



*Conservation Area Series, 45*

**Fauna of**  
**NOKREK BIOSPHERE RESERVE**  
**Meghalaya**

**ZOOLOGICAL SURVEY OF INDIA**





*Conservation Area Series, 45*

**FAUNA OF  
NOKREK BIOSPHERE RESERVE  
(Meghalaya)**

*Edited by  
The Director, Zoological Survey of India, Kolkata*

**Zoological Survey of India  
Kolkata**

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**CONSERVATION AREA SERIES**  
**FAUNA OF**  
**NOKREK BIOSPHERE RESERVE**

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## **FAUNA OF NOKREK BIOSPHERE RESERVE : – AN OVERVIEW**

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### **INTRODUCTION**

*“Only when I saw the Earth from space, in all its ineffable beauty and fragility, did I realize that humankind’s most urgent task is to cherish and preserve it for future generations.”* Sigmund Jahn, German cosmonaut

Life on Earth faces a crisis of historical and planetary proportions. In a world where conservation budgets are insufficient given the number of species threatened with extinction, identifying conservation priorities is crucial. British ecologist Norman Myers defined the biodiversity ‘hotspot’ concept in 1988 to address this dilemma. The “Biodiversity Hotspots” hold especially high numbers of endemic species but they face extreme threats and have already lost at least 70% of its natural vegetation. Presently, there are about 34 “Biodiversity Hotspots” in the world out of which 3 are in India – the Western Ghats, the Himalayas and the Indo-Burma Regions. As a global prioritization system, hotspots are extremely important in informing the flow of conservation resources. However, they do not provide guidance as to how conservation should be focused on the ground. This requires a distinct, regional-scale planning process. Establishment or designation of “Protected Areas” is one small step in this process. Such ‘protected areas’ include Biosphere Reserves, National Parks, Wildlife Sanctuaries, Reserve Forests, and Ecologically Fragile and Sensitive Areas.

To conserve the representative ecosystems of the country, a Biosphere Reserve Programme is being implemented. Twelve biodiversity rich areas of the country have been designated as Biosphere Reserves applying the UNESCO/MAB criteria. These reserves aim at conserving the biological diversity and genetic integrity of plants, animals and microorganisms in their totality as part of the natural ecosystems, so as to ensure the self-perpetuation and unhindered evolution of the living resources. The Nokrek Biosphere Reserve located at the tri-junction of the three administrative

districts of the Garo Hills of Meghalaya is one of the twelve biosphere reserves in India. It is a National Citrus Gene Sanctuary-cum-Biosphere Reserve for preserving the rich native diversity of wild citrus and musa species.

The Nokrek Biosphere Reserve lies in the western part of Meghalaya between 25°20' N & 25°29' N Latitude and 90°13' E & 90°35' E Longitude. It was designated as Nokrek Biosphere Reserve on 1<sup>st</sup> September, 1988 with an area of 820 km<sup>2</sup> spreading on the Tura range of Meghalaya plateau with its highest point the Nokrek Peak (1412 m). The core area of the Biosphere Reserve is the Nokrek National Park which was established in the year 1986 with an area of 47.48 km<sup>2</sup>. The core area of the Biosphere Reserves and the entire ridge of the Tura Range forms an important area of floral and faunal diversity as well as the primary catchment of all the major water systems in Garo Hills. The United Nations Educational, Scientific and Cultural Organization (UNESCO) under the Man and Biosphere (MAB) programme recognized the Nokrek Biosphere Reserve as part of the World Network of Biosphere Reserve in May, 2009.

The entire Biosphere Reserve is hilly with a virgin canopy of thick, tall and lush green forests cover its environs. The vegetation consists of tropical and sub-tropical types. The tropical forests cover areas up to an elevation of about 1000 m and embraces evergreen, semi-evergreen and deciduous forests, bamboo thickets and grass lands. The sub-tropical forests occur at elevation above 1200 m and this type of forest is restricted to Tura peak and Nokrek peak. These are mainly evergreen forests. Important plant species are *Altingia excels* (Grand rasamala), *Shorea assamica* (White meranti), *Bambusa pallid* (Bamboo), *Amoora wallichii* (Lali) and *Michelia insignis* (Chempaka).

In most of the Biosphere Reserve area the soil is generally loamy and rich in organic matter and nitrogen. The area consists of patchy sedimentary rock comprising of pebble bed, sand stone and carbonaceous shales. The mineral resources includes coal with an estimated reserves of 35900 million tones, limestone with an estimated reserves of 510 million tones, lithmorgic clay, fireclay, phospharite gypsum and glass sand.

The Transition zone of the Biosphere Reserve is predominantly inhabited by the Garo tribal community. More than 128 villages with a population of about 39,432 settled in the area and cultivation is the main means of livelihood. About 16.4% of the total reserve are under jhum cultivation. The main crops grown are paddy, millets, potato, ginger and vegetables. Plantation of horticultural species like oranges, aeronaut and cashew nut is another form of land use.

The Biosphere Reserve is a habitat for varieties of wildlife species. A number of mammalian fauna which includes the *Hoolock gibbons* (rare, endangered and endemic

species), Stumped tailed macaque, Rhesus macaque, Assamese macaque, Slow loris, Golden langur, Clouded leopard, Golden cat, Leopard cat, Marbled cat, Jungle cat, large Indian civet, masked palm civet, Binturong, Indian grey mongoose, Indian fox, Asiatic black bear, Lesser, bamboo rat, black naped hare, Indian crested porcupine, Guar, Sambar, Cheetal, Barking deer, Indian wild boar and wild dog. Different species of bats have also been reported from this region.

Among the birds, the Indian black baza, Barred jungle owlet, Red jungle fowl, thick billed green pigeon, Long tailed broadbill, Grey headed myna, Jungle myna, green magpie, Red winged crested cuckoo, Large green-billed Malkoha, crow pheasant, Red headed Trogon, Indian three-toed forest Kingfisher, Broad billed roller, Cuckoo-shrike, Magpie robin, Yellow bulbul, Brown fish owl, Serpent eagle, Hill myna, Pied myna, Grey headed sibia, Hornbills, Night jars, Ergets, Parrots, Swallow-shrikes have been reported.

Reptiles and insects are in abundance in the forest areas of the region. A good number of different species of fishes, amphibian, molluscs and aquatic insects are found in the streams and river systems within the Reserve.

The present project was proposed with an aim to scientifically inventorized and document the rich faunal resources of the Nokrek Biosphere Reserve. The taxonomic studies of various animal groups were taken up as per the expertise available at North Eastern Regional Centre, Zoological Survey of India, Shillong. All together 8 surveys were conducted between November, 2007 to June, 2009 after getting necessary permission from the State Forest Department, Govt. of Meghalaya. A total of 1934 examples and 95 vials of various faunal groups were studied, resulting to 17 species of Rhizopoda; 27 species of Rotifera; 28 species of Cladocera; 11 species of Aquatic Hemiptera; 89 species of Lepidoptera (Butterflies); 54 species of Pisces; 29 species of Amphibia and 9 species of Reptiles (Table-1).

**Table - 1 : Faunal details of the project area.**

<b>Taxonomic group</b>	<b>Families</b>	<b>Genera</b>	<b>Species</b>
Rhizopoda	5	6	17
Rotifera	9	12	27
Cladocera	6	20	28
Aquatic Hemiptera	6	10	11
Lepidoptera (Butterflies)	9	45	89
Fishes	15	31	54
Amphibia	6	15	29
Reptiles	4	6	9
<b>Total</b>	<b>60</b>	<b>145</b>	<b>264</b>



**PLATE - I**



**A view of Nokrek Biosphere Reserve**

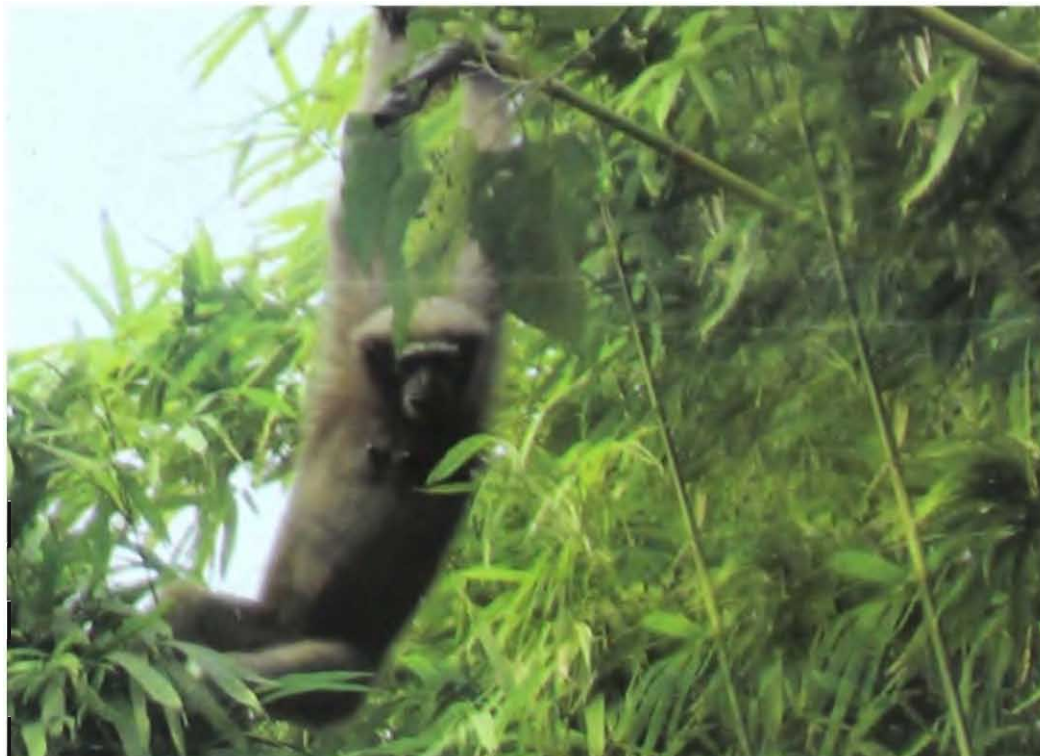


**Simsang River**

**PLATE - II**



Didari River

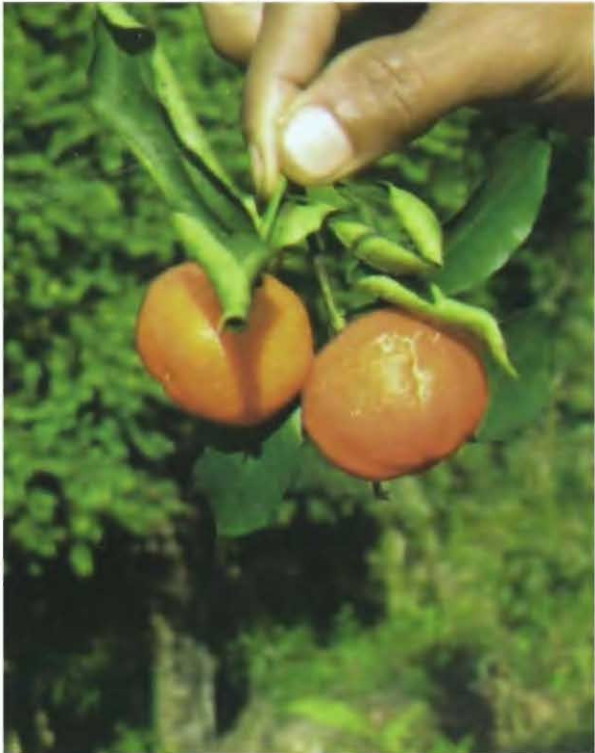


Hoolock gibbon

PLATE - III



Habitat of the Hoolock gibbon



Wild citrus

**PLATE - IV**



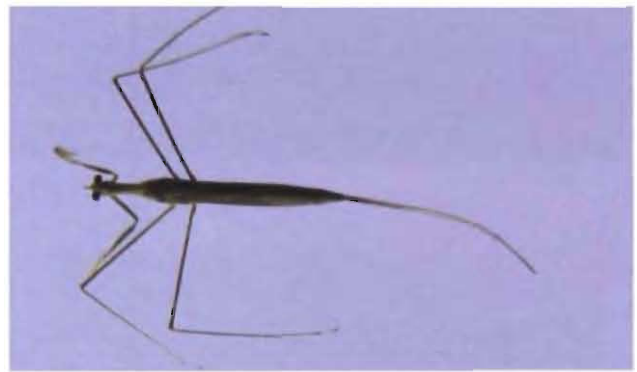
*Gestroiella insignis* Distant



*Metrocoris nigrofasciatus* Distant



*Laccotrephes pfeiferiae* (Ferrari)



*Ranatra varipes varipes* Stal



*Diplonychus rusticus* (Fabr.)



*Aphelocheirus signatus* Zettel (Dorsal & Ventral view)

PLATE - V



*Hebomoia glaucippe glaucippe* (Linn.)



*Delias descombesi descombesi* (Boisd.)



*Appias indra indra* (Moore)



*Parenonia avatar avatar* (Moore)



*Cepora nadina nadina* (Lucas)



*Loxura atymnus* (Cramer)

**PLATE - VI**



*Ypthima nareda nareda* (Kollar)



*Elymnias malelas malelas* (Hewitson)



*Thaumantis diores* Doubleday



*Faunis canens arcesilaus* (Fabricius)



*Papilio protenor protenor* Cramer



*Papilio memnon agenor f. polymnestroides* Moore

PLATE - VII



*Atrophaneura varuna astorion* (Westwood)



*Papilio paris paris* Linn.



*Papilio polytes romulus* f. *stichius* Hübner



*Atrophaneura philoxenus philoxenus* (Gray)



*Papilio demoleus demoleus* Linn.



*Graphium bathycles chiron* (Wallace)

**PLATE - VIII**



*Troides helena cerberus* (C. & R. Felder)



*Troides aecus aecus* (C. & R. Felder)



*Chilasa clytia* f. *dissimilis* (Linn.)



*Tirumala hamata septentrionis* (Butler)



*Danaus chrysippus chrysippus* (Linn.)



*Danaus genutia genutia* (Linn.)-♂

PLATE - IX



*Euploea mulciber mulciber* (Cramer)-♂



*Euploea mulciber mulciber* (Cramer)-♀



*Parantica aglea aglea* (Cramer)



*Parantica sita sita* (Kollar)



*Lexias cyanipardus* Butler-♂



*Lexias cyanipardus* Butler-♀

**PLATE - X**



*Argynnis hyperbius hyperbius* (Linn.)-♂



*Argynnis hyperbius hyperbius* (Linn.)-♀



*Tanaecia lepidea lepidea* (Butler)



*Euripus halitherses* E f. *nyctelius* Doubleday



*Stibochiona nicea nicea* (Gray)



*Hypolimnas misippus misippus* Linn.

**PLATE - XI**



*Barilius bendelisis*



*Poropuntius clavatus*



*Garra nasuta*



*Psilorhynchus balitora*

**PLATE - XII**



*Balitora brucei*



*Aborichthys kempfi*



*Botia rostrata*



*Amblyceps mangois*

**PLATE - XIII**



*Pseudolaguvia shawi*



*Glyptothorax trilineatus*



*Monopterus albus*



*Badis badis*

**PLATE - XIV**



*Odorrana livida* (Blyth) Dorsal view



*Odorrana livida* (Blyth) Ventral view



*Clinotarsus alticola* (Boulenger) Dorsal view



*Clinotarsus alticola* (Boulenger) Ventral view



*Leptobrachium nokrekensis* sp.nov. Dorsal view



*Leptobrachium nokrekensis* sp.nov. Ventral view

**PLATE - XV**



*Ophisaurus gracilis*



*Typhlops diardii*



*Amphiesma stolatum*



*Xenochrophis piscator*

## **RHIZOPODA (PROTOZOA : SARCOMASTIGOPHORA)**

**SUMITA SHARMA**

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### **INTRODUCTION**

Taxonomic studies on the rhizopods of freshwater ecosystems of India were initiated by Naidu (1966) and various other contributions are those of Mahajan (1971), Nair *et al.* (1971), Das *et al.* (1993, 1995, 2000, 2003, 2004) and Sharma and Sharma (2008). The Indian literature, however, primarily lacks information on ecosystem diversity as well as on their occurrence of testate amoebae in aquatic ecosystems of conservations areas of this country. The related contributions from conservations areas of Northeastern India are confined to the works of Sharma and Sharma (2008) and Sharma (2010).

The present study on micro-faunal diversity of Rhizopoda is a part of the survey of 'Fauna of the Nokrek Biosphere Reserve', Meghalaya. This inventory of the documented rhizopod species merits biodiversity interest in view of the stated lacunae. Comments are made on nature and composition of the studied fauna, and on distribution of various species.

### **MATERIALS AND METHODS**

The examined samples were collected, with nylobolt plankton net, from different water bodies located in and around Nokrek Biosphere Reserve and were preserved in 5% formalin. All the collections were screened with a Wild-stereoscopic binocular microscope. Different rhizopods were isolated and mounted in Polyvinyl alcohol-lectophenol mixture. Various species of Rhizopoda were identified following the works of Deflandre (1959), Chattopadhyay and Das (2003) and Sharma and Sharma (2008).

### **SYSTEMATIC ACCOUNT**

Sub-Kindom PROTOZOA

Phylum SARCOMASTIGOPHORA

Subphylum SARCODINA  
 Superclass RHIZOPODA  
 Class LOBOSEA  
 Order ARCELLINIDA  
 Family ARCELLIDAE

1. *Arcella discoides* Ehrenberg, 1843

1843. *Arcella discoides* Ehrenberg, *Abh. Akad. Wiss. Berlin*, p. 40.

*Material examined* : 1 ex., Chokpot, NBR, 30. 9. 2008; 2 exs., Manchuri Chiring,, NBR, 23. 6. 2008; 1 ex., Simsang river, Daribokgre, NBR, 22. 2. 2009.

*Distribution* : INDIA – Meghalaya, Assam, Arunachal Pradesh, Nagaland, Mizoram, Sikkim, Tripura. West Bengal, Uttaranchal and Himachal Pradesh.

*Elsewhere* : COSMOPOLITAN

2. *Arcella vulgaris* Ehrenberg, 1832

1832. *Arcella vulgaris* Ehrenberg, *Abh. Akad. Wiss. Berlin*, p. 40.

*Material examined* : 2 exs., Sangkenigiri, NBR, 25. 4. 2008; 2 exs., Mitapgre, NBR, 21. 6. 2008.

*Distribution* : INDIA- Meghalaya, Assam, Arunachal Pradesh, Nagaland, Sikkim, West Bengal and Himachal Pradesh.

*Elsewhere* : COSMOPOLITAN

Family CENTROPYXIDAE

3. *Centropyxis aculeata* (Ehrenberg, 1832)

1832. *Arcella aculeata* Ehrenberg, *Abh. Akad. Wiss. Berlin*, p. 40.

*Material examined* : 3 exs., Simsang river, Chirapat, NBR, 19. 1. 2008; 2 exs., Mandel, NBR, 25. 6. 2008.

*Distribution* : INDIA – Meghalaya, Assam, Mizoram, Arunachal Pradesh, Tripura, Sikkim, West Bengal, Andhra Pradesh, Orissa, Rajasthan and Himachal Pradesh.

*Elsewhere* : COSMOPOLITAN

4. *Centropyxis cassis* (Wallich, 1864)

1864. *Diffugia cassis*, *Ann. Mag. Nat. Hist.*, (3) 13, p. 215-245., p. 368.

*Material examined* : 3 exs., Mandelgre, NBR, 19. 1. 2008; 1 ex., Chokpot, NBR, 30. 9. 2008.

*Distribution* : INDIA – Meghalaya, Assam, West Bengal, Orissa, Uttaranchal and Andhra Pradesh.

*Elsewhere* : COSMOPOLITAN.

**5. *Centropyxis ecornis* (Ehrenberg, 1843)**

1843. *Arcella ecornis* Ehrenberg, *Abh. Akad. Wiss. Berlin*, p. 368.

*Material examined* : 2 exs. Sastgre, NBR, 24. 6. 2008; 2 exs., Kalupara Chiring, NBR, 25. 4. 2008.

*Distribution* : .INDIA – Meghalaya, Assam, Manipur, Mizoram, Arunachal Pradesh, Nagaland, Sikkim, Himachal Pradesh, Uttaranchal and West Bengal.

*Elsewhere* : COSMOPOLITAN.

**6. *Centropyxis oblonga* (Deflandre, 1929)**

1929. *Centropyxis aculeata* var. *oblonga* Deflandre, *Arch. Protistenkd.*, vol. 67, p. 349.

*Material examined* : 2 exs., Sangkenigiri, NBR, 25. 4. 2008; 1 ex., Chokpot, NBR, 30. 9. 2008.

*Distribution* : INDIA – Meghalaya, Assam, Manipur, Nagaland, Sikkim and Andhra Pradesh.

*Elsewhere* : COSMOPOLITAN.

**7. *Centropyxis platystoma* (Penard, 1890)**

1890. *Diffugia platystoma* Penard, *Mem. Soc. Phys. et Hist. Nat. de Geneva*

*Material examined* : 1 ex., Sangkenigiri, NBR, 25. 6. 2008; 2 exs., Mitapgre, NBR, 21. 6. 2008.

*Distribution* : INDIA – Meghalaya, Assam, Arunachal Pradesh, Manipur, Mizoram, Nagaland, Tripura, Sikkim, Himachal Pradesh and Uttaranchal.

*Elsewhere* : COSMOPOLITAN.

**8. *Centropyxis spinosa* (Cash and Hopkinson, 1905)**

1905. *Centropyxis aculeata* var. *spinosa* Cash and Hopkinson, *The British Freshwater Rhizopoda and Heliozoa*, vol. 1, p.195.

*Material examined* : 1 ex., Manchuri Chiring, NBR, 23. 6. 2008; 1 ex., Sastgre village, NBR, 24.6. 2009.

*Distribution* : INDIA – Meghalaya, Assam, Manipur, Mizoram, Nagaland, Arunachal Pradesh and Sikkim West Bengal, Uttaranchal and Himachal Pradesh.

*Elsewhere* : COSMOPOLITAN.

## Family DIFFLUGIIDAE

9. *Diffugia acuminata* Ehrenberg, 1838

1838. *Diffugia acuminata* Ehrenberg, *Die Infusionsthierchen als Vollkommene Organismen*, Leipzig, p. 131.

*Material examined* : 2 exs., Kalupara Chiring, NBR, 25. 4. 2008; 2 exs., Sangkenigiri, NBR, 25. 6. 2008; 1 ex., Sastgre village, NBR, 24.6. 2009.

*Distribution* : INDIA–Meghalaya, Assam, Manipur, West Bengal and Andhra Pradesh.

*Elsewhere* : COSMOPOLITAN.

10. *Diffugia amphoralis* Hopkinson, 1958

*Material examined* : 1 ex., Manchuri Chiring,, NBR, 23. 6. 2008; 1 ex., Regd. No. IV/CLA/ERS/548, Sastgre village, NBR, 24.6. 2009.

*Distribution* : INDIA – Meghalaya and West Bengal.

*Elsewhere* : COSMOPOLITAN.

11. *Diffugia lobostoma* (Leidy, 1879)

1879. *Diffugia lobostoma* Leidy, *Freshwater Rhizopods of North America*, p. 112.

*Material examined* : 1 ex., Mitapgre, NBR, 21. 6. 2008; 2 exs., Sangkenigiri, NBR, 25. 6. 2008.

*Distribution* : INDIA – Meghalaya, Assam, Arunachal Pradesh, Manipur, Nagaland, Tripura, West Bengal, Himachal Pradesh and Rajasthan.

*Elsewhere* : COSMOPOLITAN.

12. *Diffugia oblonga* Ehrenberg, 1838

1838. *Diffugia oblonga* Ehrenberg, *Die Infusionsthierchen als Vollkommene Organismen*, Leipzig, p. 131.

*Material examined* : 1 ex., Kalupara Chiring, NBR, 25. 4. 2008; 1 ex., Mandel Chiring, NBR, 25. 6. 2008.

*Distribution* : INDIA – Meghalaya, Manipur, West Bengal and Andhra Pradesh.

*Elsewhere* : COSMOPOLITAN.

13. *Diffugia pyriformis* Perty, 1848

1848. *Diffugia pyriformis* Perty, *Mitthail. Naturf. Gesses. Berg*, p. 168.

*Material examined* : 2 exs., Mandelgre paddy field, NBR, 19. 1. 2008; 1 ex.,

Sangkenigiri, NBR, 25. 4. 2008

*Distribution* : INDIA – Meghalaya, Manipur, West Bengal and Rajasthan.

*Elsewhere* : COSMOPOLITAN.

Family NEBELIDAE

14. *Lesquerusia spiralis* (Ehrenberg, 1840)

1840. *Diffugia spiralis* Ehrenberg, *Monatsb. Akad. Wiss. Belin*, p. 199.

*Material examined* : 1 ex., Sastgre Fishery pond, NBR, 14. 2. 2008; 1 ex., Sangkenigiri, NBR, 25. 4. 2008; 1 ex., Chokpot, NBR, 30. 9. 2008; 1 ex., Manchuri Chiring,, NBR, 23. 6. 2008; 1 ex., Sastgre village, NBR, 24.6. 2009.

*Distribution* : INDIA–Meghalaya, Assam, Manipur, Andhra Pradesh and West Bengal.

*Elsewhere* : COSMOPOLITAN.

Phylum ANNELIDA

Class FILOSEA

Order GROMIDA

Family EUGLYPHIDAE

15. *Euglypha acanthophora* (Ehrenberg, 1842)

1842. *Diffugia acanthophora* Ehrenberg, *Abh. Akad. Berlin*, p. 413.

*Material examined* : 1 ex., Sastgre, NBR, 24. 6. 2009; 1 ex., Simsang river, Daribokgre, NBR, 22. 2. 2009.

*Distribution* : INDIA– Meghalaya, Assam, Mizoram, Nagaland, West Bengal and Andhra Pradesh.

*Elsewhere* : COSMOPOLITAN.

16. *Euglypha laevis* (Ehrenberg, 1845)

1845. *Diffugia laevis* Ehrenberg, *Ber. Acad. Berlin*, p. 307.

*Material examined* : 1 ex., Mandelgre, NBR, 19. 1. 2008; 1 ex., Manchuri Chiring, NBR, 23. 6. 2008.

*Distribution* : INDIA – Meghalaya, Assam, Tripura, Sikkim, Uttaranchal, West Bengal and Andhra Pradesh.

*Elsewhere* : COSMOPOLITAN.

### 17. *Trinema lineare* Penard, 1890

1890. *Trinema lineare* Penard, *Mem. Soc. Geneve*, 31, p. 187, pl. 11, figs. 5-17.

*Material examined* : 1 ex., Chokpot, NBR, 30. 9. 2008; 1 ex., Manchuri Chiring, NBR, 23. 6. 2008.

*Distribution* : INDIA - Meghalaya, Assam, Arunachal Pradesh, Manipur, Mizoram, Nagaland, Tripura, Himachal Pradesh, Sikkim and West Bengal.

*Elsewhere* : COSMOPOLITAN.

### REMARKS

The micro-invertebrate communities of aquatic ecosystems of the Nokrek Biosphere Reserve reveal 17 species of Rhizopoda belonging to 5 families and 6 genera. The richness compares well with 16 and 19 species known from freshwater biotopes of Meghalaya (Das *et al.* 1995) and Manipur (Das *et al.* 2004) respectively; it is, however, higher than 12 species recorded from Tripura (Das *et al.* 2000) and only 7 species examined from Sikkim (Das *et al.* 2003). Further, the diversity is lower than 27 species reported from freshwater ecosystems of Assam (Sharma and Sharma, 2008). Nevertheless, the rhizopod fauna of the Nokrek Biosphere Reserve is fairly speciose. It is also richer than 12 species documented by the author (Sharma, 2010) from water bodies of the Baghmara reserve forest of Meghalaya.

The rhizopods are often observed in bottom ooze of aquatic ecosystems and also invariably occur as facultative plankton in shallow water bodies and also those with aquatic vegetation. Occurrence of the rhizopod species in the examined plankton collections of the Nokrek Biosphere Reserve also affirms this generalization. The documented species comprise a significant component (51.5 %) of the testate amoebae so far known from Meghalaya and also represent a dominant fraction (89.5 %) of the species recorded till date from aquatic biotopes of this state.

To sum up, Rhizopoda fauna of the Nokrek Biosphere Reserve is fairly rich. The present list requires up-dating based on specific sampling techniques of the group as well as extensive collections covering the diverse aquatic biotopes of the study area.

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## **ROTIFERA (ROTIFERA : EUROTATORIA)**

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### **INTRODUCTION**

Rotifera or Rotatoria, commonly called as Wheel animalcules, invariably form an important qualitative component of the littoral and limnetic communities of freshwater ecosystems globally. Taxonomic studies on freshwater Rotifera of India began more than one century ago and their status was lately reviewed by Sharma (1998) while Sharma and Sharma (2005a) dealt the related progress in N. E. India. The published Indian literature reflects paucity of investigations on ecosystem diversity of this group in general and on occurrence and distribution of Rotifera in aquatic biotopes of conservations areas in particular. This generalization holds valid for the rotifer communities of Northeastern India; the related contributions from water bodies of conservation areas of this region are limited to the works of Sharma (2006, 2009, 2010) and Sharma and Sharma (2005b, 2008).

The present study on micro-faunal diversity of Phylum Rotifera, a part of the survey of 'Fauna of Nokrek Biosphere Reserve', Meghalaya, is yet another attempt to fill up the stated information gap. This report presents an inventory of the rotifer species examined from the Nokrek Biosphere Reserve. In addition, comments are made on nature and composition of the rotifer taxocoenosis and on distribution of various species.

### **MATERIALS AND METHODS**

Plankton samples were collected, with nylobolt plankton net; from different water bodies located in and around Nokrek Biosphere Reserve and were preserved in 5% formalin. All the samples were screened with a Wild-stereoscopic binocular microscope, the rotifer taxa isolated and the permanent slides were made in Polyvinyl-alcohol lectophenol mixture. Various Rotifera species were identified following the works of Koste (1978), Sharma (1998a), Segers (1995), and Sharma and Sharma (1999, 2000, 2008). The system of classification of the Rotifera followed in this account is after Segers (2002).

**SYSTEMATIC ACCOUNT**

Phylum ANNELIDA  
 Phylum ROTIFERA  
 Super Class EUROTATORIA  
 Class MONOGONONTA  
 Order PLOIMA  
 Family BRACHIONIDAE

**1. *Brachionus bidentatus* Anderson, 1889**

1889. *Brachionus bidentata* Anderson, *J. Asiatic Soc. Bengal*, **58**, p. 357, pl. 21, fig.13.

*Material Examined* : 1 ex., Regd. No. IV/ROT/ERS/318, Mandel, NBR, 26. 6. 2008.

*Distribution* : INDIA – Meghalaya, Assam, Tripura, West Bengal, Orissa, Andhra Pradesh, Tamil Nadu, Punjab and Haryana.

*Elsewhere* : PANTROPICAL.

**2. *Brachionus calyciflorus* Pallas, 1766**

1766. *Brachionus calyciflorus* Pallas, *Elenchus zoophytorum*, p. 93

*Material Examined* : 1 ex., Regd. No. IV /ROT/ERS \ 367, Manchuri Chiring, NBR, 23. 6. 2008.

*Distribution* : INDIA – Meghalaya, Assam, West Bengal, Bihar, Orissa, Andhra Pradesh, Tamil Nadu, Maharashtra, Madhya Pradesh, Punjab, Haryana and Chandigarh (U.T.).

*Elsewhere* : COSMOPOLITAN.

**3. *Brachionus falcatus* Zacharias, 1898**

1898. *Brachionus falcatus* Zacharias, *Forschungsber. Biol. Stn. zu Plön*, **6**, p.45, taf. IV, fig.4.

*Material Examined* : 2 exs., Regd. No. IV / ROT / ERS/319, Mandel, NBR, 26. 6. 2008; 1 ex., Regd. No. IV/ROT/ ERS/ 329, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/ ROT/ ERS/345, near Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/ ROT/ ERS/ 426, Daribokgre, NBR, 22. 9. 2008

*Distribution* : INDIA Meghalaya, Assam, Tripura, West Bengal, Orissa, Bihar, Andhra Pradesh, Tamil Nadu, Madhya Pradesh, Gujarat, Rajasthan, Kerala, Punjab and Haryana.

*Elsewhere* : PANTROPICAL.

**4. *Brachionus quadridentatus* Hermann, 1783**

1783. *Brachionus quadridentatus* Hermann, *Naturforscher Halle* **19**, p. 47, pl. 11, Fig. 9.

**Material Examined** : 1 ex., Regd. No. IV / ROT/ ERS/284, Mandelgre, NBR, 19. 1. 2008; 1 ex., Regd. No. IV /ROT/ ERS/320, Mandel, NBR, 26. 6. 2008; 1 ex., Regd. No. IV/ ROT/ ERS/335, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/ ROT / ERS/377, Chokpot, NBR, 30. 9. 2008.

**Distribution** : INDIA – Meghalaya, Assam, Tripura, West Bengal, Orissa, Bihar, Andhra Pradesh, Tamil Nadu, Madhya Pradesh, Kerala, Rajasthan, Punjab and Kashmir.

**Elsewhere** : COSMOPOLITAN.

### 5. *Plationus patulus* O.F. Muller, 1786

1786. *Brachionus patulus* O. F. Muller, *Zoologie Fanicae prodromus, seu animalium Daniae et Norvegiae*, p. 361, Taf. XLVII, figs. 14.

**Material Examined** : 1 ex., Regd. No. IV / ROT / ERS//282, Chinapat, NBR, 19. 1. 2008; 1 ex., Regd. No. IV /ROT / ERS/ 286, Sastgre Fisher y pond, NBR, 14. 2. 2008; 1 ex., Regd. No. IV/ ROT /ERS/311, Mandel, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/ ROT/ ERS/330, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/ ROT/ ERS\357, Manchuri Chiring, NBR, 23. 6. 2008; 1 ex., Regd. No. IV /ROT / ERS/386, Orangitok village, NBR, 24. 6. 2009; 1 ex., Regd. No. IV /ROT /ERS/401, Sastgre, NBR, 24. 6. 2009; 1 ex., Regd. No. IV/ ROT/ERS\427, Daribokgre, NBR, 22. 2. 2009.

**Distribution** : INDIA Meghalaya, Assam, Tripura, West Bengal, Orissa, Andhra Pradesh, Gujarat, Tamil Nadu, Kerala, Rajasthan, Punjab and Kashmir.

**Elsewhere** : COSMOPOLITAN.

### 6. *Platyias quadricornis* (Ehrenberg, 1832)

1832. *Noteus quadricornis* Ehrenberg, *Abhandl. Akad. Wiss. Berlin* (1831), pl. IV, fig. 5.

**Material Examined** : 1 ex., Regd. No. IV/ ROT/ ERS/291, Kalupara Chiring, NBR, 25. 4. 2008; 2 exs., Regd. No. IV /ROT/ERS/295, Sungkenigiri, NBR, 25. 4. 2008; 1 ex., Regd. No. IV/ ROT/ ERS/303, Mitapgre village, NBR, 21. 4. 2008; 1 ex., Regd. No. IV/ ROT/ ERS/341, Chokpot, NBR, 30. 9. 2008.

**Distribution** : INDIA – Meghalaya, Assam, Tripura, West Bengal, Orissa, Bihar, Andhra Pradesh, Kerala, Rajasthan, Punjab, Haryana, Kashmir and Ladak.

**Elsewhere** : COSMOPOLITAN.

## Family EUCHLANIDAE

### 7. *Euchlanis dilatata* Ehrenberg, 1832

1832. *Euchlanis dilatata* Ehrenberg, *Abhandl. Akad. Wiss. Berlin* (1831), p. 131, pl. 4, fig. 3.

*Material Examined* : 1 ex., Regd. No. IV/ ROT/ ERS/296, Sungkenigiri, NBR, 25. 4. 2008; 1 ex., Regd. No. IV/ ROT/ ERS/336, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/ ROT/ ERS/387, Orangitok village, NBR, 24. 6. 2009; 1 ex., Regd. No. IV/ ROT/ ERS\ 402, Sastgre village, NBR, 24. 6. 2009; 1 ex., Regd. No. IV/ ROT/ERS\ 428, Daribokgre, NBR, 22. 2. 2009.

*Distribution* : INDIA – Meghalaya, Assam, Tripura, West Bengal, Orissa, Bihar, Andhra Pradesh, Tamil Nadu, Kerala, Rajasthan, Punjab, Kashmir and Ladak.

*Elsewhere* : COSMOPOLITAN.

### 8. *Dipleuchlanis propatula* (Gosse, 1886)

1886. *Diplois propatula* Gosse (In: Hudson & Gosse, 1886), The Rotifer or Wheel Animalcules, both British and Foreign, Vol. 1, p. 87, pl. XXIV, fig. 2.

*Material Examined* : 1 ex., Regd. No. IV/ ROT/ ERS/292, Kalupara Chiring, NBR, 25. 4. 2008

*Distribution* : INDIA – Meghalaya, Assam, Tripura, West Bengal, Orissa, Bihar, Punjab, Kerala and Tamil Nadu.

*Elsewhere* : COSMOPOLITAN.

### Family TRICHOTRIIDAE

#### 9. *Trichotria tetractis* (Ehrenberg, 1830)

1830. *Dinocharis tetractis* Ehrenberg, *Vorträge Akad. Wiss. Berlin* (1829 und 1830), p. 47.

