. Presence of scales on the body generally. Usually, the presence of a characteristic color pattern.

Material examined:

(a) River Tlawng in Mizoram; Collection date**:** 30 5 2001; 2 Ex.; *Museum No., 119/13(iii),13 (iv);* Coll. and First Report by Professor D. Kar and Party.

(a) River Tlawng in Mizoram; Collection date**:** 15 8 2001 **(Bag A)**; 1 Ex.; *Museum No.,* 49/1(i)*;* Coll. and First Report by Professor D. Kar and Party.

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: In many water bodies in India, particularly, in the hill streams (including River Barak at Karong (Nagaland-Manipur Border), River Barak at Phulpui in the upper hill stream stretch of the River Barak along Assam, Manipur, Mizoram border in NE India; also in **Rivers Tuirial and Tlawng in Mizoram; and, in River Gomati in Tripura:** In all these collections, First Reports by Professor D. Kar and Party); also in other parts of the Himalayas, notably, in Bhutan, Nepal, Myanmar, Thailand, etc.

IUCN status: Least Concern (LC)

Material examined:

(a) River Tlawng in Mizoram; Collection date**:** 6 11 2001 **(Bag D)**; 1 Ex.; *Museum No., 71/3(i);* Coll. and First Report by Professor D. Kar and Party.

Key to species: Presence of emarginated caudal fin. Dorsal fin inserted nearer to tip of snout than to caudal fin base with 9 rays. Presence of 13 vertical black bands crossing the lateral line on sides reticulated with dark bands and blotches above.

Schistura savona (Hamilton, 1822)

Distribution: In water bodies in India, particularly, in the hill streams (including River Tlawng **in Mizoram:** First Report by Professor D. Kar and Party); also in Teesta drainage, Manipur, UP, Nepal, etc.

IUCN status: Least Concern (LC)

Genus: *Botia Gray*, 1831

Botia Gray, 1831, Zool Misc. 8 (Type species, Botiaalmorhae Gray, by monotype), - Hora, 1922, Rec India Mus., 24: 313-321 (revision)- Banarescu and Nalbant, 1968, Mitt. Hamburg Zool. Mus. Inst, 65: 341 (revision)-Taki, 1972, Jap. J. Ichthyol., 19 (2): 63-81(review)-Menon, 1992, Fauna India, 4 (2), 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. Dorsal fin inserted above origin of pelvic or slightly ahead. Anal fin short. Caudal fin deeply forked. Scales absent on head.

Material examined:

(a) River Tlawng in Mizoram; Collection date**:** 25 10 2002; 3 Ex.; *Museum No., 84/3(i) to 3(iii);* Coll. and First Report by Professor D. Kar and Party.

(b) River Tlawng in Mizoram; Collection date**:** 26,27 Oct,2002; 2 Ex.; *Museum No.,,85 / 9 (i), 9(ii);* Coll. and First Report by Professor D. Kar and Party.

(c) River Tlawng in Mizoram; Collection date**:** 20 12 2014; 1 Ex.; *Museum No., 117/7(i);* Coll. and First Report by Professor D. Kar and Party.

Key to species: Eye diameter 33.3 % snout length.

Botia dario (Hamilton, 1822)

Distribution: In many water bodies in India, both in lotic and lentic water bodies (including Baskandi Anua in Cachar, Assam; River Barak at Teulien; Rivers Tuirial and Tlawng in Mizoram: In all these collections, First Reports by Prof D Kar and Party); also, in Bangladesh, Myanmar, Nepal, Pakistan, Sri Lanka, etc.

IUCN status: Least Concern (LC).

Genus: ***Lepidocephalichthys*** Bleeker, 1858

Lepidocephalichthys, Bleeker,1858, *NaTijdschr. Ned.Indet.*. 16:3: 303 (Type species, *Cobitis macrochir*

Bleeker; Tilak and Hussain,1981, *rec Zool.Surv. India Occ Paper* No. 32: 3-28 (revision); Menon, *Fauna India,* 4(2), p.52 (revision); Talwar and Jhingra, 1999, *Inland Fishes,*1: 520; Jayaram,1999, *FW Fishes of the Indian Region*: 216; Menon, 1999, *rec Zool.Surv.India Occ Paper* No.175: 159

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

Material examined:

(a) River Tlawng in Mizoram; Collection date**:** 26,27 Oct,2002; 1 Ex.; *Museum No., 85 / 11 (i);* Coll. and First Report by Professor D. Kar and Party.

(b) River Tlawng in Mizoram; Collection date**:** 20 12 2014; 1 Ex.; *Museum No., 117/8(i);* Coll. and First Report by Professor D. Kar and Party.

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

Lepidocephalichthys guntea (Hamilton, 1822)

Distribution: In many water bodies in India, both in lotic and lentic water bodies (including Salchapra Anua in Cachar, Assam; Sone Beel in Shri Bhumi (earlier Karimganj) disrict in Assam; River Tlawng in Mizoram: In all these collections, First Reports by Prof D Kar and Party); also, in Bangladesh, Myanmar, Nepal, Pakistan, 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, *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 Tlawng in Mizoram; Collection date: 26,27 Oct,2002; 1 Ex.; *Museum No., 85 / 4(i);* Coll. and First Report by Professor D. Kar and Party.

(b) River Tlawng in Mizoram; Collection date: 30 5 2001; 1 Ex.; *Museum No., 119/2(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: in both lotic and lentic water bodies (including Sone Beel, Chatla Haor and Bakri Haor in Assam; **River Gomati in Tripura; Rivers Tuirial and Tlawng 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*: *Mystus Scopoli, 1777

Mystus Russell, 1756, *Nat. Hist. Aleppo* 1: 76; *Mystus anguillaris* Meuschen. *Mystus,* Talwar and Jhingran, 1991, *Inland Fishes,* 2: 554; Roberts, 1994, *Ichthyological Exploration of Freshwaters* 5(3):243. *Genus*: *Mystus* Scopoli, 1777. *Introductio ad historiam naturalem*: 451 (Type by subsequent designation: Masc. *Bagrus halepensis* Valenciennes 1840).

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

Material examined:

(a) River Tlawng in Mizoram; Collection date: 25 10 2002; 7 Ex.; *Museum No.*, *84/11(i) to 11(vii);* Coll. and First Report by: Professor D. Kar and Party.

(b) River Tlawng in Mizoram; Collection date: 20 12 2014; 1 Ex.; *Museum No.*, *117/3(i);* Coll. and First Report by Professor D. Kar and Party.

Key to species: Maxillary barbels reaching base of pectoral fin. Presence of approximately 5 parallel longitudinal stripes on each side of the lateral line.

Mystus tengara (Hamilton,1822)

Distribution: In many water bodies in India (including Sone Beel, Chatla Haor in Assam; River Tlawng 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)

Ompok Lacepede, 1803.

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

Generic characters: Body elongated, compressed. Abdomen rounded. Head small, broad. Snout bluntly rounded. Mouth superior; its cleft oblique not extending to front border of eyes. Presence of 2 pairs of barbells; one pair each of maxillary and mandibular. Rayed dorsal fin inserted above last half of pectoral fin, with 3 or 5 rays and spine absent. Adipose dorsal fin absent. Pectoral fins with 11-14 rays and a feebly serrated or smooth spine. Presence of a very long anal fin with 52 to 75 rays; and, free from caudal fin. Caudal fin forked. Lateral line complete.

Material examined:

(a) River Tlawng in Mizoram; Collection date**:** 25 10 2002; 1 Ex.; *Museum No.*, *84/4(i);* Coll. and First Report by Professor D. Kar and Party.

Key to species: Pelvic fins not extending to Anal fin origin. Anal fin rays 60-75. Maxillary barbels extend slightly beyond anal fin base.

Ompok bimaculatus (Bloch, 179)

Distribution: In many water bodies in India: in both lotic and lentic water bodies (including Sone Beel, Puneer Haor in Assam; River Tlawng in Mizoram: In all these collections, First Reports by Professor D. Kar and Party); also in Bangladesh, Myanmar, Sumatra, Java, Vietnam, Yunnan, etc.

IUCN Status: Near Threatened (NT)

Genus**:** ***Ailia*** Gray, 1830

Ailia Gray, 1830, *Zool Miscellany,* Pl. 85 (Type species: *malapterus (sic) (Ailia) bengalensis* Gray= *Malapterus coila* Hamilton-Buchanan, by monotypy); Hora, 1941, *Rec. Indian Mus.,* 43: 110-112; Jayaram, 2006, *Catfishes of India:* 117; Ferraris, 2007, *Zootaxa,* 1418: 356 (*Ailichthys).*

Generic characters: Body short compressed. Abdomen rounded. Head short, greatly compressed. Mouth moderately wide. Eyes small lateral. Presence of 4 pairs of barbels: one pair each maxillary and nasal; and two pairs mandibular; al these barbels are usually longer than head. Rayed dorsal fin absent. Adipose dorsal fin small, short and posteriorly free. Pectoral fins with 13 to 16 rays and a spine. Pelvic fins with six rays; may sometimes be vestigial or absent. Caudal fin forked.

