

Genus *Argyromoeba* Schiner

1860. *Argyromoeba* Schiner, *Wien. ent. Monatschr.*, 4 : 51. Type-species : *Anthrax tripunctata* Wiedemann.

*6. *Argyromoeba duvaucelii* (Macquart)

1840. *Anthrax duvaucelii* Macquart, *Dipt. exot.*, 2(1) : 63.

Material examined : 1 ♂, Sambalpani, Balaram-Ambaji Wild life Sanctuary, 10.viii.2000, Coll. P. Parui.

Diagnosis : Body moderate; antennae black, with a slight grayish-white shimmer; vertex with a distinct but short and deep indentation; thorax dark, sides of thorax with long thick grayish-white scaly pubescence; the dorsum with sparse yellowish short hairs round the edges; abdomen blackish grey, 2nd segment distinctly but not greatly longer than the five remaining ones; venter blackish with short white hairs; wings almost clear, costa slightly darker, several isolated spots present, devoid of baso-costal oblique band, anal cell open.

Distribution : Gujarat, Himachal Pradesh, Uttar Pradesh, West Bengal; Pakistan.

Remarks : This is the first report from the Indian part of Thar Desert.

D. Subfamily EXOPROSOPINAE

Key to the genera

1. Ocellar tubercle a long way from vertex; antennal segment 3 like an elongated cone, with a style divided from it by a distinct suture; wing with 3 to 4 submarginal cells; claws usually with along sharp basal tooth 2
 - Ocelli more or less close to vertex; antennal style mostly not divided by a suture; wing with 2 submarginal cells only; claws usually without basal tooth, or at most with a small and obtuse tubercle *Thyridanthrax* Osten Sacken
2. Antennal segment 3 with a terminal style bearing a microscopic bristle; 3 submarginal cells in wing *Exoprosopa* (Macquart)
 - Antennal segment 3 with a terminal style bearing a minute appendage; 4 submarginal cells in wing *Ligyra* (Newman)

Genus *Thyridanthrax* Osten Sacken

1886. *Thyridanthrax* Osten Sacken, *Biologia cent.-am. (Zool.)*, : 123, Type-species : *Thyridanthrax selene* Osten Sacken.

7. *Thyridanthrax (Exhyalanthrax) absalon* (Wiedemann)

1828. *Anthrax absalon* Wiedemann, *Analecta Ent.*, : 24.

Material examined : 'Not examined'

Diagnosis : Head semicircular; proboscis short; antennae porrect, short, wide apart at base, 1st joint short, cylindrical, 2nd cup shaped, 3rd varying from elongate conical to flat onion-shaped; thorax quadrate, with rounded angles; abdomen flat, oblong; wings brown with more or less hyaline spots.

Distribution : Gujarat, Maharashtra, Orissa, Tamil Nadu; Sri Lanka, Malayasia.

Genus *Exoprosopa* (Macquart)

1840. *Exoprosopa* Macquart, *Dipt. exot.*, 2(1) : 35. Type-species : *Anthrax pandora* Fabricius.

8. *Exoprosopa (Exoprosopa) collaris* (Wiedemann)

1828. *Anthrax collaris* Wiedemann, *Aussereurop. zweifl. Insekt.*, 1 : 271.

Material examined : 'Not examined'

Diagnosis : Frons distinctly narrower at vertex than above antennae; probosis dark, withdrawn; antennal 1st and 2nd joints ferruginous, 3rd black; thorax black, with sparse black pubescence, covered with very short depressed yellowish brown scale like hairs; abdomen black, the sides often more or less reddish; wings pale grey with the basal third dark brown, a small clear spot at upper corner of 2nd basal cell, with a small yellowish spot immediately above it, and a slight pale yellowish tinge about the middle of the 1st posterior cell.

Distribution : Rajasthan.

Genus *Ligyra* Newman

1841. *Ligyra* Newman, *Entomologist*, 1 : 220. Type-species : *Anthrax bombylifformis* Macleay.