*Material Examined* : 1 ex., Regd. No. IV/ ROT/ ERS/368, Manchuri Chiring, NBR, 23. 6. 2008.

*Distribution* : INDIA – Meghalaya, Assam, Tripura, West Bengal, Orissa, Bihar, Andhra Pradesh, Madhya Pradesh, Tamil Nadu, Gujarat, Punjab, Kerala and Kashmir.

*Elsewhere* : COSMOPOLITAN.

### Family LECANIDAE

#### 10. *Lecane bulla* (Gosse, 1851)

1851. *Monostyla bulla* Goose, *Ann. Mag. Nat. Hist. ser.*, 2, 8, p. 220.

*Material Examined* : 1 ex., Regd. No. IV /ROT /ERS/289, Sastgre, NBR, 14. 2. 2008; 1 ex., Regd. No. IV/ ROT/ERS\ 312, Mandel Daribokgre, NBR, 25. 6. 2008; 1 ex., Regd. No. IV/ ROT/ ERS/388, Orangitok village, NBR, 24. 6. 2009; 1 ex., Regd. No. IV /ROT

/ERS/403, Sastgre village, NBR, 24. 6. 2009; 1 ex., Regd. No. IV/ ROT/ERS\ 429, Daribokgre, NBR, 22. 2. 2009

*Distribution* : INDIA - Meghalaya, Assam, Tripura, Mizoram, Nagaland, Arunachal Pradesh, West Bengal, Orissa, Bihar, Andhra Pradesh, Tamil Nadu, Rajasthan, Gujarat, Punjab and Kashmir.

*Elsewhere* : COSMOPOLITAN.

11. *Lecane closterocerca* (Schmarda, 1859)

1859. *Monostyla closterocerca* Schmarda, *Neue wirbellose Tiere*, p. 59, Taf. XIV, fig. 125.

*Material Examined* : 1 ex., Regd. No. IV/ ROT/ ERS/293, Kalupara Chiring, NBR, 25. 4. 2009.

*Distribution* : INDIA – Meghalaya, Assam, Tripura, Mizoram, Nagaland, Arunachal Pradesh, Orissa, Tamil Nadu, Gujarat, Rajasthan, Punjab, Kashmir and Ladak.

*Elsewhere* : COSMOPOLITAN.

12. *Lecane curvicornis* (Murray, 1913)

1913. *Cathypna curvicornis* Murray, *J. Roy. Micro. Soc.*, p. 346-347, pl. XIV, fig. 22.

*Material Examined* : 1 ex., Regd. No. IV/ ROT/ ERS/337, Bibagre Chokpot, NBR, 30. 9. 2008.

*Distribution* : INDIA – Meghalaya, Assam and Tripura, West Bengal, Bihar, Andhra Pradesh, Tamil Nadu and Madhya Pradesh.

*Elsewhere* : TROPICOPOLITAN.

13. *Lecane hamata* (Stokes, 1876)

1876. *Monostyla hamata* Stokes, *Ann. Mag. Nat. Hist. ser.*, 6, 18, p. 21, pl. VII, figs. 6-8.

*Material Examined* : 1 ex., Regd. No. IV/ ROT/ ERS/285, Mandelgre, NBR, 19. 1. 2008.

*Distribution* : INDIA – Meghalaya, Assam, Tripura, Mizoram, West Bengal, Orissa, Tamil Nadu, Gujarat, Rajasthan, Punjab, Kashmir and Ladak.

*Elsewhere* : COSMOPOLITAN.

14. *Lecane leontina* (Turner, 1892)

1892. *Cathypna leontina* Turner, *Bull. Sci. Lab. Denison Univ. Granville, Ohio*, 6, p. 61, pl. 1, fig. 12.

*Material Examined* : 1 ex., Regd. No. IV/ ROT/ ERS/283, Chinapat, NBR, 19. 1. 2008; 1 ex., Regd. No. IV/ ROT/ ERS/304, Mitapgre village, NBR, 26. 6. 2008; 1 ex., Regd.

No. IV/ ROT/ ERS/358, Manchuri Chiring, NBR, 23. 6. 2008; 1 ex., Regd. No. IV/ ROT/ ERS/369, Manchuri Chiring, NBR, 23. 6. 2008; 1 ex., Regd. No. IV/ ROT/ ERS/404, Sastgre village, NBR, 24. 6. 2009; 1 ex., Regd. No. IV/ ROT/ ERS/430, Daribokgre, NBR, 22. 2. 2009.

*Distribution* : INDIA – Meghalaya, Assam, Tripura, Manipur, Mizoram, Nagaland, Arunachal Pradesh, West Bengal, Orissa, Bihar, Andhra Pradesh, Tamil Nadu, Madhya Pradesh and Punjab.

*Elsewhere* : TROPICOPOLITAN.

### 15. *Lecane luna* (O. F. Müller, 1776)

1776. *Cercaria luna* O. F. Müller, *Zoologie Fannicae prodromus, seu animalium Daniae et Norvegiae*, p. 280.

*Material Examined* : 1 ex., Regd. No. IV/ ROT/ ERS/350, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/ ROT/ ERS/389, Orangitok village, NBR, 24. 6. 2009.

*Distribution* : INDIA – Meghalaya, Assam, Tripura, Manipur, Mizoram, Nagaland, Arunachal Pradesh, West Bengal, Orissa, Bihar, Gujarat, Rajasthan, Tamil Nadu, Punjab, Kashmir and Ladak.

*Elsewhere* : COSMOPOLITAN.

### 16. *Lecane papuana* (Murray, 1913)

1913. *Cathypna papuana* Murray, *J. Roy. Micro. Soc.*, p. 551, pl. .XXII, figs. 2, a-d.

*Material Examined* : 1 ex., Regd. No. IV/ ROT/ ERS/321, Mandel Daribokgre, NBR, 26. 6. 2008; 1 ex., Regd. No. IV/ ROT/ ERS/378, Chokpot, NBR, 30. 9. 2008.

*Distribution* : INDIA - Meghalaya, Assam, Manipur, Nagaland, West Bengal, Orissa, Bihar, Tamil Nadu, Delhi, Punjab, Kashmir and Ladak.

*Elsewhere* : TROPICOPOLITAN.

### 17. *Lecane quadridentata* (Ehrenberg, 1832)

1832. *Monostyla quadridentata* Ehrenberg, *Abhandl. Akad. Wiss. Berlin* (1831), p. 130.

*Material Examined* : 1 ex., Regd. No. IV/ ROT/ ERS/297, Sungkenigiri, NBR, 25. 4. 2008; 1 ex., Regd. No. IV/ ROT/ ERS/305, Mitapgre village, NBR, 21. 6. 2008; 1 ex., Regd. No. IV/ ROT/ ERS/331, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/ ROT/ ERS/342, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/ ROT/ ERS/390, Orangitok village, NBR, 24. 6. 2009; 1 ex., Regd. No. IV/ ROT/ ERS/431, Simsang river, Daribokgre, NBR, 22. 2. 2009.

**Distribution** : INDIA – Meghalaya, Assam, Tripura, Manipur, Mizoram, Nagaland, Arunachal Pradesh, West Bengal, Orissa, Bihar, Andhra Pradesh, Madhya Pradesh, Rajasthan, Tamil Nadu, Punjab, Haryana and Kashmir.

**Elsewhere** : COSMOPOLITAN.

18. ***Lecane ungulata*** (Gosse, 1887)

1887. *Cathypna ungulata* Gosse, *J. Roy. Micro. Soc.*, p. 361, pl. VIII, fig. 1.

**Material Examined** : 1 ex., Regd. No. IV/ ROT/ ERS/313, Mandel Daribokgre, NBR, 25. 6. 2008.

**Distribution** : INDIA – Meghalaya, Assam, Tripura, Mizoram, Nagaland, West Bengal, Orissa, Bihar, Andhra Pradesh, Tamil Nadu, Gujarat and Punjab.

**Elsewhere** : COSMOPOLITAN.

Family NOTOMMATIDAE

19. ***Cephalodella forficula*** (Ehrenberg, 1832)

1832. *Distemma forficula* Ehrenberg, *Abhandl. Akad. Wiss. Berlin* (1831), p. 139.

**Material examined** : 1 ex., Regd. No. IV/ ROT/ ERS/287, Sastgre, NBR, 14. 2. 2008.

**Distribution** : INDIA –Meghalaya, Assam, Tripura, West Bengal and Andhra Pradesh.

**Elsewhere** : COSMOPOLITAN.

20. ***Cephalodella gibba*** (Ehrenberg, 1832)

1832. *Furcularia gibba* Ehrenberg, *Abhandl. Akad. Wiss. Berlin* (1831), p. 130, Taf. IV, Fig. 16.

**Material examined** : 1 ex., Regd. No. IV/ ROT/ ERS/288, Sastgre, NBR, 14. 2. 2008.

**Distribution** : INDIA Meghalaya, Assam, Tripura, West Bengal, Tamil Nadu, Gujarat, Kashmir and Ladak.

**Elsewhere** : COSMOPOLITAN.

21. ***Cephalodella mucronata*** Myers, 1924

1924. *Cephalodella mucronata* Myers (in Harring & Myer), *Wisconsin Acad. Sci. Arts & Letters*, 21, p. 540, T. 36: 2-4.

**Material examined** : 1 ex., Regd. No. IV/ ROT/ ERS/290, Sastgre, NBR, 14. 2. 2008; 1 ex., Regd. No. IV/ ROT/ ERS/346, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/ ROT/ ERS/391, Orangitok village, NBR, 24. 6. 2009.

*Distribution* : INDIA –Meghalaya, Assam, West Bengal and Orissa.

*Elsewhere* : COSMOPOLITAN.

Family SCARIDIIDAE

22. *Scaridium longicaudum* (O. F. Müller, 1786)

1786. *Trichoda longicaudum* O. F. Müller, *Zoologie Fanicae prodromus, seu animalium Daniae et Norvegiae*, p. 216, taf. 31, figs. 8-10.

*Material Examined* : 2 exs., Regd. No. IV/ ROT/ ERS/294, Kalupara Chiring, NBR, 30. 6. 2008; 1 ex., Regd. No. IV/ ROT/ ERS/370, Manchuri Chiring, NBR, 23. 6. 2008.

*Distribution* : INDIA Meghalaya, Assam, Tripura, Mizoram, Nagaland, West Bengal, Orissa, Bihar, Punjab, Tamil Nadu and Gujarat.

*Elsewhere* : COSMOPOLITAN.

Family SYNCHAETIDAE

23. *Polyarthra vulgaris* Carlin, 1943

1943. *Polyarthra vulgaris* Carlin, *Medd. Lunds Univ. Limnol. Inst.* 5, p. 82, Taf. 1, Abb. 1, Taf. 3, Abb. 1.

*Material examined* : 1 ex., Regd. No. IV/ ROT/ ERS/351, Chokpot, NBR, 30. 9. 2008

*Distribution* : INDIA Meghalaya, Assam, Tripura, Manipur, West Bengal, Bihar, Orissa, Tamil Nadu and Punjab.

*Elsewhere* : COSMOPOLITAN.

Order FLOSCULARIACEA

Family FLOSCULARIIDAE Bartos, 1959

24. *Sinantherina spinosa* (Thorpe, 1893)

1893. *Megalotrocha spinosa* Thorpe, *J. Roy. Micr. Soc.* p. 151, T.III: 6.

*Material examined* : 1 ex., Regd. No. IV/ ROT/ ERS/314, Mandel, NBR, 25. 6. 2008; 1 ex., Regd. No. IV/ ROT/ ERS/359, Manchuri Chiring, NBR, 23. 6. 2008; 1 ex., Regd. No. IV/ ROT/ ERS/379, Chokpot, NBR, 30. 9. 2008

*Distribution*: INDIA – Meghalaya, Assam, Tripura, Manipur and Tamil Nadu.

*Elsewhere* : PANTROPICAL.

25. *Sinantherina socialis* (Linnaeus, 1758)

1758. *Megalotrocha socialis* Linnaeus, *Systema naturae* (10<sup>th</sup> Ed). Holmaie, 1, p.817.

*Material examined* : 1 ex., Regd. No. IV/ ROT/ ERS/322, Mandel, NBR, 26. 6. 2008

*Distribution* : INDIA – Meghalaya, Assam, Tripura, Manipur and Tamil Nadu.

*Elsewhere* : PANTROPICAL.

#### Family TESTUDINELLIDAE

##### 26. *Testudinella patina* (Hermann, 1783)

1783. *Brachionus patina* Hermann, *Naturforscher Halle* 19, p. 48, Taf. 2, Fig. 10.

*Material Examined* : 1 ex., Regd. No. IV/ ROT/ ERS/324, Mandel, NBR, 26. 6. 2008; 1 ex., Regd. No. IV/ ROT/ ERS/406, Sastgre village, NBR, 24. 6. 2009.

*Distribution* : INDIA Meghalaya, Assam, Mizoram, Tripura, West Bengal, Orissa, Bihar, Andhra Pradesh, Tamil Nadu, Gujarat, Punjab and Kashmir.

*Elsewhere* : COSMOPOLITAN.

##### 27. *Testudinella parva* (Ternetz, 1892)

1892. *Pterodina parva* Ternetz, *Rotatorien der Umgebung von Basel*, p. 42, Taf. III, figs. 21, 22.

*Material examined* : 1 ex., Regd. No. IV/ ROT/ ERS/323, Mandel, NBR, 26. 6. 2008

*Distribution* : INDIA - Meghalaya, Assam, Tripura, West Bengal, Orissa and Tamil Nadu.

*Elsewhere* : COSMOPOLITAN.

### DISCUSSION

Twenty-seven species of Phylum Rotifera belonging to nine Eurotatoria families and 12 genera are reported from the Nokrek Biosphere Reserve. The richness comprises nearly 12.0 % of the rotifer species so far known from N. E. India and 20.6% of the fauna of the state of Meghalaya. *Sinantherina socialis* and *S. spinosa* are new records from Meghalaya and the rest of the species are reported earlier from this state by Sharma and Sharma (1999). The documented species exclusively represent the monogonont rotifers.

Lecanidae (9 species) > Brachionidae (6 species) together comprise main component (55.6%) of the of the rotifer fauna of the Nokrek Biosphere Reserve. Two 'tropic-centered' genera namely *Lecane* and *Brachionus*, together, mainly contribute (48.1%) to species richness. Cosmopolitan elements (74.1%) distinctly dominate the rotifer composition while Pantropical (14.8%) and Tropicopolitan (11.1%) are well represented. All the stated features impart a 'tropical character' to the examined taxocoenosis. This

generalization is in conformity with identical reports by from other tropical rotifer faunas (Green, 1972; Fernando, 1980; Dussart *et al.*, 1984; Sharma, 1998b).

The rotifer communities are characterized by greater diversity of the littoral-periphytonic species and paucity of planktonic taxa. The present study shows common occurrence of *Plationus patulus*, *Euchlanis dilatata*, *Lecane bulla*, *L. leontina*, *L. luna*, *L. quadridentata* and *Testudinella patina* while *Brachionus bidentatus*, *B. calyciflorus*, *B. falcatus*, *Cephalodella forficula*, *C. gibba*, *C. mucronata*, *Sinantherina socialis*, *S. spinosa* and *Testudinella parva* are rare species.

The rotifer fauna of the Nokrek Biosphere Reserve indicates 53.3% community similarity (*vide* Sorenson's index) with that of the Baghmara Reserve Forest of South Garo Hills district of Meghalaya as studied by the author (Sharma, 2010). The former also records more richness of genera and families, and percentage composition of cosmopolitan species. Nevertheless, it shows fewer species of *Lecane* and *Brachionus* than that reported from Baghmara Reserve Forest (Sharma, 2010).

To sum up, the Rotifera taxocoenosis of the Nokrek Biosphere Reserve is fairly diverse. It is characterized by importance of tropic-centered' *Lecane* and *Brachionus*, greater richness of Cosmopolitan species, general 'tropical' character and distinct richness of the littoral-periphytonic species. The rotifer fauna, however, requires updating based on more extensive future collections from aquatic biotopes of this biosphere reserve.

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## **CLADOCERA (CRUSTACEA : BRANCHIOPODA)**

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### **INTRODUCTION**

Cladocera, commonly termed as 'Water Fleas', represent one of the most primitive groups of lower crustaceans to which the general name of 'Entomostraca' was formerly applied. Taxonomic studies on Indian Freshwater Cladocera were initiated by Baird (1860) but there is yet limited knowledge on their faunal and ecosystem diversity from different states of India in general (Sharma and Michael, 1987; Michael and Sharma, 1988; Sharma, 1991) and N. E. India in particular (Sharma and Sharma, 2008). Besides, information on occurrence and distribution of this important group of fish-food organisms in aquatic biotopes of conservations areas of the latter region is limited to the works of Sharma and Sharma (2008, 2009) and Sharma (2010).

The present study on micro-faunal diversity of Cladocera, a part of the survey of 'Fauna of the Nokrek Biosphere Reserve', Meghalaya assumes special biodiversity interest in view of the stated lacunae. An inventory of the documented species is presented in this account. Remarks are made on nature and composition of Cladoceran fauna as well as on distribution of various species.

### **MATERIALS AND METHODS**

Plankton samples were collected, with nylobolt plankton net, from different water bodies located in and around Nokrek Biosphere Reserve and were preserved in 5% formalin. All the samples were screened with a Wild-stereoscopic binocular microscope and the cladoceran taxa were sorted. Individual species and their disarticulated appendages were mounted in Polyvinyl alcohol-lectophenol mixture. The details of head pores and their arrangements in the Chydorids were studied following Megard (1965). Various species were identified following the works of Smirnov (1971, 1974, 1996), Michael and Sharma (1988), and Sharma and Sharma (1999, 2008). The system of classification followed in this account is after Dumont and Negrea (2002).

### SYSTEMATIC ACCOUNT

Superclass CRUSTACEA  
 Class BRANCHIOPODA  
 Superorder CLADOCERA (s. str.)  
 Order CTENOPODA  
 Family SIDIDAE

#### 1. *Diaphanosoma excisum* Sars, 1885

1885. *Diaphanosoma excisum* Sars, *Norske. Vidensk. Selsk. Forhandl. Christiana*, **8**, p. 13-18, pl. 2, figs. 1-3.

*Material examined* : 1 ex., Regd. No. IV/CLA/ERS/436, Mandel, NBR, 25. 6. 2008; 1 ex., Regd. No. IV/CLA/ERS/457, Chokpot, NBR, 30. 9. 2008.

*Distribution* : INDIA – Meghalaya, Assam, Tripura, West Bengal, Bihar, Rajasthan and Kerala.

*Elsewhere* : TROPICS & SUBTROPICS.

#### 2. *Diaphanosoma sarsi* Richard, 1894

1894. *Diaphanosoma sarsi* Richard, *Revue Biol. Nord. France*, **6**, p. 365, p. 15, figs. 1-8.

*Material examined* : 1 ex., Regd. No. IV/CLA/ERS/418, Mitapgre, NBR, 21. 6. 2008; 1 ex., Regd. No. IV/CLA/ERS/494, Manchuri Chiring, NBR, 23. 6. 2008.

*Distribution* : INDIA – Meghalaya, Assam, Tripura, West Bengal, Bihar, Uttar Pradesh, Rajasthan, Gujarat, Kerala and little Andaman.

*Elsewhere* : COSMOTROPICAL.

#### 3. *Pseudosida bidentata* Herrick, 1884

1884. *Pseudosida bidentata* Herrick, *Geol. & Nat. Hist. Survey Minnesota, Annual Report*, **12**, p. 20, pl. K, Fig. 9.

*Material examined* : 1 ex., Regd. No. IV/CLA/ERS/505, Manchuri Chiring, NBR, 23. 6. 2008.

*Distribution* : INDIA- Meghalaya, Assam, Tripura, Rajasthan, Tamil Nadu and Kerala.

*Elsewhere* : TROPICS & SUBTROPICS.

Order ANOMOPODA  
 Family DAPHNIIDAE

#### 4. *Scapholeberis kingi* Sars, 1903

1903. *Scapholeberis kingi* Sars, *Arch. Math. Nat.*, **25**, p. 8-10, pl. I, Figs. 2, 2a-c.

*Material examined* : 1 ex., Regd. No. IV/CLA/ERS/485, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/CLA/ERS/516, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/CLA/ERS// 576, Simsang river, Daribokgre, NBR, 22. 2. 2009.

*Distribution* : INDIA – Meghalaya, Assam, Tripura, West Bengal, Kashmir, Rajasthan and Tamil Nadu.

*Elsewhere* : AFRICA, AUSTRALIA, N. AMERICA, GERMANY & SOUTH ASIA.

#### 5. *Simocephalus acutirostratus* (King, 1853)

1853. *Daphnia elizabethae* var. *acutirostrata* King, *Pap. Proc. R. Soc. Van Diemensland*, **2**, p. 254, pl. VI.

*Material examined* : 1 ex., Regd. No. IV/CLA/ERS/528, Orangitok village, NBR, 24. 6. 2008.

*Distribution* : INDIA – Meghalaya, Assam, West Bengal, Bihar, Maharashtra and Tamil Nadu.

*Elsewhere* : AUSTRALIA, PHILIPPINES, INDIA & SRI LANKA.

#### 6. *Simocephalus serrulatus* (Koch, 1841)

1841. *Daphnia serrulata* Koch, *Deutschlands Crustacean, Myriapoden und Arachnidan. Regensburg*, p. 35.

1990. *Simocephalus surekhae* Rane: Sharma and Sharma, *Rev. Hydrobiol. trop.* **23**, p. 110, Figs. 23-25.

*Material examined* : 1 ex., Regd. No. IV/CLA/ERS/477, Chokpot, NBR, 30. 9. 2008

*Distribution* : INDIA – Meghalaya, Assam, Tripura, Madhya Pradesh, Bihar and Tamil Nadu.

*Elsewhere* : EUROPE, ASIA, AFRICA, N. & S. AMERICA and AUSTRALIA.

#### 7. *Simocephalus vetulus* (O. F. Müller, 1776)

1776. *Daphnia vetula* O. F. Müller, *Zoologie Fanicae prodromus, seu animalium Daniae et Norvegiae*, p. 199.

*Material examined* : 1 ex., Regd. No. IV/CLA/ERS/430, Daribokgre, NBR, 25. 6. 2008.

*Distribution* : INDIA - Meghalaya, Assam, Tripura, Nagaland, West Bengal, Bihar, Uttar Pradesh, Madhya Pradesh, Punjab, Kashmir, Rajasthan, Karnataka and Tamil Nadu.

*Elsewhere* : COSMOPOLITAN.

## Family BOSMINIDAE

8. *Bosmina longirostris* (O. F. Müller, 1776)

1776. *Lynceus longirostris* O. F. Müller, *Zoologie Fanicae prodromus, seu animalium Daniae et Norvegiae*, p. 76, tab. 10, figs. 7-8

*Material examined* : 1 ex., Regd. No. IV/CLA/ERS/398, Sastgre Fishery pond, NBR, 14. 2. 2008; 1 ex., Regd. No. IV/CLA/ERS/445, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/CLA/ERS/467, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/CLA/ERS/506, Manchuri Chiring,, NBR, 23. 6. 2008; 1 ex., Regd. No. IV/CLA/ERS/517, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/CLA/ERS/523, Orangitok village, NBR, 24. 6. 2009; 1 ex., Regd. No. IV/CLA/ERS/578, Simsang river, Daribokgre, NBR, 22. 2. 2009.

*Distribution* : INDIA – Meghalaya, Assam, Tripura, Manipur, West Bengal, Orissa, Bihar, Kashmir and Madhya Pradesh.

*Elsewhere* : COSMOPOLITAN.

9. *Bosminopsis deitersi* Richard, 1895

1895. *Bosminopsis deitersi* Richard, *Bull. Soc. Zool. France*, 20, p. 96, figs. 1-4.

*Material examined* : 1 ex., Regd. No. IV/CLA/ERS/495, Manchuri Chiring, NBR, 23. 6. 2008.

*Distribution* : INDIA Meghalaya, Assam, Manipur, Delhi, Rajasthan, Madhya Pradesh and Kerala.

*Elsewhere* : TROPICS & SUBTROPICS.

## Family MOINIDAE

10. *Moinodaphnia macleayi* (King, 1853)

1853, *Moina macleayi* King, 1853, *Pap. Proc. R. Soc. Tasmania*, 2, p.251-252, pl. 2.

1901, *Moinodaphnia macleayi*: Sars, 1901, *Arch. Math. Naturvidensk. Christiania*, 18, p.16-19, pl. 3. figs. 1-10.

*Material examined* : 1 ex., Regd. No. IV/CLA/ERS/406, Sangkenigiri, NBR, 25. 4. 2008; 2 exs., Regd. No. IV/CLA/ERS/419, Mitapgre, NBR, 21. 6. 2008; 1 ex., Regd. No. IV/ CLA/ ERS/446, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/ CLA/ ERS/468, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/ CLA/ ERS/478, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/CLA/ERS/496, Manchuri Chiring, NBR, 23. 6. 2008.

*Distribution* : INDIA – Meghalaya, Assam, Manipur, West Bengal, Bihar, Tamil Nadu and Kerala.

*Elsewhere* : TROPICAL & SUBTROPICAL parts of AMERICA, AFRICA & SOUTHEAST ASIA..

## Family MACROTHRICIDAE

11. *Macrothrix spinosa* King, 1853

1853. *Macrothrix spinosa* King, *Pap. Proc. R. Soc. Tasmania*, **2**, p. 256, pl. VI F.

*Material examined* : 1 ex., Regd. No. IV/ CLA/ ERS/383, Simsang river, Chinapat, NBR, 19. 1. 2008; 1 ex., Regd. No. IV/ CLA/ ERS/431, Mandel, NBR, 25. 6. 2008; 1 ex., Regd. No. IV/ CLA/ ERS/459, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/ CLA/ ERS/479, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/ CLA/ ERS/486, Chokpot, NBR, 30. 9. 2008.

*Distribution* : INDIA – Meghalaya, Assam, Manipur, Tripura, Rajasthan, Tamil Nadu, and Andaman & Nicobar islands.

*Elsewhere* : COSMOPOLITAN.

12. *Macrothrix triserialis* (Brady, 1886)

1886. *Macrothrix triserialis* Brady, *J. Linn. Soc. Zool.*, **16**, p. 295, pl. 37, figs. 16-20.

*Material examined* : 2 exs., Regd. No. IV/ CLA/ ERS/387, Mandelgre, NBR, 19. 1. 2008; 1 ex., Regd. No. IV/ CLA/ ERS/399, Sastgre Fishery pond, NBR, 14. 2. 2008; 1 ex., Regd. No. IV/ CLA/ ERS/420, Mitapgre, NBR, 21. 6. 2008; 1 ex., Regd. No. IV/ CLA/ ERS/426, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/ CLA/ ERS/447, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/ CLA/ ERS/460, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/ CLA/ ERS/487, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/CLA/ERS/507, Manchuri Chiring, NBR, 23. 6. 2008; 1 ex., Regd. No. IV/CLA/ERS/546, Sastgre, NBR, 24. 6. 2009; 1 ex., Regd. No. IV/CLA/ERS/579, Simsang river, Daribokgre, NBR, 22. 2. 2009.

*Distribution* : INDIA – Meghalaya, Assam, Tripura, Manipur, West Bengal, Bihar, Rajasthan, Kerala and little Andaman.

*Elsewhere* : COSMOTROPICAL.

## Family CHYDORIDAE

## Subfamily CHYDORINAE

13. *Alonella excisa* (Fischer, 1854)

1854. *Lynceus excisus* Fischer, *Bull. Soc. Imp. Nat. Moscow*, **27**, p. 428, pl. 3, figs. 11-14.

*Material examined* : 1 ex., Regd. No. IV/CLA/ERS/437, Mandel, NBR, 25. 6. 2008.

*Distribution* : INDIA Meghalaya, Assam, Manipur, Mizoram, Nagaland, Tripura, West Bengal, Bihar, Rajasthan, Kerala, Orissa, Uttaranchal, Madhya Pradesh and Tamil Nadu.

*Elsewhere* : COSMOPOLITAN.

#### 14. *Chydorus sphaericus* (O. F. Müller, 1776)

1776. *Lynceus sphaericus* O. F. Müller, *Zoologie Fanicae prodromus, seu animalium Daniae et Norvegiae*, p. 119.

*Material examined* : 2 exs., Regd. No. IV/CLA/ERS/388, Mandelgre, NBR, 19. 1. 2008; 2 exs., Regd. No. IV/CLA/ERS/403, Kalupara Chiring, NBR, 25. 4. 2008; 1 ex., Regd. No. IV/CLA/ERS/407, Sangkenigiri, NBR, 25. 6. 2008; 1 ex., Regd. No. IV/CLA/ERS/421, Mitapgre, NBR, 21. 6. 2008; 1 ex., Regd. No. IV/CLA/ERS/448, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/CLA/ERS/461, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/CLA/ERS/470, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/CLA/ERS/497, Manchuri Chiring, NBR, 23. 6. 2008; 1 ex., Regd. No. IV/CLA/ERS/530, Orangitok village, NBR, 24. 6. 2009; 1 ex., Regd. No. IV/CLA/ERS/547, Sastgre village, NBR, 24. 6. 2009.

*Distribution* : INDIA - Meghalaya, Assam, Manipur, Tripura, West Bengal, Kashmir, Ladak, Uttar Pradesh and Nilgiri Hills in South India.

*Elsewhere* : COSMOPOLITAN.

#### 15. *Dadaya macrops* (Daday, 1898)

1898. *Alona macrops* Daday, *Termesz. Fuz. Budapest*, **21**, p. 38-39, fig. 17.

*Material examined* : 1 ex., Regd. No. IV/CLA/ERS/488, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/CLA/ERS/508, Manchuri Chiring, NBR, 23. 6. 2008.

*Distribution* : INDIA Assam, Tripura, Rajasthan and Tamil Nadu.

*Elsewhere* : COSMOPOLITAN.

#### 16. *Disperalona caudata* Smirnov, 1996

1996. *Disperalona caudata* Smirnov, *Arthropoda selecta*, **5**, 3 /4.

*Material examined* : 1 ex., Regd. No. IV/CLA/ERS/390, Mandelgre paddy field, NBR, 19. 1. 2008; 1 ex., Regd. No. IV/CLA/ERS/531, Orangitok village, NBR, 24. 6. 2009.

*Distribution* : INDIA Assam.

*Elsewhere* : AUSTRALIA and THAILAND.

#### 17. *Dunhevedia crassa* King, 1853

1853. *Dunhevedia crassa* King, *Pap. Proc. R. Soc. Tasmania*, **2**, p. 261, pl. VII F

*Material examined* : 1 ex., Regd. No. IV/CLA/ERS/580, Simsang river, Daribokgre, NBR, 22. 2. 2009.

*Distribution* : INDIA –Meghalaya, Assam, Tripura, West Bengal, Rajasthan, Gujarat, Tamil Nadu, Kerala and little Andaman.

*Elsewhere* : COSMOPOLITAN.

18. *Picripleuroxus similis* (Vavra, 1900)

1900. *Pleuroxus similis* Vavra, *Hamburger Megalhaensische Sammerreise von Natur. Mus. Zu. Hamburg*, 5, p. 23-24, fig. 6.

*Material examined* : 1 ex., Regd. No. IV/CLA/ERS/471, Chokpot, NBR, 30. 9. 2008.

*Distribution* : INDIA –Meghalaya, Assam, Tripura, Manipur, West Bengal, Kashmir and little Andaman.

*Elsewhere* : PALAEARCTIC REGION.

19. *Pseudochydorus globosus* (Baird, 1843)

1843. *Chydorus globosus* Baird, *Ann. Mag. Nat. Hist.*, 68, p. 90, pl. II, figs. 1-4.

*Material examined* : 1 ex., Regd. No. IV/CLA/ERS/432, Mandel Daribokgre, NBR, 25. 6. 2008.

*Distribution* : INDIA Meghalaya, Assam, West Bengal, Rajasthan and Tamil Nadu.

*Elsewhere* : Holarctic, Ethiopian, Indo-Malayan, Australian Regions & European USSR.

Subfamily ALONINAE

20. *Alona costata* Sars, 1862

1862. *Alona costata* Sars, *Forhandl. Vidensk. Selesk. Christiana*, p. 286.

*Material examined* : 2 exs., Regd. No. IV/CLA/ERS/388, Mandelgre paddy field, NBR, 19. 1. 2008; 1 ex., Regd. No. IV/CLA/ERS/400, Sastgre Fishery pond, NBR, 14. 2. 2008; 2 exs., Regd. No. IV/CLA/ERS/408, Sangkenigiri, NBR, 25. 4. 2008; 1 ex., Regd. No. IV/CLA/ERS/449, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/CLA/ERS/509, Manchuri Chiring,, NBR, 23. 6. 2008; 1 ex., Regd. No. IV/CLA/ERS/548, Sastgre village, NBR, 24.6. 2009;; 1 ex., Regd. No. IV/CLA/ERS/581, Simsang river, Daribokgre, NBR, 22. 2. 2009.

*Distribution* : INDIA Meghalaya, Assam, Tripura, Arunachal Pradesh, Manipur, West Bengal, Himachal Pradesh, Uttar Pradesh and Tamil Nadu.

*Elsewhere* : Holarctic, Ethiopian, Indo-Malayan and Neotropical Regions.

21. *Alona davidi* Richard, 1895

1895. *Alona davidi* Richard, *Mem. Soc. Zool. France*, 20, p. 192-195, figs. 5-8.

*Material examined* : 1 ex., Regd. No. IV/CLA/ERS/384, Simsang river, Chirapat, NBR, 19. 1. 2008.

*Distribution* : INDIA – Assam and West Bengal.

*Elsewhere* : ETHIOPIAN REGION & HAITI.

## 22. *Alona guttata* Sars, 1862

*Material examined* : 1 ex., Regd. No. IV/CLA/ERS/401, Sastgre Fishery pond, NBR, 14. 2. 2008; 1 ex., Regd. No. IV/CLA/ERS/409, Sangkenigiri, NBR, 25. 4. 2008; 1 ex., Regd. No. IV/CLA/ERS/519, Chokpot, NBR, 30. 9. 2008.

*Distribution* : INDIA Meghalaya, Tripura, Ladak, Kashmir and Nilgiri Hills in South India.

*Elsewhere* : COSMOPOLITAN.

## 23. *Alona pulchella* King, 1853

1853. *Alona pulchella* King, *Pap. Proc. R. Soc. Tasmania*, 2, p. 260, pl. VIII B.

*Material examined* : 2 exs., Regd. No. IV/CLA/ERS/385, Simsang river, Chinapat, NBR, 19. 1. 2008.

*Distribution* : INDIA – Meghalaya, Assam, Tripura, West Bengal, Gujarat, Rajasthan and Tamil Nadu.

*Elsewhere* : COSMOTROPICAL.

## 24. *Alona rectangula* Sars, 1862

1862. *Alona rectangula* Sars, *Forhandl. Vidensk. Selesk. Christiana*, p. 160.

*Material examined* : 1 ex., Regd. No. IV/CLA/ERS/402, Sastgre Fishery pond, NBR, 14. 2. 2008; 1 ex., Regd. No. IV/CLA/ERS/404, Kalupara Chiring, NBR, 25. 4. 2008; 1 ex., Regd. No. IV/CLA/ERS/410, Sangkenigiri, NBR, 25. 4. 2008.

*Distribution* : INDIA – Meghalaya, Assam, Tripura, West Bengal, Bihar, Kashmir, Ladak, Gujarat and Rajasthan.

*Elsewhere* : COSMOPOLITAN.

## 25. *Camptocercus uncinatus* Smirnov, 1971

1971. *Camptocercus uncinatus* Smirnov, *The World Chydorid Fauna*. USSR Acad. Sci. Zool. Inst. Nova ser. 101, p. 436-438, Fig. 128, 532.

1985. *Camptocercus latikae* Rane, 1985, *Crustaceana*, 48, p. 113-116, Figs. 1-8.

*Material examined* : 1 ex., Regd. No. IV/CLA/ERS/386, Simsang river, Chinapat, NBR, 19. 1. 2008.

*Distribution* : INDIA Meghalaya, Assam and Madhya Pradesh.

*Elsewhere* : ROMANIA, S.W. AFRICA, ISRAEL, ETHIOPIA, GUATEMALA & EGYPT.

**26. *Graptoleberis testudinaria* (Fischer, 1851)**

1851. *Lynceus testudinarius* Fischer, *Mem. Acad. Imp. Sci. St. Petersburg*, **6**, p. 191, Pl. IX, Fig. 12.

*Material examined* : 1 ex., Regd. No. IV/CLA/ERS/397, Sastgre Fishery pond, NBR, 14. 2. 2008; 1 ex., Regd. No. IV/CLA/ERS/405, Kalupara Chiring, NBR, 25. 4. 2008.

*Distribution* : INDIA –Meghalaya, Assam, Kashmir, Uttaranchal and Andhra Pradesh.

*Elsewhere* : COSMOPOLITAN.

**27. *Karualona karua* (King, 1853)**

1853. *Alona karua* King, *Pap. Proc. R. Soc. Van Diemensland*, **2**, p. 260, pl. VIII

*Material examined* : 1 ex., Regd. No. IV/CLA/ERS/438, Mandel Chiring, NBR, 25. 6. 2008.