Material examined:

(a) River Tlawng in Mizoram; Collection date**:** 23 10 2000; 3 Ex.; *Museum No.*, *84/ 4(ii) to 4(iv);* Coll. and First Report by Professor D. Kar and Party.

Key to species: Pelvic fins absent. Rayed dorsal fin also absent. Anal fin long with 48 to 90 rays.

Ailia coila (Hamilton, 1822)

Distribution: In many water bodies in India: in both lotic and lentic water bodies (including Sone Beel, Rani Meghna Beel, etc., in Assam; River Tlawng in Mizoram: In all these collections, First Reports by Professor D. Kar and Party); also in Bangladesh, Nepal, Pakistan, etc.

IUCN Status: Near threatened.

Genus: ***Clupisoma*** Swainson, 1838

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

Generic characters: Body elongate, compressed with the portion between pelvic fins and vent keeled. Head of moderate size. Snout rounded. Cleft of mouth does not reach front edge of eyes. Presence of 4 pairs of barbels: one pair each of maxillary, nasal; and, two pairs of mandibular. Rayed dorsal fin inserted above near base of pectoral fins with 6-9 rays and a spine. Pelvic fin with 6 rays. Anal fin moderately long with 29 to 54 rays. Caudal fin deeply forked.

Material examined:

(a) River Tlawng in Mizoram; Collection date: 23 10 2000; 1 Ex.; *Museum No.*, *83 / 1 (i);* Coll. and First Report by Professor D. Kar and Party.

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

Clupisoma garua (Hamilton, 1822)

Distribution: In many water bodies in India: in both lotic and lentic water bodies (including Sone Beel, Baskandi Anua, etc., in Assam; River Tlawng in Mizoram: In all these collections, First Reports by Professor D. Kar and Party); also in Bangladesh, Myanmar, Nepal, etc.

IUCN status: Least Concern (LC)

Amblyceps Blyth, 1858

Amblyceps Blyth, 1858, *Proc. Asiat. Soc. Bengal,* 27: 281 (Type species: *Amblyceps caecutiens* Blyth); Hora, 1933, *Rec. Indian Mus.,* 35: 607-621; Jayaram, 2006, *Catfishes of India:* 151; Ferraris, 2007, *Zootaxa,* 1418: 17.

Generic characters: Body elongate, sub-cylindrical, compressed. Abdomen rounded. Head small, broad, depressed and covered with thick skin. Snout usually broadly rounbded. Mouth anterior, wide, transverse. Eyes small, superior. Nostrils close together and separated by nasal barbel. Presence of 4 pairs of barbels: one pair each of maxillary, nasal and two pairs of mandibular. Maxillary barbels with broad bases. Presence of a fold of skin above and anterior to pectoral fin base and immediately behind gill openings. Rayed dorsal inserted above half or first quarter of pectoral fins with 5 or 6 rays and a weak spine. Adipoise dorsal fin usually low. Presence of 7 rays and a smooth weak spine in the pectoral fins. Presence of 6 rays in the pelvic fin and 8 to 11 rays in the anal fin.

Material examined:

(a) River Tlawng in Mizoram; Collection date: 26,27 Oct,2002; 1 Ex.; *Museum No.*, *85 / 17 (i);* Coll. and First Report by Professor D. Kar and Party.

Key to species: Body depth at anus 13.8 - 17.8 % SL. Anal fin with 8-11 rays

Amblyceps mangois (Hamilton, 1822)

Distribution: In many water bodies in India, usually in the hill streams (including R Tlawng in Mizoram: First Report by Professor D. Kar and Party); also in Kangra valley in Himachal Pradesh, Manipur, Myanmar, Bangladesh, etc.

IUCN status: Least Concern (LC)

Genus:*Gagata* Bleeker, 1858

Gagata Bleeker, 1858. *Ichthyol. ArchipelIndiciProdr.,* 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 barbels with an osseous base and lying in a groove anteriorly. Nasal pair of barbels with broad flaps, separating the 2 nostrils. Mandibular barbels inserted in a transverse row but at the same level. Rayed dorsal fin inserted above middle of pectoral fins. Caudal deeply forked. Lateral line complete with pores on anterior half.

Material examined:

(a) River Tlawng in Mizoram; Collection date: 25 10 2002; 9 Ex.; *Museum No.*, *84/10 (i) to 10 (ix);* Coll. and First Report by Professor D. Kar and Party.

(b) River Tlawng in Mizoram; Collection date: 30 5 2001; 2 Ex.; *Museum No.*, *119/7(i),7(ii);* Coll. and First Report by Professor D. Kar and Party.

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: In many water bodies in India, usually, in the hill streams (including River Barak at Khangbor in NE India; **River Gomati in Tripura; River Tlawng in Mizoram:** In all these collections, First Reports by Professor D. Kar and Party); also in Nepal, Myanmar, Bangladesh, Thailand, Sumatra, etc.

IUCN status: Least Concern (LC)

Material examined:

(a) River Tlawng in Mizoram; Collection date: July 2001 **(Bag C)**; 1 Ex.; *Museum No.*, *68/ 4(i));* Coll. and First Report by Professor D. Kar and Party.

Key to species: Dorsal fin relatively large extending atleast to adipose origin. Pelvic fins reach anal fin origin. Dorsal spine extend well-past adipose fin origin.

Gagata gagata (Hamilton, 1822):

Distribution: In water bodies in India, usually, in the hill streams (including River Tlawng in Mizoram: First Report by Professor D. Kar and Party); also, Ganges basin, Bangladesh, etc.

IUCN status: Least Concern (LC)

Bagarius Bleeker, 1853

Bagarius Bleeker, 1853, *Verh. Bat. Gen.,* 25, p.121 (Type species: *Pimelodus bagarius* Hamilton-Buchanan); Hora, 1939, *J. Bombay nat. Hist. Soc.,* 40 (4): pp. 585-593 (review); Roberts, 1983, *Copeia* (2): pp. 435-445 (Revision); Jayaram, 2006, *Catfishes of India:* 201; Thompson and Page, 2006, *Zootaxa* 1345: 26 (Check list); Ferraris, 2007, *Zootaxa,* 1418: 383 (Chack list).

Generic characters: Body and abdomen elongate, flattened upto pelvics. Head broad. Body fully or almost fully covered by heavily keratinised skin, superficially differentiated into unculiferous plaques or tubercles. Snout not pointed; sharply conical. Mouth wide, terminal, slightly inferior. Eyes small, sub-cutaneous. Eyes dorsally placed at the posterior half of the head. Presence of 4 pairs of barbels: 1 pair of large maxillary, 1 pair of nasal and 2 pairs of mandibular. Rayed dorsal fin inserted above the base of pectoral fins with 7 rays and a smooth spine; and, with an elongated soft termination of varying length. Adipose dorsal fin moderately long, posteriorly free. Presence of 9 to 14(or 12) rays in the pectoral fins and a spine serrated along the inner edge; and, also, witha soft prolongation. Pelvic fins have 6 rays. Anal fin short with 13 (or 12) to 17 rays. Caudal fin deeply forked. Upper lobe of caudal fin longer; and, bioth the lobes of caudal fin, sometimes, produced into soft, filamentous prolongations. Lateral line complete.

Material examined:

(a) River Tlawng in Mizoram; Collection date**:** 30 5 2001; 1 Ex.; *Museum No.*, *119/1(i);* Coll. and First Report by Professor D. Kar and Party.

(a) River Tlawng in Mizoram; Collection date**:** 30 5 2001 **(Bag D)**; 1 Ex.; *Museum No.*, *70/3(i);* Coll. and First Report by Professor D. Kar and Party.

Key to species: Pelvic origin anterior to a vertical line through base of last dorsal fin ray. Pectoral fin rays 9 to 12.

Bagarius bagarius (Hamilton, 1822)

Distribution: In water bodies in India, generally in the hill streams (including River Tlawng in Mizoram: First Report by Professor D. Kar and Party); also in the Ganga river system, etc.

IUCN status: Vulnerable (VU)

Pseudolaguvia Misra,1976

Pseudolaguvia Misra,1976, *Fauna of India, Pisces,* Ed. 2, 2: 258 (Type species: *Glyptothorax tuberculatus* Prashad and Mukerji, by original designation); Britz and Ferraris, 2003, *Zootaxa,* 388: 1-8 (*Laguvia* species considered as belonging to *Pseudolaguvia)*(Jayaram, 2010); Jayaram, 2006, *Cat fishes of India:* 299; Thompson and Page, 2006; *Zootaxa,* 1340: 20 (Checklist); Ferraris, 2007, *Zootaxa,* 1418: 401 (Check list).

Generic characters: Presence of a prominent elongated adhesive thoracis apparatus formed by

longitudinal, muscular skin-folds, with a distinctive central pit. Adipose dorsal contiguous with rayed dorsal with very little inter-space.

Material examined:

(a) River Tlawng in Mizoram; Collection date: 26,27 Oct,2002; 1 Ex.; *Museum No.*, *85 / 16 (i);* Coll. and First Report by Professor D. Kar and Party.

(b) River Tlawng in Mizoram; Collection date: 20 12 2014; 1 Ex.; *Museum No.*, *117/5(i);* Coll. and First Report by Professor D. Kar and Party.

