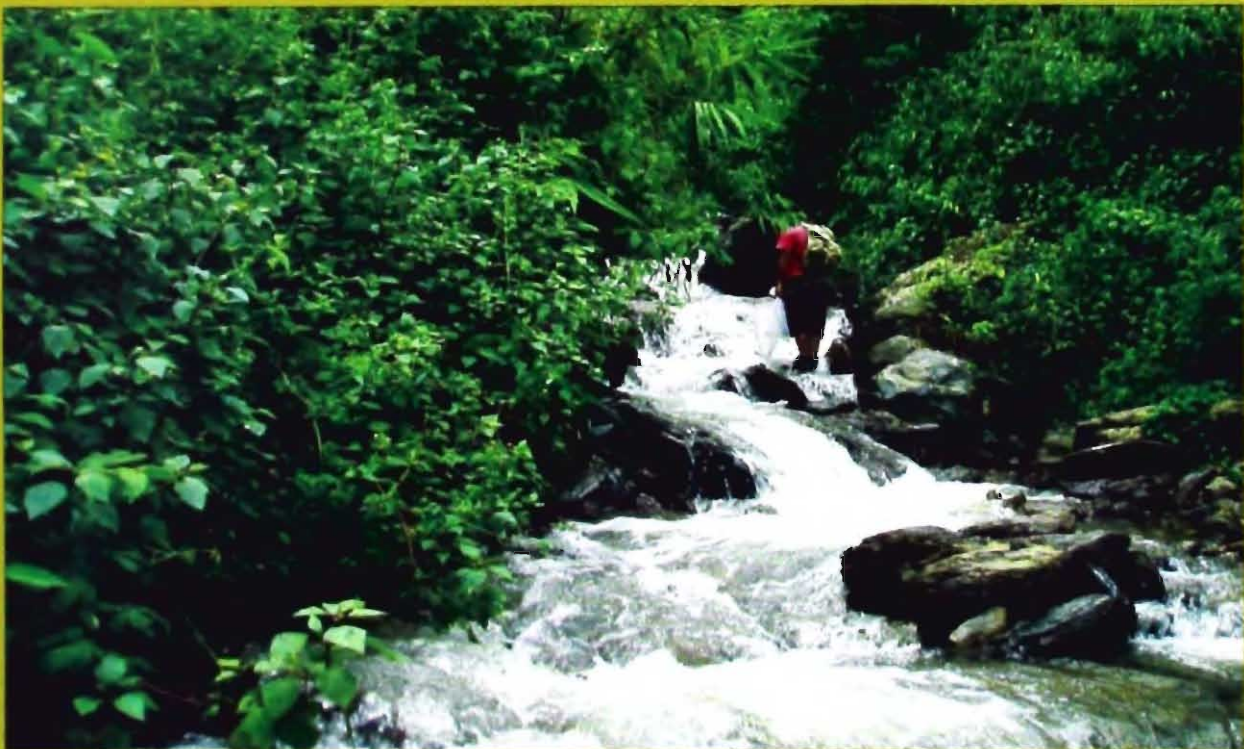


OCCASIONAL PAPER NO. 285

Studies on Lower Vertebrates of Nagaland

**NIBEDITA SEN
ROSHAMMA MATHEW**



ZOOLOGICAL SURVEY OF INDIA

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**RECORDS OF THE
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ROSAMMA MATHEW**

Zoological Survey of India, Eastern Regional Station, Risa Colony, Shillong - 793 003

Edited by the Director, Zoological Survey of India, Kolkata



**Zoological Survey of India
Kolkata**

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NO. 285	2008	1-205
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CONTENTS

INTRODUCTION	1
MAP OF NAGALAND SHOWING DISTRICTS	3
FIGURES 2-14	4
PISCES	11
SYSTEMATIC LIST	11
SYSTEMATIC ACCOUNT	17
FIGURES 15-113	79
AMPHIBIA	107
SYSTEMATIC LIST	107
SYSTEMATIC ACCOUNT	109
FIGURES 114-133	131
REPTILIA	139
SYSTEMATIC LIST	139
SYSTEMATIC ACCOUNT	142
FIGURES 134-189	179
SUMMARY	177
REFERENCES	177