*Distribution* : INDIA - Meghalaya, Assam, Tripura, Kashmir, West Bengal, Gujarat, Rajasthan, Tamil Nadu, Kerala and little Andaman.

*Elsewhere* : COSMOPOLITAN (40° N. & S. LATITUDES).

**28. *Oxyurella singalensis* (Daday, 1898)**

1898. *Alonopsis singalensis* Daday, *Termesz. Fuz. Budapest*, **21**, p. 43-45, fig. 20, a-b.

*Material examined* : 1 ex., Regd. No. IV/CLA/ERS/450, Chokpot, NBR, 30. 9. 2008; 1 ex., Regd. No. IV/CLA/ERS/532, Orangitok village, NBR, 24. 6. 2009.

*Distribution* : INDIA – Meghalaya, Assam, Tripura, West Bengal and Rajasthan.

*Elsewhere* : COSMOTROPICAL.

## DISCUSSION

Twenty-eight species, belonging to 20 genera, examined from the Nokrek Biosphere Reserve Forest, Meghalaya reveal fairly speciose and diverse Cladocera taxocoenosis. The reported species comprise a significant fraction (54. 9%) of the cladoceran fauna of Meghalaya. The studied collections include members of six families of Cladocera; the Ctenopoda belong to one family i.e., Sididae while Anomopoda are represented by five families (Daphniidae Bosminidae Moinidae Macrothricidae Chydoridae). The

rich generic diversity is another salient feature of the present survey; out of 28 genera recorded from the state of Meghalaya (Sharma and Sharma, 1999; Sharma, 2008), 20 genera are represented in the samples collected from the Nokrek Biosphere Reserve. The cladoceran faunal diversity of this Biosphere Reserve is relatively richer than 21 species and 15 genera reported by the author (Sharma, 2010) from the Baghmara Reserve Forest of Meghalaya.

*Disperalona caudata* is a biogeographically interesting species which had been designated as an Australasian element (Sharma and Sharma, 2007). *Pseudosida bidentata*, *Simocephalus serrulatus*, *Alona davidi*, *A. pulchella*, *Camptocercus uncinatus*, *Graptoleberis testudinaria* and *Pseudochydorus globosus* are examples of regional distributional interest amongst the Indian Cladocera. The studied collections show qualitative dominance of Cosmopolitan species while Cosmotropical and Pantropical elements are well represented. In general, the Cladoceran fauna of the Nokrek Biosphere Reserve exhibits 'tropical character'.

Chydoridae, the largest family of Cladocera, forms main component (16 species, 57.1%) of the reported species. The chydorid show several littoral-periphytonic species. On the contrary, paucity of typical limnetic Cladocera is another distinctive feature of this study. *Diaphanosoma sarsi*, *Simocephalus vetulus*, *Macrothrix triserialis*, *Chydorus sphaericus*, *Alona costata* and *A. guttata* exhibit relatively common occurrence and rest of the species are observed in fewer samples.

To sum up, the Cladocera fauna of the Nokrek Biosphere Reserve is fairly diverse, reflects tropical general character with Cosmopolitan > Cosmotropical species, reveals certain biogeographically interesting species and is characterized by distinct richness of the littoral-periphytonic members of the Chydoridae. The faunal diversity still requires up-dating based particularly on extensive future collections of the study area.

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## **INSECTA : HEMIPTERA : HETEROPTERA**

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### **INTRODUCTION**

The aquatic and Semi-aquatic Heteroptera (water bugs) constitute an integral component of the macro-invertebrate fauna of any aquatic ecosystem. They not only play a vital role in these biota but also form an important component of the aquatic foodchain. Certain families of bugs may be utilized in the biological control of mosquitoes because of their predatory nature. Jansson (1977) demonstrated that members of the family corixidae are used as indicators of water quality. Because of their diverse habitats and poor dispersal capabilities, these water bugs serve as Zoogeographical indicators (Jordon, 1951).

The water bugs from the state of Meghalaya (the then Assam) was first studied by Distant (1902, 1906, 1910). Then Paiva (1919) had documented the Hemipteran fauna of Garo Hills district, Meghalaya (the then Assam) where he reported 11 species of water bugs belonging to 2 families. Further, Bal and Basu (1998) has recorded 35 species of water bugs under 24 genera and 9 families from Meghalaya out of which, 16 species, 11genera and 6 families were reported from Garo hills districts in particular.

The present study on the Aquatic and semi-aquatic Hemiptera of Nokrek Biosphere Reserve, Meghalaya deals with 11 species under 10 genera and 6 families. The entire materials under report are deposited in North Eastern Regional Centre, Zoological Survey of India, Shillong.

### **SYSTEMATIC ACCOUNT**

Class INSECTA

Order HEMIPTERA

Suborder HETEROPTERA.

Infraorder NEPOMORPHA

Family NEPIDAE

Subfamily NEPINAE

1. *Laccotrephes pfeiferiae* (Ferrari, 1988)

1906. *Laccotrephes robustus* Stål : Distant, *Fauna of British India*, 3 : 18.

1999. *Laccotrephes pfeiferiae* (Ferrari) : Polhemus and Keffor, *J. New York Entomol. Soc.*, 107 : 2.

*Material examined* : 2 exs., Regn. No. I/HEM/ERS-254, NBR, Orangitok vill., 27.ix.08; 1 ex., Regn. No. I/HEM/ERS-255, NBR, Sesatgre vill., 27.ix.08; 1 ex., I/HEM/ERS-262, Mandalgre, 19.i.08; 1ex., Regn. No. I/HEM/ERS-265, Mandalgre vill., 19.i.08.

*Distribution* : INDIA : Meghalaya (Districts : East Khasi Hills, Jaiñtia Hills); Nagaland.

*Elsewhere* : Formosa, Indonesia, Myanmar, Philippines.

*Remarks* : Reported for the first time from Garo Hills districts (NBR)

2. *Laccotrephes ruber* (Linnaeus)

1906. *Laccotrephes ruber* : Distant, *Fauna Brit. India, Rhynchota*, 3 : 18.

*Materials Examined* : 2 exs, Regn. No. I/HEM/ERS-258, Mitapgre Vill., 30.ix.08; 1 ex., Regn. No. I/HEM/ERS-260, Gungunagre chiring, 21.i.08; 15 exs., Regn. No. I/HEM/ERS-264, Mandalgre vill., 19.i.08; 6 exs., Regn. No. I/HEM/ERS-270, NBR, Bibragre chiring, 29.vi.09; 1ex., Regn. No. I/HEM/ERS-282, Orangitok vill., 24.vi.09.

*Distribution* : INDIA : Meghalaya ( Districts- East Khasi Hills, West Khasi Hills, Jaiñtia Hills, East Garo Hills, West Garo Hills); Andhra Pradesh; Arunachal Pradesh; Assam; Bihar; Chandigarh; Delhi; Gujarat; Himachal Pradesh; Jammu & Kashmir; Karnataka; Kerala; Madhya Pradesh; Maharashtra; Manipur; Nagaland; Orissa; Punjab; Sikkim; Tamil Nadu; Tripura; Uttar Pradesh; West Bengal.

*Elsewhere* : China, Japan, Nepal, Pakistan, Sri Lanka.

*Remarks* : Reported for the first time from South Garo Hills districts (NBR).

Subfamily RANATRINAE

3. *Cercotmetus pilipes* (Dallas)

1850.: Ranatra (cercotmetus) pilipes Daiias, *Trans. R. ent. Soc. Lond.*, 1 : 9.

1906. *Cercometus pilipes* : Distant, *Fauna Brit. India, Rhynchota*, 3 : 23.

*Material examined* : 1 ex., Regn. No. I/HEM/ERS-251, NBR, Rongsigre vill., 17.i.08;

2 exs., , Regn. No. I/HEM/ERS-252, NBR, Chwatchigre vill., 19.i.08; 2 exs., Regn. No. I/HEM/ERS-256; NBR, Sesatgre Vill., 27.ix.08; 1 exs., Regn. No. I/HEM/ERS-257, NBR, Selbalgiri, 25.ix.08; 4 exs., Regn. No. I/HEM/ERS-259, Gungunagre chiring, 21.i.08; 1 ex., Regn. No. I/HEM/ERS-263, Mandalgre, 19.i.08; 1ex., Regn. No. I/HEM/ERS-266, Mandalgre vill., 19.i.08; 1ex., Regn. No. I/HEM/ERS-267, Resangre vill., 22.vi.08; 6 exs., Regn. No. I/HEM/ERS- 273, Daribokgre vill., 22. i.08; 1 exs., Regn. No. I/HEM/ERS-276, Daribokgre vill., 26.vi.08; 1 ex., Regn. No. I/HEM/ERS-279, Simsang river, 12.ii.08; 2 exs., Regn. No. I/HEM/ERS-283, Resangre vill., 19.vi.08; 3 exs., Regn. No. I/HEM/ERS-293, NBR, Chirapot vill., 23.vi.08.

*Distribution* : India : Meghalaya (Districts- East Khasi Hills, JaiñtiaHills); Delhi; Karnataka; Kerala, Mizoram.

*Elsewhere* : Bhutan.

*Remarks* : Reported for the first time from East and South Garo Hills districts (NBR).

#### 4. *Ranatra varipes varipes* Stål

1861. *Ranatra varipes varipes* Stål.: Nieser & Polhemus, *Amemboa*, 2 : 22.

*Material examined* : 1 ex., Regn. No. I/HEM/ERS-290, Chisobibra vill., 17.i.08.

*Distribution* : INDIA : Meghalaya (Districts-East Khasi hills, JaiñtiaHills); Bihar; Maharashtra; Manipur; Orissa; Pondicherry; Tamil Nadu; Tripura; Uttar Pradesh; West Bengal.

*Elsewhere* : Malay Peninsula, Myanmar, Nepal; Sri lanka; Thailand.

*Remarks* : First report from East Garo Hills districts (NBR).

Family BELOSTOMATIDAE

Subfamily BELOSTOMATINAE

#### 5. *Diplonychus rusticus* (Fabricius)

1781. *Nepa rustica* Fabricius, *Species insectorum*, 2 : 333.

1961. *Diplonychus rusticus* : Lauck & Menke, *Ann. Entomol. Soc. Amer.*, 54 :649.

*Materials examined* : 13 exs., Regn. No. I/HEM/ERS-281, Orangitok vill, 24.vi.09.

*Distribution* : INDIA : Meghalaya ( Districts- East Khasi Hills, Jaiñtia Hill); Andaman & Nicobar Island; Andhra Pradesh; Arunachal Pradesh; Assam; Bihar; Chandigarh; Delhi; Goa; Gujarat; Himachal Pradesh; Jammu and Kashmir; Karnataka; Kerala, Madhya Pradesh; Maharashtra; Manipur; Mizoram; Orissa, Pondicherry; Punjab; Rajasthan; Tamilnadu; Tripura; Uttar Pradesh; West Bengal.

*Elsewhere* : Austria, China, Japan, Java, Malay Peninsula, Myanmar, Philippines, Sri Lanka, Indonesia, Thailand, New Guinea.

*Remarks* : First report from West Garo Hills districts (NBR).

Family APHELOCHEIRIDAE

6. *Aphelocheirus (Micraphelochairus) signatus* Zettel

1998. *Aphelocheirus signatus* Zettel, *Ann. Naturhist. Mus. Wein*, 100 : 91.

*Material examined* : 3 exs., Regn. No. I/HEM/ERS – 297, NBR, Dedari chiring, 30.iv.08; 1ex., Regn. No. I/HEM/ERS – 301, NBR, Selbalgre vill., 26.iv.08.

*Distribution* : INDIA : Meghalaya ( Districts : East Garo Hills, West Garo Hills).

*Remarks* : Reported earlier from NBR by Zettel, 1998.

Family NAUCORIDAE

Subfamily CHEIROCHELINAЕ

7. *Gestroiella insignis* Distant

1910. *Gestroiella insignis* Distant, *Fauna Brit. India. Rhynchota*, 5 : 318.

*Material examined* : 1 ex., Regn. No. I/HEM/ERS-250, NBR, Adogre vill., 22.i.08; 1ex., Regn. No. I/HEM/ERS-253, Resangre vill., 25.ix.08; 1ex., Regn. No. I/HEM/ERS-261, NBR, 30.iv.08; 3 exs., Regn. No. I/HEM/ERS-271, Mandalgre vill., 19.i.08; 3 exs., Regn. No. I/HEM/ERS-285, Chinabat vill., 24 vi. 09; 12 exs., Regn. No. I/HEM/ERS-289, Chisobibra vill., 28.vi.08; 3 exs., Regn. No. I/HEM/ERS-298, Resangre vill., 22.vi.08; 1 ex., I/HEM/ERS-299, Daribokgre vill., 01.v.08; 5 ex., I/HEM/ERS-300, Resangre vill., 28.vi.08.

*Distribution* : INDIA : Meghalaya (District-Jaiñtia Hills); Assam; Manipur.

*Remarks* : Reported for the first time from East and West Garo Hills districts (NBR).

Subfamily LACCOCORINAE

8. *Heleocoris obliquatus* (Spinola)

1837. *Heleocoris obliquatus* Spinola, *Ess. Ins. Hemipt.*, : 55

*Material examined* : 1 ex., Regn. No. I/HEM/ERS-272, Resangre vill., 22.vi.08; 2 exs., Regn. No. I/HEM/ERS-275, NBR, 17.i.08; 1ex., Regn. No. I/HEM/ERS-278, NBR, 20.i.08; 13 exs., Regn. No. I/HEM/ERS-280, NBR, 23.vi.09; 1 exs., Regn. No. I/HEM/ERS-286, Chinabat vill., 24.vi.09, 1 ex., Regn. No. I/HEM/ERS-294, Chirapot vill., 23.vi.08; 4 exs., Regn. No. I/HEM/ERS-295, NBR, 17.i.08.

*Distribution* : INDIA : Meghalaya (Districts-South Garo Hills Dist., Jaiñtia Hills); Maharashtra Mizoram; Uttar Pradesh.

*Elsewhere* : Myanmar.

*Remarks* : Reported for the first time from West Garo Hills districts (NBR).

Family NOTONECTIDAE

Subfamily NOTONECTINI

9. *Enithares fusca* Brooks

1948. *Enithares fusca* Brooks, *J. Kans. Ent. Soc.*, 21 : 46.

*Material examined* : 1 ex., Regn. No. I/HEM/ERS – 302, Orangitok vill., 24.vi.09.

*Distribution* : INDIA : Meghalaya (Districts – East Khasi Hills); Karnataka, Kerala, Madhya Pradesh; Tamil Nadu.

*Remarks* : First report from West Garo Hills districts (NBR).

Infraorder GERROMORPHA

Family GERRIDAE

Subfamily PTILOMERINAE

10. *Ptilomera (Ptilomera) laticaudata* (Hardwicke)

1825. *Gerris laticaudata* Hardwicke, *Trans. Linn. Soc.*, 14 : 134

*Materials examined* : 2 exs., Regn. No. I/HEM/ERS- 268, Anchigre vill., 23.vi.09; 12 exs., Regn. No. I/HEM/ERS-269, Daribokgre vill., 25.vi.09; 4 exs., Regn. No. I/HEM/ERS-274, 17.i.08; 1 ex., Regn. No. I/HEM/ERS-277, NBR, 23.i.08; 5 exs., Regn. No. I/HEM/ERS-284, Resangre vill., 19.vi.08; 1 ex., Regn. No. I/HEM/ERS-287, Chinabat vill., 24.vi.09; 1 ex., Regn. No. I/HEM/ERS- 288, Anchigre vill., 23.vi.09; 14 exs., Regn. No. I/HEM/ERS-292, Chirapot vill., 23.vi.08.

*Distribution* : INDIA : Meghalaya (Districts-West Garo Hills, South Garo Hills, East Khasi Hills, Jaiñtia Hills); West Bengal; Sikkim; Tamil Nadu.

*Elsewhere* : Myanmar, Malay Peninsula, Sri Lanka, Thailand.

*Remarks* : Reported for the first time from East Garo Hills districts (NBR).

11. *Metrocoris nigrofasciatus* Distant

1910. *Metrocoris nigrofasciatus* : Distant, *Fauna of Brit. India, Rhynchota*, 5 : 159.

*Material Examined* : 6 exs., Regn. No. I/HEM/ERS-291, Sesatgre vill., 17.i.08; 5 exs., Regn. No. I/HEM/ERS-296, 17.i.08; 7 exs., Regn. No. I/HEM/ERS-303, Daribokgre vill., 25.vi.09.

*Distribution* : INDIA : Meghalaya (Districts- East Khasi Hills, Jaiñtia Hills, South Garo Hills); Assam, Uttar Pradesh.

*Elsewhere* : Java, Malaya, Myanmar, Thailand.

*Remarks* : Reported for the first time from East & West Garo Hills districts (NBR).

### SUMMARY

The present study deals with 11 species belonging to 10 genera under 6 families of aquatic Hemiptera, from the Nokrek Biosphere Reserve.

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## **INSECTA : LEPIDOPTERA : RHOPALOCERA)**

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### **INTRODUCTION**

The order Lepidoptera include insects with two pairs of wings; the body, wings and other appendages are covered with scales which are often brilliant in colour and arranged in showy patterns. Adult mouthparts are greatly reduced and modified to a coiled tube for sucking up liquid food. These insects exhibit complete metamorphosis, and are represented by the butterflies and moths – living jewels which are seldom equaled in beauty. This, and the phenomenon of mimicry and migration, have made them objects of curiosity among all people.

Butterflies occur in all suitable habitats where there is ample provision for food and shelter. The Eastern Himalayas, and North-East India in particular, are very rich in butterfly species. More than fifty percent of the butterfly species that occur in the Indian subcontinent and Myanmar are found in North-East India alone. Meghalaya, under which the Nokrek Biosphere Reserve comes, falls in the North-East India and is home to various species of butterflies. About 300 species or so of butterflies have been reported from Meghalaya, most of them from East Khasi Hills and few from other districts of the state but none from the South Garo Hills in which area a part of the NBR falls. Therefore, it is not surprising that several species recorded herein are reported for the first time from the Garo Hills.

The present report is based on the butterflies collected from the Nokrek Biosphere Reserve by various survey parties of this Centre. The collections are registered and deposited in the holdings of the North Eastern Regional Centre, Zoological Survey of India, Shillong, and of which few are added new to our Holdings.

### **SYSTEMATIC ACCOUNT**

Phylum ARTHROPODA

Class INSECTA

Order LEPIDOPTERA  
Suborder RHOPALOCERA  
Superfamily PAPILIONOIDEA  
Family PIERIDAE

1. *Delias aglaia aglaia* (Linnæus)

1758. *Papilio aglaia* Linnaeus, *Syst. Nat.* p. 465.

1897a. *Delias aglaia* (Linnæus) : Butler, *Ann. Mag. Nat. Hist.*, (6), p. 162.

1910. *Delias aglaia aglaia* (Linnæus) : Fruhstorfer, *Macrolep.*, Fauna Indo-Austr., 9, p. 133.

**Materials examined** : 1♂, Regn. No. I/LE/ERS- 644, Meghalaya, WGH District, NBR, Remsangre, near Rongram riverside, N 25°34'24.9"; E090°17'55.1"; Alt. 475m, 25.ix.2008, R. Mathew & Party.

*Distribution* : INDIA : Meghalaya, Sikkim.

*Elsewhere* : Kulu to Kumaon, Nepal.

*Remarks* : Common.

2. *Delias descombesi descombesi* (Boisduval)

1836. *Pieris descombesi* Boisduval, *Spec. Gén., Lép.* 1, p. 465.

1878a. *Delias descombesi* (Boisduval) : Moore, *Proc. Zool. Soc. Lond.*, p. 839.

1937. *Delias descombesi descombesi* (Boisduval) : Talbot, *Monograph of Delias*, p. 377.

**Material examined** : 3♂, Regn. No. I/LE/ERS-585, Meghalaya, WGH, NBR, Bansangre, 28.vi.2008, R. Mathew & Party; 1♀, Regn. No. I/LE/ERS-661, Meghalaya, WGH, NBR, Kalupara Chiring banks, N25°24'14.8"; E090°16'04.0"; Alt. 87m, 25.iv.2008, R. Mathew & Party.

*Distribution* : INDIA : Meghalaya.

*Elsewhere* : Nepal to Burma; Siam, Annam, Saigon, Cochin-China.

*Remarks* : Common.

3. *Appias lycnida eleonora* (Boisduval)

1836. *Pieris eleonora* Boisduval, *Spec. Gén. Lép.*, 1, p. 481.

1872. *Appias eleonora* (Boisduval) : Butler, *Proc. Zool. Soc. Lond.*, p. 47.

1910. *Appias lycnida hippoides* f. *vacans* : Fruhstorfer, *Macrolep.*, Fauna Indo-Austr., 9, p. 148.

1907. *Appias hippo* : Bingham : *Fauna Brit. Ind., Butterflies*, 2, p. 203.

**Material examined** : 1♂, Regn. No. I/LE/ERS-476, Meghalaya, WGH, NBR,

Remsangre, Rongram Chiring, N 25°36'50"; E 090°18'47.1"; Alt. 632m, 22.vi.2008, R. Mathew & Party; 1♂, Regn. No. I/LE/ERS-502, Meghalaya, WGH, NBR, Oragitok, 27.ix.2008, R. Mathew & Party; 1♂, Regn. No. I/LE/ERS-595, Meghalaya, EGH, NBR, Didari Chiring, N 25°32'28.1"; E 090°17'22.7"; Alt. 500m, 29.iv.2008, R. Mathew & Party; 1♂, Regn. No. I/LE/ERS-608, Meghalaya, SGH, NBR, Anchigre, near Norang Chiring, N 25°25'49.0"; E 090°19'04.6"; Alt. 347, 23.vi.2009, R. Mathew & Party; 1♂, Regn. No. I/LE/ERS-646, Meghalaya, EGH, NBR, Tosekgre, N 25°32'25.1"; E 090°17'59.6"; Alt. 700m, 26.iv.2008, R. Mathew & Party; 1♂, Regn. No. I/LE/ERS-656, Meghalaya, NBR, Manchuri Chiring, N25°33'25.4"; E 090°18'44.3"; Alt. 623m, 28.iv.2008, R. Mathew & Party; 2♂, Regn. No. I/LE/ERS-660, Meghalaya, EGH, NBR, Tosekgre, N 25°32'24.1"; E 090°17'59.6"; Alt. 700m, 26.iv.2008, R. Mathew & Party.

*Distribution* : INDIA : Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland and Sikkim.

*Elsewhere* : Myanmar, Hainan, Tongking, Siam, Annam.

*Remarks* : Very common.

#### 4. *Appias albina darada* ♀ f. *semiflava* Fruhstorfer

1865. *Pieris darada* C. & R. Felder, *Reise Novara*, Lep., 2, pp. 137-216, pls, xxii-xxvii.

1910. *Appias albina confusa* ♀ f. *semiflava*: Fruhstorfer, *Macrolep.*, Fauna Indo-Austr., 9, pp.121-288.

1932. *Appias albina darada* ♀ f. *semiflava*: Fruhstorfer, Evans' *Ident. Indian Butterflies*, ed. 2, p.74.

*Material examined* : 1ex, Regn. No. I/LE/ERS-501, Meghalaya, EGH, NBR, Daribokgre, N 25°29'34.8"; E 090°19'26.9"; Alt. 1119m, 25.vi.2008, R. Mathew & Party; 2exs. Regn. No. I/LE/ERS-561, Meghalaya, EGH, NBR, Daribokgre IB compound, N 25°29'34.8"; E 090°19'26.9"; Alt. 1119m, 24.vi.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS-592, Meghalaya, EGH, NBR, Daribokgre, near Didari Chiring, N 25°29'08.1"; E 090°18'55.1"; Alt. 1055m, 30.iv.2008, R. Mathew & Party.

*Distribution* : INDIA : Peninsular India to Sikkim, Meghalaya and Andaman Islands.

*Elsewhere* : Sri Lanka, Burma.

*Remarks* : Not common.

#### 5. *Appias indra indra* (Moore)

1857. *Pieris indra* Moore, *Cat. Lep. Mus. E.I.C.*, 1, p74; *id.*, *Proc. Zool. Soc. London*, pp. 102-104.

1910. *Appias indra indra*: Fruhstorfer, *Macrolep.*, Fauna Indo-Austr., 9, pp.121-288.

*Material examined* : 1 ex., Regn. No. I/LE/ERS-560, Meghalaya, EGH, NBR, Daribokgre IB Compound, N 25°29'34.8"; E 090°19'26.9"; Alt. 1119m, 24.vi.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS-610, Meghalaya, WGH, NBR, Chinabat village, near Sinisuri Chiring, N 25°33'11.7"; E 090°22'38.6"; Alt. 470m, 24.vi.2009, J.Lyngdoh & Party.

*Distribution* : INDIA : Eastern Himalayas.

*Elsewhere* : Nepal, Burma, South China, Malaysia.

*Remarks* : Male : not rare, but females scarce.

### 6. *Pieris napi ajaka* Moore

1865 a. *Pieris ajaka* Moore, *Proc. Zool. Soc. Lond.*, p. 490.

1932 a. *Pieris napi ajaka* Moore : Evans, *Identification of Indian Butterflies*, (ed. 2), p. 67.

*Material examined* : 1 ex., Regn. No. I/LE/ERS-509, Meghalaya, EGH, NBR, Daribokgre, near Simsang river, N 25°29'27.2"; E 090°19'55.3"; Alt. 872m, 01.v.2008, R. Mathew & Party.

*Distribution* : INDIA : Punjab, Kumaon, Meghalaya.

*Elsewhere* : Not known.

*Remarks* : Common.

### 7. *Pieris canidia canis* Evans

1912. *Pieris canidia canis* Evans, *Journ. Bomb. Nat. Hist. Soc.*, 21, pp. 559, 976.

1997. *Pieris canidia canis* Evans : Ghosh & Chaudhury, *Fauna of West Bengal, Pt. 7, State Fauna Series 3*, p. 710.

*Material examined* : 1 ♀, Regn. No. I/LE/ERS-477, Meghalaya, SGH, NBR, Mitapgre village, N 25°23'51.3"; E 090°16'27.5"; Alt. 62m, 21.vi.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS-510, Meghalaya, EGH, NBR, Oragitok village, 27.ix.2008, R. Mathew & Party; 1 ♀, Regn. No. I/LE/ERS-594, Meghalaya, EGH, NBR, Daribokgre, near Didari Chiring, N25°29'08.1"; E090°16'15.1"; Alt. 498m, 30.iv.2008, R. Mathew & Party; 1 ♂, Regn. No. I/LE/ERS-613, Meghalaya, EGH, NBR, Daribokgre, Didari River, N25°29'28.3"; E090°19'22.5"; Alt. 1105m, 25.vi.2009, J. Lyngdoh & Party; 1 ♂, 1 ♀, Regn. No. I/LE/ERS- 655, Meghalaya, NBR, Manchuri Chiring, N25°33'25.4"; E 090°18'44.3"; Alt. 623m, 28.iv.2008, R. Mathew & Party; 2 ♂, Regn. No. I/LE/ERS -657, Meghalaya, EGH, NBR, Chinapat, N 25°33'07.6"; E 090°22'41.8"; Alt. 438m, 27.iv.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS- 658, Meghalaya, EGH, NBR, Selbalgre, N 25°34'40.2"; E 090°17'27.7"; Alt. 488m, 26.iv.2008, R. Mathew & Party; 1 ♂, Regn.

No. I/LE/ERS- 659, Meghalaya, EGH, NBR, Tosekgre, N 25°32'54.1"; E 090°17'59.6";  
Alt. 700m, 26.iv.2008, R. Mathew & Party.

*Distribution* : INDIA : Assam, Meghalaya, Nagaland, South India, Nilgiri Hills.

*Elsewhere* : Turkey, China and Malaysia.

*Remarks* : Common.

### 8. *Pieris canidia indica* Evans

1908. *Danaus canidia* Adamson, *Trans. Nat. Hist. Northumb., Durh., and Newc. (n.s.)*, **3**, p. 117.

1926. *Pieris canidia indica* : Evans, *J. Bomb. Nat. Hist. Soc.*, **31**, p. 712

*Material examined* : 1♀, Regn. No. I/LE/ERS-594, Meghalaya, NBR, Didari Chiring area, N 25°29'08.1": E 090°18'55.1": Alt. 1055m, 30.iv.2008, R. Mathew & Party; 1♂, 1♀, Regn. No. I/LE/ERS-655, Meghalaya, NBR, Manchuri Chiring area, N25°33'25.4"; E090°18'44.3"; Alt. 623m, 28.iv.2008, R. Mathew & Party; 2♂, Regn. No. I/LE/ERS-657, Meghalaya, NBR, Chinapat, N 25°33'07.6"; E090°22'41.8"; Alt. 438m, 27.iv.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS-658, Meghalaya, NBR, Selbalgre, N25°34'40.2"; E090°17'27.7"; Alt. 488m, 26.iv.2008, R. Mathew & Party; 1♂, Regn. No. I/LE/ERS-659, Meghalaya, NBR, Tasekgre, N25°32'54.1"; E090°17'59.6"; Alt. 700m, 26.iv.2008, R. Mathew & Party.

*Distribution* : INDIA : The Himalayas.

*Elsewhere* : North Baluchistan to Burma.

*Remarks* : Common.

### 9. *Pieris brassicae nepalensis* Doubleday

1846. *Pieris brassicae* var. *nepalensis*. Doubleday, *Gen. Diurn. Lep.*, **1**, p. 9.

1882. *Mancipium nepalensis* : Moore, *Proc. Zool. Soc. Lond.*, p. 256

1882. *Pieris brassicae* : Elwes, *Proc. Zool. Soc. Lond.*, p. 401

1907. *Pieris brassicae nepalensis* : Röber, *Macrolep.*, Fauna Palaearctica, **1**, p. 45.

*Material examined* : 1♀, Regn. No. I/LE/ERS- 503, Meghalaya, NBR, Manchuri Chiring, N 25°33'26.3'; E 090°18'43.6"; Alt. 650m, 23.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : Assam, Meghalaya, Nagaland.

*Elsewhere* : Baluchistan to Tibet and Yunnan.

*Remarks* : Common.

### 10. *Ixias pyrene familiaris* Butler

1874. *Ixias familiaris* : Butler, *Trans. Ent. Soc. Lond.*, part 4, p. 432.

1910. *Ixias pyrene pirenassa* : Fruhstorfer, In Seitz, *Macrolep.*, Fauna Indo-Austr., 9, p. 159.

1869. *Thestias rhexia* : Butler, *Cat Fabr. Lep.*, p. 216.

1907. *Ixias pyrene* f. *rhexia* : Röber, *Macrolep.*, Fauna Palaearctica, 1, p. 58.

1891. *Ixias pyrene* : Watson, *J. Bombay nat. Hist. Soc.*, 6, p. 52.

*Material examined* : 1♂, Regn. No. I/LE/ERS – 504, Meghalaya, EGH, NBR, Mondal Nokrat, 28.ix. 2008, R. Mathew & Party; 1♂, Regn. No. I/LE/ERS – 512, Meghalaya, EGH, NBR Mondalnokrat, 26.ix.2008, R. Mathew & Party; 3 exs., Regn. No. I/LE/ERS-555, Meghalaya, EGH, NBR, Daribokgre IB Compound, N 25°29'34.8"; E 090°19'26.9"; Alt. 1119m, 25.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : Arunachal Pradesh, Meghalaya, Sikkim, Assam.

*Remarks* : Common.

### 11. *Hebomoia glaucippe glaucippe* (Linnæus)

1758. *Papilio glaucippe*, Linnaeus, *Systema naturae* (ed. 10), p. 469.

1865. *Hebomoia glaucippe* : Moore, *Proc. Zool. Soc. Lond.*, p. 759.

1907. *Hebomoia glaucippe glaucippe* : Fruhstorfer, *D.E.Z. Iris*, 20, p. 91.

1910. *Hebomoia glaucippe aturia* : Fruhstorfer, *Macrolep.*, Fauna Indo-Austr., 9, p. 176.

*Material examined* : 1♂, Regn. No. I/LE/ERS- 478, Meghalaya, WGH, NBR, Remsangre, near Rongram river, N 25°36'50"; E 090°18'47.1"; Alt. 632m, 22.vi.2008, R. Mathew & Party; 1ex., Regn. No. I/Le/ERS- 541, Meghalaya, WGH, NBR, Remsangre, Rongram Chiring, N 25°34'51.7"; E 090°16'08.6"; Alt. 523m, 18.vi.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS- 542, Meghalaya, SGH, NBR, Mitapgre, N 25°23'07.3"; E 090°16'27.5"; Alt. 523m, 21.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : Meghalaya.

*Elsewhere* : Nepal to Burma.

*Remarks* :- Common.

### 12. *Catopsila crocale crocale* ♂ form *flavescens* Fruhstorfer

1775. *Papilio crocale*, Cramer, *Pap. Exot.*, 1, p. 87.

1881. *Catopsila crocale* : Wood-Mason & de Nicèville, pp. 237, 251..

1910. *Catopsila crocale crocale* ♂ f. *flavescens* : Fruhstorfer, *Macrolep.*, Fauna Indo-Austr., 9, p. 162.

*Material examined* : 1♂, Regn. No. I/LE/ERS- 593, Meghalaya, EGH, Didari Chiring, N 25°29'08.1"; E 090°18'55.1"; Alt. 1055m, 30.iv.2008, R. Mathew & Party.

*Distribution* : INDIA : Manipur, Meghalaya, Andaman Islands.

*Elsewhere* : Sri Lanka, Myanmar, South China, Phillipines, Borneo, Sumatra, Java.

*Remarks* : Common.

### 13. *Catopsila pyranthe pyranthe* (Linnaeus)

1758. *Papilio pyranthe*, Linnaeus, *Systema naturae* (ed. 10), p. 469.

1881 *Catopsila pyranthe* : Moore, *Lep. Ceylon*, 1, p. 124.

1910. *Catopsila pyranthe pyranthe* : Fruhstorfer, *Macrolep.*, Fauna Indo-Austr., 9, p. 162.

1932 *Catopsila pyranthe minna* : Evans, *Identification of Indian Butterflies* (ed. 2), p. 75.

*Material examined* : 1♂, Regn. No. I/LE/ERS- 475, Meghalaya, WGH, NBR, Remsangre, near Rongram river, N 25°36'50.0"; E 090°18.0'47.1"; Alt. 632m, 22.vi.2008, R. Mathew & Party; 2♂, Regn. No. I/LE/ERS- 609, Meghalaya, WGH, NBR, Chinabat village, Sinisuri Chiring, N 25°25'49.0"; E 090°22'38.6"; Alt. 470m, 24.vi.2009, J.Lyngdoh & Party; 1♂, Regn. No. I/LE/ERS- 647, Meghalaya, WGH, NBR, Sandong Chiring, N 25°22'39.5"; E 090°18'19.7"; Alt. 87m, 25.iv.2008, R. Mathew & Party.

*Distribution* : INDIA : Tripura, Andaman Islands

*Elsewhere* : Sri Lanka, Myanmar, Hainan, Formosa, South China, South and East to Borneo, Java, Celebes, Phillipines.

*Remarks* : Quite common.

### 14. *Dercas verhuelli doubledayi* Moore

1905. *Dercas doubledayi*, Moore, *Lep. Indica*, 7, p. 31.

1910. *Dercas verhuelli doubledayi* : Fruhstorfer, *Macrolep.*, Fauna Indo-Austr., 9, p. 160.

*Material examined* : 1♀, Regn. No. I/LE/ERS- 662, Meghalaya, EGH, NBR, Chinapat village, N 25°33'07.6"; E 090°22'41.8"; Alt. 438m, 27.iv.2008, R. Mathew & Party.

*Distribution* : INDIA : Nagaland, Sikkim.

*Elsewhere* : Northern Myanmar.

*Remarks* : Not very common.

### 15. *Eurema hecabe contubernalis* (Moore)

1857. *Terias hecabe* : Moore, *Cat. Lep. mus. E. I. C.*, 1, p. 63.

1886. *Terias contubernalis* : Moore, *Journ. Linn. Soc. Lond. Zool.*, 21, p. 46.

1907. *Terias hecabe f. contubernalis* : Bingham, *Fauna Brit. Ind., Butterflies*, 2. p. 253.

1932. *Eurema hecabe hecabe* : Corbet & Pendlebury, *Bull. Raffles Mus. Sing.*, no. 7, pp. 144,145,152,153.

*Material examined* : 2 exs., Regn. No.I/LE/ERS-543, Meghalaya, WGH, NBR, Rengsangre, Rongram Chiring, N 25°34'51.7"; E 090°16'08.6"; Alt. 523m, 18.vi.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS- 612, Meghalaya, SGH, NBR, Wagigatok village, N 25°25'39.3"; E 090°13'16.1"; Alt. 399m, 23.vi.2009, J. Lyngdoh & Party.

*Distribution* : INDIA : Bengal, Meghalaya, Nagaland, Sikkim.

*Elsewhere* : Myanmar and Malaysia.

*Remarks* : Very common.

#### 16. *Eurema blanda heliophila* (Butler)

1867. *Terias silhetana*, Wallace, *Trans. Ent. Soc. Lond.*, 4(3), p 324.

1885 *Terias heliophila* : Butler, *Ann. Mag. Nat. Hist.*, 16(5), p. 338.

1910. *Terias blanda silhetana* : Fruhstorfer, *Macrolep.*, Fauna Indo-Austr., 9, p. 169.