Key to species: Thoracic adhesive apparatus comparatively poorly developed. Presence of two broad vertical bands each below the rayed dorsal fin. Pelvic fins inserted nearer to tip of snout than caudal fin base.

Pseudolaguvia shawi (Hora, 1921)

Distribution: In water bodies in India, (including Rivers Tuirial and Tlawng in Mizoram: First Reports by Professor D. Kar and Party); also in Darjeeling, Kalimpong, Duars, Siliguri, Arunachal Pradesh, 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 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. 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 Tlawng in Mizoram; Collection date: 26, 27 Oct, 2002; 1 Ex.; *Museum No.*, *85 /14 (i);* Coll. and First Report by Professor D. Kar and Party.

(b) River Tlawng in Mizoram; Collection date: 6 11 2001 **(Bag D)**; 3 Ex.; *Museum No.*,,71/2(i) to 2 (iii)*;* 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; sometimes, may be in the downstream region also (being swept away) (including River Barak at Lakhipur, Katigorah; River Tlawng in Mizoram: First Reports by Professor D. Kar and Party); in general, in the Ganga-Brahmaputra basin in India; 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 Tlawng in Mizoram; Collection date: 25 10 2002; 1 Ex.; *Museum No.*, *84/1(i);* Coll. and First Report by Professor D. Kar and Party.

(b) River Tlawng in Mizoram; Collection date:: 20 12 2014 1 Ex.; *Museum No.*, *117/9(i);* Coll. and First Report by Professor D. Kar and Party.

(c) River Tlawng in Mizoram (MZ); Collection date: 30 5 2001 1 Ex.; *Museum No.„119/14(i);* 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 Tlawng 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 Tlawng in Mizoram; Collection date: 26,27 Oct,2002; 5 Ex.; *Museum No.*, *85/ 21 (i) to 21(v).;* Coll. and First Report by Professor D. Kar and Party.

(b) River Tlawng in Mizoram; Collection date: 30 5 2001; 5 Ex.; *Museum No.*, *119/15(i) to15 (v);* Coll. and First Report by Professor D. Kar and Party.

(c) River Tlawng in Mizoram; Collection date: **28** 10 2006 **(Bag E)**; 2 Ex.; *Museum No.*, *73/*4(i), 4(ii)*;* Coll. 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 **Sone Beel, Chatla Haor,** Baskandi Anua and Salchapra Anua in Assam; River Tlawng in Mizoram: In all these collections: First Reports by Professor D. Kar and party); also, in Bangladesh, South China, Malaya, Java, Myanmar, Nepal, etc.

IUCN status: Least Concern (LC)

Genus: ***Macrognathus*** Lacepede, 1800

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

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

*Material examined**:***

(a) River Tlawng in Mizoram; Collection date: 20 12 2014; 1 Ex.; *Museum No.*, *117/2(ii);* Coll. and First Report by Professor D. Kar and Party.

Key to species: Dorsal fin with 24 to 26 spines and 30 to 42 soft rays. Anal with three spines. Caudal fin distinctly separated from dorsal and anal fins.

Macrognathus pancalus Hamilton, 1822

Distribution: **In** many water bodies in India (including **Sone Beel, Chatla Haor,** Salchapra Anua, Shiv Narayanpur Anua in Assam; River Tlawng in Mizoram: In all these collections: First Reports by Professor D. Kar and party); also, in Bangladesh, Pakistan, etc.

IUCN status: Least Concern (LC)

Material examined:

(a) River Tlawng in Mizoram; Collection date: 20 12 2014; 3 Ex.; *Museum No.*, *117/2(i), 117/2(ii), 117/2(iii);* Coll. and First Report by Professor D. Kar and Party.

Key to species: Dorsal fin spines 16-23.

Macrognathus aral (Bloch and Schneider, 1801).

Distribution: **In** many water bodies in India (including **Sone Beel, Chatla Haor,** Rani Meghna Beel, Javda Beel, etc., in Assam; River Tlawng in Mizoram: In all these collections: First Reports by Professor D. Kar and party); also, in Bangladesh, Myanmar, Nepal, etc.

IUCN status: Least Concern (LC)

Genus: ***Parambassis*** Bleeker, 1874

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

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. Jaws straight or only slightly upturned. Supra-orbital ridge smooth or serrated, with one or two spines posteriorly. Presence of 2 dorsal fins with 6 or 7 spines and 11 to 14 rays, which are closely placed with a notch in between. Anal fin with 3 spines and with 11 to 16 rays.

Material examined:

(a) River Tlawng in Mizoram; Collection date: 26,27 Oct,2002; 11 Ex.; *Museum No.*, *85 / 5(i) to 5(xi);* Coll. and First Report by Professor D. Kar and Party.

Key to species: Body depth 41.7 to 43.4 %; caudal peduncle depth 0.9 to 12 % SL.

Parambassis ranga (Hamilton, 1822)

Distribution: **In** many water bodies in India (including **Sone Beel, Chatla Haor,** Sat Beel in in Assam; River Tlawng in Mizoram: In all these collections: First Reports by Professor D. Kar and party); also, in Bangladesh; Malaysia, Mayanmar, etc.

IUCN status: Least Concern (LC).

Genus: ***Badis*** Bleeker, 1853

Badis Bleeker, 1853, *Verh. Bat. Genootsch.,* 25: 106 (Type species: *Labrus buchanani* Bleeker = *Labrus* Hamilton-Buchanan, by tautonomy); Kullander & Britz, 2002, *Ichthyol. Explor. Freshwaters,* 13 (4): 303.

Generic Characters: Body moderately elongated, compressed. Abdomen rounded. Head usually large, compressed. Snout bluntly rounded. Mouth relatively small, slightly upturned, slightly protractile; cleft not extending to anterior margin of eye. Eyes large. Lower jaw longer. Opercle with one sharp spine. Presence of a single dorsal fin, inserted above base of pectoral fins; the spinous portion longer than soft portion with 16 to 18 spines and 7 to 10 rays. Anal fin with 3 spines and 6 to 8 rays. Caudal fin rounded. Lateral line scales generally 26 to 33. Unique characters include a black stripe along middle of dorsal fin and dark bars on trunk.

Material examined:

(a) River Tlawng in Mizoram; Collection date: 26,27 Oct,2002; 6 Ex.; *Museum No.*, *85 / 20 (i) to 20 (vi);* Coll. and First Report by Professor D. Kar and Party.

(b) River Tlawng in Mizoram; Collection date: 30 5 2001; 2 Ex.; *Museum No.*, *119/12(i),12(ii);* Coll. and First Report by Professor D. Kar and Party.

(c) River Tlawng in Mizoram; Collection date: July 2001 **(Bag C)**; 1 Ex.; *Museum No.*, *68/3(i);* Coll. and First Report by Professor D. Kar and Party.

(d) River Tlawng in Mizoram; Collection date: 30 5 2001 **(Bag D)**; 2 Ex.; *Museum No.*, *70/5(i),5(ii);* Coll. and First Report by Professor D. Kar and Party.

(e) River Tlawng in Mizoram; Collection date: **28** 10 2006 **(Bag E)**; 2 Ex.; *Museum No.*, *73/*3(i), 3(ii)*;* Coll. and First Report by Professor D. Kar and Party.

(f) River Tlawng in Mizoram; Collection date: 1 6 2001 **(Bag E)**; 1 Ex.; *Museum No.*, *75/3(i);* Coll. and First Report by Professor D. Kar and Party.

Key to species: Presence of usually 26 scales in lateral row.

Badis badis (Hamilton, 1822)

Distribution: **In** many water bodies in India (including **Sone Beel, Chatla Haor,** Karbhala Beel in Assam; River Tlawng in Mizoram: In all these collections: First Reports by Professor D. Kar and party); also, in Bangladesh, Nepal, 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 Tlawng in Mizoram; Collection date: 25 10 2002; 4 Ex.; *Museum No.*, *84/9(i) to 9 (iv);* Coll. and First Report by Professor D. Kar and Party.

(b) River Tlawng in Mizoram; Collection date: 26,27 Oct,2002; 2 Ex.; *Museum No.*, *85 / 10(i), 10(ii);* 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 **Sone Beel, Chatla Haor,** Karbhala Beel in

Assam; River Tlawng in Mizoram: In all these collections: First Report 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 Tlawng in Mizoram; Collection date: 26,27 Oct,2002; 3 Ex.; *Museum No.*, *85 / 1(i) to 1 (iii);* Coll. and First Report by Professor D. Kar and Party.

(b) River Tlawng in Mizoram; Collection date: 30 5 2001; 4 Ex.; *Museum No.*, *119/8(i) to 8(iv);* 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 Salchapra Anua, Baskandi Anua wetlands in Assam; River Tlawng in Mizoram: In all these collections: First Reports by Professor D. Kar and party); also, in Bangladesh. China, Malaya, Myanmar, etc.

IUCN Status: Least Concern (LC)

Material examined:

(a) River Tlawng in Mizoram; Collection date: 20 12 2014; 1 Ex.; *Museum No.*, *117/4(i);* Coll. and First Report by Professor D. Kar and Party.