INTRODUCTION

Nagaland lies between 25°6'–27°4' N and between 93°20'–95°15' E. (Fig. 1). It is hilly and mountainous with deep gorges and steep slopes bordering narrow valleys (Fig. 2-14), and has a geographical area of 16,579,00 ha. The state consists of a narrow strip of hilly area running from the northeast to the southwest, which is located in the northern extension of the Arakan Yoma ranges of Myanmar. It comprises of the erstwhile Naga Hills district of Assam and Tuensang Frontier Division of the North East Frontier Agency. Nagaland got its statehood as the 16th state of India on 1st December, 1963. For Administrative convenience, the state is divided into 11 districts (11 districts are officially declared, but a map to this effect was not available) namely Peren, Dimapur, Kohima, Phek, Kiphire, Zunheboto, Wokha, Tuensang, Mokokchung, Longleng and Mon. Kohima, the capital, at 1495 m above mean sea level is historically a very important city. The war cemetery here stands as a monument of World Peace. Nagaland is home to 16 major tribes. The state claims to have a literacy rate of 67 % and the population density is 120 persons per sq. km.

With its exquisitely picturesque landscapes, vibrant colourful sunrise and sunsets, lush and verdant flora (Fig. 2-14), Nagaland is a land that represents unimaginable beauty molded perfectly for a breathtaking experience. It is sometimes referred to as the Switzerland of the East. Nagaland is bounded by Assam in the west, Myanmar on the east, Arunachal Pradesh and parts of Assam in the north and Manipur in the south.

The forest types are Tropical Wet Evergreen, Tropical Moist Deciduous, Montane Wet Temperate and Subtropical Pine Forests. The recorded Forest Area in Nagaland is 8,629,00 ha which is 52% of the geographical area of the state and 1.1% of India's forest area. An area of 88.36% of the recorded forest area is under private control and the rest under state government. Tropical Wet Evergreen forest occurs in patches in the lower and middle elevations all over the state, except in the southwest where Tropical Moist Deciduous forests dominate. Many of the river valleys and gorges are covered with Evergreen forest. The tropical semi-evergreen forest also occurs in many of the once evergreen forests. In the higher hills Subtropical Broadleaf forest occurs with small areas of conifers in the eastern parts. There is no large Grassland in Nagaland, however, small patches occur in sheltered valleys and along the rivers. In the abandoned Jhum, grasses appear till they are replaced by shrubs and trees. As per the Forest Survey of India Report, 1999, there has been an overall increase in the dense forest cover in Nagaland because of improved land

management. The state has one National Park and three Wildlife Sanctuaries. The climate is tropical 'monsoon' type with a hot wet summer and a cool dry winter. Altitude varies from 194 m to 3841 m and the temperature generally ranges from less than 0° to 35°C. Annual rainfall averages between 1800 to 2500 mm.

Some of the rivers of the state wherein collections were made during the surveys are Chathe (also known as 'pagla nadi', because of the flash floods occurring in it), Dhansiri, Kaleiru, Munglai, Mutsure, Nhezu, Saprai, Sedzu, Tanghairoi, Taphi, Tiru, Tathan, Tening and Zingkhi (Fig. 2-14). Nagaland exhibits twin drainage systems. Its western and northern parts are drained by Brahmaputra drainage, while eastern and southern part by Chindwin drainage.

Studies on the Fish fauna of the state have been undertaken by Hora (1921, 21a, 36); Hora and Mukherjee (1935); Malhotra and Suri (1969); Sen, (1985); Talwar and Jhingran (1991); Nath and Dey (1997); Kosygin and Viswanath (1998); Jayaram (1999); Menon (1999); Sen (2003) and Karmakar and Das (2005). As per literature 125 species of fish have so far been reported from the state. The present study has enhanced knowledge of this group and a total of 140 species, including 15 new records, have been reported herein. All the reported and recorded species have been incorporated to get an overall picture of the fish resources of the state. The systematic arrangement is as per Jayaram (1999) and the nomenclatural status as per online version of Eschmeyer (2007, www.fishbase.org). Status of the species wherever applicable has been mentioned under remarks as per BCPP, C.A.M.P. (1999). For all the species only original references have been cited. The species marked with** denotes new record for the state.