1907. *Terias silhetana f. heliophila* : Bingham, *Fauna Brit. Ind., Butterflies*, 2. p. 258.

*Material examined* : 1 ex., Regn. No. I/LE/ERS- 611, Meghalaya, WGH, NBR, Chinabat village, Sinisuri Chiring, N 25°33'11.7"; E 090°22'38.6"; Alt. 470m, 24.vi.2009, J. Lyngdoh & Party.

*Distribution* : INDIA : Sikkim, Assam, Meghalaya.

*Elsewhere* : Myanmar.

*Remarks* : It is a wet season form from the area Sikkim-Assam-Burma.

#### 17. *Cepora nadina nadina* (Lucas)

1852. *Pieris nadina*, Lucas, *Rev. Mag. Zool.*, ser. 2, 4, p. 333 (♂ ♀, Khasi Hills).

1905. *Huphina nadina* : Moore, *Lep. Indica*, 6, p. 214, pl. 545, figs. 2, 2a -2e (♂ ♀).

1939. *Cepora nadina nadina* : Talbot, *Fauna Brit. Ind.Ceyl. Bur., Butterflies*, 2, p. 369, fig. 137, ♂.

*Material examined* : 2♀ Regn. No. I/LE/ERS- 511, Meghalaya, EGH, NBR, Daribokgre, near Simsang river, N 25°29'27.7"; E 090°19'55.3"; Alt. 872m, 1.v.2008, R.Mathew & Party; 1♀, Regn. No. I/LE/ERS- 556, Meghalaya, EGH, NBR, Daribokgre IB Compound, N 25°29'34.8"; E 09°19'26.9"; Alt. 1119m, 25.vi.2008, R.Mathew & Party.

*Distribution* : INDIA : Eastern Himalayas.

*Elsewhere* : Myanmar.

*Remarks* : Not rare.

18. *Cepora nadina amba* (Wallace)

1857. *Pieris amba*, Moore, *Cat. Lep. Mus. E.I.C.*, 1, p. 76 (♂ ♀, N. India).

1893. *Huphina amba* : Swinhoe, *Trans. Ent. Soc. Lond.*, pt. 3, p. 309.

1939. *Cepora nadina amba* : Talbot, *Fauna Brit. Ind.Ceyl. Bur., Butterflies*, 2, p. 371.

*Material examined* : 1 ex., Regn. No. I/LE/ERS- 545, Meghalaya, WGH, NBR, Rengsangre, near Rongram Chiring, N 25°34'51.7"; E 090°16'08.6"; Alt. 523m, 18.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : Eastern Himalayas.

*Elsewhere* : Myanmar.

*Remarks* : Not rare.

19. *Leptosia nina nina* (Fabricius)

1793. *Papilio nina*, Fabricius, *Ent. Syst.*, 3,1, p. 194.

1931. *Leptosia nina nina* : Yates, *J. Bombay Nat. Hist. Soc.*, 34, p. 1006.

*Material examined* : 1 ex., Regn. No. I/LE/ERS- 645, Meghalaya, EGH, NBR, Nokrek Peak, 29.ix.2008, R. Mathew & Party.

*Distribution* : INDIA : Peninsular India to Mussooree, Andaman Islands, Meghalaya.

*Elsewhere* : Sri Lanka, Myanmar, China, Malaysia and Philippines.

*Remarks* : The only species of the genus found in the Indian Region.

20. *Parenonia avatar avatar* (Moore)

1857. *Eronia avatar* Moore, *Cat. Lep. Mus. E. I. C.*, 1, p. 61, pl. 2a, fig. 1.

1910. *Parenonia avatar avatar* : Fruhstorfer, *Fauna Indo-Austr.*, 9, p. 178, t. 66a.

*Material examined* : 1 ex., Regn. No. I/LE/ERS-508, Meghalaya, EGH, NBR, Mondal Nokrat, 28.ix.2008, R. Mathew & Party; 1♂, Regn. No. I/LE/ERS-557, Meghalaya, EGH, NBR, Daribokgre Forest Rest House Compound, N25°29'34.8"; E090°19'26.9"; Alt. 1119m, 25.vi.2008, R. Mathew & Party; 1ex., Regn. No. I/LE/ERS-558, Meghalaya, EGH, NBR, Daribokgre, Forest Resthouse Compound, N25°29'34.8"; E090°19'26.9"; Alt. 1119m, 24.vi.2008, R. Mathew & Party; 1♂, Regn. No. I/LE/ERS-584, Meghalaya, WGH, NBR, Sasatgre, N25°28'09.3"; E090°15'39.7"; Alt. 41m, 27.ix.2008, R. Mathew & Party.

*Distribution* : INDIA : Eastern Himalayas.

*Elsewhere* : Myanmar.

*Remarks* : Rare.

## Family PAPILIONIDAE

21. *Troides helena cerberus* (C. & R. Felder).

1865. *Papilio cerberus* C. & R. Felder, *Reise Novara, Lep.*, 2, p. 291.

1895. *Troides cerberus* : Rothschild, *Nov. Zool.*, 2, pp. 219-221.

1909. *Papilio helena cerberus* : Jordan, *Fauna Indo-Austral.*, 9, p. 24.

1923. *Troides helena cerberus* : Evans, *J. Bombay Nat. Hist. Soc.*, 29, p.231.

*Material examined* : 2♀, Regn. No. I/LE/ERS- 486, Meghalaya, EGH, NBR, Chizobibra, 27.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : Meghalaya, Sikkim to Orrisa.

*Elsewhere* : Bangladesh, Bhutan, Myanmar, Malay Peninsula, Indonesia and Vietnam.

*Remarks* : This largest of all Indian butterflies is not rare. Reported for the first time from Garo Hills.

22. *Troides aecus aecus* (C. & R. Felder)

1860. *Ornithoptera aecus*, C. & R. Felder, *Wien. Ent. Mon.*, 3, p. 225.

1895. *Troides aecus* : Rothschild, *Nov. Zool.*, 2, p. 223-4.

1939. *Troides aecus aecus* : Talbot, *Fauna Brit. Ind. Ceyl. Bur.*, *Butterflies*, 2, p. 68-69.

*Material examined* : 1 ex., Regn. No. I/LE/ERS – 580, Meghalaya, WGH, NBR, Oragitok village, 27.ix.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS-626, Meghalaya, EGH, NBR, Daribokgre, near Didari Chiring, N 25°29'48.3"; E 090°19'22.5"; Alt. 1105, 25.vi.2009, J. Lyngdoh & Party.

*Distribution* : INDIA :Garhwal to North- East India, Meghalaya.

*Elsewhere* : Myanmar and Western parts of China.

*Remarks* : Not rare. Reported for the first time from Meghalaya.

23. *Pachliopta aristolochiae* (Fabricius)

1775. *Papilio aristolochiae* Fabricius, *Syst. Ent.*, p. 443.

1909. *Papilio aristolochiae aristolochiae* : Jordan, *Fauna Indo-Austral.*, 9, p. 38.

1932. *Tros aristolochiae aristolochiae* : Evans, *Ident. Indian Butterfl.*, (ed.2), p. 44.

1939. *Polydorus aristolochiae aristolochiae* : Talbot, *Fauna Brit. Ind. Ceyl. Bur.*, *Butterflies*, 2, p. 86.

2008. *Pachliopta aristolochiae* : Kumar, *Handbook on Common Butt. of Uttarakhand*, p. 10.

*Material examined* : 1♂, Regn. No. I/LE/ESRS – 537, Meghalaya, WGH, NBR,

Rengsangre, near Rongram Chiring, N 25°34'51.7"; E 090°16'08.6"; Alt. 523m, 18.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : Throughout India.

*Elsewhere* : Bangladesh, Nepal, Sri Lanka, Myanmar, China, Philippines and Indonesia.

*Remarks* : Common. Reported for the first time from Garo Hills.

#### 24. *Atrophaneura dasarada dasarada* (Moore)

1857. *Papilio dasarada* Moore, *Cat. Lep. Mus. E. I. C.*, 1. p. 96.

1928. *Papilio dasarada dasarada* : Jordan, *Nov. Zool.*, 34. p. 164.

1932. *Tros dasarada dasarada* : Evans, *Ident. Ind. Butterfl.*(ed.2), p. 45.

1993. *Atrophaneura dasarada dasarada* : Varshney, *Orient. Ins.*, 27, p. 353.

*Material examined* : 1♀, Regn. No. I/LE/ERS- 491, Meghalaya, EGH, NBR, Daribokgre IB Compound, N 25°29'34.0"; E 090°19'26.9"; Alt. 1119m, 25.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : North-East India.

*Elsewhere* : Nepal, Bhutan, Sri Lanka and Myanmar.

*Remarks* : Not rare. Reported for the first time from Garo Hills District.

#### 25. *Atrophaneura varuna astorion* (Westwood)

1842. *Papilio astorion* Westwood, *Ann. Mag. Nat. Hist.*, 9, p. 37.

1909. *Papilio varuna astorion* : Jordan, *Fauna Indo-Austral.*, 9, p. 30.

1932. *Tros varuna astorion* : Evans, *Ident. Ind. Butterfl.*(ed.2), p. 43.

1939. *Polydorus varuna astorion* : Talbot, *Fauna Br. India Ceyl. Burm.*, 1 : 73-74.

1993. *Atrophaneura varuna astorion* : Varshney, *Orient. Ins.*, 27, p. 353.

*Material examined* : 1 ex., Regn. No. I/LE/ERS- 581, Meghalaya, WGH, NBR, Oragitok village, 27.ix.2008, R. Mathew & Party.

*Distribution* : INDIA : Eastern Himalayas, Meghalaya.

*Elsewhere* : Bhutan, Malaysia, Vietnam, Siam.

*Remarks* : Not rare. Reported for the first time from Garo Hills District.

#### 26. *Atrophaneura coon doubledayi* (Wallace)

1865. *Papilio doubledayi* Wallace, *Trans. Linn. Soc. Lond.*, 25, p. 57 (Andamans).

1932. *Tros coon doubledayi* : Evans, *Ident. Ind. Butt.*, edn. 2, p. 44, pl. 1, fig. A 2.6 ( $\sigma$ ).

1939. *Polydorus coon doubledayi* : Talbot, *Fauna Br. India Ceyl. Burm.*, 1 : 78.

1993. *Atrophaneura coon doubledayi* : Varshney, *Orient. Ins.*, 27, p. 353.

*Material examined* : 1 ex., Regn. No. I/LE/ERS- 605, Meghalaya, WGH, NBR, Rongram, N 25°34'21.1"; E 090°17'57.1"; Alt. 437m, 28.iv.2008, R. Mathew & Party.

*Distribution* : INDIA : Meghalaya.

*Elsewhere* : Myanmar.

*Remarks* : Not common. Reported for the first time from Garo Hills District.

### 27. *Atrophaneura philoxenus philoxenus* (Gray)

1831. *Papilio philoxenus* Gray, *Zool. Misc.*, 1, p. 32 (Nepal).

1909. *Papilio philoxenus philoxenus* : Jordan, *Fauna Indo-Austral.*, 9, p. 32.

1932. *Tros philoxenus philoxenus* : Evans, *Ident. Ind. Butt.*, edn. 2, p. 45, pl. 1, fig. A 2.15 ( $\sigma$ ).

1939. *Polydorus philoxenus philoxenus* : Talbot, *Fauna Br. India Ceyl. Burm.*, 1 : 96 97.

1993. *Atrophaneura philoxenus philoxenus* : Varshney, *Orient. Ins.*, 27, p. 353.

*Material examined* : 1 ex., Regn. No. I/LE/ERS-489, EGH, NBR, Daribokgre, N25°29'34.8"; E090°19'26.9"; Alt. 1119m, 26.vi.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS-554, EGH, NBR, Daribokgre Forest IB compound, N25°29'34.8"; E090°19'26.9"; Alt. 1119m, 25.vi.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS-578, EGH, NBR, Sasatgre, N25°28'09.3"; E090°15'39.7"; Alt. 341m, 27.ix.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS-579, WGH, NBR, Oragitok, 27.ix.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS-680, EGH, NBR, Tasek Chiring, N25°32'25.2"; E090°17'18.1"; Alt. 564m, 26.iv.2008, R. Mathew & Party.

*Distribution* : INDIA : Himalayan foothills.

*Elsewhere* : Nepal, Myanmar, Thailand, Vietnam, China.

*Remarks* : Not rare.

### 28. *Graphium bathycles chiron* (Wallace)

1865. *Papilio chiron* Wallace, *Trans. Linn. Soc. Lond.*, 25, p.66.

1895. *Papilio bathycles chiron* : Rothschild, *Nov. Zool.*, 2, p. 438

1939. *Graphium bathycles chiron* : Talbot, *Fauna Br. Ind. Ceyl. Burm.*, 1, p. 228.

*Material examined* : 1 ex., Regn. No. I/LE/ERS- 616, WGH, NBR, Chinabat village, near Sinisuri Chiring, N25°33'11.7"; E090°22'38.6"; Alt. 470m, 24.vi.2009, J.Lyngdoh & Party.

*Distribution* : INDIA : Sikkim, Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura.

*Elsewhere* : Myanmar and Vietnam.

*Remarks* : Not rare.

**29. *Papilio memnon agenor* Linnæus**

1758. *Papilio agenor* Linnæus, *Syst. Nat.*, p. 460.

1895. *Papilio memnon agenor* : Rothschild, *Nov. Zool.*, 2(3), p. 316.

*Material examined* : 1♂. Regn. No. I/LE/ERS-533, WGH, NBR, Dakopgre, 20.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : Andaman and Nicobar Islands, West Bengal, North-East India.

*Elsewhere* : South Myanmar.

*Remarks* : Common.

**30. *Papilio memnon agenor* form *alcanor* Cramer**

1777. *Papilio alcanor* Cramer, *Pap. Exot.*, 2, p. 107, pl. 166, figs. A,B.

1895. *Papilio memnon agenor* ♀f. *alcanor* : Rothschild, *Nov. Zool.*, 2(3), p. 320.

*Material examined* : 1♀. Regn. No. I/LE/ERS-604, EGH, NBR, Daribokgre, Didari Chiring, N25°29'08.1"; E090°18'55.1"; Alt. 1055m, 30.iv.2008, R. Mathew & Party.

*Distribution* : INDIA : North-East India, Andaman & Nicobar Islands.

*Elsewhere* : Myanmar.

*Remarks* : Not rare.

**31. *Papilio memnon agenor* form *polymnestroides* Moore**

1902. *Iliades polymnestroides* Moore, *Lep. Indica*, 5, p. 202, pl. 451, figs. 1,2 (♂,♀).

1909. *Papilio memnon agenor* ab. *polymnestroides* : Jordan, *Fauna Indo-Austral.*, 9, p. 72, t. 48b (non 32c)

*Material examined* : 1 ex., Regn. No. I/LE/ERS – 490, EGH, NBR, Chisobibra village, near Simsang river, 28.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : West Bengal, North-East India.

*Elsewhere* : South Myanmar.

*Remarks* : Not rare.

### 32. *Papilio protenor protenor* Cramer

1775. *Papilio protenor* Cramer, *Pap. Exot.*, 1, p. 77. pl. 49., figs. A, B (♂).

1909. *Papilio protenor protenor* : Jordan, *Fauna Indo-Austral.*, 9, p. 75-76.

*Material examined* : 1ex., Regn. No. I/LE/ERS-534, WGH, NBR, Remsangre, Rongram riverside, N25°36'50"; E090°18'47.1"; Alt. 632m, 22.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : Himalayas from Kashmir to North-East India.

*Elsewhere* : Myanmar.

*Remarks* : Not rare.

### 33. *Papilio protenor euprotenor* Fruhstorfer

1908. *Papilio protenor euprotenor* Fruhstorfer, *Ent. Zeit. Stutt.*, 22 (11), p. 46.

1932. *Papilio protenor euprotenor* : Evans, *Ident. Ind. Butt.*, ed. 2, p. 49, pl. 3, fig. A 4.6 (♂).

*Material examined* : 1 ex., Regn. No. I/LE/ERS-488, WGH, NBR, Oragitok village, 27.ix.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS-679, Meghalaya, NBR, Manchuri Chiring, N25°33'25.9"; E090°18'44.3"; Alt. 623m, 28.iv.2008, R.Mathew & Party.

*Distribution* : INDIA : North-East India.

*Elsewhere* : North Myanmar to Vietnam.

*Remarks* : Not rare.

### 34. *Papilio castor castor* Westwood

1842. *Papilio castor* Westwood, *Ann. Mag. Nat. Hist.*, 9, p. 37.

1895. *Papilio castor castor* : Rothschild, *Nov. Zool.*, 2(3), p. 357.

*Material examined* : 1ex., Regn. No. I/LE/ERS-617, SGH, NBR, Anchigre, Norang Chiring, N25°25'49.0"; E090°19'04.6"; Alt. 347m, 23.vi.2009, J.Lyngdoh & Party.

*Distribution* : INDIA : North-East India.

*Elsewhere* : Myanmar.

*Remarks* : Not rare.

### 35. *Papilio helenus helenus* Linnæus.

1758. *Papilio helenus* Linnæus, *Syst. Nat.* (ed.10), p. 459.

1895. *Papilio helenus helenus* : Rothschild, *Nov. Zool.*, 2(3), p. 284-286.

*Material examined* : 1ex., Regn. No. I/LE/ERS-469, SGH, NBR, Mitapgre village, N25°23'51.3"; E090°16'27.3"; Alt. 62m, 21.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : Western Ghats, Nilgiris, Uttarakhand, Karnataka, North-East India.

*Elsewhere* : Myanmar, Thailand, Malaysia and Sri Lanka.

*Remarks* : Common.

### 36. *Papilio paris paris* Linnæus

1758. *Papilio paris* Linnæus, *Syst. Nat.*, p. 459.

1895. *Papilio paris paris* : Rothschild, *Nov. Zool.*, 2(3), p. 384.

*Material examined* : 1ex., Regn. No. I/LE/ERS-472, SGH, NBR, Mitapgre village, N25°23'51.3"; E090°16'27.3"; Alt. 62m, 21.vi.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS-553, EGH, NBR, Darobokgre Forest IB compound, N25°29'34.8"; E090°19'26.9"; Alt. 1119m, 25.vi.2008, R.Mathew & party.

*Distribution* : INDIA : South India, Orissa, Kumaon to Sikkim, Assam, Meghalaya.

*Elsewhere* : Myanmar.

*Remarks* : Common.

### 37. *Papilio chaon chaon* Westwood.

1845. *Papilio chaon* Westwood, *Arc. Entom.*, 2, p. 97, pl. 72, fig. 1.

1909. *Papilio chaon chaon* : Jordan, *Fauna Indo-Austral.*, 9, p. 53.

*Material examined* : 1ex., Regn. No. I/LE/ERS-473, SGH, NBR, Mitapgre village, N25°23'51.3"; E090°16'27.3"; Alt. 62m, 21.vi.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS-540, WGH, NBR, Remsangre, near Rongram river, N25°34'51.7"; E090°16'08.6"; Alt. 523m, 18.vi.2008, R.Mathew & Party; 1 ex., Regn. No. I/LE/ERS-643, WGH, NBR, Goiragre village, N25°27'36.2"; E090°11'33.7"; Alt. 92m, 1.x.2008, R.Mathew & Party; 1 ex., Regn. No. I/LE/ERS-681, EGH, NBR, Tasekgre Chiring, N25°32'54.1"; E090°17'59.6"; Alt. 700m, 26.iv.2008, R.Mathew & Party.

*Distribution* : INDIA : Orissa, Himalayan Terai to North-East India.

*Elsewhere* : Nepal, Bhutan, Myanmar.

*Remarks* : Common.

### 38. *Papilio polytes romulus* Cramer.

1775. *Papilio romulus* Cramer, *Pap. Exot.*, 1, p. 67, fig. A.

1895. *Papilio polytes romulus* : Rothschild, *Nov. Zool.*, 2(3), p. 347.

1923. *Papilio polytes romulus* : Evans, *J. Bombay Nat. Hist. Soc.*, 29, p. 238, pl.iv, fig. A25.

*Material examined* : 1♂, Regn. No. I/LE/ERS-467, WGH, NBR, Remsangre, near Rongram river, N25°36'50"; E090°18'47.1"; Alt. 632m, 22.vi.2008, R. Mathew & Party; 4♂, Regn. No. I/LE/ERS-468, SGH, NBR, Mitapgre village, N25°23'51.3"; E090°16'27.5"; Alt. 62m, 21.vi.2008, R. Mathew & Party; 2♂, Regn. No. I/LE/ERS-536, WGH, NBR, Remsangre, near Rongram river, N25°36'50"; E090°18'47.1"; Alt. 632m, 22.vi.2008, R. Mathew & Party; 1♂, Regn. No. I/LE/ERS-549, EGH, NBR, Daribokgre village, Didari Valley, N25°29'08.6"; E090°18'55.6"; Alt. 1045m, 25.vi.2008, R. Mathew & Party; 1♂, Regn. No. I/LE/ERS-550, SGH, NBR, Mitapgre village, 21.vi.2008, R. Mathew & Party; 2♂, Regn. No. I/LE/ERS-582, WGH, NBR, Sasatgre village, N25°28'09.3"; E090°15'39.7"; Alt. 41m, 27.ix.2008, R. Mathew & Party; 1♂, Regn. No. I/LE/ERS-606, EGH, NBR, Bibrage Chiring, N25°34'54.2"; E090°16'15.1"; Alt. 498m, 29.iv.2008, R. Mathew & Party; 1♂, Regn. No. I/LE/ERS-615, WGH, NBR, Chinabat, near Sinisuri Chiring, N25°33'11.7"; E090°22'38.6"; Alt. 470m, 24.vi.2009, J. Lyngdoh & Party; 1♂, Regn. No. I/LE/ERS-625, SGH, NBR, Sangni village, near Sangni Chiring, N25°23'29.9"; E090°10'38.04"; Alt. 190m, 23.vi.2009, J. Lyngdoh & Party.

*Distribution* : INDIA : Throughout.

*Elsewhere* : Sri Lanka, Myanmar, Vietnam, Malaysia.

*Remarks* : Very common.

### 39. *Papilio polytes romulus* form *romulus* Cramer.

1775. *Papilio romulus* Cramer, *Pap. Exot.*, 1, p. 67, fig. A.

*Material examined* : 1♀, Regn. No. I/LE/ERS-471, SGH, NBR, Mitapgre village, N25°23'51.3"; E090°16'27.5"; Alt. 62m, 21.vi.2008, R. Mathew & Party; 1♂, Regn.No. I/LE/ERS-535, WGH, NBR, Remsangre, near Rongram river, N205°34'51.7"; E090°16'08.7"; Alt. 523m, 18.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : Throughout.

*Elsewhere* : Sri Lanka, Myanmar, Vietnam, Malaysia.

*Remarks* : Common.

### 40. *Papilio polytes romulus* form *stichius* Hübner.

1806-19. *Princeps heroicus stichius*, Hübner, *Samml. Exot. Schmett.*, 1

1895. *Papilio polytes* ♀ f. *stichius*: Rothschild, *Nov. Zool.*, 2(3), p. 347.

*Material examined* : 1♀, Regn. No. I/LE/ERS-470, WGH, NBR, Remsangre village, near Rongram river, N25°36'50"; E090°18'47.1"; Alt. 632m, 22.vi.2008, R. Mathew &

Party; 1 ♀, Regn. No. I/LE/ERS-487, WGH, NBR, Oragitok village, 27.ix.2008, R. Mathew & Party; 1 ♀, Regn. No. I/LE/ERS-538, WGH, NBR, Remsangre village, near Rongram Chiring, N25°34'51.7"; E 090°16'08.6"; Alt. 523m, 18.vi.2008, R. Mathew & Party; 1 ♀, Regn. No. I/LE/ERS-552, GH, NBR, Mondal Nokrat, 26.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : Throughout.

*Elsewhere* : Sri Lanka, Myanmar, Vietnam, Malaysia.

*Remarks* : Common.

#### 41. *Papilio demoleus demoleus* Linnæus.

1758. *Papilio demoleus* Linnæus, *Syst. Nat.* (ed.10), p. 464.

1895. *Papilio demoleus demoleus* Linnæus : Rothschild, *Nov. Zool.*, 2(3), p. 279.

1932. *Papilio demoleus demoleus* Linnæus : Evans, *J. Bombay nat. Hist. Soc.*, 36, p. 198.

1993. *Papilio demoleus demoleus* Linnæus : Varshney, *Orient. Ins.*, 27, p. 352.

*Material examined* : 4ex., Regn. No. I/LE/ERS-466, SGH, NBR, Mitapgre village, N25°23'51.3"; E 090°16'27.3"; Alt. 62m, 21.vi.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS-539, SGH, NBR, Mitapgre village, N25°23'51.3"; E 090°16'26.9"; Alt. 62m, 21.vi.2008, R. Mathew & Party; 1ex., Regn. No. I/LE/ERS-551, SGH, NBR, Mitapgre village, N25°23'51.3"; E 090°16'27.5"; Alt. 62m, 21.vi.2008, R. Mathew & Party; 1ex., Regn. No. I/LE/ERS-614, SGH, NBR, Anchigre village, near Norang Chiring, N25°25'49.0"; E 090°19'04.6"; Alt. 347m, 23.vi.2009, J. Lyngdoh & Party; 1ex., Regn. No. I/LE/ERS-642, SGH, NBR, near Kalupara Chiring, N25°24'14.8"; E 090°16'04.0"; Alt. 87m, 25.iv.2008, R. Mathew & Party.

*Distribution* : INDIA : Throughout.

*Elsewhere* : Sri Lanka, Myanmar, Middle East Asia.

*Remarks* : Common.

#### 42. *Chilasa clytia* f. *dissimilis* Linnaeus

1758. *Papilio dissimilis* Linnaeus, *Systema Naturae*, ed. 10, p. 479.

1909. *Papilio clytia* f. *dissimilis* : Jordan, *Macrolep.*, *Fauna Indo-Austr.*, 9, p. 42, t. 20d.

1923. *Chilasa clytia* f. *dissimilis* : Evans, *J. Bombay nat. Hist. Soc.*, 29, p. 234.

*Material examined* : 1 ♂, Regn. No. I/LE/ERS-641, Meghalaya, WGH, Remsangre, near Rongram river, N25°34'24.9"; E090°17'55.1"; Alt. 475m, 25.ix.2008, R. Mathew & Party.

*Distribution* : INDIA : Southern India to the Himalayas., Manipur.

*Elsewhere* : Myanmar.

*Remarks* : Not rare. Reported for the first time from Garo Hills District.

Family LYCAENIDAE

43. *Heliophorus epicles indicus* (Fruhstorfer)

1908. *Ilerda indicus* Fruhstorfer, *Ent. Z.*, **22**, p.46.

1912. *Ilerda epicles*: Evans, *Rec. zool. Surv. India*, **8**, p.65.

1988. *Heliophorus epicles indicus*: Gupta & Shukla, *Rec. zool. Surv. India, Occ. Paper.* **109**, p. 92-93.

*Material examined* : 1ex., Regn. No. I/LE/ERS-548, WGH, NBR, Remsangre village, near Rongram Chiring, N25°34'21.2"; E090°17'57.8"; Alt. 522m, 19.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : Uttar Pradesh to Kumaon, Arunachal Pradesh,

*Elsewhere* : Nepal, Myanmar.

*Remarks* : Common.

44. *Loxura atymnus* (Cramer)

1780. *Papilio atymnus* Cramer, *Pap. Ex.*, **4**, p. 82, pl. cccxxxi, figs. D, E.

1836. *Loxura atymnus* : Boisduval, *Sp. Gén.*, pl. 7, fig. 3.

1890. *Loxura atymnus* : deNicéville, *Butt. Of India, Burma Ceyl.*, **3**, p. 436, pl. 29, fig. 232♂.

*Material examined* : 1 ex., Regn. No. I/LE/ERS-654, WGH, NBR, Wadrogre village, N25°34'49.4"; E090°16'21.6"; Alt. 499m, 26.ix.2008, R. Mathew & Party.

*Distribution* : INDIA : Throughout India (except the higher Himalayas and the desert tracts).

*Elsewhere* : Myanmar, Malaysia, Thailand, Indonesia, China.

*Remarks* : Common.

Family RIODINIDAE

45. *Zemerus flegyas indicus* Cramer

1897. *Zemerus flegyas indicus* Fruhstorfer, *Berl. Ent. Zeits.*, **42**, p.333.

1948. *Zemerus flegyas indicus*, Parsons & Cantlie, *J. Bombay nat. Hist. Soc.*, **47** (3), p. 512.

*Material examined* : 1ex., Regn. No. I/LE/ERS- 567, EGH, NBR, Daribokgre Forest IB compound, N25°29'34.8"; E090°19'26.9"; Alt. 1119m, 24.vi.2008, R. Mathew & Party;

1 ex., Regn. No. I/LE/ERS-635, EGH, NBR, Daribokgre, N25°29'34.1"; E090°19'27.0"; Alt. 1115m, 25.vi.2009, J. Lyngdoh & Party.

*Distribution* : INDIA : Missourie (North-West Himalayas) to North-East India.

*Elsewhere* : Myanmar, Indonesia and China.

*Remarks* : Common.

#### Family SATYRIDAE

##### 46. *Ypthima nareda nareda* (Kollar)

1844. *Satyrus nareda* Kollar, *Kasch. und das Reich der Siek*, 4, p. 451.

1882. *Ypthima nareda* : Moore, *Proc. Zool. Soc. London*, 1882, p. 238.

1932. *Ypthima nareda nareda* : Evans, *Ident. Ind. Butt.*, (ed. 2), p. 120.

*Material examined* : 1ex., Regn. No. I/LE/ERS-546, WGH, NBR, Rengsangre village, Rongram Chiring, N25°34'51.7"; E090°16'08.6"; Alt. 523m, 18.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : Kashmir to Assam, Meghalaya.

*Elsewhere* : Myanmar, South-East Tibet and China.

*Remarks* : Common.

##### 47. *Orsotriaena medus medus* (Fabricius)

1775. *Papilio medus* Fabricius, *Syst. Ent.*, 1(3), p. 488.

1886. *Orsotriaena medus* : Moore, *J. Linn. Soc. Lond.*, 21, p. 32.

1911. *Orsotriaena medus medus* : Fruhstorfer, *Fauna Indo-Austral.*, 9, p. 358.

*Material examined* : 1ex., Regn. No. I/LE/ERS-547, WGH, NBR, Rengsangre village, Rongram Chiring, N25°34'51.7"; E090°16'08.6"; Alt. 523m, 18.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : Andaman & Nicobar Islands, Plains of North India, Assam, Sikkim, Arunachal Pradesh, Madhya Pradesh, Orissa, Nagaland, Uttar Pradesh and West Bengal.

*Elsewhere* : Bangladesh, Malaysia, Myanmar, Nepal, Vietnam, Australia and New Guinea.

*Remarks* : The only species of the genus found in India.

##### 48. *Elymnias malelas malelas* (Hewitson)

1863. *Melanitis malelas* Hewitson, *Exot. Butt.*, 3, pl. i, figs. 6,7.

1894. *Elymnias malelas* : de Nicéville, *Sikk. Gaz.*, p. 129.

1911. *Elymnias malelas malelas* : Fruhstorfer, *Fauna Indo-Austral.*, 9, p. 381.

*Material examined* : 1♂, Regn. No. I/LE/ERS-568, EGH, NBR, Daribokgre, Mondal Nokrat, 26.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : North-Eastern India.

*Elsewhere* : Bhutan, Myanmar, Malaysia, Thailand and Vietnam.

*Remarks* : Not so common. Reported for the first time from Garo Hills District.

#### Family AMATHUSIIDAE

##### 49. *Faunis conens arcesilaus* (Fabricius)

1787. *Papilio arcesilaus* Fabricius, *Mant. Ins.*, 2, p. 28, n. 305.

1947. *Faunis canens arcesilaus* : Talbot, *Fauna of Brit. India (Butterflies)*, 2, p. 409.

*Material examined* : 1♂, Regn. No. I/LE/ERS-653, EGH, NBR, Daribokgre, Mondal Nokrat, 28.ix.2008, R. Mathew & Party.

*Distribution* : INDIA : Sikkim, Nagaland, Meghalaya.

*Elsewhere* : Bhutan, Bangladesh, Myanmar, Malaysia, Vietnam, Thailand, Indonesia, Vietnam and Singapore.

*Remarks* : Not common. Reported for the first time from Garo Hills District.

##### 50. *Thaumantis diores* Doubleday

1845. *Thaumantis diores* Doubleday, *Ann. and Mag. Nat. Hist.*, 16, p. 234.

1993. *Thaumantis diores* : Varshney, *Orient. Ins.*, 28, p. 166.

*Material examined* : 1♂, Regn. No. I/LE/ERS-507, EGH, NBR, Daribokgre, N25°27'42.5"; E090°19'20.4"; Alt. 1406m, 29.ix.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS-636, WGH, NBR, Rengsangre, Rongram riverside, N25°34'24.9"; E090°17'55.1"; Alt. 475m, 25.ix.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS-637, WGH, NBR, Selbalgre Forest, N25°34'30.7"; E090°17'20.0"; Alt. 509m, 5.ix.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS-638, EGH, NBR, Sandong Chiring, N25°22'39.5"; E090°18'19.7"; Alt. 87m, 25.iv.2008, R. Mathew & Party.

*Distribution* : INDIA : Sikkim, Assam, Meghalaya, Nagaland.

*Elsewhere* : Bangladesh.

*Remarks* : Quite common in the NBR. Reported for the first time from Garo Hills District.

## Family DANAIIDAE

51. *Danaus chrysippus chrysippus* (Linnæus)

1758. *Papilio chrysippus* Linnæus, *Syst. Nat.* (ed.10), p. 471.

1865. *Danais chrysippus* : Moore, *Proc. Zool. Soc. London*, p. 761.

1940. *Danaus chrysippus chrysippus* : Corbet, *The Hong Kong Nat.*, 10(1), pp. 11-19.

**Materials examined** : 1♂, Regn. No. I/LE/ERS- 521, EGH, NBR, Daribikgre, Simsang valley, N25°29'27.7"; E090°19'55.3"; Alt. 872m, 1.v.2008, R.Mathew & Party; 1♀, Regn. No. I/LE/ERS-586, EGH, NBR, Didari Chiring, N25°29'08.1"; E090°18'55.1"; Alt. 1055m, 30.iv.2008, R. Mathew & Party; 1♂, Regn. No. I/LE/ERS-588, EGH, NBR, Didari Chiring, N25°29'08.1"; E090°18'55.1"; Alt. 1055m, 30.iv.2008, R. Mathew & Party; 3♂, Regn. No. I/LE/ERS-648, WGH, NBR, Kalupara Chiring, N25°24'14.8"; E090°16'04.0'; Alt. 87m, 25.iv.2008, R. Mathew & Party; 1♀, Regn. No. I/LE/ERS-668, WGH, NBR, Rongram, N25°34'21.1"; E090°17'57.1"; Alt. 437m, 28.iv.2008, R.Mathew & Party.

**Distribution** : INDIA : Throughout.

**Elsewhere** : Burma, Malaysia, Indonesia, Borneo, Philippines, Japan, China, Sri Lanka.

**Remarks** : Common.

52. *Danaus genutia genutia* (Linnæus)

1758. *Papilio plexippus* Linnæus, *Syst. Nat.* (ed.10), p. 471.

1865. *Danais plexippus* : Moore, *Proc. Zool. Soc. London*, p. 761.

1918. *Salatura plexippus* : Ormiston, *Spolia Zeylanica*, p. 6.

1883. *Danais (Salatura) genutia*: Marshall & deNicéville, *Butterflies of Ind.,Burm.& Ceylon*, 1, p. 52.

1940. *Danaus plexippus plexippus* : Corbet, *The Hong Kong Nat.*, 10(1), p. 18.

**Material examined** : 1♀, Regn. No. I/LE/ERS- 532, WGH, NBR, Remsangre, Rongram, N25°36'50.0"; E090°18'47.1"; Alt. 632m, 22.vi.2008, R. Mathew & Party; 1♂, Regn. No. I/LE/ERS- 563, WGH, NBR, near Manchuri Chiring, N25°33'26.3"; E090°18'43.6"; Alt. 650m, 23.vi.2008, R. Mathew & Party; 1♂, Regn. No. I/LE/ERS- 669, EGH, NBR, near Tasekgre Chiring, N25°32'54.1"; E090°17'59.6"; Alt. 700m, 26.iv.2008, R. Mathew & Party.

**Distribution** : INDIA : Throughout.

**Elsewhere** : Afghanistan, Baluchistan, Sri Lanka, Myanmar, China and Malaysia.

**Remarks** : Common.

### 53. *Danaus melaneus melaneus* (Cramer)

1775. *Papilio melaneus* Cramer, *Pap. Exot.* 1, plates xxx.

1878. *Danaus melaneus* : Moore, *Proc. Zool. Soc. London*, p. 822.

1947. *Danaus melaneus* : Talbot, *Fauna Brit. India Ceylon and Burma*, 2, p. 43.

*Material examined* : 1ex., Regn. No. I/LE/ERS- 518, WGH, NBR, Sasatgre, N25°28'09.3"; E090°15'39.7"; Alt. 341m, 27.ix.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS- 591, EGH, NBR, Daribokgre, near Didari river, N25°29'08.1"; E090°18'55.1"; Alt. 1055m, 30.iv.2008, R. Mathew & Party; 1♀, Regn. No. I/LE/ERS- 623, EGH, NBR, Daribokgre, near Didari Chiring, N25°29'48.3"; E090°19'22.5"; Alt. 1105m, 25.vi.2009, J. Lyngdoh & Party.