Key to species: Dorsal fin with 28-33 rays. A number of dark blotches on flanks; some with many black spots on body and also on dorsal and caudal fins. Ventral side of body usually white or pale yellow.

Channa punctata (Bloch, 1793)

Distribution: **In** many water bodies in India (including **Sone Beel, Chatla Haor,** Salchapra Anua, Fulbari Anua Wetlands in Assam; River Tlawng in Mizoram: In all these collections: First Reports by Professor D. Kar and party); also, in Bangladesh. China, Malaya, Myanmar, etc.

UCN Status: Least Concern (LC)

4. Discussion

An overall look into the habitat inventory features of the River **Tlawng** reveals that the long range of microhabitat of the river consists of all the four kinds of mirohabitats, *viz.,* Fall, Cascade, Riffle-pool and Run-sheet. Out of these, the most common and widely observed microhabitat is the riffle-pool type followed by run-sheet. Falls are seen generally in the upper reach of the river when the river flows down from a hill top; as, sometimes, evident around the Kolasib region of Mizoram. Cascades are usually found in the mid-reach region of the river; and, are not often found elsewhere. Riffle-pools are usually seen in various regions of the entire length of the river, depending on the characteristics of the substratum. Interestingly, the river Tlawng displays run-sheet type of microhabitat towards its downstream tail end stretching from around village Ramnathpur to village Katakhal when the river Tlawng flows as River Dhaleswari (or River Katakhal) upto its confluence point with River Barak in the Barak valley region of Assam.

Concomitant to above, four different types of substrata are found in the entire length of the River Tlawng. These are (a)Bedrocks, (b) Boulders, (c) Cobbles and Gravels and (d) Fines consisting of sand, silt and clay. In River Tlawng, Bedrocks are infrequently found in the upstream region near the origin of the river. 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. The substratum in the entire downstream stretch of the river is formed of mainly `fines' consisting mainly of sand, silt and clay.

In continuation of the above, there appears to be a differential trend in fish diversity and fish species composition in different microhabitats and substrata of the River Tlawng. 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 *Barilius* species, *Tariquilabeo* species, *Psilorhynchus* species, *Lepidocephalichthys* species, *Paracanthocobitis* species, *Schistura* species, *Gagata* species, etc. However, the lower midreach region was found to be inhabited mainly by *Devario* species, *Puntius* spp, *Botia* species, *Cabdio* species; and, so on. The entire downstream plainwater lower and terminal stretch of the river was found to harbour many ichthyospecies, like *Salmostoma, Securicula, Gudusia, Puntius, Pethia, Amblypharyngodon, Esomus, Osteobrama, Labeo, Cirrhinus, Mystus, Eutropiichthys, Clupisoma, Ailia, Parambassis, Chanda, Glossogobius,* etc.

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

Notwithstanding the above, Bailey, R.G.(20, 21) and Bailey and Hickley (22) had studied the water bodies and fishes in Africa. Concomitantly, Didem *et.al* (34)worked on the fishes of Western Black Sea Coast of Turkey; while, Kullander and Britz (109) and. Conway and Kottelat (110) had worked on the fishes of Myanmar..

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References

Akhtar M.M.; Azomm Golam, Shamim Reza Sabuz; Hamidul Islam (2019). Sexual dimorphism of *Canthophrys gongota* (Teleostei: Cobitidae) using landmark-bsed geometric morhometrics in the Atrai. *BangalshJornal of Scienti and Industrial Researc*, *54*(2), 187-194

Arunachalam, M., Raja, M., Nandagopal, S., & Mayden, R. L. (2013). *Garra palaruvica,* a new cyprinid fish

(Cypriniformes: Cyprinidae) from Kerala, Western Ghats, Peninsular India. *International Journa of Zoology*

Research, *3*(1), 62-68.

Bănăduc, D., Noblet, B., Chauveau, R., Latrache, Y., Touati, A., & Curtean-Bănăduc, A. (2020). *Mountainous lotic systems dams environmental risks in Carpathians and Alps; Acta Oecologica Carpatica XIII*, 57/68, 57-58.

Barbhuiya, A. H., Singha, R., & Kar, D. (2021). Golden Mahseer in Barak in North-East India with a note on their morphometry and meristics, pp. 11-19. In:Advances in Animal Research, pp. 1-93, Global Net Publication (New Delhi).

Barman, R. P. (1984). On a small collection of fish from Mizoram, India: Journal, Bombay Natural Hist. *Society*,

86, 463-466.

Barman, R. P. (1985 a). A new freshwater fish of the Genus *Barilius* Hamilton (Pisces: Cyprinidae) from West

Bengal, India. Journal, Bombay Natural Hist. *Society*, *83*, 171-173.

Barman, R. P. (1985 b).A new cyprinid fish of the Genus *Danio* Hamilton (Pisces: Cyprinidae) from Andhra

Pradesh, India. *Journal, Bombay Natural Hist. Society*, *82*, 602-605.

Barman, R. P. (1986). *Barilius nelsoni*, a new cyprinid fish (Pisces: Cyprinidae) from Tripura, North-Eastern

India. *Journal, Bombay Natural Hist. Society*, *86*, 213-215.

Barman, R. P. (1992). New Record of a croaker, J*ohnius coitor* (Hamilton Buchanan) (Pisces: Sciaenidae) from Tripura, North-East India. *Journal, Bombay Natural Hist. Society*, *89*, 135-136.

Barman, R. P. (1994). Fish fauna of Tripura, North-East India. *Journal, Bombay Natural Hist. Society*, 91, 37-46.

Bailey, R. G. (1994).Guide to the Fishes of River Nile in the Republic of Sudan. *Journal of natural History*, *28*, 937-970.

Bailey, R. G. (1996). Changes in the Fish and Fisheries Ecology of a large man-made lake in Tanzania for the period from 1965-94. *Fisheries Management and Ecology*, *3*, 251-260.

Bailey, R. G., & Hickley, P. (1986). A recent collection of *Nothobrabchus virgatus* Chanbers, a new killifish from southern Sudan. *Revue fr. Aquariol*., *12*(1986)..

Barbhuiya, A. H., Das, B., Darlong, L., Tarafdar, R. G., Sharma, R., Sharma, S. S., Datta, S., Das, B., Barman, R., Deb, S., Saha, B., & Kar, D. (2009). Fish Biodiversity in certain rivers of Tripura. *Environment & Ecology*, *27*(1), 222-227.

Das, B. K., Boruah, P., & Kar, D. (2015). Ichthyofaunal Diversity of Siang River in Arunachal Pradesh, India. Proc. *Zool. Soc. (Springer)*, DOI 10.1007/s 12595-015-0155-6. ISSN 0373-5893.

Das, B. K., Boruah, P., & Kar, D. (2015). Ichthyofaunal Diversity of Siang River in Arunachal Pradesh, India. *Proceedings of the Zoological Society*, published online DOI 10.1007/s12595-015-0155-6.

Das, S., Das, T., Das, B. K., & Kar, D. (2015). Length-Weight Relationship and Condition Factor in *Channa punctata* of River Manu in Tripura. *International Journal of Fisheries and Aquatic Studies (IJFAS)*, *2*(3), 56-57.

Das, U., & Kar, D. (2016). Diel and seasonal variation of zooplankton from the freshwater pond of North Tripura District, India. *Lake 2016: Conference on Conservation and Sustainable Management of Ecologically Sensitive Regions in Western Ghats (the 10th Biennial Lake Conference)*.

Day, F. (1873). *Report on the Freshwater Fish and Fisheries of India and Burma*, pp.22, 23, 35, 36 (Calcutta).

Day, F. (1878). The Fishes of India, being a Natural History of the Fishes known to inhabit the Seas and Freshwaters of India, Burma and Ceylon, xx + 778, 195 pls, Text and Atlas in 4 parts, W_M Dawson and Sons Ltd. (London).

Day, F. (1885). Relationship of the Indian and African Freshwater Fish Fauna. J. Linn. Soc. (Zool.), 18: 308-317.

Day, F. (1889). The Fauna of British India, including Ceylon and Burma: Fishes, Vols. I & II: pp. 548 and 509.

Dey, S.; Manorama, M.; and Ramanujam, S,N, (2015). New Records of three species of Fish in the upper reaches of the Btrahmaputra and Surma-Meghna River basins, Meghalaya, India. Journal of Threatened taxa, 7(12): 7922-7926.

Didem,Gokturk; F Saadet Karakulak.; Nuran Unsal; and, Abdullah E. Kahraman (2012). A New Reccord for occurrence of *Symphodus bailloni* (Osteichthuyes: Perciformes: Labridae) in the Western Black Sea Cooast of Turkey. Scientific World Joiurnal, Vol.2012, Article ID 615318, pp 5:http://dx.doi.org/10.1100/2012/615318)

Dudgeon, D. (1995). The Ecology of rivers and streams in Tropical Asia: pp. 615-657. In: Ecosystems

of the World 22: River and Stream Ecosystems (Eds.) Cushing, C.E.; Cummins, K.W.; and, Minshall, G.W., Elsevier Press (UK).