Apart from Chanda's (1994, 2002) comprehensive work on the amphibians, there is very little information on the amphibian fauna of Nagaland (Ao, *et al.*, 2003; Kiyasetuo and Khare, 1986). The present paper deals with 43 species of amphibians. Status of the species has been mentioned under *Remarks* wherever applicable is as per BCPP, C.A.M.P. (1998).

Located in the 'Biodiversity hot spot' region, Nagaland is very rich in herpetofauna. However, the state needs yet to be thoroughly explored to assess its herpetological resources. Ao *et al.* (2004) reported 41 species of reptiles from Nagaland with 19 new records for the state. Subsequently, Mathew (2005) added two more species. Fauna of Nagaland (2006) reported 62 species of reptiles. The present study reports 74 species of reptiles.

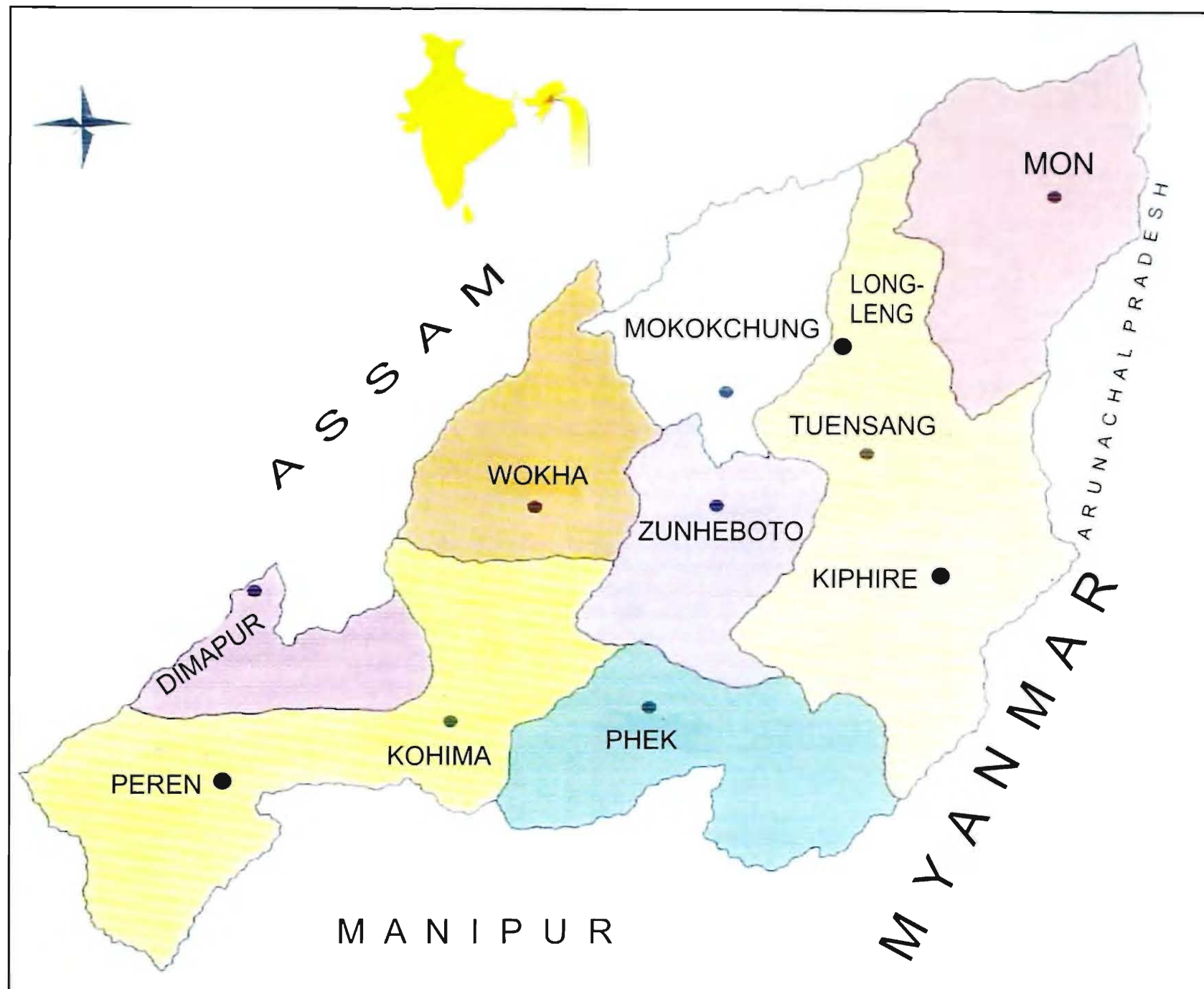


Fig. 1 : Map of Nagaland showing districts



Fig. 2 : Ruins of Medieval Kachari Kingdom, Relics of a bygone Era, Dimapur



Fig. 3 : Traditional Gate



Fig. 4 : Chathe river, Dimapur



Fig. 5 : Jhum cultivation on the hills



Fig. 6 : Fish collection, Kiphire

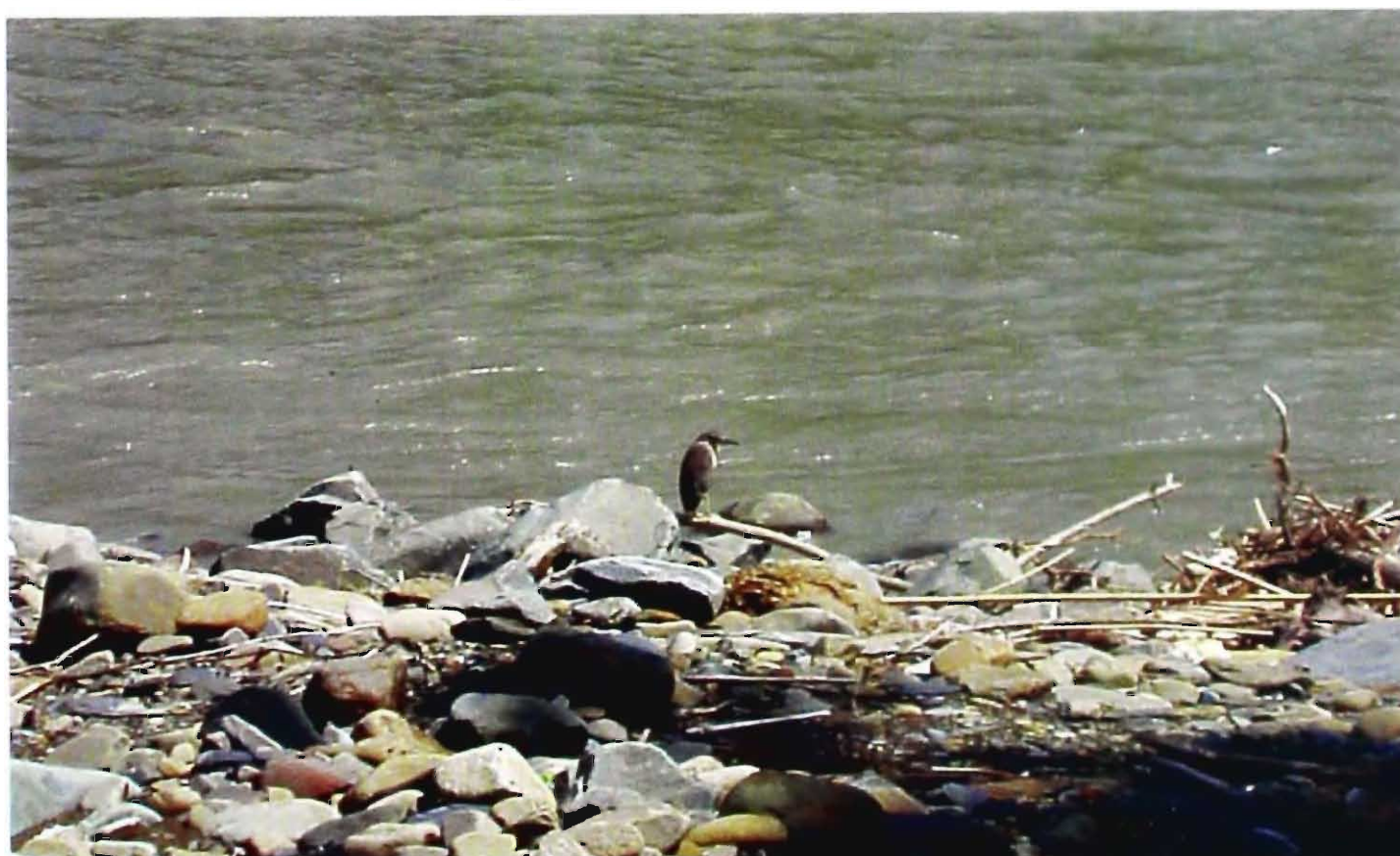