*Distribution* : INDIA : Terai Region to NE Himalayas.

*Elsewhere* : China, Myanmar, Malaysia and Indonesia.

*Remarks* : Common.

### 54. *Danaus melaneus plataniston* (Fruhstorfer)

1910. *Danaida melaneus plataniston* Fruhstorfer, *Fauna Indo-Aust.*, 9, p. 210.

1943. *Danaus melaneus plataniston* : Talbot, *Trans. Roy. Soc. Lond.*, 93, p. 141.

*Material examined* : 1♀, Regn. No. I/LE/ERS-562, EGH, NBR, Daribokgre Forest IB compound, N25°29'34.8"; E090°19'26.9"; Alt. 1119m, 25.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : North-East India including Sikkim.

*Elsewhere* : Afghanistan, Myanmar, Indonesia and China.

*Remarks* : Not common.

### 55. *Tirumala hamata septentrionis* (Butler)

1874. *Danaus septentrionis* Butler, *Ent. Mo. Mag.*, 11, p. 163.

1947. *Danaus hamata septentrionis* : Talbot, *Fauna Brit. India Burm. Ceyl.*, 2, pp. 34-35, fig. 11.

1993. *Tirumala hamata septentrionis* : Varshney, *Orient. Ins.*, 27, p. 366.

*Material examined* : 1 ex., Regn. No. I/LE/ERS-624, EGH, NBR, Daribokgre, near Didari Chiring, N25°29'48.3"; E090°19'22.5"; Alt. 1105m, 25.vi.2009, J. Lyngdoh & Party.

*Distribution* : INDIA : The Himalayas.

*Elsewhere* : Nepal, Bhutan, Myanmar, Indonesia, China, Vietnam and Malaysia.

*Remarks* : First record from Meghalaya.

56. *Tirumala limniace leopardus* (Butler).

1844. *Danais limniace*, Kollar (non Cramer), *Kaschmir und das Reich der Siek*, 4, p.425.

1866. *Danais limniace* var. *leopardus*, Butler, *Proc. Zool. Soc. Lond.*, 1866, p. 52.

1880. *Tirumala limniace* : Moore, *Lep. Ceylon*, 1, Part 1, 4, fig. 3.

1883. *Danais (Tirumala) limniace* : Marshall & de Nicéville, *Butt. Ind. Burm. Ceyl.*, 1, p. 47.

1997. *Tirumala limniace leopardus* (Butler) : Mondal & Maulik, *State Fauna Series 3 : Fauna of West Bengal*, Part-7, p. 778.

*Material examined* : 1 ♀, Regn. No. I/LE/ERS- 587, EGH, NBR, Didari Chiring area, N25°32'28.1"; E090°17'22.7"; Alt. 500m, 29.iv.2008, R. Mathew & Party.

*Distribution* : INDIA : Kumaon, Orissa, West Bengal, North-East India, Nicobar Islands.

*Elsewhere* : Sri Lanka, Pakistan, Myanmar, South China, Vietnam, Indonesia, Philippines.

*Remarks* : Not common in the NBR.

57. *Parantica aglea melanoides* Moore

1883. *Parantica melanoides*, Moore, *Proc. Zool. Soc. Lond.*, 1883, p. 247.

1887. *Danais melanoides* : Elwes & deNicéville, *Proc. Zool. Soc. Lond.*, 1887, p. 414.

1905. *Danais aglea melanoides* : Bingham, *Fauna Brit. Ind.*, Butterflies, 1, p. 19.

1947. *Danaus aglea melanoides* : Talbot, *Fauna Brit. India Burm. Ceyl.*, 2, pp. 39-40.

1993. *Parantica aglea melanoides* : Varshney, *Orient. Ins.*, 27, p. 366.

*Material examined* : 1 ♂, Regn. No. I/LE/ERS- 474, WGH, NBR, Remsangre, near Rongram river, N25°36'50.0"; E090°18'47.1"; Alt. 632m, 22.vi.2008, R. Mathew & Party;

*Distribution* : INDIA : Kashmir to Sikkim and North-Eastern India.

*Elsewhere* : Myanmar, Malaysia, Thailand, Vietnam and China.

*Remarks* : Not common in the NBR.

58. *Parantica aglea aglea* (Cramer)

1781. *Papilio aglea*, Cramer, *Pap. Exot.*, vol.4, pl. cclxxvii, fig. E.

1880. *Parantica aglea*, Moore, *Lep. Ceylon*, 1(1), p. 7.

1885. *Danais (Parantica) aglea* : de Nicéville, *J. Asiat. Bengal*, 54 (2), p. 40.

1943. *Danaus aglea aglea* : Talbot, *Trans. Roy. Ent. Soc. London*, 93, p. 140.

1993. *Parantica aglea aglea* : Varshney, *Orient. Ins.*, **27**, p. 366.

*Material examined* : 1 ex., Regn. No. I/LE/ERS- 519, WGH, NBR, Oragitok, 27.ix.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS- 520, EGH, NBR, Daribokgre, near Simsang river, N25°20'27.7"; E090°19'55.3"; Alt. 872m, 1.v.2008, R. Mathew & Party; 1♂, 1♀, Regn. No. I/LE/ERS- 529, WGH, NBR, Rengsangre, near Rongram Chiring, N25°34'51.9"; E090°19'08.6"; Alt. 523m, 18.vi.2008, R. Mathew & Party; 1♀, Regn. No. I/LE/ERS- 531, SGH, NBR, Mitapgre, N25°23'51.3"; E090°16'27.5"; Alt. 62m, 21.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : NE India, Orissa to Southern India.

*Elsewhere* : Sri Lanka.

*Remarks* : Common.

#### 59. *Parantica sita sita* (Kollar)

1846. *Danais tytia*, Gray, *Lep. Ins. Nepal* : **9**, pl. ix, fig. 2.

1848. *Danais sita*, Kollar, *Hüg. Kasch.*, **4**, p. 424, pl.vi.

1947. *Danaus sita* : Talbot, *Fauna Brit. India Ceylon and Burma*, **2**, p. 45.

1993. *Parantica sita sita* : Varshney, *Orient. Ins.*, **27**, p. 366.

*Material examined* : 1ex., Regn. No. I/LE/ERS- 506, EGH, NBR, Daribokgre, Mondal Nokrat, 26.vi.2008, R. Mathew & Party; 1♂, Regn. No. I/LE/ERS-621, EGH, NBR, Daribokgre, N25°29'34.1"; E090°19'27.0"; Alt. 1115m, 25.vi.2009, J. Lyngdoh & Party; 1♂, Regn. No. I/LE/ERS-622, EGH, NBR, Daribokgre, near Didari Chiring, N25°29'48.3"; E090°19'22.5"; Alt. 1105m, 25.vi.2009, J. Lyngdoh & Party; 1 ex., Regn. No. I/LE/ERS- 649, EGH, NBR, Daribokgre, Mondal Nokrat, 28.ix.2008, R. Mathew & Party.

*Distribution* : INDIA : Himalayas, East from Kashmir to NE India.

*Elsewhere* : Afghanistan, Bhutan, Myanmar, South-East Tibet, China, Thailand.

*Remarks* : Common.

#### 60. *Euploea core core* (Cramer)

1780. *Papilio core* Cramer, *Pap. Exot.*, **3**, p. 133, pl. cclxvii, fig. E,F.

1865. *Euploea core* : Moore, *Proc. Zool. Soc. London*, 1865, p.761.

1910. *Euploea core core* : Fruhstorfer, *Fauna Indo-Austr.*, **9**, p. 235.

*Material examined* : : 1ex., Regn. No. I/LE/ERS- 505, GH, NBR, near Manchuri Chiring, N25°33'26.3"; E090°18'43.6"; Alt. 650m, 23.vi.2008, R.Mathew & Party; 2♀, Regn. No. I/LE/ERS- 530, WGH, NBR, Rengsangre, near Rongram Chiring, N25°34'51.9"; E090°16'08.6"; Alt. 523m, 18.vi.2008, R. Mathew & Party; 1♀, Regn. No. I/LE/ERS-

590, GH, NBR, Bibragre Chiring area, N25°34'54.2"; E090°16'15.1"; Alt. 498m, 29.iv.2008, R. Mathew & Party; 1 ♀, Regn. No. I/LE/ERS-618, EGH, NBR, Daribokgre, Didari Chiring area, N25°29'58.3"; E090°19'22.5"; Alt. 1105m, 25.vi.2009, J. Lyngdoh & Party; 1 ♀, Regn. No. I/LE/ERS-619, WGH, NBR, Chinabat, Sinisuri Chiring area, N25°33'11.7"; E090°22'38.6"; Alt. 470m, 24.vi.2009, J. Lyngdoh & Party; 1 ♂, Regn. No. I/LE/ERS-650, WGH, NBR, Kalupara Chiring area, N25°24'14.8"; E090°16'04.0"; Alt. 87m, 25.iv.2008, R. Mathew & Party; 1 ♀, Regn. No. I/LE/ERS-651, WGH, NBR, Rengsangre, Rongram riverside, N25°34'24.9"; E090°17'55.1"; Alt. 475m, 25.ix.2008, R. Mathew & Party; 1 ♂, Regn. No. I/Le/ERS-664, GH, NBR, Manchuri Chiring, N25°33'25.4"; E090°18'44.3"; Alt. 623m, 28.iv.2008, R. Mathew & Party; 2 ♂, Regn. No. I/LE/ERS-666, EGH, NBR, Tasekgre Chiring area, N25°32'54.1"; E090°17'59.6"; Alt. 700m, 26.iv.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS-667, WGH, NBR, Kalupara Chiring area, N25°24'14.8"; E090°16'04.0"; Alt 87m, 25.iv.2008, R. Mathew & party.

*Distribution* : INDIA : Throughout.

*Elsewhere* : Widespread in Oriental Regions.

*Remarks* : Very common in the NBR.

#### 61. *Euploea coreta coreta* (Godart)

1819. *Danais coreta* Godart, *Encyc. Meth.*, p. 178.

1910. *Euploea coreta coreta* : Fruhstorfer, *Fauna Indo-Austr.*, **9**, p. 245.

*Material examined* : 1 ♀, Regn. No. I/LE/ERS-589, GH, NBR, Bibragre Chiring area, N25°34'54.2"; E090°16'15.1"; Alt. 498m, 29.iv.208, R. Mathew & Party.

*Distribution* : INDIA : Peninsular India.

*Elsewhere* : Sri Lanka.

#### 62. *Euploea mulciber mulciber* (Cramer)

1777. *Papilio mulciber* Cramer, *Pap. Exot.*, **2**, p. 45, pl. cxxvii, fig. C, D.

1910. *Euploea mulciber* : Hannyngham, *J. Bombay. nat. Hist. Soc.*, **20**, p. 133.

1923. *Euploea mulciber mulciber* : Evans, *J. Bombay nat. Hist. Soc.*, **29**, p. 521.

*Material examined* : 1 ♀, Regn. No. I/LE/ERS- 564, EGH, NBR, Daribokgre Forest IB compound, N25°29'34.8"; E090°19'26.9"; Alt. 1119m, 24.vi.2008, R. Mathew & Party; 1 ♂, Regn. No. I/LE/ERS- 565, WGH, NBR, Manchuri Chiring area, N25°3'26.3"; E090°18'43.6"; Alt. 650m, 23.vi.2008, R. Mathew & Party; 1 ♂, Regn. No. I/LE/ERS-566, EGH, NBR, Chisobibra, 28.vi.2008, R. Mathew & Party; 1 ♀, Regn. No. I/LE/ERS-583, WGH, NBR, Sasatgre village, N25°28'09.3"; E090°15'39.7"; Alt. 41m, 27.ix.2008, R. Mathew & Party; 2 ♂, Regn. No. I/LE/ERS-620, EGH, NBR, Daribokgre, near Didari

Chiring, N25°29'48.3"; E090°19'22.5"; Alt. 1105m, 25.vi.2009, J. Lyngdoh & Party; 1♂, Regn. No. I/LE/ERS-652, WGH, NBR, Wadogre village, N25°34'49.4"; E090°16'21.6"; Alt. 499m, 26.ix.2008, R. Mathew & Party; 1♂, Regn. No. I/LE/ERS-663, WGH, NBR, Manchuri Chiring, N25°33'25.4"; E090°18'44.3"; Alt. 623m, 28.iv.2008, R. Mathew & Party; 1♂, Regn. No. I/LE/ERS-665, EGH, NBR, Chinabat, N25°33'07.6"; E090°22'41.8"; Alt. 438m, 27.iv.2008, R. Mathew & Party.

*Distribution* : INDIA : Terai Region to NE India, West Bengal, Tamil Nadu.

*Elsewhere* : China, Vietnam, Malaysia.

*Remarks* : Very common in the NBR.

#### Family ACRAEIDAE

##### 63. *Pareba issoria issoria* (Hübner).

1787. *Papilio vesta* Fabricius, *Mant. Ins.*, 2, p. 14.

1818. *Telchinia issoria* Hübner, *Zuträge z. Samml. Exot. Schmett.*, 1, p. 27.

1865. *Pareba vesta* Moore, *Proc. Zool. Soc. Lond.*, 1865, p. 760.

1994. *Pareba issoria issoria* : Varshney, *Orient. Ins.*, 28, p. 191.

*Material examined* : 2 exs., Regn. No. I/LE/ERS- 522, WGH, NBR, Oragitok, 27.ix.2008, R. Mathew & Party.

*Distribution* : INDIA : North-East India and West Bengal.

*Elsewhere* : Nepal, Bhutan and Myanmar.

*Remarks* : The only species of the genus found in the Indian region.

#### Family NYMPHALIDAE

##### 64. *Hestina nama* (Doubleday).

1845. *Diadema nama* Doubleday, *Ann. Mag. nat. Hist.*, 16 (1), p. 232.

1881. *Hestina nama* (Doubleday) : de Nicéville, *J. Asiat. Soc. Beng.*, 50 (1), p. 57.

1994. *Hestina nama* : Varshney, *Orient. Ins.*, 28, p. 188.

*Material examined* : 1ex., Regn. No. I/LE/ERS- 577, EGH, NBR, Daribokgre Forest IB compound, N25°29'34.8"; E090°19'26.9"; Alt. 1119m, 24.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : Himachal Pradesh, Uttar Pradesh, West Bengal, Sikkim, Assam, Meghalaya, Nagaland and Arunachal Pradesh.

*Elsewhere* : Myanmar.

*Remarks* : Not very common in the NBR.

**65. *Tanaecia lepidea lepidea* (Butler).**

1868. *Adolias lepidea* Butler, *Ann. Mag. nat. Hist. Lond.*, 4, p. 71.

1932. *Euthalia lepidea lepidea* (Butler) : Evans, *Ident. Ind. Butt.*, p. 150.

1992. *Tanaecia lepidea lepidea* (Butler) : Haribal, *Butterflies of Sikkim Himalaya*, p. 180.

*Material examined* : 1ex., Regn. No. I/LE/ERS- 523, WGH, NBR, Remsangre, near Rongram Chiring, N25°34'51.7"; E090°16'08.6"; Alt. 523m, 18.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : Uttar Pradesh to Arunachal Pradesh, Orissa and South India.

*Elsewhere* : Bangladesh and Myanmar.

*Remarks* : Endangered species.

**66. *Euthalia kesava kesava* (Moore).**

1859. *Adolias kesava* Moore, *Trans. Ent. Soc. Lond.*, (new series) 5, p. 67, pl. 3, fig. 5.

1932. *Euthalia kesava kesava* (Moore) : Evans, *Ident. Ind. Butt.*, (ed. 2), p. 152.

*Material examined* : 1ex., Regn. No. I/LE/ERS- 498, WGH, NBR, Wadogre, N25°34'49.4"; E090°16'21.6"; Alt. 499m, 26.ix.2008, R. Mathew & party.

*Distribution* : INDIA : Sikkim, Assam and West Bengal.

*Elsewhere* : Bhutan, Bangladesh and Myanmar.

**67. *Pantoporia hordonia hordonia* (Stoll).**

1790. *Papilio hordonia* Stoll, In Cramer, *Pap. Exot.*, pl. 33, figs. 4, 4D.

1857. *Neptis hordonia* Horsfield & Moore, *Cat. Lep. mus. East India Coy.*, 1, p. 164, n. 337.

1881. *Neptis hordonia* (Stoll) : de Nicéville, *J. Asiat. Soc. Beng.*, 50 (1), p. 58.

1992. *Pantoporia hordonia hordonia* (Stoll) : Haribal, *Butterflies of Sikkim Himalaya*, p. 175.

*Material examined* : 1ex., Regn. No. I/LE/ERS- 485, SGH, NBR, Mitapgre, N25°23'51.3"; E090°16'27.5"; Alt. 62m, 21.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : South India, Orissa, West Bengal, Sikkim, Arunachal Pradesh, Meghalaya and Assam.

*Elsewhere* : Myanmar, Malaysia, Thailand, Indonesia and Vietnam.

*Remarks* : Quite common.

**68. *Athyma selenophora selenophora* Kollar.**

1848. *Limenitis selenophora* Kollar, *Hügel's Kaschmir*, 4 (2), p. 426, pl.vii, figs. 1,2.

1857. *Athyma selenophora* (Kollar) : Horsfield & Moore, *Cat. Lep. Mus. East Ind. Co.*, 1, p. 175.

1932. *Pantoporia selenophora* (Kollar) : Evans, *Ident. Indian Butterflies* (ed.2), p. 162.

1992. *Pantoporia selenophora selenophora* (Kollar): Haribal, *Butt. of Sikkim Himalaya*, p. 177.

1997. *Athyma selenophora selenophora* (Kollar): Gupta, *Fauna of W. Bengal, pt. 7, State Fauna Series*, 3, p. 587.

*Material examined* : 1 ♂, Regn. No. I/LE/ERS- 570, EGH, NBR, Daribokgre Forest IB compound, N25°29'34.8"; E090°19'26.9"; Alt. 1119m, 24.vi.2008, R. Mathew & Party.

*Distributin* : INDIA : South India, Western Ghats, Nilgiris, the Himalayas, Bihar, West Bengal, Sikkim, Assam, Manipur, Arunachal Pradesh and Meghalaya.

*Elsewhere* : Bangladesh and Myanmar.

*Remarks* : Not common in NBR.

#### 69. *Neptis hylas kamarupa* Moore.

1874. *Neptis kamarupa* Moore, *Proc. Zool. Soc. London*, 1874, p. 570.

1932. *Neptis hylas adara* Moore : Evans, *Ident. Indian Butterflies*, p. 166.

1969. *Neptis hylas kamarupa* Moore : Elliot, *Bull. Mus. nat. hist., Ent. London, Suppl.*, 15, p. 61.

*Material examined* : 1ex., Regn. No. I/LE/ERS- 500, EGH, NBR, Daribokgre, N25°29'34.8"; E090°19'26.9"; Alt. 1119m, 24.vi.2008, R. Mathew & Party; 1ex., Regn. No. I/LE/ERS-528, WGH, NBR, Rengsangre, Rongram Chiring area, N25°34'51.7"; E090°16'08.6"; Al. 523m, 18.vi.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS-677, WGH, NBr, Kalupara Chiring, N25°24'14.8"; E090°16'04.0"; Alt. 87m, 25.iv.2008, R. Mathew & Party.

*Distribution* : INDIA : Foothills of the Himalayas from Mussorie to Assam, Orissa, Karnataka and Tamil Nadu.

*Elsewhere* : Bhutan, Bangladesh, Vietnam, Thailand and Myanmar.

*Remarks* : Common.

#### 70. *Neptis hylas adara* Moore

1878. *Neptis adara* More, *Proc. Zool. Soc. Lond.*, 1878, p. 830.

1932. *Neptis hylas adara* : Evans, *The Ident. Of India Butt.*, 2<sup>nd</sup> ed., p. 167.

*Material examined* : 1 ex., Regn. No. I/LE/ERS-571, EGH, NBR, Daribokgre Forest IB compound, N25°29'34.8"; E090°19'26.9"; Alt. 1119m, 25.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : Assam.

*Elsewhere* : Myanmar.

*Remarks* : Rare.

### 71. *Neptis nandina susruta* Moore.

1857. *Neptis nandina* Moore, In Horsfield & Moore, *Cat. Lep. Mus. E.I.C.*, 1, p.168, n. 347, pl. 4a, fig. 7.

1932. *Neptis nandina susruta* Moore: Evans, *Ident. Indian Butterflies*, 2<sup>nd</sup> ed., p. 167.

*Material examined* : 1ex., Regn. No. I/LE/ERS- 603, EGH, NBR, Daribokgre, Didari Chiring area, N25°32'28.1"; E090°17'22.7"; Alt. 500m, 29.iv.2008, R. Mathew & Party.

*Distribution* : INDIA : North-Eastern Himalayas from Sikkim to Arunachal Pradesh and West Bengal.

*Elsewhere* : Myanmar.

*Remarks* : Quite common.

### 72. *Neptis columella ophiana* Moore

1858. *Neptis columella*, Moore, *Proc. Zool. Soc. Lond.*, 1858, p. 7, n. 13, pl. xlix, fig. 5, ♂ & ♀.

1872. *Neptis ophiana*: Moore, *Proc. Zool. Soc. Lond.*, 1872, p. 561.

1932. *Neptis columella ophiana*: Evans, *Ident. Indian Butterflies*, 2<sup>nd</sup> ed., p. 164.

*Material examined* : 1 ex., Regn. No. I/LE/ERS-527, WGH, NBR, Rengsangre, Rongram Chiring, N25°34'51.7"; E090°16'08.6"; Alt. 523m, 18.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : Western to Eastern Himalayas.

*Elsewhere* : Myanmar.

*Remarks* : Not common.

### 73. *Neptis radha radha* Moore

1857. *Neptis radha* Moore, Horsfield & Moore, *Cat. Lep. Mus. EIC.*, 1, p. 166, n. 343, pl. 4a, fig. 4.

1886. *Neptis radha* : de Nicéville, *The Butterflies of India, Burma and Ceylon*, 2, p. 84.

1932. *Neptis radha radha*: Evans, *Ident. Indian Butterflies*, 2<sup>nd</sup> ed., p. 170.

*Material examined* : 1 ex., Regn. No. I/LE/ERS-597, EGH, NBR, Daribokgre, Didari Chiring area, N25°29'08.1"; E090°18'55.1"; Alt. 1055m, 30.iv.2008, R. Mathew & Party.

*Distribution* : INDIA : Sikkim, Assam.

*Elsewhere* : Bhutan.

*Remarks* : Endangered.

**74. *Kallima inachus inachus* (Boisduval )**

1836. *Papilio inachus* Boisduval, In Crochard's ed. *Curv. Reg. Anim. Ins.*, 2, pl. 139, fig. 3(♀).

1882. *Kallima inachus* (Boisduval) : de Nicéville, *J. Asiat. Soc. Beng.*, 51(2-3), p. 58.

1992. *Kallima inachus inachus* (Boisduval) : Haribal, *Butterflies of Sikkim Himalaya*, p. 169.

*Material examined* : 1ex., Regn. No. I/LE/ERS- 576, EGH, NBR, Daribokgre, Mondal Nokrat, 26.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : Foothills of the Himalayas from Kashmir to Arunachal Pradesh; Eastern Ghats, Bihar, Orissa and Andaman Island.

*Elsewhere* : Sri Lanka, Nepal and Myanmar.

*Remarks* : Not common in the NBR.

**75. *Hypolimnas misippus* Linnaeus**

1764. *Papilio misippus*, Linnaeus, *Mus. Ulr.*, p. 264, n. 83.

1871. *Hypolimnas misippus* : Kirby, *Syn. Cat. Diurn. Lep.*, p. 225, n. 2.

*Material examined* : 1♂, Regn. No. I/LE/ERS-481, SGH, NBR, Mitapgre, N25°23'51.3"; E090°16'27.5"; Alt. 62m, 21.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : Throughout India.

*Elsewhere* : Widespread.

*Remarks* : Cosmopolitan species.

**76. *Junonia hierta magna* (Evans).**

1926. *Precis hierta magna* Evans, *J. Bombay nat. Hist. Soc.*, 31, p. 715.

1932. *Precis hierta magna* Evans : Evans, *Ident. Indian Butterflies*, p. 176.

1994. *Junonia hierta magna* Evans : Haribal, *Butterflies of Sikkim Himalaya*, p. 163.

*Material examined* : 1♂, Regn. No. I/LE/ERS- 482, SGH, NBR, Mitapgre, N25°23'51.3"; E090°16'27.5"; Alt. 62m, 21.vi.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS-525, WGH, NBR, Remsangre, Rongram Chiring, N25°34'51.9"; E090°16'08.6"; Alt. 523m, 18.vi.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS-629, WGH, NBR, Chinabat, N25°33'11.7"; E090°22'38.6"; Alt. 470m, 24.vi.2009, J. Lyngdoh & Party; 1 ex., Regn. No. I/LE/ERS-671, WGH, NBR, Chinapat, N25°33'07.6"; E090°22'41.8"; Alt. 438m, 27.iv.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS-676, EGH, NBR,

Tasekgre Chiring, N25°32'54.1"; E090°17'59.6"; Alt. 700m, 26.iv.2008, R. Mathew & Party.

*Distribution* : INDIA : North-East India (Sikkim, Arunachal Pradesh) and Andaman and Nicobar Islands.

*Elsewhere* : Myanmar.

*Remarks* : Very common.

#### 77. *Junonia lemonias lemonias* (Linnaeus).

1758. *Papilio lemonias* Linnæus, *Syst. Nat.*, (ed. 10), p. 473.

1881. *Junonia lemonias* (Linnæus) : de Nicéville, *J. Asiat. Soc. Beng.*, **50** (1), p. 50.

1992. *Precis lemonias lemonias* (Linnæus) : Haribal, *Butterflies of Sikkim Himalaya*, p. 163.

1994. *Junonia lemonias lemonias* (Linnæus) : Varshney, *Oriental Insects*, **28**, p. 176.

*Material examined* : 1ex., Regn. No. I/LE/ERS- 499, EGH, NBR, Daribokgre, N25°29'34.8"; E090°19'26.9"; Alt. 1119m, 24.vi.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS- 524, WGH, NBR, Remsangre, Rongram Chiring, N25°34'51.7"; E090°16'08.6"; Alt. 523m, 18.vi.2008, R Mathew & Party; 3 ex., Regn. No. I/LE/ERS-601, EGH, NBR, Bibragre Chiring area, N2°34'54.2"; E090°16'15.1"; Alt. 542m, 29.iv.2008, R. Mathew & Party; 2 ex., Regn. No. I/LE/ERS-628, WGH, NBR, Chinabat, N25°33'11.7"; E090°22'38.6"; Alt. 470m, 24.vi.2009, J. Lyngdoh & Party; 1 ex., Regn. No. I/LE/ERS-670, GH, NBR, Manchuri Chiring, N25°33'25.4"; E090°18'44.3"; Alt. 623m, 28.iv.2008, R. Mathew & Party; 2 ex., Regn. No. I/LE/ERS-675, EGH, NBR, Tasekgre Chiring, N25°32'54.1"; E090°17'59.6"; Alt. 700m, 26.iv.2008, R. Mathew & Party.

*Distribution* : INDIA : North-East India (Sikkim and Arunachal Pradesh).

*Elsewhere* : Myanmar, Sri Lanka, China and Malaysia.

*Remarks* : Common.

#### 78. *Junonia atlites* (Linnaeus).

1763. *Papilio atlites* Linnæus, *Cent. Ins.*, p. 24, n. 72.

1882. *Junonia atlites* (Linnæus) : Aurivillius, *Kongl. Sv. Vet.-akad. Handl.*, **19**, p. 79.

1932. *Precis atlites* (Linnæus) : Evans, *Ident. Indian Butterflies*, p. 176.

1994. *Junonia atlites* (Linnæus) : Varshney, *Oriental Insects*, **28**, p. 176.

*Material examined* : 2 ex., Regn. No. I/LE/ERS- 484, SGH, NBR, Mitapgre, N25°23'51.3"; E090°16'27.5"; Alt. 62m, 21.vi.2008, R. Mathew & Party; 2 ex., Regn. No. I/LE/ERS-497, WGH, NBR, Chinabat, N25°33'07.5"; E090°22'41.9"; Alt. 439m, 23.vi.2008,

R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS-574, WGH, NBR, Chinabat, N25°33'07.5"; E090°22'41.9"; Alt. 439m, 23.iv.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS-602, WGH, NBR, Rongram, N25°34'21.1"; E090°17'57.1"; Alt. 437m, 28.iv.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS- 627, SGH, NBR, Anchigre, N25°25'49.0"; E090°19'04.6"; Alt. 347m, 23.vi.2009, J. Lyngdoh & Party.

*Distribution* : INDIA : Throughout.

*Elsewhere* : Bangladesh, Sri Lanka and Myanmar.

*Remarks* : Common.

### 79. *Precis iphita iphita* (Cramer).

1779. *Papilio iphita* Cramer, *Pap. Exot.*, 3, pl. 209, fig. C,D.

1881. *Precis iphita* (Cramer) : Moore, *Lep. Cey.*, 1, p. 39, pl. 21, fig. 1, 1a-1b.

1932. *Precis iphita iphita* (Cramer) : Evans, *Ident. Indian Butterflies* (ed. 2), p. 177.

1994. *Precis iphita* (Cramer) : Varshney, *Oriental Insects*, 28, pp. 175-176.

*Material examined* : 1ex., Regn. No. I/LE/ERS- 495, EGH, NBR, Daribokgre, Forest IB compound, N25°29'34.8"; E090°19'26.9"; Alt. 1119m, 24.vi.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS-514, EGH, NBR, Darobokgre, Simsang riverside, N25°29'27.7"; E090°19'55.3"; Alt. 872m, 1.v.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS-526, SGH, NBR, Mitapgre, N25°23'51.3"; E090°16'27.5"; Alt. 62m, 21.vi.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS-575, EGH, NBR, Daribokgre, Forest IB compound, N25°29'34.8"; E090°19'26.9"; Alt. 1119m, 26.vi.2008, R. Mathew & Party; 1ex., Regn. No. I/LE/ERS- 598, EGH, NBR, Didari Chiring area, N25°32'28.1"; E090°17'22.7"; Alt. 500m, 29.iv.2008, R. Mathew & Party; 1ex., Regn. No. I/LE/ERS-599, EGH, NBR, Bibragre, N25°34'54.2"; E090°16'15.1"; Alt. 498m, 29.iv.2008, R. Mathew & Party; 1ex., Regn. No. I/LE/ERS- 600, EGH, NBR, Daribokgre, Didari riverside, N25°29'08.1"; E090°18'55.1"; Alt. 1055m, 30.iv.2008, R. Mathew & Party; 1ex., Regn. No. I/LE/ERS- 630, WGH, NBR, Chinabat, N25°33'11.7"; E090°22'38.9"; Alt. 470m, 24.vi.2009, J. Lyngdoh & Party; 1ex., Regn. No. I/LE/ERS- 631, SGH, NBR, Sangni village, N25°23'29.9"; E090°10'38.4"; Alt. 190m, 23.vi.2009, J. Lyngdoh & Party; 1ex., Regn. No. I/LE/ERS- 672, EGH, NBR, Selbalgre, N25°34'40.2"; E090°17'27.7"; Alt. 488m, 26.iv.2008, R. Mathew & Party; 1ex., Regn. No. I/LE/ERS- 674, EGH, NBR, Tasekgre Chiring area, N25°32'54.1"; E090°17'59.6"; Alt. 700m, 26.iv.2008, R. Mathew & Party.

*Distribution* : INDIA : Throughout.

*Elsewhere* : Sri Lanka and Myanmar.

*Remarks* : Common.

80. *Kaniska canace canace* (Linnæus).

1767. *Papilio canace* Linnæus, *Syst. Nat.*, ed. 12, 1, p. 779, n. 173.

1770. *Papilio charonia* Drury, *Ill. Ex. Ent.*, 1, pl. 15, figs. 1, 2.

1819. *Vanessa charonia* (Drury) : Godart, *Enc. Méth.*, 9, p. 308, n. 27.

1886. *Vanessa canace* (Linnaeus) : de Nicéville, *The Butt. India, Burma & Ceylon*, 2, p. 231.

1932. *Vanessa canace canace* (Linnaeus) : Evans, *Ident. Indian Butterflies*, p. 178.

1992. *Kaniska canace canace* (Linnaeus) : Haribal, *Butterflies of Sikkim Himalaya*, p. 166.

*Material examined* : 1ex., Regn. No. I/LE/ERS- 493, EGH, NBR, Daribokgre, Simsang riverside, 26.vi.2008, R. Mathew & Party; 1ex., Regn. No. I/LE/ERS- 515, EGH, NBR, Daribokgre, 1.v.2008, R. Mathew & Party; 1ex., Regn. No. I/LE/ERS- 516, WGH, NBR, Oragitok village, 27.ix.2008, R. Mathew & Party.

*Distribution* : INDIA : South India, North East India, Uttar Pradesh Hills and West Bengal.

*Elsewhere* : Pakistan, Sri Lanka, Nepal, Myanmar, Indonesia, Philippines and Japan.

*Remarks* : Not very common in the NBR.

81. *Argynnis hyperbius hyperbius* (Linnæus).

1764. *Papilio hyperbius* Johanssen, *Amoen. Acad.*, 6, p. 48, n. 75.

1882. *Argynnis (Acidalia) niphe* Linnæus : de Nicéville, *J. Asiat. Soc. Beng.*, 51 (2-3), p. 57.

1932. *Argynnis hyperbius hyperbius* (Linnæus) : Evans, *Ident. Indian Butterflies*, p. 182.

2003. *Argynnis hyperbius hyperbius* (Linnæus) : Gupta, *Fauna of Sikkim, State Fauna Series* 9, p. 37.

*Material Examined* : 1♀, Regn. No. I/LE/ERS- 483, SGH, NBR, Mitapgre village, N25°23'51.3"; E 090°16'27.5"; Alt. 62m; 21.vi.2008, R. Mathew & Party; 1♀, Regn. No. I/LE/ERS-492, EGH, NBR, Daribokgre, Simsang riverside, 26.vi.2008, R. Mathew & Party; 2Ex., Regn. No. I/LE/ERS-596, EGH, NBR, Daribokgre, Didari Chiring area, N25°32'28.1"; E090°17'22.7"; Alt. 500m, 30.iv.2008, R. Mathew & Party; 1♂, Regn. No. I/LE/ERS-607, EGH, NBR, Daribokgre, Didari Chiring, N25°29'08.1"; E090°18'55.1"; Alt. 1055m, 30.iv.2008, R. Mathew & Party; 2♀, Regn. No. I/LE/ERS-634, EGH, NBR, Daribokgre, near Didari river, N25°29'48.3"; E090°19'22.5"; Alt. 1105m, 25.vi.2009, J. Lyngdoh & Party.

*Distribution* : INDIA : Madhya Pradesh, Maharashtra, Uttar Pradesh, West Bengal, The Nilgiris, Rajasthan, Sikkim, Assam, Meghalaya, Kerala and Tamil Nadu.

*Elsewhere* : Sri Lanka, Nepal, Indonesia, Taiwan, China, Australia and Myanmar.

*Remarks* : Common.

82. *Cirrochroa aoris aoris* Doubleday.

1847. *Cirrochroa aoris* Doubleday, In Doubleday, *Gen. diurn. Lep.*, 1, p. 158, n. 1, pl. 21, fig. 2, ♂.

1932. *Cirrochroa aoris aoris* Doubleday : Evans, *Ident. Indian Butterflies*, p. 188.

2003. *Cirrochroa aoris aoris* Doubleday : Gupta, *Fauna of Sikkim, State Fauna Series 9*, p. 40.

*Material examined* : 1♂, Regn. No. I/LE/ERS- 513, WGH, NBR, Sasatgre, N25°28'09.3"; E090°15'39.7"; Alt. 341m, 7.ix.2008, R. Mathew & Party; 3 ex., Regn. No. I/LE/ERS-572, EGH, NBR, Daribokgre, Forest IB compound, N25°29'34.8"; E090°19'26.9"; Alt. 1119m, 24.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : South India, Nicobar Island, West Bengal and North-East India.

*Elsewhere* : Bangladesh, Nepal, Bhutan, Sri Lanka and Myanmar.

*Remarks* : Not very common.

83. *Cethosia cyane* (Drury).

1770. *Papilio cyane* Drury, *Ill. Ex. Ent.*, 1, pl. iv, fig. 1, ♀.

1886. *Cethosia cyane* (Drury) : de Nicéville, *The Butt. of India, Burma & Ceylon*, 2, p. 33.

1932. *Cethosia cyane* (Drury) : Evans, *Ident. Indian Butterflies*, p. 190.

2003. *Cethosia cyane* (Drury) : Gupta, *Fauna of Sikkim, State Fauna Series 9*, p. 35-36.

*Material examined* : 1♂, Regn. No. I/LE/ERS- 480, EGH, NBR, Didari, N25°29'08.6"; E090°18'55.6"; Alt. 1045m, 25.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : The Himalayas from Mussorie to Arunachal Pradesh; West Bengal, Uttar Pradesh and Orissa.

*Elsewhere* : Nepal, Bhutan, Bangladesh, Sri Lanka and Myanmar.

*Remarks* : Common.

84. *Cethosia biblis tisamena* Fruhstorfer.