Key to the species

1. Wing dark blackish brown, without any considerable clear or nearly clear part
.....*aurantiaca* (Guérin-Méneville)
- Wing with apical part and considerable portion of posterior half practically clear
.....*oenomaus* (Rondani)

*9. *Ligyra aurantiaca* (Guérin-Méneville)

1844. *Anthrax aurantiaca* Guérin-Méneville, *Icon., du regne anim. Dipt.*, 3 : 539.

Material examined : 1 ♂, Balaram nursery, Balaram-Ambaji wildlife sanctuary, 17.viii.2000, Coil. P. Parui.

Distribution : Gujarat, Arunachal Pradesh, Bihar, West Bengal.

Remarks : This is the first report from the Indian part of Thar Desert.

*10. *Ligyra oenomaus* (Rondani)

1875. *Hyperalonia oenomaus* Rondani, *Annali Mus. Civ. Stor. nat. Giacomo Doria*, 7 : 453.

Material examined : 2 ♂, Balaram nursery, Balaram-Ambaji wildlife sanctuary, 17.viii.2000, Coil. P. Parui.

Distribution : Gujarat, Arunachal Pradesh, Assam, Sikkim, West Bengal; Borneo, Malaysia, Philippines.

Remarks : This is the first report from the Indian part of Thar Desert.

SUMMARY

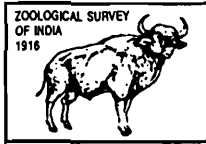
The distribution pattern of 10 species of the family Bombyliidae so far known from the Indian part of Thar desert shows that all the species are predominantly Oriental in distribution. Of them, 8 species (80%) are restricted to the Oriental region, whereas the remaining 2 species (20%) extend beyond the limit of this region. Of the 8 species distributed in the Oriental region, 6 species namely, *B. maculatus*, *P. albofulva*, *P. nigrofemorata*, *E. (E) collaris*, *L. aurantiaca* and *L. oenomaus* are endemic to India, and *E. (E) collaris* is restricted to Rajasthan.

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THREATENED AND ENDEMIC FISHES OF TRIPURA WITH COMMENTS ON THEIR CONSERVATION

R. P. BARMAN

Zoological Survey of India, FPS Building, Kolkata-700 016, India

INTRODUCTION

Tripura is a hilly state located in the sub-Himalayan region of the North-East India. It is surrounded on the North, West, South-East by Bangladesh (Erswhile East Pakistan). In the East of this state it has a common boundary with Assam and Mizoram. Physiographically, this state represents the western fringe of the typical ridge and valley structural province of the late Tertiary fold mountain belt, generally known as the Indo-Burmese Ranges or Purbachal Ranges. A perusal of the existing literature, viz., Datta (1977), Nair (1977), Lipton (1983–84), Bhattacharya (1988) and Barman (1988, 1989, 1990, 1991, 1992, 1994 & 2002) on the fish fauna of Tripura shows that this state harbours 129 species of fishes under 78 genera, 33 families and 11 orders. The diagnostic features of all these 129 species of fishes along with a short description of the state with reference to its fisheries aspect, topography and drainage pattern of the river systems of Tripura have been provided by the present author in a separate publication (Barman, 2002). The fishes of this state have been reviewed in respect of its threatened species. The threatened species of this state has been designated as per Molur and Walker (1998) and Menon (1999). Out of these 129 species this state contains 28 vulnerable, 10 endangered and 4 rare species of fishes of India. This state also contains 4 Endemic species of our country. The present paper deals only with the vulnerable, endangered, rare species and endemic species of India found in Tripura. Some comments for protection and conservation of the fish fauna of Tripura are furnished in this communication.