Fig. 7 : A heron by the river side, Kiphire



Fig. 8 : Mokokchung town on a misty morning



Fig. 9 : Jhum cultivation across and over the hills



Fig. 10 : A view on way to Phek



Fig. 11 : Fish collection, Tuensang



Fig. 12 : A torrential river, habitat of the cascade frog



Fig. 13 : Traditional way of fish collection, Tuensang



Fig. 14 : The survey party at Wokha

PISCES

SYSTEMATIC LIST

Phylum CHORDATA

Class ACTINOPTERYGII

Order OSTEOGLOSSIFORMES

Family NOTOPTERIDAE

1. *Notopterus notopterus* (Pallas, 1769)

Order CYPRINIFORMES

Family CYPRINIDAE

2. *Hypophthalmichthys molitrix* (Valenciennes, 1844)
3. *Salmostoma acinaces* (Valenciennes, 1842)
4. *Salmostoma bacaila* (Hamilton, 1822)
5. *Aspidoparia morar* (Hamilton, 1822)
6. *Barilius barila* (Hamilton, 1822)
7. *Barilius barna* (Hamilton, 1822)
8. *Barilius barnoides* Vinciguerrae, 1890**
9. *Barilius bendelisis* (Hamilton, 1807)
10. *Barilius dogarsinghi* Hora, 1921
11. *Barilius shacra* (Hamilton, 1822)
12. *Barilius tileo* (Hamilton, 1822)
13. *Raiamas guttatus* (Day, 1869)
14. *Chela cachius* (Hamilton, 1822)
15. *Chela laubuca* (Hamilton, 1822)
16. *Esomus danricus* (Hamilton, 1822)