1909. *Cethosia tisamena* Fruhstorfer, In Seitz., *Macrolep. Of the World*, 9, p. 725.

1932. *Cethosia biblis tisamena* Fruhstorfer : Evans, *Ident. Indian Butterflies*, p. 190.

2003. *Cethosia biblis tisamena* Fruhstorfer : Gupta, *Fauna of Sikkim, State Fauna Series 9*, p. 36.

*Material examined* : 1ex., Regn. No. I/LE/ERS- 496, WGH, NBR, Sasatgre,

N25°28'09.3"; E090°15'39.7"; Alt. 341m, 27.ix.2008, R. Mathew & Party; 1 ex., Regn. No. I/LE/ERS- 573, EGH, NBR, Daribokgre, Forest IB compound, N25°29'34.8"; E090°19'26.9"; Alt. 1119m, 25.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : North-Eastern India.

*Elsewhere* : Bhutan and Myanmar.

*Remarks* : Common.

### 85. *Ariadne merione* (Cramer)

1777. *Papilio merione*, Cramer, *Pap. Ex.*, 2, pl. cxliv, figs. G, H.

1869. *Ergolis merione* : Butler, *Cat. Fab. Lep. B. M.*, p. 70, n. 3.

1994. *Ariadne merione* : Varshney, *Orient. Ins.*, 28, p. 167.

*Material examined* : 1♂, 1♀, Regn. No. I/LE/ERS-632, WGH, NBR, Chinabat village, Sinisuri Chiring area, N25°33'11.7"; E090°22'38.6"; Alt. 470m, 24.vi.2009, J. Lyngdoh & Party; 1♂, Regn. No. I/LE/ERS-633, SGH, NBR, Anchigre village, Norang Chiring area, N25°25'49.0"; E090°19'04.6"; Alt. 347m, 23.vi.2009, J. Lyngdoh & Party; 1 Ex., Regn. No. I/LE/ERS-673, EGH, NBR, Tasek village, Tasekgre Chiring area, N25°32'54.1"; E090°17'59.6"; Alt. 700m, 26.iv.2008, R. Mathew & Party.

*Distribution* : INDIA : Widely distributed.

*Elsewhere* : Nepal, Sri Lanka and Myanmar.

*Remarks* : Common.

### 86. *Cyrestis thyodamas thyodamas* Boisduval.

1836. *Cyrestis thyodamas* Boisduval, Cuvier's *Regne Animal, Insectes*, 2, pl. 138.

1881. *Cyrestis thyodamas* Boisduval : de Nicéville, *J. Asiat. Soc. Beng.*, 50 (1), p. 57.

1932. *Cyrestis thyodamas thyodamas* Boisduval : Evans, *Ident. Indian Butterflies*, p. 173.

2003. *Cyrestis thyodamas thyodamas* Boisduval : Gupta, *Fauna of Sikkim, State Fauna Series* 9, p. 51.

*Material examined* : 1ex., Regn. No. I/LE/ERS- 479, SGH, NBR, Mitapgre village, N25°23'51.3"; E090°16'27.5"; Alt. 62m, 21.vi.2008, R. Mathew & Party; 1ex., Regn. No. I/LE/ERS- 494, EGH, NBR, Daribokgre, Mondal Nokrat village, 26.vi.2008, R. Mathew & Party.

*Distribution* : INDIA : West Bengal, Sikkim, Arunachal Pradesh and Assam.

*Elsewhere* : Bhutan and Myanmar.

*Remarks* : Quite common.

### 87. *Stibochiona nicea nicea* (Gray).

1846. *Adolias nicea* Gray, *Lep. Ins. Nepal*, p. 13, pl. 12, fig. 1.

1881. *Stibochiona nicea* (Gray) : de Nicéville, *J. Asiat. Soc. Beng.*, **50** (1) : 57.

1992. *Stibochiona nicea nicea* (Gray) : Haribal, *Butterflies of Sikkim Himalaya*, p. 156.

*Material examined* : 1♂, Regn. No. I/LE/ERS- 517, EGH, NBR, Daribokgre, Simsang riverside, N25°29'27.7"; E090°19'55.3"; Alt. 872m, 1.v.2008, R. Mathew & Party.

*Distribution* : INDIA : North-West to North-East Himalayas.

*Elsewhere* : Nepal, Indonesia, North China, North Myanmar and Bangladesh.

*Remarks* : Restricted to the Indian Region.

### 88. *Lexias cyanipardus* Butler

1868. *Symphaedra cyanipardus*, Butler, *Proc. Zool. Soc. Lond.*, **1868**, p. 613, n. 4.

1932. *Adolias cyanipardus* : Evans, *The Identification of Indian Butterflies*, 2<sup>nd</sup> ed., p. 158.

1994. *Lexias cyanipardus* : Varshney, *Oriental Insects*, **28**, p. 185.

*Material examined* : 2♂, 1♀, Regn. No. I/LE/ERS-639, WGH, NBR, Remsangre, Rongram Chiring area, N25°34'24.9"; E090°17'55.1"; Alt. 475m, 25.ix.2008, R. Mathew & Party; 1♂, Regn. No. I/LE/ERS-640, EGH, NBR, Daribokgre, Nokrek Peak, N25°27'42.5"; E090°19'20.4"; Alt. 1406m, 29.ix.2008, R. Mathew & Party.

*Distribution* : INDIA : North East India.

*Elsewhere* : Myanmar.

*Remarks* : Rare. Endangered species.

### 89. *Euripus halitherses f. nyctelius* (Doubleday)

1845. *Diadema nyctelius* Doubleday, *Ann. Mag. Nat. Hist.*, **16**, p. 182.

1886. *Euripus halitherses* ♀f. *nyctelius* : Doubleday & Hewitson, *Butt. of India, Burm. Ceyl.*, **2**, p. 18-19.

*Material examined* : 1♀. Regn. No. I/LE/ERS-569, Meghalaya, EGH, NBR, Daribokgre, near Didari river, N 25°29'08.6"; E 090°18'55.6"; Alt. 1045m, 25.vi.2008, R. Mathew & Party.

*Distribution* : North-East Himalayas.

*Elsewhere* : Myanmar, Bangladesh.

*Remarks* : This female form of *Euripus halitherses* is a mimic of *Euploea midamus*.

### SUMMARY

A total of 249 ex. of butterflies, collected by several tour parties of the Nokrek Biosphere Reserve, were studied and identified. The present paper is the first specific report on the butterfly fauna of NBR, one of the country's Biosphere Reserves, and records the finding of 89 species (including subspecies and/or forms) of butterflies under 45 genera and 9 families. Three endangered species viz., *Tanaecia lepidea lepidea* (Butler), *Neptis radha radha* Moore and *Lexias cyanipardus* Butler and one rare species *Neptis hylas adara* Moore, of Nymphalidae are recorded. It is worth mentioning that one of the survey teams to the NBR, under the leadership of Dr. D. Khynriam, Asst. Zoologist, also corroborates the report of Kunte (2010) on the sighting of the federally protected Scarce Jester butterfly, *Symbrenthia silana* de Niceville. The survey party did not collect this protected species but took photographs of it. This species is the rarest of the genus and has not been sighted or collected in the past 90 years. Therefore the sighting is significant in that it further underlines the urgency of maintaining the natural characteristic of the Reserve, as it is one of the few localities which is home to this Schedule-I nymphalid butterfly.

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## PISCES

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### INTRODUCTION

Nokrek Biosphere reserve is rich in diversified fish fauna. 1289 examples of fishes belonging to 54 species under 31 genera, 15 families and 5 orders have been dealt with in the present paper. Original reference only has been cited for each species. The systematic arrangement followed after Jayaram (1999) and the nomenclatural status after online version of Eschmeyer ([www.fishbase.org](http://www.fishbase.org)). Status of the species mentioned under remarks are after BCPP, C.A.M.P (1999) and Menon (1999).

### SYSTEMATIC LIST

Phylum CHORDATA  
Class ACTINOPTERYGII  
Order CYPRINIFORMES  
Family CYPRINIDAE

1. *Barilius barna* (Hamilton)
2. *Barilius bendelisis* (Hamilton)
3. *Barilius tileo* (Hamilton)
4. *Barilius vagra* (Hamilton)
5. *Raiamas bola* (Hamilton)
6. *Esomus danricus* (Hamilton)
7. *Danio dangila* (Hamilton)
8. *Danio rerio* (Hamilton)
9. *Devario aequipinnatus* (McClelland)
10. *Devario devario* (Hamilton)

11. *Rasbora rasbora* (Hamilton)
12. *Neolissochilus hexagonolepis* (McClelland)
13. *Neolissochilus hexastichus* (McClelland)
14. *Poropuntius clavatus* (McClelland)
15. *Puntius conchoni* (Hamilton)
16. *Puntius ticto* (Hamilton)
17. *Crossocheilus latius* (Hamilton)
18. *Garra annandalei* Hora
19. *Garra gotyla gotyla* (Gray)
20. *Garra gravelyi* (Annandale)
21. *Garra kemp* Hora
22. *Garra lamta* (Hamilton)
23. *Garra nasuta* (McClelland)

Family PSILORHYNCHIDAE

24. *Psilorhynchus balitora* (Hamilton)
25. *Psilorhynchus gracilis* Rainboth

Cypriniformes BALITORIDAE

26. *Balitora brucei* Gray
27. *Acanthocobitis botia* (Hamilton)
28. *Nemacheilus sikmaiensis* (Hora)
29. *Schistura reticulofasciata* (Singh and Banarescu)
30. *Schistura rupecula* McClelland
31. *Schistura scaturigina* (McClelland)
32. *Schistura vinciguerrae* (Hora)
33. *Aborichthys garoensis* Hora
34. *Aborichthys kemp* Chaudhuri

Family COBITIDAE

35. *Botia rostrata* Gunther
36. *Lepidocephalichthys guntea* (Hamilton)

Order SILURIFORMES

Family AMBLYCIPITIDAE

37. *Amblyceps mangois* (Hamilton)

- Family ERETHISTIDAE  
38. *Pseudolaguvia shawi* (Hora)
- Family SISORIDAE  
39. *Glyptothorax trilineatus* Blyth
- Family OLYRIDAE  
40. *Olyra longicaudata* McClelland
- Order CYPRINODONTIFORMES  
Family APLOCHEILIDAE  
41. *Aplocheilus panchax* (Hamilton)
- Order SYNBRANCHIFORMES  
Family SYNBRANCHIDAE  
42. *Monopterus cuchia* (Hamilton)
- Order PERCIFORMES  
Family AMBASSIDAE  
43. *Parambassis lala* (Hamilton)  
44. *Parambassis ranga* (Hamilton)  
45. *Pseudambassis baculis* (Hamilton)
- Family BADIDAE  
46. *Badis assamensis* Ahl  
47. *Badis badis* (Hamilton)
- Family CICHLIDAE  
48. *Oreochromis mossambica* (Peters)
- Family OSPHRONEMIDAE  
49. *Colisa chuna* (Hamilton)  
50. *Colisa fasciatus* (Schneider)
- Family CHANNIDAE  
51. *Channa gachua* (Hamilton)  
52. *Channa orientalis* (Bloch & Schneider)  
53. *Channa punctata* (Bloch)  
54. *Channa stewartii* (Playfair)

**SYSTEMATIC ACCOUNTS**

Order CYPRINIFORMES

Family CYPRINIDAE

1. *Barilius barna* (Hamilton, 1822)

1822. *Cyprinus (Barilius) barna* Hamilton, *Fishes of Ganges* : 268, 384 (Type locality: Yamuna river and Brahmaputra river)

*Material Examined* : 1 ex., Reg.No. V/F/ERS/ZSI/2850, Dobagre (alt. 52 m), NBR, 21.02.2009.

*Distribution* : INDIA: Arunachal Pradesh, Assam, Manipur, Meghalaya , Mizoram, Nagaland, Tripura, West Bengal, Bihar, Orissa, Delhi, Uttar Pradesh, Rajasthan, Madhya Pradesh and Karnataka.

*Elsewhere* : BANGLADESH; MYANMAR; NEPAL.

2. *Barilius bendelisis* (Hamilton, 1822)

1807. *Cyprinus bendelisis* Hamilton, *Journey in Mysore*, 3 : 345, Pl.32 (Type locality: Vedwati stream, headwaters of Krishna river near Heriuru, Mysore).

*Material Examined* : 2 exs., Reg. No. V/F/ERS/ZSI/2636, Bandari-Nongkari river (alt. 82 m), NBR, 10.02.2008; 36 exs., Reg. No. V/F/ERS/ZSI/2641, Chinapat, NBR, 14.02.2008; 6 exs., Reg. No. V/F/ERS/ZSI/2671, Adugre village (alt. 667 m), NBR, 22.01.2008; 12 exs., Reg. No. V/F/ERS/ZSI/2697, Selbalgre (alt. 488 m), NBR, 26.04.2008; 9 exs., Reg. No. V/F/ERS/ZSI/2703, Sandeng chiring (alt.87 m), NBR,25.04.2008; 2 exs., Reg. No. V/F/ERS/ZSI/2725, Kalupara chiring, NBR,25.04. 2008; 1 ex., Reg. No. V/F/ERS/ZSI/2738, Chinapat (alt. 438 m), NBR, 27.04.2008; 17 exs., Reg. No. V/F/ERS/ZSI/2761, Rengsangre (at. 766 m), NBR, 18.06.2008; 20 exs., Reg. No. V/F/ERS/ZSI/ 2769, Chisobibra, NBR, 27.06.2008; 1 ex., Reg. No. V/F/ERS /ZSI/ 2775, Mitapgre village (alt. 62 m), NBR, 21.06.2008; 8 exs., Reg. No. V/F/ERS /ZSI/2781,Chinapat, NBR, 23.06.2008; 14 exs., Reg. No. V/F/ERS/ZSI/ 2787, Chisobibra, NBR, 28.06.2008; 1 ex., Reg. No. V/F/ERS/ZSI/ 2798, Rengsangre, NBR, 18.06.2008; 1 ex., Reg. No. V/F/ERS/ZSI/ 2802, Rengsangre, NBR, 18.06.2008; 2 exs., Reg. No. V/F/ERS/ZSI/ 2805, Chisobibra, NBR, 27.06.2008; 1 ex., Reg. No. V/F/ERS/ZSI/ 2818, Sangui chiring (alt. 190 m), NBR, 23.06.2009; 2 exs., Reg. No. V/F/ERS/ZSI/ 2836, Digangiri river (alt. 50 m), NBR, 21.02.2009; 5 exs., Reg. No. V/F/ERS/ ZSI/ 2851, Dobagre (alt. 52 m), NBR, 21.02.2009; 1 ex., Reg. No. V/F/ERS/ ZSI/2891, Rengsangre, NBR, 25.09.2008; 1 ex., Reg. No. V/F/ERS/ ZSI/ 2901, Goiragre (alt.92 m), NBR, 01.10.2008; 1 ex., Reg. No. V/F/ERS/ ZSI/ 2905, Rengsangre, NBR, 24.09.2008; 2 exs., Reg. No. V/F/ERS/ZSI/ 2907, Selbalgre, NBR, 25.09.2008.

*Distribution* : INDIA : Arunachal Pradesh, Assam, Manipur, Meghalaya , Mizoram, Nagaland, Tripura, Sikkim and also throughout India.

*Elsewhere* : BANGLADESH; BHUTAN ; NEPAL; PAKISTAN; SRILANKA..

*Remarks* : Commonly occurring species in the area under report.

### 3. *Barilius tileo* (Hamilton, 1822)

1822. *Cyprinus tileo* Hamilton, *Fishes of Ganges* : 276,385 (Type locality: Kosi river, Uttar Pradesh)

*Material Examined* : 1 ex., Reg. No. V/F/ERS/ZSI/ 2772, Mitapgre village (alt 62 m), NBR, 21.06.2008.

*Distribution* : INDIA : Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura , Eastern Himalayas and West Bengal.

*Elsewhere* : BANGLADESH; MYANMAR ; NEPAL ; PAKISTAN.

### 4. *Barilius vagra vagra* (Hamilton, 1822)

1822. *Cyprinus (Barilius) vagra* Hamilton, *Fishes of Ganges* : 269, 385 (Type locality: Ganges river at Patna)

*Material Examined* : 1 ex., Reg. No. V/F/ERS/ZSI/ 2624, Rongram river, NBR, 14.02.2008; 1 ex., Reg. No. V/F/ERS/ZSI/ 2648, Ganol chiring (alt. 567 m), NBR, 18.01.2008; 1 ex., Reg. No. V/F/ERS/ZSI/ 2696, Selbalgre (alt. 488 m), NBR, 26.04. 2008; 1 ex., Reg. No. V/F/ERS/ZSI/2714, Didari chiring (alt. 500 m), 29.04.2008.

*Distribution* : INDIA: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Tripura and all along the base of Himalayas.

*Elsewhere* : AFGHANISTAN; BANGLADESH; NEPAL; NWFP( Punjab, Sind, Baluchistan, Azad Kashmir); PAKISTAN.

*Remarks* : It's status is Vulnerable at National level (BCPP).

### 5. *Raiamas bola* (Hamilton, 1822)

1822. *Cyprinus bola* Hamilton, *Fishes of Ganges*: 274, 385 (Type locality : Brahmaputra river)

*Material Examined* : 1 ex., Reg. No. V/F/ERS/ZSI/ 2770, Chisobibra, NBR, 27. 06. 2008.

*Distribution* : INDIA: Arunachal Pradesh, Assam, Manipur, Meghalaya, Tripura, Himalayas: Kosi, Bagmati, Gandak drainages in Bihar and head Waters of Ganges river in Uttar Pradesh.

*Elsewhere* : NEPAL.

*Remarks* : It's status is Vulnerable at National level (BCPP) or Endangered (IUCN).

### 6. *Esomus danricus* (Hamilton, 1822)

1822. *Cyprinus danrica* Hamilton, *Fishes of Ganges*, pp. 325, 390, Pl. 16, fig. 88 (Type locality : Ponds and ditches of Bengal).

*Material Examined* : 7 exs., Reg. No. V/F/ERS/ZSI/2653, Matchurigre village (alt. 701 m), NBR, 18.01.2008.

*Distribution* : INDIA: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and also throughout India

*Elsewhere* : BANGLADESH; MALAYA; MYANMAR; NEPAL; PAKISTAN; SRI LANKA; THAILAND; SOUTH VIETNAM (MEKONG BASIN).

### 7. *Danio dangila* (Hamilton, 1822)

1822. *Cyprinus dangila* Hamilton, *Fishes of Ganges*, pp. 321, 390 (Type locality: mountain streams of Mongher, Bihar).

*Material Examined* : 2 exs., Reg. No. V/F/ERS/ZSI/2681, Babregre stream (alt.361 m),NBR, 23.01.2008; 14 exs., Reg. No. V/F/ERS/ZSI/2682, Rapdikgre stream, NBR, 23.01.2008; 2 exs., Reg. No. V/F/ERS/ZSI/ 2700, Sandeng chiring (alt. 87 m), NBR, 25.04.2008; 1 ex., Reg. No.V/F/ERS/ZSI/2776, Dapgre (alt. 115 m), NBR, 20.06.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2797, Rengsangre (alt. 466 m),NBR, 18.06.2008;

*Distribution* : INDIA: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, Bihar, Eastern Himalayas, Madhya Pradesh, Uttar Pradesh and West Bengal.

*Elsewhere*: BANGLADESH; BHUTAN; MYANMAR; NEPAL.

### 8. *Danio rerio* (Hamilton, 1822)

1822, *Cyprinus rerio* Hamilton, *Fishes of Ganges* : 323, 390 (Type locality : Kosi river, Uttar Pradesh).

*Material Examined* : 6 exs., Reg. No. V/F/ERS/ZSI/2617, Shrut Majang hill (alt.854 m), NBR, 12.02.2008; 2 exs., Reg. No. V/F/ERS/ZSI/2619, Shrut Majang hill, NBR, 14.02. 2008; 2 exs., Reg. No. V/F/ERS/ZSI/ 2638, Chinapat, NBR, 14.02.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2667, Adugre village (alt. 667 m), NBR, 22.01.2008; 2 exs., Reg. No. V/F/ ERS/ZSI/2686, Sangkenigiri (alt.74 m), NBR, 25.04.2008; 12 exs., Reg. No. V/F/ ERS /ZSI/2687, Bibragre chiring (alt.498 m), NBR, 29.04.2008; 3 exs., Reg. No. V/F/ ERS/ ZSI/2699, Sandeng chiring (alt. 87 m), NBR, 25.04.2008; 3 exs., Reg. No. V/F/ ERS/ ZSI/2732, Chinapat (alt. 438 m), NBR, 27.04.2008; 22 exs., Reg. No. V/F/ERS / ZSI/2750, Manchuri chiring (alt. 650 m), NBR, 23.06.2008; 1 ex., Reg. No. V/F/ERS /ZSI/2758, Rengsangre, NBR, 18.06.2008; 3 exs., Reg. No. V/F/ERS/ZSI/2762, Dapgre, NBR, 20.06.2008; 10 exs., Reg. No. V/F/ERS/ZSI/2771, Rengsangre, NBR, 18.06.2008; 3 exs., Reg. No. V/F/ERS/ZSI/ 2785, Chisobibra, NBR, 28.06.2008; 10 exs., Reg. No. V/ F/ERS/ZSI/2793, Rengsangre (alt. 632 m), NBR, 22.06.2008; 6 exs., Reg. No. V/F/ ERS/ZSI/2900, Wadregre (alt. 499 m), NBR, 26.09.2008.

*Distribution* : INDIA: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and also throughout India.

*Elsewhere* : BANGLADESH; BHUTAN; MYANMAR; NEPAL; PAKISTAN.

*Remarks* : Commonly occurring species in the area under report.

### 9. *Devario aequipinnatus* (McClelland, 1839)

1839. *Perilampus aequipinnatus* McClelland, *Asiat. Res.*, 19 (2) pp. 393, Pl. 60, fig. 1 (Type locality : Assam).

*Material Examined* : 11 exs., Reg. No. V/F/ERS/ZSI/2607, Ganol river (alt. 964 m), NBR, 13.02.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2626, Achingre (alt. 336 m), NBR, 10.02.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2645, Bibragre, NBR, 18.01.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2658, Mandalgre (alt. 900 m), NBR, 19.01.2008; 17 exs., Reg. No. V/F/ERS/ZSI/2680, Jingangre village (alt. 765 m), NBR, 22. 01. 2008; 8 exs., Reg. No. V/ F/ERS/ZSI/2709, Didari chiring (alt. 500 m), NBR, 29.04.2008; 4 exs., Reg. No. V/ F /ERS/ZSI/ 2717, Tosekgre chiring (alt. 564 m), NBR, 26.04.2008; 2 exs., Reg. No. V/ F/ ERS/ZSI/2722, Kalupari chiring (alt. 87 m), NBR, 25.04.2008; 25 exs., Reg. No. V/ F/ ERS/ ZSI/ 2734, Chinapat, NBR, 27.04.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2752, Manchuri chiring, NBR, 23.06.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2759, Rengsangre, NBR, 18.06.2008; 3 exs., Reg. No. V/F/ERS/ZSI/2779, Chinapat, NBR, 23.06.2008; 15 exs., Reg. No. V/F/ERS/ZSI/2784, Chisobibra, NBR, 28.06.2008; 1 ex., Reg. No. V/F/ ERS/ ZSI/ 2823, Anchigre (alt. 347 m), NBR, 23.06.2009; 8 exs., Reg. No. V/F/ERS/ ZSI/ 2829, Badadangre (altl. 965 m), NBR, 23.02.2009; 4 exs., Reg. No. V/F/ERS/ ZSI/ 2847, Dobagre (alt. 52 m), NBR, 21.02.2009;

*Distribution* : INDIA: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, Sikkim and also throughout India.

*Elsewhere* : BANGLADESH; INDOCHINA; MYANMAR; NEPAL; SRILANKA; THAILAND.

*Remarks* : Common in occurrence in the area under report.

### 10. *Devario devario* (Hamilton, 1822)

1822. *Cyprinus devario* Hamilton, *Fishes of Ganges*, pp.341, 393, Pl.6, fig.94 (Type locality : rivers and ponds of Bengal).

*Material Examined* : 2 exs., Reg. No. V/F/ERS/ZSI/2856, Dobagre, NBR, 21.02.2009.

*Distribution* : INDIA: Arunachal Pradesh, Assam, Meghalaya, Mizoram, Nagaland, Tripura, West Bengal, E.Himalayas, Western Himalayas, Eastern Punjab, Uttar Pradesh , Bihar, Orissa, Madhya Pradesh, Ahemedabad, Krishna-Godavari river system, Deccan.

*Elsewhere* : AFGHANISTAN; BANGLADESH; MYANMAR; NEPAL; PAKISTAN.

### 11. *Rasbora rasbora* (Hamilton, 1822)

1822. *Cyprinus rasbora* Hamilton, *Fishes of Ganges* : pp. 329, 391, Pl. 2, fig. 90 (Type locality : Ponds of Bengal).

*Material Examined* : 20 exs., Reg.No. V/F/ERS/ZSI/ 2835, Digangiri river (alt. 50 m), NBR, 21.02.2009.

*Distribution* : INDIA: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and also throughout India.

*Elsewhere* : BANGLADESH; MYANMAR; PAKISTAN; THAILAND.

### 12. *Neolissochilus hexagonolepis* (McClelland, 1839)

1839. *Barbus hexagonolepis* McClelland, *Asiat. Res.*, **19** (2) : 270, 340, pl. 41, fig. 3 (Type locality : Upper Assam).

*Material Examined* : 1 ex., Reg. No. V/F/ERS/ZSI/2647, Bibrage, NBR, 18.01.2008; 1 ex., Reg. No. V/F/ERS/ZSI/ 2669, Adugre village, NBR, 22.01.2008; 1 ex., Reg. No. V/F/ERS/ ZSI/ 2672, Bonsamgre (alt. 318 m), NBR, 22.01.2008; 1 ex., Reg. No. V/F/ERS/ZSI/ 2694, Selbalgre (alt. 488 m), NBR, 26.04.2008; 3 exs., Reg. No. V/F/ERS/ZSI/ 2720, Tosekgre chiring (alt. 564 m), NBR, 26.04.2008; 1 ex., Reg. No. V/F/ERS/ZSI/ 2736, Chinapat, NBR, 27.04.2008.

*Distribution* : INDIA: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, Sikkim, throughout Northern India, Darjeeling and Eastern Himalayas.

*Elsewhere* : BANGLADESH; CHINA; INDONESIA; MALAYSIA; MYANMAR; NEPAL; SUMATRA; THAILAND; PAKISTAN; VIETNAM.

*Remarks* : Its status is Endangered (Menon,1999).

### 13. *Neolissocheilus hexastichus* (McClelland, 1839)

1839. *Barbus hexastichus* McClelland, *Asiat. Res.* **19** (2): 269, 333, pl. 39, fig. 2 (Type locality: great rivers in the plains of India)

*Material Examined* : 1 ex., Reg. No. V/F/ERS/ZSI/2606, Didari river, NBR, 22. 11. 2007; 6 exs., Reg. No. V/F/ERS/ZSI/2611, Ganol river, NBR, 13.02.2008; 2 exs., Reg. No. V/F/ERS/ZSI/2613, Simsang river, NBR, 12.02.2008; 1 ex., Reg. No. V/F/ERS/ZSI/ 2620, Shrut Majang hill, NBR, 14.02.2008; 1 ex., Reg. No. V/F/ERS/ZSI/ 2627, Achingre (alt. 336 m), NBR, 10.02.2008; 4 exs., Reg. No. V/ F/ ERS/ZSI/ 2632, Bandari-Nongkari river (alt. 82 m), NBR, 10.02.2008; 2 exs., Reg. No. V/F/ERS/ZSI/2639, Chinapat, NBR, 14.02.2008; 2 exs., Reg. No. V/F/ ERS/ZSI, 2646, Bibrage, NBR, 18.01.2008; 6 exs., Reg. No. V/F/ERS/ZSI/ 2655, Chinapat, NBR, 19.01.2008; 2 exs., Reg. No. V/F/ERS / ZSI/2668, Adugre village, NBR, 22.01.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2693, Selbalgre, NBR, 26.04.2008; 10 exs., Reg. No. V/F/ERS/ZSI/2712, Didari chiring, NBR, 29.04.2008; 2 exs., Reg. No. V/F/ERS/ZSI/2719, Tosekgre chiring NBR, 26.04.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2723, Kalupara chiring (alt. 87 m), NBR, 25.04.2008; 1 ex., Reg. No. V/

F/ERS/ZSI/ 2729, Daribokgre, NBR, 01.05.2008; 1 ex., Reg. No. V/ F/ ERS/ ZSI/ 2735, Chinapat, NBR, 27.04.2008; 1 ex., Reg. No. V/F/ERS/ZSI/ 2760, Rengsangre, NBR, 18.06.2008; 7 exs., Reg. No. V/F/ERS/ZSI/2763, Rengsangre, NBR, 19.06.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2766, chisobibra, NBR, 27.06. 2008; 1 ex., Reg. No. V/F/ERS/ZSI/2774, Mitapgre village (alt. 62 m), NBR, 21.06.2008; 2 exs., Reg. No. V/F/ERS/ZSI/ 2780, Chinapat, NBR, 23.06.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2786, Chisobibra, NBR, 28.06.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2794, Rengsangre, NBR, 22.06.2008; 14 exs., Reg. No. V/F/ ERS/ZSI/2796, Daribok, NBR, 26.06.2008; 2 exs., Reg. No. V/F/ERS/ZSI/ 2812, Daribokgre (alt.1105 m), NBR, 25.06.2009; 6 exs., Reg. No. V/F/ERS/ZSI/2822, Anchigre, NBR, 23.06.2009; 4 exs., Reg. No. V/F/ERS/ZSI/2824, Daribokgre, NBR 22.02.2009; 4 exs., Reg. No. V/F/ERS/ZSI/2830, Badadangre, NBR, 23.02.2009; 14 exs., Reg. No. V/F/ERS/ZSI/2840, Daribokgre, NBR, 22.02.2009; 1 ex., Reg. No. V/F/ERS/ZSI/2892, Rengsangre, NBR, 25.09.2008.

*Distribution* : INDIA : Arunachal Pradesh, Assam, Meghalaya, Mizoram, Nagaland, Rivers from Kashmir to Sikkim along the Himalayan Foot hills.

*Elsewhere* : MYANMAR.

*Remarks* : It's status is Vulnerable at National level.

#### 14. *Poropuntius clavatus* (McClelland, 1845)

1845., *Barbus clavatus* McClelland, *Calcutta J. nat. Hist.*, 5 : 280, pl. 21, fig.2 (Type locality : Sikkim mountains on northern frontier of Bengal)

*Material Examined* : 1 ex., Reg. No. V/F/ERS/ZSI/2677, Bonsamgre (alt. 318 m), NBR, 22.01.2008.

*Distribution* : INDIA : Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, Sikkim, North Bengal below the Himalayan foot hills and West Bengal.

*Elsewhere*: BANGLADESH; MYANMAR; NEPAL.

*Remarks*: Its status is Endangered.

#### 15. *Puntius conchoni* (Hamilton, 1822)

1822. *Cyprinus conchoni* Hamilton, *Fishes of Ganges*: 317,389 (Type locality : ponds of north east Bengal; Kosi river and Ami river).

*Material Examined* : 17 exs., Reg. No. V/F/ERS/ZSI/2768, chisobibra, NBR, 27.06.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2773, Mitapge village, NBR, 21.06. 2008; 3 exs., V/F/ERS/ZSI/2788, Chisobibra, NBR, 28.06.2008; 16 exs., Reg. No. V/F/ERS/ZSI/2857, Dobagre, NBR, 21.02.2009.

*Distribution* : INDIA: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram,

Nagaland, Tripura, West Bengal, Bihar, Uttar Pradesh, Punjab, Maharashtra, Orissa, Eastern and Western Himalayas, Darjeeling, Deccan.

*Elsewhere* : AFGHANISTAN; BANGLADESH; NEPAL; PAKISTAN.

*Remarks* : It's status is Vulnerable at National level.

#### 16. *Puntius ticto* (Hamilton, 1822)

1822. *Cyprinus ticto* Hamilton, *Fishes of Ganges* : 314, 398, pl. 8, fig. 87 (Type locality : south-eastern part of Bengal).

*Material Examined* : 10 exs., Reg. No. V/F/ERS/ZSI/ 2866, Damalgre (alt. 44 m), NBR, 21.02.2009.

*Distribution* : INDIA: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and also throughout India.

*Elsewhere* : AFGHANISTAN; BANGLADESH; BHUTAN; CHINA; MYANMAR; NEPAL; PAKISTAN; YUNAN; SRI LANKA and THAILAND.

#### 17. *Crossocheilus latius* (Hamilton, 1822)

1822. *Cyprinus latius* Hamilton, *Fishes of Ganges* : 345, 393 (Type locality : Tista river at base of Darjeeling Himalayas).

*Material Examined* : 2 exs., Reg.No. V/F/ERS/ZSI/2726, Kalupara chiring, NBR, 25.04.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2801, Rengsangre, NBR, 18.06.2008.

*Distribution* : INDIA : Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, Sikkim, West Bengal, Bihar, Uttar Pradesh, Gangetic Watershed of Himalayas, Orissa, Karnataka, Bombay, Western Ghats, Kaimur hills.

*Elsewhere* : BANGLADESH; CHINA; MYANMAR; NEPAL; PAKISTAN.

#### 18. *Garra annandalei* Hora, 1921

1921. *Garra annandalei* Hora, *Rec. Indian Mus.* , 22 (5): 657 (Type locality: Mahananda river, below Darjeeling).

*Material Examined* : 2 exs., Reg. No. V/F/ERS/ ZSI/2615, Simsang river, NBR, 12.02.2008; 1 ex., Reg. No. V/F/ERS/ZSI/ 2625, Rongram river, NBR, 14.02.2008; 1 ex., Reg. No. V/F/ERS/ZSI/ 2674, Bonsangre, NBR, 22.01.2008; 1 ex., Reg. No. V/F/ERS/ ZSI/ 2715, Didari chiring, NBR, 29.04.2008; 14 ex., Reg. No. V/F/ERS/ZSI/ 2731, Daribokgre, NBR, 01.05.2008; 1 ex., Reg. No. V/F/ERS/ ZSI/ 2755, Manchuri chiring, NBR, 23.06.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2782, Chinapat, NBR, 23.06.2008; 4 exs., Reg. No. V/F/ERS/ZSI/ 2844, Daribokgre, NBR, 22.02.2009.

*Distribution* : INDIA: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Bihar, Darjeeling, Himalayas, North Bengal and West Bengal.

*Elsewhere* : BANGLADESH; BHUTAN; EASTERN NEPAL.

19. *Garra gotyla gotyla* (Gray, 1832)

1832, *Cyprinus gotyla* Gray, *Illustr. Indian Zool.*, 1 : pl. 88, figs 3, 3a (Type locality: Northern India)

*Material Examined* : 1 ex., Reg. No. V/F/ERS/ZSI/2675, Bonsamgre, NBR, 22.01.2008.

*Distribution*: INDIA: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, Sikkim, all along the Himalayas, Chotanagpur plateau and the Vindhya-Satpura mountains of the Indian peninsula.

*Elsewhere* : AFGHANISTAN; BANGLADESH; BHUTAN; MYANMAR; NEPAL; PAKISTAN

*Remarks* : Its status is Vulnerable at National level.

20. *Garra gravelyi* (Annandale, 1919)

1919. *Discognathus gravelyi* Annandale, *Rec. Indian Mus.*, 16(1): 133, pl. 2, figs. 3, 3a (Type locality : Inle lake and He-Ho stream, Southern Shan States, Burma)

*Material Examined* : 1 ex., Reg. No. V/F/ERS/ZSI/2650, Bibrage, NBR, 18.01.2008; 1 exs., Reg. No. V/F/ERS/ZSI/ 2673, Bonsamgre, NBR, 22.01.2008; 3 exs., Reg. No. V/F/ERS/ZSI/ 2721, Tosekgre chiring, NBR, 26.04.2008; 2 exs., Reg. No. V/F/ ERS/ZSI/ 2754, Manchuri chiring, NBR, 23.06.2008.

*Distribution* : INDIA: Arunachal Pradesh, Manipur, Mizoram.

*Elsewhere* : MYANMAR.

*Remarks* : Reported for the first time from Meghalaya.

21. *Garra kempfi* Hora, 1921

1921, *Garra kempfi* Hora, *Rec. Indian Mus.*, 22 (5): 665, pl. 26, figs 3,3a (Type locality: Siyom river below Demda, Abor Hills, Arunachal Pradesh)

*Material Examined* : 4 exs., Reg. No. V/F/ERS/ZSI/ 2739, Chinapat, NBR, 27.04.2008; 4 exs., Reg. No. V/F/ERS/ZSI/2756, Manchuri chiring, NBR, 23.06.2008.

*Distribution* : INDIA : Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland.

*Elsewhere* : Same as above.

*Remarks* : Its status is Vulnerable. Endemic to North East India (Sen,2003).

22. *Garra lamta* (Hamilton, 1822)

1822. *Cyprinus (Garra) lamta* Hamilton (*partim*), *Fishes of Ganges* : 343,393 (Type locality: Rapti river, Gorakhpur, U.P.)

*Material Examined* : 1 ex., Reg. No. V/F/ERS/ZSI, 2670, Adugre village, NBR, 22.01.2008.