Froese, R. and D. Pauly. Editors. 2024.FishBase.World Wide Web electronic publication. www.fishbase.org, (06/2024),. www.Fishbase.org.

Ghosh, S.K. and Lipton, A.P. (1982). Ichthyofauna of the NEH Region with special reference to their economic importance. ICAR Research Complex, NEH Region, Shillong, Spl. Bull. 1: 119-126.

Greenwood P. H., Rosen D. E., Weitzman S. H. and Myers G. S., 1966 Phyletic studies of teleostean fishes with a provisional classification of living forms, *Bulletin of American Museum of Natural History*, 131, 339-456.

IUCN (1988). Red List of Threatened Animals, IUCN, Gland (Switzerland).

Jayaram, K.C. (1981). The Freshwater Fishes of India, Pakistan, Bangladesh, Burma, Sri Lanka: a Handbook, xxii +475, Zoological Survey of India (Calcutta).

Jayaram,K.C.(1999). The Freshwater Fishes of the Indian Region, xvii +551, Narendra Publishing House (Delhi).

Jayaram, K.C. (2003). Ecostatus and Conservation Strategies for Mahseer fishes of India with special reference to Deccan species: pp. 3-12. In: Welfare Biology in the New Millennium, (Eds.) Kar, D.; Dey, S.C. and Datta, N.C., pp. xx + 97, Allied Publishers Pvt.Ltd. (Bangalore).

Jayaram, KC (2010). The Freshwater Fishes of the Indian Region, xxiv + 614, Narendra Publishing House (New Delhi).

Kar, D. (1990). Limnology and Fisheries of Lake Sone in the Cachar district of Assam (India), Matsya, 15-16: 209-213.

Kar, D. (1996). Biodiversity Conservation Prioritisation Project (BCPP) in India. Proc. International Project Formulation Workshop of BCPP, World Wide Fund (WWF) for Nature-India, 1 (New Delhi).

Kar, D. (1999). Microbiological and Environmental Studies in relation to Fishes of India, Gordon Research Conference, Connecticut, USA.

Kar, D.; Saha, D.; Hussain, A.; Barbhuiya, M.H.; Kar, S.; and, Dey, S.C. (1999). Limnological Studies of some of the Wetlands of Assam, Mizoram, Tripura and Aruna-Chal Pradesh related to their status of Eutrophication. Proc. Indian Sci. Congr., 86 (III):pp. 55.

Kar, D (2000 a). Fish Genetic Resources in the Principal rivers and wetlands in North-East India with special emphasis on Barak valley(Assam), in Mizoram and in Tripura. Proc. National Project Initiation Workshop of the NATP-ICAR World Bank-aided project on Germplasm Inventory, Evaluation and Gene Banking of Freshwater Fishes': National Bureau of Fish Genetic Resources (NBFGR),Lucknow, 1:12p

Kar, D (2000 b). Species composition and distribution of Riverine fishes of Mizoram and Tripura with emphasis on Habitat parameters and Health of Fishes. Proc. National Workshop on Fish Biodiveristy and Conservation in the North-East India: NBFGR-NEC (Govt. of India sponsored),

1: 25 p.

Kar, D. (2000 c). An account of Ichthyospecies of North-East India with a note on their conservation. Proc. International Symposium, Lake 2000, Indian Institute of Science, Bangalore, 1: 16 p.

Kar, D (2000 d). On a collection of Fishes from River Gomati and River Howrah in Tripura. Proc. Nat. Symp.Currnet Trends in Wetlands and Fisheries Research in the New Millennium, 1: 20 p.

Kar, D (2001 a). Species composition and distribution of Fishes in the rivers in Barak valley region of Assam and the Principal rivers in Mizoram and in Tripura in relation to their Habitat parameters. Proc. National Workshop, NATP-ICAR Project Mid-term Review, 1: Central Marine Fisheries Research Institute, Cochin, 25 p.

Kar, D (2001 b). Further Studies on the Ichthyospecies composition and Distribution of Freshwater fishes in Barak drainage, and in principal rivers in Mizoram and in Tripura with a note on their Feeding and Breeding biology. National Project Monitoring Workshop of NATP-ICAR Project, National Bureau of Fish Genetic Resources, Lucknow, 1: 22 p.

Kar, D (2002). Fish Genetic Resources and Habitat Diversity of the Barak Drainage, Mizoram and Tripura with a note on Conservation of Endangered Species. International Symposium, `Lake 2002', Indian Institute of Science, Bangalore, 9-13 Dec, 2002, Abstracts, pp. 117-121.

Kar, D. (2003 a). Fishes of Barak drainage, Mizoram and Tripura: pp. 203-211. In: Environment, Pollution and Management (Eds.) Kumar, A. Bohra, C. and Singh, L.K., pp. xii + 604, APH Publishing Corporation (New Delhi).

Kar, D. (2003 b). Peoples' Perspective on Fish Conservation in the Water bodies of South Assam, Mizoram and Tripura: pp. 325-328. In: Participatory Approach for Fish Biodiversity Conservation in North-East India (Eds.) Mahanta, P.C. and Tyagi, L.K., v + 412, National Bureau of Fish Genetic Resources (ICAR) (Lucknow).

Kar, D. (2003 c). Ichthyoresources of Tripura: Assessment, Management and Conservation. Proc. Nat Symp. Assessment and Management of Biorecources, North Bengal University and The Zoological Society, Calcutta, 28-30 May 2003,p.48.

Kar, D. (2004 a). A Glimpse into the Fish Bioresources of North-East India with a note on their management, Conservation and Biotechnological potential. Invited Lecture at the DBT-sponsored National Seminar on Biodiversity Cconservation and Sustainable Utilisation of Environemntal Resources: Tripura University, 10-11 Jan. 2004.

Kar, D (2004 b). Fish Fauna of Barak Drainage in Assam, of Mizoram and of Tripura with a note on Conservation. J. Freshwater Biol., 16 (1-4): 31-39.

Kar, D. (2005 a). Fish Biodiversity and Habitat Parameters of rivers in Barak drainage (Assam), in Mizoram and in Tripura. Himalayan Journal of Environmental Zoology, 19 (1): 41-45.

Kar, D. (2005 b). Fish Diversity in the Major Rivers in Southern Assam, Mizoram and Tripura: pp.679-691. Proc. 2nd International Symposium on GIS and Spatial Analyses in Fisheries and Aquatic Sciences, 2-6 Sep 2002, University of Sussex, Brighton (UK), (Eds.), Vol.2, Nishida, T.;

Kailola, P.J.; and, Hollingworth, C.E. Fisheries and Aquatic GIS Research Group, Kawagoe, Saitama (Japan).

Kar, D. (2005 c). A critical Overview of the Water Bodies in Barak valley region of Assam, in Mizoram and in Tripura with a note on the present status of Fish Biodiversity and their Conservation. National Workshop on Women and Sustainable Development in the Context of South Assam. North-Eastern Centre for Advanced Studies and Womens' College, Silchar, Assam, 18-19 Feb 2005.

Kar, D (2006). Fish Biodiversity of North-East India. Proc. International Conference on Ganga, Patna University and Aquatic Animal Health Management Society, Canada,1.

Kar, D (2007 a). Fundamentals of Limnology and Aquaculture Biotechnology, pp. xiv + 609, Daya Publishing House (New Delhi).

Kar, D. (2007 b).Sustainability issues of Inland Fish Biodiversity and Fisheries in Barak drainage (Assam), in Mizoram and Tripura: pp.555-560. In: Sustain Fish (Eds) Kurup, Madhusoodana, B and Ravindran, K., pp xii + 863, School of Industrial Fisheries, Cochin University of Science & Technology (CUSAT): Proceedings of International Symposium on `Improved sustainability of Fish Production Systems and Appropriate Technologies for Utilisation', 16-18 March, 2005 (Cochin).

Kar, D.; Barbhuiya, A.H. and Das, B. (2008 a). Wetlands, Rivers and Fish Diversity in North-East India. Key Speaker at International Symposium of Indian national cartographic Association, ISRO, Ahmedabad, Nov 2008.

Kar, D., Barbhuiya, A.H. and Das, B. (2008 b). Wetland panorama of North-East India. Keynote address: Zonal Conference of Indian National Cartographic Association, Survey of India, Shillong, June 2008

Kar, D., Barbhuiya, A.H. and Das, B. (2008 c). Fish Diversity and Habitat parameters of rivers in North-East India. Keynote address from Session Chair, All-India Congress in Zoology, Dec 2008.

Kar, D., Barbhuiya, A.H. and Das, B. (2008 d). Fishes and water bodies of North-east India: their Conservation: Indian Science Congress, NEHU, Jan 2009.

Kar, D., Barbhuiya, A.H (2009 a) Status and Conservation of Freshwater Fishes of India, IUCN Workshop, Zoo Outreach Organisation, India.

Kar, D., Barbhuiya, A.H. (2009 b). Hill stream Fishes of North-East India. National Symposium of Hill stream Fishes, National Centre for Cold water Fisheries, Bhimtal, ICAR, Oct 2009.

Kar, D. (2010). Present status of Fish Diversity and water bodies in North-east India with a note on their Conservation. Keynote address of the Session Chair, Lake 2010 International Conference. Indian Institute of Science, Bangalore, Dec 2010.