1. NAMES OF THE THREATENED SPECIES

A. Names of the vulnerable species

Order CLUPEIFORMES

Family CLUPEIDAE

1. *Tenualosa ilisha* (Hamilton)

Order CYPRINIFORMES

Family CYPRINIDAE

2. *Aspidoparia jaya* (Hamilton)
3. *Barilus barila* (Hamilton)
4. *Puntius chola* (Hamilton)
5. *P. conchoniis* (Hamilton)
6. *Barbodes sarana sarana* (Hamilton) (= *Puntius sarana sarana*)
7. *Cirrhinus reba* (Hamilton)
8. *Cyprinion semiplotus* (= *Semiplotus semiplotus*) (McClelland)
9. *Labeo pangusia* (Hamilton)
10. *Chagunius chagunio* (Hamilton)
11. *Garra gotyla gotyla* (Gray)

Family COBITIDAE

12. *Botia almorae* Gray (= *Botia rostratra*)

Family BALITORIDAE

13. *Noemacheilus scaturigina* (McClelland)

Order SILURIFORMES

Family BAGRIDAE

14. *Rita rita* (Hamilton)
15. *Mystus bleekeri* (Day)
16. *M. vittatus* (Bloch)
17. *Aorichthys aor* (Hamilton)
18. *Aorichthys seenghala* (Sykes)

Family SCHILBEIDAE

19. *Ailia coila* (Hamilton)
20. *Clupisoma garua* (Hamilton)

Family PANGASIIDAE

21. *Pangasius pangasius* (Hamilton)

Family SISORIDAE

22. *Bagarius bagarius* (Hamilton)

Family CLARIIDAE

23. *Clarias batrachus* (Linnaeus)

Family HETEROPNEUSTIDAE

24. *Heteropneustes fossilis* (Bloch)

Order CHANNIFORMES

Family CHANNIDAE

25. *Channa orientalis* Bloch & Schneider

Order PERCIFORMES

Family MUGILIDAE

26. *Sicamugil cascasia* (Hamilton)

27. *Rhinomugil corsula* (Hamilton)

Family ANABANTIDAE

28. *Anabas testudineus* (Bloch)

B. Names of the Endangered species

Order ANGUILLIFORMES

Family ANGUILLIDAE

1. *Anguilla bengalensis* (Gray)

Order OSTEOGLOSSIFORMES

Family NOTOPTERIDAE

2. *Chitala chitala* (Hamilton) (= *Notopterus chitala*)

Order CYPRINIFORMES

Family CYPRINIDAE

3. *Raiamas bola* (Hamilton)

4. *Tor putitora* (Hamilton)

5. *Tor tor* (Hamilton)

Order SILURIFORMES

Family SILURIDAE

6. *Ompok bimaculatus* (Bloch)

7. *O. pabda* (Hamilton)

Family SCHILBEIDAE

8. *Pseudeutropius atherinoides* (Bloch)
9. *Eutropiichthys vacha* (Hamilton)

Family SISORIDAE

10. *Glyptothorax cavia* (Hamilton)

C. Names of the Rare species

Order CYPRINIFORMES

Family CYPRINIDAE

1. *Barilius nelsoni* Barman
2. *Poropuntius clavatus* McClelland (= *Puntius clavatus clavatus*)
3. *Puntius gelius* (Hamilton)
4. *Schismatorhynchus nukta* (Sykes)

2. NAMES OF THE ENDEMIC SPECIES

Order CYPRINIFORMES

Family CYPRINIDAE

1. *Barilus gatensis* (Valenciennes)* (Found in the Peninsular India and Tripura)
2. *Barilus nelsoni* Barman (Found in Tripura only)
3. *Schismatorhynchus nukta* (Sykes)* (Found in the Peninsular India and Tripura only)

Family COBITIDAE

4. *Botia dario* (Hamilton) (Found in Assam, Tripura, North Bengal, Rajmahal Hills in South Bihar)

*The presence of these two species in Tripura needs more confirmation. These two species were recorded from Tripura by earlier workers.

CONSERVATION

The problems of protection and conservation of the fishes of Tripura are almost common with the rest of our country particularly the North Eastern states. Tripura is small state with only 10,491 sq. km. area accounting 0.32% of the total land area of our country and occupies the 22nd position in terms of the area among the States and Union Territories of India. The maximum length and breadth of this state is 183.5 km. and 112.7 km. respectively. Hilly ranges cover almost