*Distribution* : INDIA : Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, Sikkim, Eastern Himalayas and Western Ghats.

*Elsewhere* : NEPAL.

### 23. *Garra nasuta* (McClelland, 1839)

1839. *Platycaera nasuta* McClelland, *J. Asiat. Soc. Beng.*, 7(2): 947, pl.55, figs.2,2a,2b (Type locality : Khasi Hills, Meghalaya)

*Material Examined* : 3 exs., Reg. No. V/F/ERS/ZSI/2727, Kalupara chiring (alt. 87 m), NBR, 25.04.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2852, Dobagre (alt.52 m), NBR, 21.02. 2009.

*Distribution* : INDIA: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland.

*Elsewhere* : MYANMAR; SOUTH CHINA; THAILAND and VIETNAM.

## Family PSILORHYNCHIDAE

### 24. *Psilorhynchus balitora* (Hamilton, 1822)

1822. *Cyprinus balitora* Hamilton, *Fishes of Ganges*: 348, 394 (Type locality : rivers of north-east Bengal)

*Material Examined* : 2 exs., Reg. No. V/F/ERS/ZSI/2637, Bandari-Nongkari river, NBR, 10.02.2008; 2 exs., Reg. No. V/F/ERS/ZSI/2649, Bibragre, NBR, 18.01.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2702, Sandeng chiring, NBR, 25.04.2008; 2 exs., Reg. No. V/F/ERS/ZSI/2713, Didari chiring, NBR, 29.04.2008; 4 exs., Reg. No. V/F/ERS/ZSI/2718, Tosekgre chiring, NBR, 26.04.2008; 32 exs., Reg. No. V/F/ERS/ZSI/2767, Chisobibra, NBR, 27.06.2008; 2 exs., Reg. No. V/F/ERS/ZSI/2777, Dapgre, NBR, 20.06.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2800, Rensange, NBR, 18.06.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2906, Rengsangre, NBR, 24.09.2008; 2 exs., Reg. No. V/F/ERS/ZSI/2910, Selbalgre, 25.09.2008.

*Distribution* : INDIA : Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, North Bengal, upper reaches of Jamuna river, Gomti river at Lucknow.

*Elsewhere* : BANGLADESH; MYANMAR; NEPAL.

### 25. *Psilorhynchus gracilis* Rainboth, 1983

1983. *Psilorhynchus gracilis* Rainboth, *Proc. Calif. Acad. Sci.*, 43(6): 69, figs. 2 & 3 (Type locality: Jubuneswari river at Badargunj, Bangladesh)

*Material Examined* : 1 ex., Reg. No. V/F/ERS/ZSI/2838, Digangiri river (alt. 50 m), NBR, 21.02.2009; 14 exs., Reg. No. V/F/ERS/ZSI/ 2848, Dobagre (alt. 52 m), NBR, 21.02.2009.

*Distribution* : INDIA: Assam, Meghalaya, Mizoram.

*Elsewhere* : BANGLADESH (Gangetic lowland streams).

#### Family BALITORIDAE

#### 26. *Balitora brucei* Gray, 1830

1832. *Balitora brucei* Gray, *Ill. Ind. Zool.*, 1 : Pl. 88, fig.1 (Type locality: Mountain streams, India).

*Material Examined* : 3 exs., Reg. No. V/F/ERS/ZSI/2631, Achingre (alt. 336 m), NBR, 10.02.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2799, Rengsangre, NBR, 18.06.2008; 2 exs., Reg. No. V/F/ERS/ZSI/2837, Digangiri river, NBR, 21.02.2009; 8 exs., Reg.No. V/F/ERS/ZSI/2849, Dobagre, NBR, 21.02.2009.

*Distribution* : INDIA : Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, Sikkim, West Bengal, Darjeeling and Eastern Himalayas.

*Elsewhere*: BANGLADESH; BHUTAN; NEPAL (Gandak drainage).

#### 27. *Acanthocobitis botia* (Hamilton, 1822)

1822. *Cobitis botia* Hamilton, *Fishes of Ganges* : 350, 394 (Type locality : rivers of north eastern Bengal).

*Material Examined* : 1 ex., Reg. No. V/F/ERS/ZSI/2635, Bandari-Nongkari River, (alt.82mts), NBR, 10.02.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2833, Digangiri river, NBR, 21.02.2009.

*Distribution* : INDIA: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and throughout India except Malabar coast & south of R. Krishna.

*Elsewhere* : BANGLADESH; CHINA; MYANMAR; NEPAL; PAKISTAN; SRILANKA; THAILAND; YUNNAN.

#### 28. *Nemacheilus sikmaiensis* (Hora, 1921)

1921. *Nemacheilus sikmaiensis* Hora, *Rec. Indian Mus.*, 22 (3) : 201, pl. 9, fig. 4 and pl. 10, figs. 1, 1a (Type locality : Sikmai stream near Patel, Manipur).

*Material Examined* : 4 exs., Reg. No. V/F/ERS/ZSI, 2827, Daribokgre, NBR, 22.02.2009; 3 exs., Reg. No. V/F/ERS/ZSI/2831, Badadangre, NBR, 23.02.2009; 4 exs., Reg. No. V/F/ERS/ZSI/ 2843, Daribokgre, NBR, 22.02.2009; 2 exs., Reg. No. V/F/ERS/ZSI/ 2867, Bibragre, NBR, 18.01.2008; 1 ex., Reg. No. V/F/ERS/ZSI/ 2868, Bonsamgre,

NBR, 22.01.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2869, Chinapat, NBR, 19.01.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2870, Didari chiring, NBR, 29.04.2008; 10 exs., Reg.No. V/F/ERS/ZSI/2873, Daribokgre, NBR, 01.05.2008; 5 exs., Reg. No. V/F/ERS/ZSI/2874, Chinapat, NBR, 14.02.2008; 3 exs., Reg. No. V/F/ERS/ZSI/2876, Chinapat, NBR, 27.04.2008; 5 exs., Reg. No. V/F/ERS/ZSI/2878, Rengsangre, NBR, 19.06.2008; 2 exs., V/F/ERS/ZSI/2880, Simsang, river, NBR, 21.11.2007; 1 ex., V/F/ERS/ZSI/2881, Manchuri chiring, NBR, 28.04.2008; 5 exs., V/F/ERS/ZSI/2884, Simsang river, NBR, 12.02.2008; 2 exs., V/F/ERS/ZSI/2894, Rengsangre, NBR, 25.09.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2909, Selbalgre, NBR, 25.09.2008.

*Distribution* : INDIA: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim.

*Elsewhere* : MYANMAR.

*Remarks* : It's status is Endangered at National level.

### 29. *Schistura reticulofasciata* (Singh and Banarescu, 1981)

1981. *Mesonoemacheilus reticulofasciatus* Singh, Sen, Banarescu and Nalbant, *Trav. Mus. Hist. nat. Grigore Antipa*, **23**: 206, Figs. 12-16 (Type locality: Barapani near Shillong, Meghalaya)

*Material Examined* : 1 ex., Reg. No. V/F/ERS/ZSI/2605, Didari river, NBR, 22.11.2007; 3 exs., Reg. No. V/F/ERS/ZSI/2614, Simsang, river, NBR, 12.02.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2621, Shrut Majang hill, NBR, 14.02.2008; 2 exs., Reg. No. V/F/ERS/ZSI/2622, Didari river, NBR, 13.02.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2623, Rongram river, NBR, 14.02.2008; 5 exs., Reg. No. V/F/ERS/ZSI/2629, Achingre, NBR, 10.02.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2640, Chinapat, NBR, 14.02.2008; 2 exs., Reg. No. V/F/ERS/ZSI/2656, Chinapat, NBR, 19.01.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2661, Selbalgre chiring NBR, 20.01.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2676, Bonsamgre, NBR, 22.01.2008; 8 exs., Reg. No. V/F/ERS/ZSI/2811, Daribokgre, NBR, 25.06.2009; 3 exs., Reg. No. V/F/ERS/ZSI/2815, Chinabat village, NBR, 24.06.2009; 21 exs., Reg. No. V/F/ERS/ZSI/2820, Anchigre (alt. 347 m), NBR, 23.06.2009; 1 ex., Reg. No. V/F/ERS/ZSI/2826, Daribokgre, NBR, 22.02.2009; 2 exs., Reg. No. V/F/ERS/ZSI/2834, Digangiri river, NBR, 21.02.2009; 9 exs., Reg. No. V/F/ERS/ZSI/2841, Daribokgre, NBR, 22.02.2009; 7 exs., Reg. No. V/F/ERS/ZSI/2853, Dobagre, NBR, 21.02.2009; 7 exs., Reg. No. V/F/ERS/ZSI/2871, Tosekgre chiring NBR, 26.04.2008; 22 exs., Reg. No. V/F/ERS/ZSI/2872, Daribokgre, NBR, 01/05/2008; 22 exs., Reg. No. V/F/ERS/ZSI/2875, Chinapat, NBR, 27.04.2008; 5 exs., Reg. No. V/F/ERS/ZSI/2877, Rengsangre, NBR, 19.06.2008; 7 exs., Reg. No. V/F/ERS/ZSI/2882, Manchuri chiring, NBR, 28/04/2008; 6 exs., Reg. No. V/F/ERS/ZSI/2883, Rengsangre, NBR, 22.06.2008; 2 exs., Reg. No. V/F/ERS/ZSI/2885, Rengsangre, NBR, 18.06.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2889, Simsang R., NBR, 26.06.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2890, Chisobibra, NBR, 27.06.2008; 4 exs., Reg. No. V/F/ERS/ZSI/2893, Rengsangre, NBR, 25.09.2008; 6 exs.,

Reg. No. V/F/ERS/ZSI/2908, Selbalgre, NBR, 25.09.2008; 3 exs., Reg. No. V/F /ERS/ZSI/2911, Selbalgre, NBR, 25.09.2008.

*Distribution* : INDIA: Assam, Meghalaya.

*Elsewhere* : Same as above.

*Remarks* : So far restricted in North Eastern India only.

### 30. *Schistura rupecula* (McClelland, 1838)

1838. *Schistura rupecola* McClelland, *J. Asiat. Soc. Beng.*, **7** : 948, pl. 55, fig. 3 (Type locality : Simla)

*Material Examined* : 1 ex., Reg. No. V/F/ERS/ZSI/2604, Simsang river (alt. 905 m), NBR, 21.11.2007; 2 exs., Reg. No. V/F/ERS/ZSI/2610, Ganol river, NBR, 13.02.2008; 4 exs., Reg. No. V/F/ERS/ZSI/2630, Achingre, NBR, 10.02.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2821, Anchigre, NBR, 23.06.2009.

*Distribution* : INDIA : Arunachal Pradesh, Manipur, Meghalaya, Nagaland, Simla, Kashmir, Doon Valley, Poonch Valley, Western Himalaya, Kumaon Garhwal Himalaya, Yamuna, Satlej drainages in Himachal Pradesh.

*Elsewhere* : NEPAL.

### 31. *Schistura scaturigina* (McClelland, 1839)

1839. *Cobitis (Schistura) scaturigina* McClelland, *Asiat. Res.*, **19** : 308, 443, pl. 53, fig. 6 (Type locality : Assam)

*Material Examined* : 1 ex., Reg.No. V/F/ERS/ZSI/2886, Mitapgre village, NBR, 21.06.2008.

*Distribution* : INDIA : Arunachal Pradesh, Assam, Meghalaya, Mizoram, Nagaland, Tripura, Sikkim, Eastern Himalayas, Darjeeling, Uttar Pradesh

*Elsewhere* : BANGLADESH; BHUTAN; NEPAL.

*Remarks* : It's status is Vulnerable.

### 32. *Schistura vinciguerrae* (Hora, 1935)

1935. *Nemachilus vinciguerrae* Hora, *Rec. Indian Mus.*, **37** (1): 62, pl. 3, fig. 12 (Type locality : S. Shan State, Burma; and Thailand)

*Material Examined* : 7 exs., Reg.No. V/F/ERS/ZSI/2691, Rongram chiring, NBR, 28.04.2008; 1 ex., Reg.No. V/F/ERS/ZSI/2695, Selbalgre, NBR, 26.04.2008.

*Distribution* : INDIA : Assam, Manipur, Mizoram, Tripura.

*Elsewhere* : MYANMAR.

*Remark s*: It's status is Endangered at National level.

### 33. *Aborichthys garoensis* Hora, 1925

1925. *Aborichthys garoensis* Hora, *Rec. Indian Mus.*, **27** (3): 233, figs 1a, 1b (Type locality : Tura, Garo Hills, Meghalaya)

*Material Examined* : 1 ex., Reg.No. V/F/ERS/ZSI/2705, Didari chiring, NBR, 30.04.2008.

*Distribution* : INDIA: Arunachal Pradesh, Meghalaya.

*Elsewhere* : Same as above.

*Remarks* : So far restricted to North East India only.

### 34. *Aborichthys kempi* Chaudhuri, 1913

1913, *Aborichthys kempi* Chaudhuri, *Rec. Indian Mus.*, **8**(3): 245, pl. 7, figs. 1, 1a & 1b (Type locality : Abor Hills, Meghalaya).

*Material Examined* : 3 exs., Reg. No. V/F/ERS/ZSI/2609, Ganol river, NBR, 13.02.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2612, Simsang river, NBR, 12.02.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2616, Kchibama (alt. 1054 m), NBR, 11.02.2008; 4 exs., Reg. No. V/F/ERS/ZSI/2643, Sasatgre chiring (alt. 341 m), NBR, 17.01.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2660, Misimagre (alt. 581 m), NBR, 18.01.2008; 3 exs., Reg. No. V/F/ERS/ZSI/2689, Rongram chiring, NBR, 28.04.2008; 2 exs., Reg. No. V/F/ERS/ZSI/2707, Manchuri chiring, NBR, 28.04.2008; 2 exs., Reg. No. V/F/ERS/ZSI/2730, Daribokgre, NBR, 01.05.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2757, Didari chiring, NBR, 25.06.2008; 4 exs., Reg. No. V/F/ERS/ZSI/2842, Daribokgre, NBR, 22.02.2009; 1 ex., V/F/ERS/ZSI/2879, Rengsangre, NBR, 19.06.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2888, Simsang river, NBR, 26.06.2008.

*Distribution* : INDIA: Arunachal Pradesh, Meghalaya.

*Elsewhere* : MYANMAR.

## Family COBITIDAE

### 35. *Botia rostrata* Gunther, 1868

1868. *Botia rostrata* Gunther, *Cat. Fishes Br. Mus.*, **7**: 367, fig (Type-locality: Ganges river in Bengal, and Assam)

*Material Examined* : 3 exs., Reg. No. V/F/ERS/ZSI/2728. Kalupara chiring (alt. 87 m), NBR, 25.04.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2803, Rengsangre, NBR, 18.06.2008.

*Distribution* : INDIA : Arunachal Pradesh, Assam, Meghalaya, Mizoram, Nagaland, Tripura, West Bengal.

*Elsewhere* : BANGLADESH ; SALWEEN AND IRRAWADDY BASIN IN CHINA.

*Remarks* : Its status is Endangered.

36. *Lepidocephalichthys guntea* (Hamilton, 1822)

1822. *Cobitis guntea* Hamilton, *Fishes of Ganges* : 353, 394 (Type locality : ponds and freshwaters of Bengal).

*Material Examined* : 2 exs., Reg. No. V/F/ERS/ZSI/2790, Chisobibra, NBR, 28.06.2008; 2 exs., Reg. No. V/F/ERS/ZSI/2902, Goiragre (alt. 92 m), NBR, 01.10. 2008.

*Distribution* : INDIA: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and also throughout India except Karnataka , Kerala and South of Krishna.

*Elsewhere* : BANGLADESH; NEPAL; PAKISTAN; MYANMAR; SALWEEN BASIN; THAILAND.

Family AMBLYCIPITIDAE

37. *Amblyceps mangois* (Hamilton, 1822)

1822. *Pimelodus mangois* Hamilton, *Fishes of Ganges* : 199, 379 (Type locality : Northern Bihar).

*Material Examined* : 2 exs., Reg. No. V/F/ERS/ZSI/2854, Dobagre, (alt. 52 m), NBR, 21.02.2009; 1 ex., Reg. No. V/F/ERS/ZSI/ 2903, Goiragre, NBR, 01.10.2008.

*Distribution* : INDIA : Arunachal Pradesh, Assam, Manipur, Meghalaya , Nagaland, Tripura and also all along the base of the Himalayas & Krishna river system.

*Elsewhere* : BANGLADESH; MYANMAR; LAOS; NEPAL; PAKISTAN; THAILAND.

Family ERETHISTIDAE

38. *Pseudolaguvia shawi* Hora, 1921

1921. *Laguvia shawi* Hora, *Rec.Indian Mus.*, **22** (5): 740, pl. 29, fig. 2 (Type locality: Mahananda and Sivoke rivers, Darjeeling Himalaya)

*Material Examined* : 2 exs., Reg. No. V/F/ERS/ZSI/ 2855, Dobagre, NBR, 21.02.2009.

*Distribution* : INDIA : Assam, Meghalaya, Mizoram, Nagaland and also Darjeeling Himalayas, Northern India.

*Elsewhere* : BANGLADESH.

*Remarks* : Its status is Endangered.

Family SISORIDAE

39. *Glyptothorax trilineatus* Blyth, 1861

1861. *Glyptothorax trilineatus* Blyth, *J. Asiat. Soc. Beng.*, **29**: 154 (Type locality: Tenasserim, Burma)

*Material Examined* : 1 ex., V/F/ERS/ZSI/2804, Chisobibra, NBR, 27.06.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2839, Digangiri river, NBR, 21.02.2009; 4 exs., Reg. No. V/F/ERS/ZSI/ 2846, Dobagre, NBR, 21.02.2009.

*Distribution* : INDIA: Arunachal Pradesh, Manipur, Mizoram, Nagaland, Sikkim. *Elsewhere*: CHINA; LAOS; MYANMAR; NEPAL and THAILAND.

#### Family OLYRIDAE

##### 40. *Olyra longicaudata* McClelland, 1842

1842. *Olyra longicaudata* McClelland; *Calcutta Jour. Nat. Hist.*, 2 : 588, pl. 21, fig. 1 (Type locality : Khasi hills, Meghalaya)

*Material Examined* : 1 ex., Reg. No. V/F/ERS/ZSI/2704, Sandeng chiring (alt. 87 m), NBR, 25.04.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2792, Chisobibra, NBR, 28.06.2008.

*Distribution* : INDIA : Arunachal Pradesh, Assam, Meghalaya, Mizoram, Nagaland, Tripura and also Darjeeling Himalayas.

*Elsewhere* : MYANMAR.

#### Order CYPRINODONTIFORMES

#### Family APLOCHEILIDAE

##### 41. *Aplocheilus panchax* (Hamilton, 1822)

1822. *Esox panchax* Hamilton, *Fishes of Ganges* : 211, 380, pl. 3. Fig. 69 (Type locality: Bengal)

*Material Examined* : 3 exs., Reg. No. V/F/ERS/ZSI/2858, Damalgre (alt. 44 m), NBR, 21.02.2009

*Distribution* : INDIA: Assam, Meghalaya, Mizoram, Tripura, Andaman, Bihar, Madhya Pradesh, Orissa, Punjab, Uttar Pradesh and West Bengal.

*Elsewhere* : BANGLADESH; MYANMAR; THAILAND TO MALAY ARCHIPELAGO; PAKISTAN; SIAM; SRILANKA.

#### Order SYNBRANCHIFORMES

#### Family SYNBRANCHIDAE

##### 42. *Monopterusuchia* (Hamilton, 1822)

1822. *Unibranchapertura suchia* Hamilton, *Fishes of Ganges*, 16:363, pl. 16, fig.4 (Type locality : rivers and ponds of southeast parts of Bengal)

*Material Examined* : 20 exs., V/F/ERS/ZSI/2914, Mitapgre village (alt.62 m), NBR, 21.06.08.

*Distribution* : INDIA : Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland, Tripura, Northern India, Orissa.

*Elsewhere* : BANGLADESH; MYANMAR; NEPAL; PAKISTAN.

Order PERCIFORMES  
FAMILY AMBASSIDAE

43. *Parambassis lala* (Hamilton, 1822)

1822. *Chanda lala* Hamilton, *Fishes of Ganges*: 114, pl. 21, fig. 39 (Type locality: Gangetic provinces)

*Material Examined* : 17 exs., Reg. No. V/F/ERS/ZSI/2865, Damalgre, NBR, 21.02.2009.

*Distribution* : INDIA: Assam, Orissa, West Bengal.

*Elsewhere* : Same as above.

44. *Parambassis ranga* (Hamilton, 1822)

1822. *Chanda ranga* Hamilton, *Fishes of Ganges* : 113, 371, pl. 16, fig. 38 (Type locality : freshwaters of all parts of Gangetic provinces)

*Material Examined* : 2 exs., Reg.No.V /F/ ERS/ ZSI, 2864, Damalgre, NBR, 21.02.2009

*Distribution* : INDIA: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Tripura and also throughout India.

*Elsewhere* : BANGLADESH; MYANMAR; MALAYA; NEPAL; PAKISTAN; SIAM; THAILAND.

45. *Pseudambassis baculis* (Hamilton, 1822)

1822. *Chanda baculis* Hamilton, *Fishes of Ganges* : 112, 371, pl. 22, fig. 7 (Type locality : north eastern parts of Bengal).

*Material Examined* : 1 ex., Reg. No. V/F/ERS/ZSI/2887, Mitapgre village, NBR, 21.06.2008

*Distribution* : INDIA : Arunachal Pradesh, Assam, Meghalaya , Mizoram, Tripura, Bihar, Duars, Kalimpong, Madhya Pradesh, Mumbai, North India, Orissa, Punjab, Siliguri, West Bengal.

*Elsewhere* : BANGLADESH; MYANMAR; PAKISTAN; THAILAND.

Family BADIDAE

46. *Badis assamensis* Ahl, 1937

1936. *Badis badis assamensis* Ahl, *Zool. Anz.*, 117 : 118 (Type locality: Assam, India)

*Material Examined* : 8 exs., Reg. No. V/F/ERS/ZSI/2819, Sangui chiring (alt. 190 m), NBR, 23.06.2009; 2 exs., Reg. No. V/F/ERS/ZSI/2859, Damagre, NBR, 21.02.2009; 4 exs., Reg. No. V/F/ERS/ZSI/2895, Rengsangre, NBR, 25.09.2008; 1 ex., Reg.No. V/F/ERS/ZSI/2898, Oragitok, NBR, 27.09.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2912, Selbalgre, NBR, 25.09.2008.

*Distribution* : INDIA: Assam, Nagaland.

*Elsewhere* : Same as above

*Remarks* : Reported for the first time from Meghalaya.

#### 47. *Badis badis* (Hamilton, 1822)

1822. *Labrus badis* Hamilton-Buchanan, *Fishes of Ganges* : 70, 368, pl. 25, fig. 23 (Type locality : Gangetic provinces).

*Material Examined* : 19 exs., Reg. No. V/F/ERS/ZSI/2618, Shrut Majang hill, NBR, 14.02.2008; 2 exs., Reg. No. V/F/ERS/ZSI/2633, Bandari-Nongkari river, NBR, 10.02.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2644, Bibragre, NBR, 18.01.2008; 3 exs., Reg. No. V/F/ERS/ZSI/2657, Mandal chiring, NBR, 19.01.2008; 2 exs., Reg. No. V/F/ERS /ZSI/2663, Gungunagre chiring (alt. 532 m), NBR, 21.01.2008; 7 exs., Reg. No. V/F/ERS/ZSI/2666, Adugre village, NBR, 22.01.2008; 2 exs., Reg. No. V/F/ERS/ZSI/2683, Nabokgre (alt. 695 m), 23.01.2008; 2 exs., Reg. No. V/F/ERS/ZSI/2692, Selbalgre, NBR, 26.04.2008; 3 exs., Reg. No. V/F/ERS/ZSI/2701, Sandeng chiring, NBR, 25.04.2008; 7 exs., Reg. No. V/ F/ ERS/ZSI/2710, Didari chiring, NBR, 29.04.2008; 3 exs., Reg. No. V/F/ERS/ZSI/ 2716, Tosekgre chiring NBR, 26.04.2008; 3 exs., Reg. No. V/F/ERS / ZSI/2724, Kalupara chiring NBR, 25.04.2008; 6 exs., Reg. No. V/F/ERS/ZSI/2733, Chinapat, NBR, 27.04.2008; 3 exs., Reg. No. V/F/ERS/ZSI/2751, Manchuri chiring, NBR, 23.06.2008; 37 exs., Reg. No. V/F/ERS/ZSI/2765, Chisobibra, NBR, 27.06.2008; 83 exs., Reg. No. V/F/ERS/ZSI/2783, Chisobibra, NBR, 28.06.2008; 1 ex., Reg. No. V/F/ ERS/ZSI/2816, Chinabat village, NBR, 24.06.2009; 3 exs., Reg. No. V/F/ ERS/ZSI/2832, Digangiri river, NBR, 21.02.2009.

*Distribution* : INDIA : Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and also throughout India.

*Elsewhere* : BANGLADESH; BHUTAN; MYANMAR, NEPAL; PAKISTAN.

#### Family CICHLIDAE

#### 48. *Oreochromis mossambicus* (Peters, 1852)

1852. *Chromis (Tilapia) mossambicus* Peters, *Montab. Akad. Wiss., Berlin* : 681 (Type locality : Mozambique)

*Material Examined* : 7 exs., Reg. No. V/F/ERS/ZSI/2654, Matchurigre village (alt. 701 m), NBR, 18.01.2008; 1 ex., V/F/ERS/ZSI/2791, chisobibra, NBR, 28.06.2008.

*Distribution* : INDIA : Assam, Manipur, Meghalaya, Nagaland, Tripura and throughout India (Introduced)

*Elsewhere* : EAST AFRICA ; PAKISTAN; SRI LANKA.

Family OSPHRONEMIDAE

49. *Colisa chuna* (Hailton, 1822)

1876. *Trichogaster chuna* Hamilton, *Fishes of India* : 373, pl. 79, fig. 3( Type locality: Ganges river)

*Material Examined* : 4 exs., Reg.No. V/F/ERS/ZSI/2862, Damalgre, NBR, 21.02.2009

*Distribution* : INDIA : Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland, Tripura and Gangetic province.

*Elsewhere* : BANGLADESH

50. *Colisa fasciatus* (Schneider, 1801)

1801. *Trichogaster fasciatus* Schneider, *Syst. Ichthy.* 164, pl. 36 (Type locality : Tranquebar)

*Material Examined* : 1 ex., Reg. No. V/F/ERS/ZSI/2861, Damalgre, NBR, 21.02.2009

*Distribution* : INDIA : Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland, Tripura, Northern India, Estuaries of Ganga, Coromondol coast, River Krishna.

*Elsewhere* : BANGLADESH; MYANMAR; NEPAL; PAKISTAN.

Family CHANNIDAE

51. *Channa gachua* (Hamilton, 1822)

1822. *Ophiocephalus gachua* Hamilton, *Fishes of Ganges* : 68, 367, pl. 21, fig. 21 (Type locality : Bengal)

*Material Examined* : 3 exs., Reg. No. V/F/ERS/ZSI/2608, Ganol river, NBR, 13.02.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2634, Bandari-Nongkari river, NBR, 10.02.2008; 2 exs., Reg. No. V/F/ERS/ZSI/2652, Matchurigre village , NBR, 18.01.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2662, Selbalgre chiring, NBR, 20.01. 2008; 3 exs., Reg. No. V/F/ERS/ZSI/2665, Adugre village, NBR, 22.01.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2678, Dorakgre village (alt. 563 m), NBR, 22.01.2008; 2 exs., Reg. No. V/F/ERS/ZSI/2685, Chokpot (alt. 46 m), NBR, 24.01.2008; 5 exs., Reg. No. V/F/ERS/ZSI/2688, Bibragre chiring, NBR, 29.04.2008; 2 exs., Reg. No. V/F/ERS/ZSI/2690, Rongram chiring, NBR, 28.04.2008; 3 exs., Reg. No. V/F/ERS/ZSI/2698, Sandeng chiring, NBR, 25.04.2008; 2 exs., Reg.No. V/F/ERS/ ZSI/2708, Manchuri chiring, NBR, 28.04.2008; 1 ex., Reg. No. V/F/ERS/ZSI/ 2764, Rengsangre , NBR, 19.06.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2778, Dapgre, NBR,

20.06.2008; 6 exs., Reg. No. V/F/ERS/ZSI/2817, Rongap chiring (alt. 127 m), NBR, 23.06.2009; 2 exs., Reg. No. V/F/ERS/ZSI/2825, Daribokgre, NBR, 22.02. 2009; 3 exs., Reg. No. V/F/ERS/ZSI/ 2897, Rengsangre, NBR, 25.09.2008; 2 exs., Reg. No. V/F/ERS/ZSI/2899, Oragitok, NBR, 27.09.2008; 1 ex., Reg. No. V/F/ERS/ ZSI/2904, Goiragre, NBR, 01.10.2008; 2 exs., Reg. No. V/F/ERS/ZSI/2913, Sfelbalgre, NBR, 25. 09.2008.

*Distribution* : INDIA : Arunachal Pradesh, Assam, Manipur, Nagaland, Maharashtra, West Bengal.

*Elsewhere* : AFGHANISTAN IN THE WEST TO INDONESIA THROUGH SOUTH AND CENTRAL ASIA.

#### 52. *Channa orientalis* (Bloch and Schneider, 1801)

1801. *Channa orientalis* Schneider, *Syst. Ichtyol*, 496, pl. 90, fig. 2 (Type locality : India).

*Material Examined* : 1 ex., Reg. No. V/F/ERS/ZSI/2628, Achingre, NBR, 10.02.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2642, Sasatgre chiring, NBR, 17.01.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2651, Matchurigre village, NBR, 18.01.2008; 2 exs., Reg. No. V/F/ ERS/ZSI/2659, Mandalgre (alt.934 m), NBR, 19.01.2008; 5 exs., Reg. No. V/F/ERS/ZSI/2664, Adugre village, NBR, 22.01.2008; 2 exs., Reg. No. V/F/ERS/ZSI/2679, Dorakgre village, NBR, 22.01.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2684, Chokpot, NBR, 24.01.2008; 1 ex., Reg. No. V/F/ERS/ZSI/ 2896, Rengsangre, NBR, 25.09.2008;

*Distribution* : INDIA : Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, Sikkim and also throughout India.

*Elsewhere* : AFGHANISTAN; BALUCHISTAN; BANGLADESH; HAINAN; INDO-CHINA; INDONESIA; IRAN; MALAYA ARCHIPELAGO; MYANMAR; NEPAL; PAKISTAN; SIAM; SRI LANKA; TAIWAN; THAILAND; YUNNAN.

*Remarks* : It's status is Vulnerable at National level.

#### 53. *Channa punctata* (Bloch, 1793)

1793. *Ophiocephalus punctatus* Bloch, *Naturges ausland. Fische.* (7) : 139, pl.358 (Type locality : rivers and lakes of Coromondol coast).

*Material Examined* : 1 ex., Reg.No. V/F/ERS/ZSI/2863, Damalgre (alt.44 m), NBR, 21.02.2009.

*Distribution* : INDIA : Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and also throughout India.

*Elsewhere* : AFGHANISTAN; BANGLADESH; CHINA; MALAYA; MYANMAR; NEPAL; PAKISTAN; POLYNESIA; SRI LANKA, TAHITI.

#### 54. *Channa stewartii* (Playfair, 1867)

1867. *Ophiocephalus stewartii* Playfair, *Proc. Zool. Soc. London* : 14, pl. 77, fig. 3 (Type locality : Cachar, Assam)

*Material Examined* : 4 exs., Reg. No. V/F/ERS/ZSI/2706, Didari chiring, NBR, 30.04.2008; 1 ex., Reg. No. V/F/ERS/ZSI/2711, Didari chiring, NBR, 29.04.2008; 4 exs., Reg. No. V/F/ERS/ZSI/2737, Chinapat, NBR, 27.04.2008; 1 ex., Reg. No. V/F/ERS/ ZSI/2753, Manchuri chiring, NBR, 23.06.2008; 8 exs., Reg. No. V/F/ERS/ZSI/2789, Chisobibra, NBR, 28.06.2008; 20 exs., Reg. No. V/F/ERS/ZSI/2795, Rengsangre, NBR, 22.06.2008; 5 exs., Reg. No. V/F/ERS/ZSI/2813, Daribokgre, NBR, 25.06.2009; 4 exs., Reg. No. V/F/ERS/ ZSI/2814, Chinabat village, NBR, 24.06.2009

*Distribution* : INDIA: Arunachal Pradesh, Assam, Meghalaya, Mizoram, Tripura, Bihar , West Bengal

*Elsewhere* : NEPAL.

### SUMMARY

1289 examples of fishes collected from Nokrek Biosphere reserve belonging to 54 species, 15 families and 5 orders have been presented in the paper. Of the 54 species, 7 endangered species (namely, *Raiamas bola*, *Neolissochilus hexagonolepis*, *Poropuntius clavatus*, *Nemacheilus sikmaiensis*, *Schistura vinciguerrae*, *Botia rostrata* and *Pseudolaguvia shawi*) and 7 vulnerable species (namely *Barilius vagra*, *Neolissochilus hexastichus*, *Puntius conchoniis*, *Garra gotyla*, *Garra kempi*, *Schistura scaturigina* and *Channa orientalis*) are occurring in the area under report.

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## AMPHIBIA

**NIBEDITA SEN, ROSAMMA MATHEW AND ASEM BIPIN MEETEI**

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### INTRODUCTION

Nokrek Biosphere Reserve is a hot spot for amphibian collections. During the Three years study period (2007-2010), 3 new species of caecilian (*Ichthyophis* spp.), 1 new species of megophryid (*Leptobrachium* sp.) have already been reported from the area (Mathew and Sen, 2009 a,b). Further collections and study will surely reveal a positive result in future. During the period under study 138 examples of amphibian belonging to 29 species under 15 genera, 6 families and 2 orders were collected. The species with (\*) denotes reported for the first time either from the State or district. Systematic arrangements and nomenclature are after Frost (2009). Status of the species mentioned in the remarks column is after B.C.P.P.(C.A.M.P.) (1998).

### SYSTEMATIC LIST

Order ANURA

Family BUFONIDAE

1. *Bufo manipurensis* Mathew & Sen\*
2. *Bufo melanostictus* Schneider
3. *Bufo stuarti* Smith
4. *Bufo wokhaensis* Mathew & Sen\*

Family Dicoglossidae

5. *Euphlyctis cyanophlyctis* (Schneider)
6. *Euphlyctis hexadactylus* (Lesson)
7. *Fejervarya limnocharis* (Gravenhorst)
8. *Fejervarya nepalensis* (Dubois)
9. *Fejervarya teraiensis* (Dubois)
10. *Limnonectes laticeps* (Boulenger)

## Family MEGOPHRYIDAE

11. *Leptobrachium nokrekensis* sp.nov.
12. *Leptobrachium smithi* Matsui, Nabhitabhata & Panha
13. *Xenophrys parva* (Boulenger)
14. *Xenophrys robusta* (Boulenger)

## Family RANIDAE

15. *Amolops assamensis* Sengupta, Hussain, Choudhury, Gogoi, Ahmed and Choudhury\*
16. *Amolops gerbillus* (Annandale)
17. *Amolops marmoratus* (Blyth)
18. *Clinotarsus alticola* (Boulenger)
19. *Hylarana leptoglossa* (Cope)
20. *Hylarana nigrovittata* (Blyth)
21. *Odorrana livida* (Blyth)

## Family RHACOPHORIDAE

22. *Kurixalus naso* (Annandale)
23. *Philautus namdaphaensis* Sarkar and Sanyal
24. *Polypedates leucomystax* (Gravenhorst)
25. *Rhacophorus bipunctatus* Ahl

## Order GYMNOPIHIONA

## Family ICHTHYOPHIIDAE

26. *Ichthyophis alfredii* Mathew and Sen
27. *Ichthyophis daribokensis* Mathew and Sen
28. *Ichthyophis garoensis* Pillai and Ravichandran
29. *Ichthyophis nokrekensis* Mathew and Sen

## Order ANURA

## Family BUFONIDAE

\*1. *Bufo manipurensis* Mathew and Sen, 2009

2009, *Bufo manipurensis* Mathew & Sen, *Rec. zool. Surv. India, Occ. Paper No. 293* : 15, Pl.VI.  
(Type locality: Chakpi river, Chandel district, Manipur)

*Material Examined* : 1 ex., Reg.No.V/A/ERS/ZSI/ 896, Daribokgre, (alt.1115 m), NBR, 25.06.2009.

*Distribution* : INDIA: Manipur.

*Remarks* : Reported for the first time from Meghalaya.

**2. *Bufo melanostictus* Schneider, 1799  
(=*Duttaphrynus melanostictus*)**

1799. *Bufo melanostictus* Schneider, *Hist. Amph.*, 1 : 216 (Type locality : "Ex India Orientalis)

*Material Examined* : 1 ex., Reg. No. V/A/ERS/ZSI/899, NBR, 26.09.2008 ; 1 ex., Reg. No. V/A/ERS/ZSI/900, Tura forest, NBR, 25.04.2008

*Distribution* : INDIA: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and also throughout India.

*Elsewhere* : BALI; BORNEO; CHINA; HONGKONG; INDONESIA; JAVA; MALAYSIA; MYANMAR; NEPAL; PAKISTAN; PHILIPPINES; SUMATRA; THAILAND; SRI LANKA.