Kar, D. (2011). Fish diversity, fish habitats, fish disease and aquaculture in North-East India Hotspot: A synopsis. *Conservation Forum Journal.* 3: 5. ISSN: 0974-6609

Kar, D. (2012). Wetlands, Rivers, Fish diversity, Fish disease and Aquaculture in North-East India. Fishing Chimes, 31 (12): 35-37

Kar, D (2013 a) Wetlands and Lakes of the World, pp.xxx + 687, Springer (London)., Print ISBN 978-81-322-1022-1; e-Book ISBN: 978-81-322-1923-8

Kar, D (2013 b). Wetlands, Rivers and Fishes of North-East India with a note on the Health of Fishes. Proc. International Symposium, Kerala University, 3-5 Oct 2013.

Kar, D. (2015). Epizootic Ulcerative Fish Disease Syndrome, xix + 293, Elsevier, (Academic Press), USA, ISBN: 9780128025048.

Kar, D. (2016 a). Wetlands, Rivers, Fish Resources and Fish Disease in North-East India: An Overview. Proc. International Symposium on Aquaculture and Fisheries (as part of the International Conference on Environmental Sustainability for Food Security (ENFOSE, 2016), 23 Sep 2016, held at Fisheries College and Research Institute (FCRI), Tamil Nadu Fisheries University (TNFU), pp. 6.

Kar, D (2016 b). Wetlands, Rivers, Fish, Plankton resources and Fish disease and Aquaculture in North-East India: An Overview. Proc. International Symposium, Lake 2016, pp.37, Indian Institute of Science, Bengaluru, and Alva's Education Foundation, Mengaluru (India).

Kar, D. (2019). Wetlands diversity and their fishes in Assam, India. *Transylv. Rev. Syst. Ecol. Res. 21.3 (2019), "The Wetlands Diversity":* 47-80 (Romania) (pp.1-94(Romania)

Kar, D. (2021 a). Community Based Fisheries Management: A Global Perspective, pp.xiii + 590, Elsevier (Academic Press) USA.

Kar, D. (2021 b). Fish and Their Habitats in North-East India Biodiversity Hotspot. J Oceanography and Fisheries, USA, 13 (2): pp. 1-3 Oceanogr Fish Open Access J. 2021; 13(2): 555856 (USA), DOI: 10.19080/OFOAJ.2021.13.555856).

Kar, D. (2021 c). Unique Oxbow Wetlands in Assam, India. Oceanography & Fisheries Open access Journal, Volume 14 Issue 3: pp. 1-8, December 2021 DOI: 10.19080/OFOAJ.2021.14.555890 (USA).

Kar, D. (2021 d) Wetlands, Fishes and Pandemics with Special Reference to India. Sustainability in Environment, ISSN 2470-637X (Print) ISSN 2470-6388 (Online) Vol. 6, No. 3: pp. 136-142, 2021, www.scholink.org/ojs/index.php/se 1&2*1 (USA).

Kar, D. (2022). Seasonal Floodplain Haor Wetlands in Assam Hotspot in India. Oceanography and Fisheries open access Journal (ISSN 2476-0536), 15 (2): 1-9 (USA).

Kar, Devashish (2024a). Fishes of River Kopili in the Assam Province of Eastern Himalayan Biodiversity Hotspot (Research Article). Oceanogr. Fish. Open Access Journal, Vol. 17 (4)(July, 2024): pp. 1-18. (MS ID:.555968 (2024): DOI: 10.19080/OFOAJ.2024.17.555968.

294. Kar, Devashish (2024b). Distribution and Conservation Status of Ichthyospecies of River Monu in Tripura: First Detailed Taxonomic Report. (Research Article). Oceanogr. Fish. Open Access Journal, Vol. 17 (4) (August 2024): pp.: 1-22 (MS ID:555969 (2024). DOI:

10.19080/OFOAJ.2024.17.555969.

KAR, Devashish and *Roy AUROBINDO* (2021 a). **EPIZOOTIC ULCERATIVE SYNDROME (EUS) FISH DISEASE CHRONOLOGY, STATUS AND MAJOR OUTBREAKS IN THE WORLD.** *Transylv. Rev. Syst. Ecol. Res. 23.2 (2021), "The Wetlands Diversity":* pp. 29-38.

285. *Kar DEVASHISH* and *Roy AUROBINDO*(2021 b). (Devastating pandemic in the Globe: COVID-19; ***Acta Oecologica Carpatica XIV:*** pp. - 1 – 8.

Kar, D and Sen, N. (2007). Systematic List and Distribution of Fish Biodiversity in Mizoram, Tripura and Barak drainage in North-East India. ZOOs' Print Journal,22 (3):2599-2607.

Kar, D and Barbhuiya, A.H. (2009). Mahseer Fishes of Barak Drainage, Mizoram and Tripura. Souvenir: National Symposium on Coldwater Fisheries Management: new Strategies and Approaches, 2.4 Oct 09, Directorate of Coldwater Fisheries Research (ICAR), Bhimtal, Uttarakhand, India: pp. 77-80.

Kar, D. and Das, B.K. (2015). Sustainability of Freshwater Fishes in North-East India. Fishing Chimes, 35 (5): 47-52

Kar, Devashish and Kumar, Ankush (2023). Present Status of Freshwater Fish Diversity and Human impact with Particular Reference to North-East India Biodiversity Hotspot. Oceanography and Fisheries Open Access Journal (ISSN: 2476-0536), Volume 16 (Issue 4),August 2023, DOI: 10.19080/OFOAJ.2023.16.555943.

Kar, Devashish and Das, Bubul (2024). Taxonomic Study of the Riverine Fishes of Karbi Anglong in North East India of the Eastern Himalayan Biodiversity Hotspot. Oceanogr. Fish.Open Access Journal, Vol 17 (3): pp. 1-9. DOI: 10.19080/OFOAJ.2024.17.555962.

Kar, D. and Khynriam, D.(2020). On a recent pioneering taxonomic study of the fishes from rivers Diyung, Vombadung, Khuolzangvadung, Tuikoi and Mahur in Dima Hasao district of Assam. *Transylv. Rev. Syst. Ecol. Res* (Romania). *22.3 (2020), "The Wetlands Diversity"*: pp. 83-106.

Kar**,** D. and Khynriam, D. (2022). Fishes in the Upstream Rheophilic Stretch of River Barak at Karong. Sustainability in Environment ISSN 2470-637X (Print) ISSN 2470-6388 (Online) Vol. 7, No. 3: 77-96.

Kar, D. and Khynriam, D. (2023). A Pioneering Study on Taxonomic Diversity of Fishes in the Headwaters of River Barak in Assam, Manipur and Mizoram, Northeast, India. Oceanogr Fish Open Access J, Volume 15 Issue 5 - January 2023. DOI: 10.19080/OFOAJ.2023.15.555921

Kar, Devashish Kar and Dimos Khynriam (2024).Further Report on the Systematic, Distribution and Conservation of Ichthyospecies in the Headwaters of River Barak (Assam, Manipur and Mizoram), North East, India. Oceanogr Fish Open Access J (ISSN 2476-0536): 17(1): OFOAJ.MS.ID.555954 (2024); DOI: 10.19080/OFOAJ.2024.17.555954

Kar, D., Dey, S.C. and Datta, N.C. (2003). Welfare Biology in the New Millennium, xx + 97, Allied Publishers Pvt. Ltd. (Bangalore).

Kar, D., Barbhuiya, AH, Arifuddidn, Barbhuiya, MA, Chetia,P., Islam, R and Rahman, S (2007).

Traditional Riverine Fish Catching Devices of Assam. Fishery Technology, 44 (2): 137- 146.

Kar, D., Barbhuiya, A.H., Thangjam, G., Devi, S.M., Deb, S., Das, B., Chanu, H. and Nishima (2008). Panorama of Fish Biodiversity in certain rivers and wetlands in Manipur. Proc.Zool.Soc.India 7(2):123-134.

Kar, D., Shomorendra, M., Singha, R., Puinyabati, H., Geetarani, B., Binky, K., Sangeeta, O. and Ranibala, T.(2011). Fish diversity and Helminth fauna in the fishes of Assam and Manipur, India.: Fishing Chimes,: 55-65.

Kar, S.; Das, P.; Das, U.; Bimola, M.; Kar, D.; and, Aditya, G. (2018 a). Correspondence of zooplankton assemblage and water quality in wetlands of Cachar, Assam, India: Implications for environmental management. Limnological Review, 18 (1): 9-19.

Kar, S.; Das, P.; Das, U.; Bimola, M.; Kar, D.; and, Aditya, G. (2018 b). Correspondence of zooplankton assemblage and water quality in wetlands of Cachar, Assam, India: Implications for environmental management. Limnological Review, 18 (1): 9-19.

Das, P.; Mukherjee, S.; Kar,S.;Das,U.;Kar,D.; and, Aditya,G.(2018). Zooplnakton as dietary component of selected freshwater fish: Network Analysis based on gut content. AACL Bioflux, 11 (1): 232-244.

Devashish KAR, Dimos KHYNRIAM, Bubul DAS, and *Satyajit DAS* (2020).

A recent taxonomic study of the fish from the Jinam river in Dima Hasao Biodiversity Hotspot region of Assam (India). *Transylv. Rev. Syst. Ecol. Res. 22.2 (2020), "The Wetlands Diversity" pp 87 – 102.*

Kar, Devashish Kar (2025 a). Distribution and Conservation Status of Ichthyospecies in Rivers Feni, Muhuri and Lubdachhara in the Eastern Himalayan Biodiversity Hotspot of Tripura: Recent Detailed Taxonomic Report. Oceanogr Fish Open Access J**.,** Volume 18 Issue 1 - February 2025, DOI, 10.19080/OFOAJ.2024.18.5559778; **Oceanogr Fish Open Access J 18(1): OFOAJ.MS.ID.555978 (2025)**

Kar, Devashish (2025 b). Conservation Status and Distribution of Fish Species in Rivers Deo and Juri in the Tripura Province in the North East India Eastern Himalayan Biodiversity Hotspot Region: Detailed Taxonomic Study and A Report on Dharmanagar Fish Market. Oceanogr Fish Open Access J. 2025; 18(2): 555982. DOI:10.19080/OFOAJ.2025.18.555982

Kar, Devashish (2025 c).. Ichthyodiversity and Conservation Status in Dumboor Lake and Kurti Beel in Tripura: Detailed Taxonomic Report. Oceanogr Fish Open Access J. 2025; 18(1): 555980. DOI:10.19080/OFOAJ.2025.18.555980

Kar, Devashish (2025 d).. Distribution and Conservation Status of Ichthyospecies in Rivers Dhalai and Haora in the Eastern Himalayan Biodiversity Hotspot Region of Tripura Province in the Northeast India: Recent Detailed Taxonomic Study. Oceanogr Fish Open Access J. 2025; 18(1): 555979. DOI:10.19080/OFOAJ

Khynriam, D. and Sen, N. 2014. Taxonomic study on Nemacheiline loaches of North East India. *Rec.*

zool. Surv. India, Occ. Paper No. 358: 1-37. Edited and published by Director, Zoological Survey of India, Kolkata.

Kottelat, M.; Harries, D.R; and, Proudlove, G.S.(2007). *Schistura papulifera,* a new species of cave loach from Meghalaya, India (Teleostei: Balitoridae). Zootaxa 1393: 35-44

Kullander, Sven O and Ralf Britz (2008).*Puntius padamya*, a new species of cyprinid fish from Myanmar (Teleostei: Cyprinidae). Electronic Journal of Ichthyology, 2: 56 – 66)

Kevin W. Conway and Maurice Kottelat (2007). A new species of *Psilorhynchus* (Teleostei: Psilorhynchidae) from thr Ataran River Basin, Myanmar, with comments on the generic name *Psilorhynchoides. Zootaxa,* 1663: 47- 57

Lalramliana; Beihrosa, Solo; Samuel Lalronunga; and, Lalnuntleuanga (2018 a). *Hemimyzon indicus,* a new species of balitorid fish from the Kaladan basin, Mizoram, North-east India (Teleostei: Balitoridae).

Lalramliana; John Daniel Marcus Knight; Denis Van Lalhlimpuia; and, Mahender Singh (2018 b). Integrative taxonomy reveal a new species of snalehead fish, *Channa stiktos* (Teleostei: Channidae), from Mizoram, North-east India. Vertebrate Zoology, 68(2): 165-175).

Lambert, Niyoyitungiye; Anirudha Giri; Bhanu Prakash Mishra; Devashish Kar (2020). The impact of abiotic factors on the occurrence, assemblages and diversity of freshwater zooplanktonin lake Tanganyika, Burundian littoral. International Journal of Entomology Research, 5 (2): 74-82.

Lokeshwar, Y.; Voshwanath, W.; and Kosygin, L. (2013). *Schistura paucireticulata,* a new loach from Tuirial River, Mizoram, India (Teleostei: Nemacheilidae), Zootaxa, 3683(5): 581-588).

Lipton A.P (1983-84). Fish Fauna of Tripura. Matsya, 9-10: 110-118.

Menon, A.G.K. (1974). A Checklist of the Fishes of the Himalayan and the Indo-gangetic Plains, pp. viii + 136, Inland Fish. Soc. India (Barrackpore).

Menon, AGK (1978). An Appraisal of Satpura Hypothesis of Distribution of the Malayan Fauna abd Flora to Peninsular India. *Zoologiana,* 1: 18 – 23.

Menon A.G.K. (1999). Checklist: Freshwater Fishes of India, xviii + 366, Occasional Paper No. 175, Zoological Survey of India (Calcutta).

Misra,K.S. (1959). An aid to the Identification of Commercial Fishes of India and Pakistan. Rec. Indian Mus., 57 (1-4): 1-320.

Mittermeier, R.A. and Mittemeier, C.G. (1997). Megadiversity: Earth's Biologically Wealthiest Nation. In: Global Freshwater Biodiversity (Ed.) McAllister, D.E; Hamilton, A.L.; and, Harvery, B; Sea Wind, Cemex, Mexico City, 11: 1-140.

Nath, M.; Singh, N.R.; Das, B.K.; Dutta, B.; Das, U.; Das, P.; Kar, S.; and, Kar, D. (2015). A preliminary study on Fish Diversity of Kakri and Deo rivers around Dharma nagar in Tripura. International Journal of Theoretical and Applied Sciences, 7 (2): 6-13.

Nath, P. and Dey, S.C. (1989). Two new Fish species of thr genus *Amblyceps* Blyth from Arunachal Pradesh, India. J. Assam Science Society, 32 (1): 1 – 6.).

Nath, P. and Dey, S.C. (1997). Fish and Fisheries of North-East India, Vol. I: Arunachal Pradesh: 1-140

Nelson, Joseph S.; Grande Terry C.; and, Wilson, Mark V. H. (2016), Fishes of the World, 5th Edition, pp. 752 , ISBN: 978-1-118-34233-6, John Wiley (USA)

Pethiyagoda, R., 1991. Freshwater fishes of Sri Lanka. The Wildlife Heritage Trust of Sri Lanka, Colombo. 362 p.

Sen, N. (2000). Occurrence, Distribution and Status of Diversified Fish Fauna of North-East India: pp. 31-48. In: Fish Diversity of North-East India (Eds.)Ponniah, A.G.andSarkar,U.K., pp. 228, National Bureau of Fish Genetic Resources, ICAR (Lucknow).

Sen, N. and Khynriam, D. (2014). *Pictorial Handbook on Fishes of North East India:* 1-345. Edited and published by Director, Zoological Survey of India, Kolkata.

Sen, T.K. (1985). The Fish Fauna of Assam and the neighbouring North-Eastern States of India. Records of Zoological Survey of India, Occasional Paper No. 64: 1-216.

Shaw, G.E. and Shebbeare, E.O. (1937). The Fishes of Northern Bengal. J. Royal Asiatic Soc. Bengal Science: 137 pp, 6 pls.

Sinha, M. (1994). Threatened coldwater fishes of North-Eastern Region of India: pp. 173-176. In: Threatened Fishes of India, pp. 384, Natcon. Publication No. 4 (UP).

Talwar, P.K. and Jhingran, A.G. (1991). Inland Fishes of India and Adjacent Countries, Vol. I & II, pp. 1158, Oxford and IBH Co., Pvt. Ltd. (New Delhi).

Tilak, Raj and Jain Seema (1987). On the Systematic status of *Danio (Danio) menoni*Barman (Pisces: Cyprinidae). Journal, Bombay Natural Hist. Society, vol. 84: pp.693-694.

WCMC (1998). Freshwater Biodiversity: A Preliminary Gobal Assessment. A Document prepared for the 4th Meeting of the Conference of the Practices to the Convention of Biological Diversity, World Conservation Monitoring Centre.

Wikramanayake, E.D. and Moyle, P.B. (1989). Ecological structure of Tropical Fish Assemblages in wet-zone streams of Sri Lanka. Journal of Zoology (London), 281: 503-526.

Yadava, Y.S. and Chandra, R. (1994). Some threatened carps and cat fishes of Brahmaputra River System: pp. 45-55. In: Threatened Fishes of India, pp. 384, Natcon. Publication No. 4 (UP).