*Ramarks* : Though it is a widely distributed species but its status is vulnerable.

**3. *Bufo stuarti* Smith, 1929**

1929, *Bufo stuarti* Smith, *Rec. Indian Mus.*, 31 : 77

*Material Examined* : 1 ex., Reg. No. V/A/ERS/ZSI/883, Daribokgre, IB compound (alt.1119 m), NBR, 24.06.2008.

*Distribution* : INDIA: Meghalaya.

*Elsewhere* : MYANMAR.

**\*4. *Bufo wokhaensis* Mathew and Sen, 2009**

2009. *Bufo wokhaensis* Mathew & Sen, *Rec. zool. Surv. India, Occ. Paper No.293*: 22, Pl.IX. (Type locality:Wokha rest house compound, Wokha district, Nagaland).

*Material Examined* : 1 ex., Reg. No. V/A/ERS/ZSI/870, NBR, 20.06.2008.

*Distribution* : INDIA: Nagaland.

*Remarks* : So far reported from type locality only. Reported for the first time from Meghalaya.

Family DICROGLOSSIDAE

**5. *Euphlyctis cyanophlyctis* (Schneider, 1799)**

1799, *Rana cyanophlyctis* Schneider, *Hist. Amph.* 1 : 137

*Material Examined* : 1ex., Reg. No. V/A/ERS/ZSI/888, Rongram river, NBR, 14.02.2008; 5 exs., Reg. No. V/A/ERS/ZSI/894, Rensangre forest IB compound (alt.488m), NBR, 27.04.2008.

*Distribution* : INDIA: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and also throughout India.

*Elsewhere* : AFGHANISTAN, BANGLADESH, BHUTAN, MALAYA, MYANMAR, NEPAL, PAKISTAN, SAUDI ARABIA, SRI LANKA.

6. *Euphlyctis hexadactylus* (Lesson, 1834)

1834, *Rana hexadactyls* Lesson, *Voy. India Orient., Zool.* : 331

*Material Examined* : 1 ex., Reg. No. V/A/ERS/ZSI/864, Wadregre village (alt. 476 m), NBR, 20.01.2008; 2 exs., Reg. No. V/A/ERS/ZSI/475, Didari river, (alt. 906 m), NBR, 13.02.2008.

*Distribution* : INDIA: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, Kerala, Maharashtra, Orissa, Rajasthan, Tamil Nadu, Throughout south, west and east India, West Bengal.

*Elsewhere* : BANGLADESH, SRI LANKA.

7. *Fejervarya limnocharis* (Gravenhorst, 1829)

1829, *Rana limnocharis* Gravenhorst, *Delic. Mus. Zool. Vratislav.*, 1 : XXX

*Material Examined* : 1 ex., Reg. No. V/A/ERS/ZSI/865, Daribokgre (alt. 1105 m), NBR, 25.06.2009.

*Distribution* : INDIA: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and also throughout India.

*Elsewhere* : BANGLADESH, BORNEO, CHINA, INDOCHINA, JAPAN, JAVA, MALAY PENINSULA, MYANMAR, NEPAL, PAKISTAN, PHILIPPINES, SRI LANKA, SUMATRA, TAIWAN, THAILAND AND VIETNAM.

*Remarks* : Frost (2009) commented that the species *Fejervarya limnocharis* is distributed only in Indonesia, Malaysia, Thailand, Laos, and Cambodia and the populations currently associated with this name from India, Bangladesh, Japan and *Elsewhere* are unnamed species. Further studies will throw light on its identity and *Distribution*. **Its status is vulnerable.**

8. *Fejervarya nepalensis* (Dubois, 1975)

1975, *Rana nepalensis* Dubois, *C. R. Hebd. Seances Acad. Sci.*, Paris, (D) 281 : 1720

*Material Examined* : 11 exs., Reg. No. V/A/ERS/ZSI/868, Daribokgre (alt. 872 m), NBR, 01.05.2008; 1 ex., Reg. No. V/A/ERS/ZSI/880, Daribokgre IB, NBR, 01.05.2008.

*Distribution* : INDIA: Arunachal Pradesh, Assam, Nagaland.

*Elsewhere* : NEPAL.

9. *Fejervarya teraiensis* (Dubois, 1984)

1984, *Rana (Fejervarya) teraiensis* Dubois, *Alytes*, 3 : 143-159 [ 150]

**Material Examined** : 1 ex., Reg. No. V/A/ERS/ZSI/867, Daribokgre (alt. 872 m), NBR, 01.05.2008; 4 exs., Reg. No. V/A/ERS/ZSI/877, Chisobibra park, NBR. 28.06.2008; 2 exs., Reg. No. V/A/ERS/ZSI/879, Daribokgre IB, NBR, 01.05.2008; 2 exs., Reg. No. V/A/ERS/ZSI/882, Daribokgre IB (alt.1119 m), NBR, 24.06.2008; 2 exs., Reg. No. V/A/ERS/ZSI/887, Manchwichiring (alt. 623 m), NBR, 28.04.2008; 1 ex., Reg. No. V/A/ERS/ZSI/890, Daribokgre (alt. 1105 m), 25.06.2009.

**Distribution** : INDIA: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura.

**Elsewhere** : NEPAL.

#### 10. *Limnonectes laticeps* (Boulenger, 1882)

1882, *Rana laticeps* Boulenger, *Cat. Batr. Sal. Brit. Mus.* : 20

**Material Examined** : 1 ex., Reg. No. V/A/ERS/ZSI/874, Didari river, (alt. 906 m), NBR, 13.02.2008.

**Distribution** : INDIA: Arunachal Pradesh, Assam, Meghalaya, West Bengal.

**Elsewhere**: BANGLADESH; BORNEO; MALAYA; MYANMAR; THAILAND.

#### Family MEGOPHRYIDAE

#### 11. *Leptobrachium nokrekensis* Mathew and Sen, 2009

2009. *Leptobrachium nokrekensis* Mathew and Sen, *Rec. zool. Surv. India*, **109** (3): 91

**Material Examined** : 1 ex., Reg. No. V/A/ERS/ZSI/834, Didari Kchibama, NBR, 11.02.2008; 2 exs., Reg. No. V/A/ERS/ZSI/835, Didari Kchibama, NBR, 11. 02. 2008; 4 exs., Reg. No. V/A/ERS/ZSI/836, Ganol river, NBR, 13.02.2008.

**Distribution** : INDIA: Meghalaya

**Remarks** : Mathew and Sen (2009) described this new species from Nokrek Biosphere Reserve, Meghalaya.

#### \*12. *Leptobrachium smithi* Matsui, Nabhitabhata and Panha, 1999

1999. *Leptobrachium smithi* Matsui, Nabhitabhata & Panha, *Japanese J. Herpetol.*, **18** (1): 19-29

**Material Examined** : 1 ex., Reg. No. V/A/ERS/ZSI/ 860, Rensangre (alt. 522 m), NBR, 19.06.2008; 1 ex., Reg. No. V/A/ERS/ZSI/861, Daribokgre IB (alt. 1119 m), NBR, 24.06.2008; 3 exs., Reg. No. V/A/ERS/ZSI/ 862, Daribokgre IB (alt. 1119 m), NBR (night collection), 30.04.2008.

**Distribution** : INDIA: Assam, Meghalaya.

**Elsewhere** : CHINA, INDONESIA, MALAYSIA, MYANMAR, PHILIPPINES, THAILAND.

*Remarks* : Sengupta et.al. (2001) who reported *L. smithi* from Assam observed that *L. hasseltii*, according to Matsui et.al.(1999) is restricted in *Distribution* to Sundas,Thailand. Further studies will ascertain its presence in India. We collected *L. smithi* from Meghalaya. Reported for the first time from Garo Hills. Its status is endangered.

13. *Xenophrys parva* (Boulenger, 1893)

1893, *Leptobrachium parva* Boulenger, *Ann. Mus. Genova* (2) 13: 344

*Material Examined* : 3 exs., Reg.No. V/A/ERS/ZSI/ 898, Daribokgre, NBR, 29. 09. 2008.

*Distribution* : INDIA: Arunachal Pradesh, Assam, Meghalaya, Nagaland, Sikkim, West Bengal.

*Elsewhere* : BANGLADESH; CHINA; MALAYSIA; MYANMAR; NEPAL; THAILAND AND VIETNAM.

14. *Xenophrys robusta* (Boulenger, 1908)

1908. *Megalophrys robusta* Boulenger, *Proc. Zool. Soc. London* : 418

*Material Examined* : 1ex., Reg.No. V/A/ERS/ZSI/ 866, Daribokgre, NBR, 27. 09. 2008.

*Distribution* : INDIA: Arunachal Pradesh, Assam, Meghalaya, Nagaland.

*Elsewhere* : BANGLADESH, CHINA, HONGKONG, MYANMAR AND VIETNAM.

\*15. *Amolops assamensis* Sengupta, Hussain, Choudhury, Gogoi, Ahmed and Choudhury, 2008

2008. *Amolops assamensis* Sengupta et.al. *Hamadryad* Vol. 32, No. 1, pp. 5-12

*Material Examined* : 1 ex., Reg. No. V/A/ERS/ZSI/869, Daribokgre (alt. 872 m), NBR, 01.05.2008; 1 ex., Reg.No. V/A/ERS/ZSI/873, Didari river (alt. 906 m), NBR, 13.02.2008; 4 exs., Reg. No. V/A/ERS/ZSI/881, Rensangre forest IB(alt. 488 m), NBR, 27.04.2008; 2 exs., Reg. No. V/A/ERS/ZSI/892, Daribokgre IB, NBR, 24.06.2008.

*Distribution* : Assam.

*Remarks* : Reported for the first time from Meghalaya.

16. *Amolops gerbillus* (Annandale, 1912)

1912, *Rana gerbillus* Annandale, *Rec. Indian Mus.*, 8 : 10

*Material Examined* : 5 exs., Reg. No. V/A/ERS/ZSI/872, Didari river (alt. 906 m), NBR, 13.02.2008; 1 ex., Reg. No. V/A/ERS/ZSI/ 897, Rongram river, NBR, 14.02. 2008

*Distribution* : INDIA: Arunachal Pradesh, Assam, Meghalaya, Mizoram, Nagaland, West Bengal.

*Elsewhere* : CHINA, MYANMAR, TIBET.

**17. *Amolops marmoratus*** (Blyth, 1855)

1855, *Polypedates* (?) *marmoratus* Blyth, *J. Asiat. Soc. Bengal*, **24** : 187-188

*Material Examined* : 1 ex., Reg. No. V/A/ERS/ZSI/871, Didari river (alt. 906 m), NBR, 13.02.2008.

*Distribution* : INDIA: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, West Bengal.

*Elsewhere* : CHINA, MYANMAR, NEPAL, TIBET, THAILAND.

**\*18. *Clinotarsus alticola*** (Boulenger, 1882)

1882, *Rana alticola* Boulenger, *Cat. Batr. Sal. Brit. Mus.* : 62

*Material Examined* : 7 exs., Reg. No. V/A/ERS/ZSI/876, Chisobibra park, NBR, 28.06.2008; 3 exs., Reg. No. V/A/ERS/ZSI/884, Rensangre forest IB (alt. 488 m), NBR, 27.04.2008; 2 exs., Reg. No. V/A/ERS/ZSI/886, Daribokgre, NBR, 30.04.2008; 1 ex., Reg. No. V/A/ERS/ZSI/891, Daribokgre, NBR, 25.06.2009.

*Distribution* : INDIA: Assam, Meghalaya, Mizoram, Nagaland, Tripura, Andamans, Orissa, Sikkim, West Bengal.

*Elsewhere* : BANGLADESH, CHINA, INDONESIA, JAPAN, MALAYSIA, MYANMAR, NEPAL, SRI LANKA, THAILAND, VIETNAM.

*Remarks* : Reported for the first time from Garo Hills.

**19. *Hylarana leptoglossa*** (Cope, 1868)

1868, *Hylarana leptoglossa* Cope, *Proc. Acad. Nat. Sci. Philadelphia*, **20** : 140

*Material Examined* : 1 ex., Reg. No. V/A/ERS/ZSI/863, Wadregre village (alt. 476 m), NBR, 20.01.2008.

*Distribution* : INDIA: Arunachal Pradesh, Assam, Meghalaya, Mizoram, Tripura.  
*Elsewhere*: MYANMAR; THAILAND; VIETNAM.

*Remarks* : Its status is vulnerable.

**\*20. *Hylarana nigrovittata*** (Blyth, 1856)

1856, *Lymnodytes nigrovittatus* Blyth, *J. Asiat. Soc. Bengal*, **24** : 718

*Material Examined* : 1 ex., Reg. No. V/A/ERS/ZSI/889, Rongram river, NBR, 14.02.2008.

*Distribution* : INDIA: Assam, Meghalaya.

*Elsewhere* : MALAYA; NEPAL; MYANMAR.

*Remarks* : Reported for the first time from Garo Hills. Its status is vulnerable.

**\*21. *Odorrana livida* (Blyth, 1856)**

1856, *Polypedates lividus* Blyth, *J. Asiat. Soc. Bengal*, **24** : 718

*Material Examined* : 1 ex., Reg. No. V/A/ERS/ZSI/885, Didari chiring (alt. 500 m), NBR, 29.04.2008; 2 exs., Reg. No. V/A/ERS/ZSI/893, Daribok IB compound, NBR, 24.06.2008.

*Distribution* : INDIA: Assam, Manipur, Meghalaya, Mizoram, Nagaland, Eastern Himalayas; West Bengal.

*Elsewhere* : CHINA; MALAYA PENINSULA; MYANMAR; THAILAND; VIETNAM; YUNNAN.

*Remarks* : According to Frost (2009) it is restricted to Myanmar but by the differentiating characters (Bain et.al.2003), *O. livida* can be separated from *O. chloronota* and it seems that both the species are occurring in North east India. Reported for the first time from Garo Hills.

**22. *Kurixalus naso* (Annandale, 1912)**

1912, *Rhacophorus naso* Annandale, *Rec. Indian Mus.*, **8** : 12

*Material Examined* : 1 ex., Reg. No. V/A/ERS/ZSI/838, Daribokgre forest IB (alt. 1132 m), NBR, 05.01.2008.

*Distribution* : INDIA: Arunachal Pradesh, Meghalaya, Mizoram.

*Elsewhere* : CHINA; MYANMAR.

*Remarks* : Mathew and Sen (2008) reported it for the first time from Meghalaya (Nokrek Biosphere Reserve).

**23. *Philautus namdaphaensis* Sarkar and Sanyal, 1985**

1985, *Philautus namdaphaensis* Sarkar and Sanyal, *Rec. zool. Surv. India*, **81** : 287

*Material Examined* : 1 ex., Reg. No. V/A/ERS/ZSI/837, Daribokgre forest IB (alt. 1132 m), 01.05.2008.

*Distribution* : INDIA: Arunachal Pradesh, Meghalaya.

*Elsewhere* : Same as above.

*Remarks* : Mathew and Sen (2008) reported it for the first time from Meghalaya (Nokrek Biosphere Reserve). Its status is vulnerable.

**24. *Polypedates leucomystax* (Gravenhorst, 1829)**

1829. *Hyla leucomystax* Gravenhorst, *Syst. Rept.*: 31 (Type locality : "Java")

*Material Examined* : 7 exs., Reg. No. V/A/ERS/ZSI/ 895, NBR, 25.04.2008.

*Distribution* : INDIA : Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, Gujarat, Nicobar Islands, Sikkim, West Bengal.

*Elsewhere* : BORNEO; CHINA; JAPAN (Introduced); JAVA, MALAY PENINSULA; MYANMAR; NEPAL; PHILIPPINES; SINGAPORE; SRI LANKA; SUMATRA; TAIWAN; THAILAND.

**\*25. *Rhacophorus bipunctatus* Ahl, 1927**

1927, *Rhacophorus bipunctatus* Ahl, *Sitzungsber. Ges. Naturforsch. Freunde Berlin*: 46

*Material Examined* : 4 exs., Reg. No. V/A/ERS/ZSI/878, Daribokgre IB, NBR, 01.05.2008.

*Distribution* : INDIA: Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland, Tripura.

*Remarks* : Recorded for the first time from Garo Hills.

Order GYMNOPIHIONA

Family ICHTHYOPHIIDAE

**26. *Ichthyophis alfredii* Mathew and Sen, 2009**

2009. *Ichthyophis alfredii* Mathew & Sen, *Rec. zool. Surv. India, Occ. Paper No, 309*: 4, Pl. I A, B. (Type locality: Nokrek Biosphere Reserve, Garo Hills, Meghalaya)

*Material Examined* : 1 ex., Reg. No. V/A/ERS/ZSI/841, Daribokgre IB compound, NBR, 24.06.2008; 4 exs., Reg. No. V/A/ERS/ZSI/856, Daribokgre IB compound, 24.06.2008; 1ex.,Reg.No.V/A/ERS/ZSI/857,Rongbang(alt.416m), NBR, 23.06.2008.

*Distribution* : Garo Hills, Meghalaya.

**27. *Ichthyophis daribokensis* Mathew and Sen, 2009**

2009. *Ichthyophis daribokensis* Mathew & Sen, *Rec. zool. Surv. India, Occ. Paper No, 309* : 8, Pl. II A,B.(Type locality: Nokrek Biosphere Reserve, Garo Hills, Meghalaya)

*Material Examined* : 1 ex., Reg. No. V/A/ERS/ZSI/839, Rensangre (alt. 522 m), NBR, 19.06.2008; 1 ex., Reg.No. V/A/ERS/ZSI/842, Rongramchiring, NBR, 28.04. 2008; 3 exs., Reg.No.V/A/ERS/ZSI/843, Sasatgre, NBR, 26.06.2008; 1 ex., Reg. No. V/A/ ERS/ZSI/ 844, Mandal Nokrat, NBR, 25.06.2008; 3 exs., Reg.No. V/A/ ERS/ZSI/845, Kiwang, Daribokgre, NBR, 25.06.2008; 1ex., Reg. No. V/A/ERS/ ZSI/ 846, Rensangre, NBR, 18.06.2008; 5 exs., Reg.No. V/A/ ERS/ ZSI/ 847, Daribokgre IB compound, NBR, 30.04.2008.

*Distribution* : Garo Hills, Meghalaya.

### 28. *Ichthyophis garoensis* Pillai and Ravichandran, 1999

1999. *Ichthyophis garoensis* Pillai and Ravichandran, *Rec. zool. Surv. India, Occ. Paper No. 172* : 28

*Material Examined* : 1 ex., Reg. No. V/A/ERS/ZSI/858, Rongbang (alt. 416 m), NBR, 23.06.2008; 2 exs., Reg. No. V/A/ERS/ZSI/859, Didari (alt. 1088 m), NBR, 25.06. 2008.

*Distribution* : INDIA : Assam, Meghalaya.

*Elsewhere* : Same as above.

### 29. *Ichthyophis nokrekensis* Mathew and Sen, 2009

2009. *Ichthyophis nokrekensis* Mathew & Sen, *Rec. zool. Surv. India, Occ. Paper No. 309*: 13, Pl. IV A,B,C. (Type locality : Nokrek Biosphere Reserve, Garo Hills, Meghalaya).

*Material Examined* : 1 ex., Reg. No. V/A/ERS/ZSI/840, Sasatgre, NBR, 26.06.2008; 1 ex., Reg. No. V/A/ERS/ZSI/848, Daribokgre IB compound, 25.06.2008; 1 ex., Reg. No. V/A/ERS/ZSI/849, Oragitok, NBR, 27.06.2008; 1 ex., Reg. No. V/A/ERS/ZSI/ 850, Kiwang, NBR, 25.06.2008; 1 ex., Reg. No. V/A/ERS/ZSI/851, Mandal Nokrat, NBR, 26.06.2008; 1 ex., Reg. No. V/A/ERS/ZSI/852, Sasatgre, NBR, 26.06.2008; 4 exs., Reg. No. V/A/ERS/ZSI/ 853, Daribokgre IB compound, NBR, 25.06.2008; 1 ex., Reg. No. V/A/ERS/ ZSI/ 854, Daribokgre, NBR, 30.04.2008; 1 ex., Reg. No. V/A/ERS/ZSI/855, Rensangre (alt. 522 m), 19.06.2008.

*Distribution* : Garo Hills, Meghalaya.

## SUMMARY

Nokrek Biosphere Reserve is a hot spot for amphibian collection. During the study period 138 examples of amphibia were collected belonging to 29 species under 15 genera, 6 families and 2 orders. 1 species of megophryid and 3 species of caecilians were described new from that area. One endangered (*Leptobrachium smithi*) and 5 vulnerable species (namely, *Bufo melanostictus*, *Fejervarya limnocharis*, *Hylarana leptoglossa*, *Hylarana nigrovittata* and *Philautus namdaphaensis*) have been recorded from the area.

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## **REPTILIA**

### **(CHORDATA : REPTILIA : SQUAMATA)**

**ROSAMMA MATHEW AND ASEM BIPIN MEETEI**

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### **INTRODUCTION**

During the present study in the Biosphere Reserve, the reptilian specimens were collected from different habitats such as land, water, in and around human habitations, under the logs, under the stones, in fields, thin and thick forests streams and bushes. The collected materials were preserved in 5-10% formalin depending on the size. Out of the 26 species of Lizards and 56 species of Snakes reported from Meghalaya (Mathew, 1995), 9 species of lizards under four families and 15 species of Snakes under three families are represented from the Biosphere Reserve. Identification and nomenclatural status followed after Schleich and Kastle, 2002; Smith 1935, 1935a and Whitaker and Captain, 2004.

### **SYSTEMATIC LIST**

Phylum CHORDATA  
Class REPTILIA  
Order SQUAMATA  
Suborder SAURIA  
Family GEKKONIDAE

1. *Hemidactylus platyurus* (Schneider, 1792)

Family AGAMIDAE

2. *Calotes maria* Gray, 1845
3. *Calotes versicolor* (Daudin, 1802)
4. *Japalura planidorsata* Jerdon, 1870

Family SCINCIDAE

5. *Eutropis macularia* (Blyth, 1853)
6. *Eutropis carinata* (Schneider, 1801)

7. *Sphenomorphus indicum indicum* (Gray, 1853)

8. *Sphenomorphus maculatus* (Blyth, 1853)

Family ANGUIDAE

9. *Ophisaurus gracilis* (Gray, 1845)

Family TYPHLOPIDAE

10. *Typhlops diardii* Schlegel, 1839

Family COLUBRIDAE

11. *Amphiesma khasiense* (Boulenger, 1890)

12. *Amphiesma xenura* (Wall, 1907)

13. *Amphiesma stolatum* (Linnaeus, 1758)

14. *Blythia reticulata* (Blyth, 1854)

15. *Calamaria pavementata* (Duméril, Bibron & Duméril, 1854)

16. *Lycodon aulicus* (Linnaeus, 1758)

17. *Oligodon albocinctus* (Cantor, 1839)

18. *Psammodynates pulverulentus* (Boie, 1827)

19. *Pseudoxenodon macrops* (Blyth, 1854)

20. *Rhabdophis himalayanus* (Günther, 1864)

21. *Rhabdophis subminiatus* (Schlegel, 1837)

22. *Trachischium monticola* (Cantor, 1839)

23. *Xenochrophis piscator* (Schneider, 1799)

Family VIPERIDAE

24. *Ovophis monticola* (Günther, 1864)

## SYSTEMATIC ACCOUNT

Order SQUAMATA

Suborder SAURIA

Family GEKKONIDAE

### 1. *Hemidactylus platyurus* (Schneider, 1792)

1792. *Stellio platyurus* Schneider, *Amphib. Physiol.* ii., p. 30.

*Material examined* : 2 exs., Reg. No.VR/ERS/ZSI/345, Rongram river side, NBR, 14.02.2008.

*Distribution* : INDIA: Arunachal Pradesh, Meghalaya, Sikkim and West Bengal.

*Elsewhere* : South East Asian countries and Southern China.

## Family AGAMIDAE

2. *Calotes maria* Gray, 1845

1845. *Calotes maria* Gray, *Cat. Liz. Brit. Mus.* p. 243.

*Material examined* : 1 ex., Reg. No. VR/ERS/ZSI/343: Daribok IB Compound, NBR, 22.11.2007; 1 ex., Reg. No. VR/ERS/ ZSI/352, Chinapat , NBR, Alt.438m, 27.04. 2008; 1 ex., Reg. No. VR/ERS/ZSI/355, Tosekgre Chiring side, NBR, Alt. 564m, 26.04.2008; 1 ex., Reg. No.VR/ERS/ ZSI/385, Rensangre Forest IB, NBR, 25.09.2008.

*Distribution* : INDIA: Meghalaya.

3. *Calotes versicolor* ( Daudin, 1802)

1802. *Agama versicolor* Daudin, *Hist. Nat., Rept.* iii, p. 395.

*Material examined* : 3 exs., Reg. No. VR/ERS/ZSI/342, Anksingre, NBR, Alt. 106m,10.02.2008; 1 ex., Reg. No.VR/ERS/ZSI/344, Daribok Forest IB compound,NBR, Alt.1064m, 12.02.2008; 1 ex., Reg. No. VR/ERS/ ZSI/353, Chinapat, NBR, Alt.438m, 27.04.2008; 2exs., Reg. No. VR/ ERS/ZSI/354, Tosekgre Chiring side, NBR, Alt. 564m; 2 exs., Reg. No. VR/ERS/ZSI/ 356, Bibragre Chiring side, NBR, Alt. 498m, 29.04.2008; 1 ex., Reg. No.VR/ERS/ZSI/357, Songkenigre, NBR, Alt.74m, 25.04.2008; 1 ex., Reg. No. VR/ERS/ZSI/361, Sonkenigre, NBR, Alt. 74m, 25.04.2008; 1 ex., VR/ERS/ZSI/386, Sasatgre, NBR, 27.09. 2008.

*Distribution* : All over India.

4. *Japalura planidorsata* Jerdon, 1870

1870. *Japalura planidorsata* Jerdon, *P. Asiat. Soc. Beng.* p. 76

*Material examined* : 7 exs., VR/ERS/ZSI/389, Daribokgre, NBR, 29.09.2008.

*Distribution* : INDIA: Meghalaya, Assam.

## Family SCINCIDAE

5. *Eutropis macularia* (Blyth,1853)

1853. *Euprepes macularius* Blyth, *J. Asiat. Soc. Beng.* xxii, p. 652.

*Material examined* : 1 ex., Reg. No. VR/ERS/ZSI/341, Anksingre, NBR, Alt. 106m, 10.02.2008; 1 ex., Reg. No. VR/ERS/ZSI/394, Mitagre, NBR, 30.09.2008.

*Distribution* : INDIA: Meghalaya, Assam, West Bengal, Bihar, Uttar Pradesh.

6. *Eutropis carinata* (Schneider, 1801)

1801. *Scincus carinatus* Schneider, *Hist. Amphib.* ii, p. 183.

*Material examined* : 1 ex., Reg. No. VR/ERS/ZSI/395, On the way to Chokpot, NBR, 30.09.2008.

*Distribution* : INDIA: Meghalaya, Mizoram, West Bengal, Indian Peninsula.

### 7. *Sphenomorphus indicum indicum* (Gray, 1853)

1853. *Hinulia indica* Gray, *Ann. Mag. Nat. Hist.* (2) xii, p. 388

*Material examined* : 1 ex., Reg. No. VR/ERS/ZSI/351, Daribokgre Forest IB Compound, NBR, Alt. 1132m 02.05.2008; 1 ex., Reg. No. VR/ERS /ZSI/ 387, Daribokgre Forest IB Compound, NBR, 28.09.2008.

*Distribution* : INDIA: Meghalaya, Sikkim, West Bengal, Andaman & Nicobar Island.

### 8. *Sphenomorphus maculatus* (Blyth, 1853)

1853. *Lissonota maculata* Blyth, *J. Asiat. Soc. Beng.* xxii, p. 653

*Material examined* : 2 exs., Reg. No. VR/ERS/ZSI/346, Rongram river side, NBR, 14.02.2008; 1ex., Reg. No. VR/ERS/ZSI/347, Daribokgre Forest IB Compound, NBR, 21.11.2007; 2 exs., Reg. No. VR/ERS/ZSI/388, Daribokgre Forest IB Compound, NBR, 28.09.2008.

*Distribution* : INDIA: Meghalaya, Assam, Mizoram, Nagaland, West Bengal, Andaman & Nicobar.

## Family ANGUIDAE

### 9. *Ophisaurus gracilis* (Gray, 1845)

1845. *Pseudopus gracilis* Gray, *Cat. Liz. Brit. Mus.* P. 56

*Material examined* : 1 ex., Reg. No. VR/ERS/ZSI/377, Didari, NBR, Alt. 1103m, 25.9.2008.

*Distribution* : INDIA: Meghalaya, Assam, Eastern Himalayas, West Bengal.

## Suborder SERPENTES

## Family TYPHLOPIDAE

### 10. *Typhlops diardii* Schlegel, 1839

1839. *Typhlops diardi* Schlegel, *Addid. Amphib.*, p. 39.

*Material examined* : 1 ex., Reg. No. VR/ERS/ZSI/372, Daribokgre IB compound, NBR, 24.06.2008; 1 ex., VR/ERS/ZSI/409, Sasatgre, NBR, 26.6.2009.

*Distribution* : INDIA: Meghalaya, Assam, Mizoram, Nagaland, Sikkim, West Bengal, 1525m in western Himalayas upto Dehradun.

## Family COLUBRIDAE

11. *Amphiesma khasiense* (Boulenger, 1890)

1890. *Tropidonotus khasiensis* Boulenger, *F. B. I.* p. 344

*Material examined* : 1ex., Reg. No.VR/ERS/ZSI/366, NBR entry point, Daribokgre, NBR, 26.06.2008; 1 ex., VR/ERS/ZSI/381, Sastgre, NBR, 27.9.2008.

*Distribution* : INDIA: Meghalaya, Assam, Mizoram, West Bengal.

12. *Amphiesma xenura* (Wall, 1907)

1907. *Tropidonotus xenura* Wall, *J. Bombay. N. H. S.* xvii, p. 616.

*Material examined* : 1 ex., Reg. No.VR/ERS/ZSI/376, Romgram river side, Rengsangre, NBR, 25.09.2008; 1 ex., VR/ERS/ZSI/392, Daribokgre, NBR, 28.09.2008; 1 ex., VR/ERS/ZSI/413, Near Peak area, Daribokgre, NBR, Alt. 1115m, 25.06.2009.

*Distribution* : INDIA: Meghalaya, Mizoram and Nagaland.

13. *Amphiesma stolatum* (Linnaeus, 1758)

1758. *Coluber stolatus* Linnaeus, *Syst. Nat.* 10<sup>th</sup> ed. p. 219

*Material examined* : 1 ex., Reg. No. VR/ERS/ZSI/384, Rengsangre, NBR, 26.09.2008.

*Distribution* : INDIA: Meghalaya, Mizoram, the whole of India.

14. *Blythia reticulata* (Blyth, 1854)

1854. *Calamaria reticulata* Blyth, *J.A. S. Bengal*, xxiii, p. 287

*Material examined* : 1 ex., Reg. No.VR/ERS/ZSI/375, Daribokgre, NBR, 24.06.2008; 1 ex., Reg. No.VR/ERS/ZSI/379, Daribokgre IB compound, NBR, 27.09.2008; 1ex., Reg. No. VR/ERS/ZSI/382, Daribokgre, NBR, 27.09.2008; 1ex., VR/ERS/ZSI/393, Daribokgre, NBR, 28.09.2008.

*Distribution* : INDIA: Meghalaya, Assam, Manipur.

15. *Calamaria pavementata* (Duméril, Bibron & Duméril, 1854)

1854. *Calamaria pavementata* Dum. & Bib., *Erp. Gen.* vii, p. 71.

*Material examined* : 1 ex., Reg. No. VR/ERS/ZSI/338, Simsang area, NBR, Alt. 901m, Nov., 2007; 2 exs., Reg. No. VR/ERS/ZSI/358, Rongram Chiring, NBR, Alt. 437m, 28.04.2008; 1 ex., Reg. No.VR/ERS/ZSI/365, Oragitok, NBR, 28.06.2008.

*Distribution* : INDIA: Meghalaya, Assam.

16. *Lycodon aulicus* (Linnaeus, 1758)

1758. *Coluber aulicus* Linnaeus, *Mus. Adolph. Frider.* i, p. 29

*Material examined* : 1 ex., VR/ERS/ZSI/373, Tura Forest IB.

*Distribution* : INDIA: Meghalaya, Assam, the whole of India.

### 17. *Oligodon albocinctus* (Cantor, 1839)

1839. *Coronella albocincta* Cantor, *P. Z. S.*, p. 50

*Material examined* : 1 ex., Reg. No.VR/ERS/ZSI/370, Chinapat, NBR, Alt. 439m, 23.06.2008; 1 ex., VR/ERS/ZSI/408, Daribokgre vill., NBR, Alt. 1118m, 24.06.2009.

*Distribution* : INDIA: Meghalaya, Assam, Sikkim & West Bengal.

### 18. *Psammodynates pulverulentus* (Boie, 1827)

1827. *Psammophis pulverulentus* Boie, *Isis*, p. 547.

*Material examined* : 1 ex., Reg. No. VR/ERS/ZSI/360, Didami Chiring, NBR, Alt.500m, 29.04.2008; 1 ex., Reg. No. VR/ERS/ZSI/368, Daribokgre IB Compound, NBR, 24.06.2008; 1 ex., VR/ERS/ZSI/390, Mondal Nokrat, NBR, 28.09.2008; 1 ex., VR/ERS/ZSI/412, Near Peak area, Daribokgre, NBR, Alt. 1115m, 26.06.2009.

*Distribution* : INDIA: Meghalaya, Arunachal Pradesh, Mizoram & West Bengal.

### 19. *Pseudoxenodon macrops* (Blyth, 1854)

1854. *Tropidonotus macrops* Blyth, *J. A. S. Bengal*, xxiii, p. 296.

*Material examined* : 1 ex., Reg. No. VR/ERS/ZSI/383, Rengsangre, NBR, 24.09.2008.

*Distribution* : INDIA: Meghalaya, Assam & West Bengal.

### 20. *Rhabdophis himalayanus* (Günther, 1864)

1864. *Tropidonotus himalayanus*, Gunther, *Rept. Brit. Ind.*, p. 265

*Material examined* : 1 ex., Reg. No. VR/ERS/ZSI/380, Peak, NBR, 29.09.2008.

*Distribution* : INDIA: Meghalaya, Mizoram, Manipur, Nagaland & Eastern Himalayas.

### 21. *Rhabdophis subminiatus* (Schlegel, 1837)

1837. *Tropidonotus subminiatus* Schlegel, *Phys. Serp.*, ii, p. 313.

*Material examined* : 1 ex., Reg. No.VR/ERS/ZSI/391, Daribokgre, NBR, 28.09.2008.

*Distribution* : INDIA: Meghalaya, Mizoram, Manipur, Nagaland, Assam, Tripura, Sikkim & Eastern Himalayas.

### 22. *Trachischium monticola* (Cantor, 1839)

1839. *Calamaria monticola* Cantor, *P. Z. S.*, p. 50.

*Material examined* : 3 exs., Reg. No. VR/ERS/ZSI/359, Nokrek peak, NBR, 02.05.2008; 1 ex., Reg. No. VR/ERS/ZSI/371, Didari Chiring & around, Daribokgre, NBR 25.06.2008; 2 exs., Reg. No. VR/ERS/ZSI/378, Entry point to NBR, 29.09.2008.

*Distribution* : INDIA: Meghalaya.

### 23. *Xenochrophis piscator* (Schneider, 1799)

1799. *Hydrus piscator* Schneider, *Hist. amphib.* i. p. 247.

*Material examined* : 1 ex., Reg. No. VR/ERS/ZSI/339, Rongsi Chiring, NBR, Alt.184m, 17.01.2008; 1ex., Reg. No. VR/ERS/ZSI/340, Gunguagre Chiring, NBR, 21.02.2008; 2 exs., Reg. No. VR/ERS/ZSI/367, Rangbang 1.5 km from Chinapat, NBR, 23. 06. 2008.

*Distribution* : INDIA: Throughout India except Andaman & Nicobar Island.

### Family VIPERIDAE

### 24. *Ovophis monticola* (Günther, 1864)

1864. *Trimeresurus monticola* Gunther, *Rept. Brit. Ind.*, p. 388.

*Material examined* : 1 ex., Reg. No. VR/ERS/ZSI/374, Daribokgre IB compound, NBR, 24.06.2008.

*Distribution* : INDIA: Meghalaya, Assam, Arunachal Pradesh, Mizoram, West Bengal & Eastern Himalayas.

### SUMMARY

The present species inventory of Reptilian fauna of Nokrek Biosphere Reserve is done from the samples collected during the eight surveys conducted by different Scientist of this Station within a span of three years. 73 examples of reptilian fauna belonging to the order Squamata were studied, out of which 36 examples belongs to sub-order Sauria under 9 species 6 genera and 4 families and 37 examples belongs to Sub-order Serpentes under 15 species 12 genera and 3 families. Considering the location of this study area, there is a fair chance for the presence of turtles, tortoises and some more lizards and snakes. Since the reptiles habitat cover almost anywhere; intensive, qualitative, group specific future surveys needs to be taken up to determine and update the status of reptilian fauna in this Biosphere Reserve.

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