Table 1. Seasonal distribution of Ichthyospecies in River Tlawng in Mizoram along with their Global and Local Conservation status

Sl No.	Fish name	Collection date:23 10 2000 & River Coll No. 83, +(No. of Fishes),River No/Fish No. =Museum No.	Collection date:25 10 2002 & River Coll No. 84, +(No.of Fishes), River No/Fish No. =Museum No.	Collection date: 26,27 Oct,2002 & River Coll No. 85, +(No. of Fishes),River No/Fish No. =Museum No.	Collection date 24 3 2002 & River Coll No. 109, +(No. of Fishes),River No/Fish No. =Museum No.	Collection date: 20 12 2014 & River Coll No. 117, +(No. of Fishes),River No/Fish No. =Museum No.	Collection date:30 5 2001 & River Coll No. 119, +(No.of Fishes),River No/Fish No. =Museum No.	Total No. of Fish collected	Conservation Status (Global) Conservation Status (Global) IUCN Conservation status (Global) LC=Least Concern VU= Vulnerable EN= Endangered NT=Near Threatened NE=Not Evalu	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 Concer

									ated DD-Data Deficient	n(NC)
1	*Notopterus notpterus*		+(1), *84/5(i)*					1	LC	C
2	*Gudusia chapra*		+(2) *84/2(i), 2(ii)*					2	LC	C
3	*Salmostoma bacaila*			+(6),*85* / 13(i) to 13 (vi)			+(3),*119/10(i) to 119/10 (iii)*	9	LC	LC
4	*Cabdio morar*		+(2),*84/6(i), 6(ii)*					2	LC	C
5	*Barilius barila*			+(6),*85 / 3(I to 3 (vi)*		+(1),117/6(i)		7	LC	LC
6	*Opsarius bendelisis*						+(5),*119/3(i), 3(iii) to 3 (vi)*	5	LC	C
7	*Opsarius barna*			+(22), *85 / 3(vii) to 3 (xii); 7(i) to*				22	LC	C

				7 (xvi)						
8	*Opsarius tileo*	+(4),*83 / 2(1) to 2 (iv)*					+(1),*119/3(ii)*	5	LC	LC
9	*Devario aequipinnatus*			+(2),*85 / 15(i), 18(i)*			+(2),*119/5(i),5(ii)*	4	LC	LC
10	*Devario devario*		+(1),*84/8(i)*					1	LC	C
11	*Rasbora daniconius*						+(3),*119/4(i) to 4(iii)*	3	LC	C
12	*Tor tor*			+(13), *85 /2(i),2(ii), 6(viii) to 6 (xviii)*				13	DD	C
13	*Systomus clavatus*						+(3),*119/6(i).6(ii),6(iv)*	3	NT	C
14	*Puntius sophore*		+(7),*84/12 (i) to 12 (vii)*					7	LC	C
15	*Pethia conchonius*				+(1),*109/3(i)*		+(1),*119/11(i)*	2	LC	LC
16	*Pethia ticto*			+(7),*85 / 6(i) to 6 (vii)*				7	LC	C

17	*Cirrhinus mrigala*						+(1),*119/6(iii)*	1	LC	C
18	*Labeo rohita*					+(1),*117/1(i)*		1	LC	C
19	*Garra annandale*			+(2),*85 / 8(i),8(ii)*			+(6),*119/9(i),9(ii),9(iv) to 9(vii)*	8	LC	LC
20	*Garra lamta*				+(1), *109/2(i)*			1	LC	C
21	*Psilorhynchus balitora*			+(11), *85 / 19(i) to 19 (xi)*				11	LC	C
22	*Paracanthocobitis botia*		+(2),*84/7(i),7(ii)*	+(8),*85 / 12 (i) to 12 (viii)*	+(1),*109/1(i)*		+(2),*119/13(i), 13(ii)*	13	LC	NC
23	*Schistura multifasciata*						+(2),*119/13(iii),13 (iv)*	2	LC	C
24	*Botia dario*		+(3),*84/3(i) to 3(iii)*	+(2),*85 / 9 (i), 9(ii)*		+(1),*117/7(i)*		6	LC	NC
25	*Lepidocephalichthys guntea*			+(1),*85 / 11 (i)*		+(1),*117/8(i)*		2	LC	LC
26	*Sperata seenghala*			+(1),*85 / 4(i)*			+(1),*119/2(i)*	2	LC	LC
2	*Mystus*		+(7),			+(1),*1*		8	LC	LC

7	*tengara*		*84/11(i) to 11(vii)*			*17/3(i)*				
28	*Ompok bimaculatus*		+(1), *84/4(i)*					1	NT	C
29	*Ailia coila*		+(3),*84/4(ii) to 4(iv)*					3	NT	C
30	*Clupisoma garua*	+(1),*83 / 1 (i)*						1	LC	C
31	*Amblyceps mangois*			+(1),*85 / 17 (i)*				1	LC	C
32	*Gagata cenia*		+(9),*84/10 (i) to 10 (ix)*				+(2),*119/7(i),7(ii)*	11	LC	LC
33	*Bagarius bagarius*						+(1),*119/1(i)*	1	VU	C
34	*Pseudolaguvia shawi*			+(1),*85 / 16 (i)*		+(1),*117/5(i)*		2	LC	LC
35	*Glyptothorax telchitta*			+(1),*85 / 14 (i)*				1	LC	C
36	*Xenentodon cancila*		+(1), *84/1(i)*			+(1),*117/9(i)*	+(1),*119/14(i)*	3	LC	NC
37	*Macrognathus aral*					+(2),*117/2(I), 117/2(iii)*		2	LC	C
38	*Macrognathus*					+(1),*117/2(ii*		1	LC	C

	pancalus					*)*				
39	*Mastaembelus armatus*			+(5),*85/ 21 (i) to 21(v)*			+(5),*119/15(i) to15 (v)*	10	LC	LC
40	*Parambassis ranga*			+(11), *85 / 5(i) to 5(xi)*				11	LC	C
41	*Badis badis*			+(6),*85 / 20 (i) to 20 (vi)*			+(2),*119/12(i),12(ii)*	8	LC	LC
42	*Glossogobius giuris*		+(4), *84/9(i) to 9 (iv)*	+(2),*85 / 10(i), 10(ii)*				6	LC	LC
43	*Channa gachua*			+(3),*85 / 1(i) to 1 (iii)*			+(4),*119/8(i) to 8(iv)*	7	LC	LC
44	*Channa punctata*					+(1), *117/4(i)*		1	LC	C

Table 2. Seasonal Distribution of more Ichthyospecies in River Tlawng in Mizoram along with their Global and Local Conservation status

Sl No.	Fish name	Collection date 15 8 2001 **(Bag A)** & River Coll No. 49 +(No.of Fishes),River No/Fish No. =Museum No.	Collection date: 17 8 2002 **(Bag A)** & River Coll No. 50 +(No.of Fishes),River No/Fish No. =Museum No.	Collection date: June 2001 **(Bag B)** & River Coll No.62 +(No.of Fishes),River No/Fish No. =Museum No.	Collection date July 2001 **(Bag C)** & River Coll No. 68, +(No. of Fishes),River No/Fish No. =Museum No.	Collection date: 30 5 2001 **(Bag D),** & River Coll No. 70, +(No. of Fishes),River No/Fish No. =Museum No.	Collection date: 6 11 2001 **(Bag D)** & River Coll No. 71 +(No.of Fishes),River No/Fish No. =Museum No.	Collection date: **28** 10 2006 **(Bag E)** & River Coll No. 73 +(No.of Fishes),River No/Fish No. =Museum No.	Collection date: 1 6 2001 **(Bag E)** & River Coll No. 75 +(No.of Fishes),River No/Fish No. =Museum No.	Total No. of Fish collected	Conservation Status (Global) Conservation Status (Global) Conservation Status (Global) IUCN Conservationstatus (Global) LC=Least Concern VU= Vulnerable EN= Endangered NT=NearThreatened NE=Not	Conservation Status (Local) Conservation Status (Local) Conservation Status (Local) Conservation status (Local) (based on occurrence of Fish species in 1 or >1 locations 1

											Evaluated DD-Data Deficient	Location: of Concern(C) 2 Locations:Less Concern(LC) >2Locations:No Concern(NC)
1	*Salmostoma bacaila*		+(7), *50/*1 (i) to 1 (vii)			+(7),*70/*1(i), 2(i) to 2(iii), 6(i) to 6(iii)				14	LC	LC
2	*Barilius barila*				+(1),*68/1(i)*					1	LC	C
3	*Barilius vagra*				+(2),68/*2(i), 2(ii)*					2	LC	C
4	*Opsarius barna*			+(16),*62/*1(i) to 1 (xvi)						16	LC	C
5	*Puntiu*					+(2),*7*	+(3),			5	LC	LC

	s chola					*0/*4(i), 4(ii)	*71*/1 (i) to 1 (iii)					
6	*Garra annandale*							+(2), *73/*1 (i), 1(ii)		2	LC	C
7	*Psilorhynchus balitora*								+(2), *75/*2 (i), 2(ii)	2	LC	C
8	*Paracanthocobitis botia*							+(2), *73/*2 (i), 2(ii)	+(2), *75/*1 (i), 1(ii)	4	LC	LC
9	*Schistura savona*						+(1), *71/3 (i)*			1	LC	C
10	*Schistura multifasciata*	+(1), 49/1 (i)								1	LC	
11	*Gagata gagata*				+(1),*68/ 4(i)*					1	LC	C
12	*Bagarius bagarius*					+(1),*70/3(i)*				1	VU	C
13	*Glyptothorax telchitta*						+(3), 71/2 (i) to 2			3	LC	C

							(iii)					
14	*Mastaembelus armatus*							+(2), *73/*4 (i), 4(ii)		2	LC	C
15	*Badis badis*				+(1),*68/3(i)*	+(2),*70/5(i), 5(ii)*		+(2), *73/*3 (i), 3(ii)	+(1), *75/3 (i)*	6	LC	NC