17. *Danio dangila* (Hamilton, 1822)
18. *Danio rerio* (Hamilton, 1822)
19. *Devario acuticephala* (Hora, 1921)
20. *Devario aequipinnatus* (McClelland, 1839)
21. *Devario devario* (Hamilton, 1822)

22. *Devario naganensis* Chaudhuri, 1912
23. *Rasbora daniconia* (Hamilton, 1822)**
24. *Rasbora rasbora* (Hamilton, 1822)
25. *Amblypharyngodon mola* (Hamilton, 1822)
26. *Ctenopharyngodon idellus* (Valenciennes, 1844)
27. *Cyprinus carpio carpio* Linnaeus, 1758
28. *Tor progenies* (McClelland, 1839)
29. *Tor putitora* (Hamilton, 1822)
30. *Tor tor* (Hamilton, 1822)
31. *Neolissocheilus hexagonolepis* (McClelland, 1839)
32. *Neolissocheilus hexastichus* (McClelland, 1839)
33. *Osteobrama cotio cotio* (Hamilton, 1822)
34. *Chagunius chagunio* (Hamilton, 1822)
35. *Poropuntius burtoni* (Mukherji, 1934)
36. *Poropuntius clavatus* (McClelland, 1845)
37. *Puntius chelynooides* (McClelland, 1839)
38. *Puntius chola* (Hamilton, 1822)
39. *Puntius conchoni* (Hamilton, 1822)
40. *Puntius filamentosus* (Valenciennes, 1844)
41. *Puntius manipurensis* Menon, Remadevi and Vishwanath, 2000**
42. *Puntius orphoides* (Valenciennes, 1842)
43. *Puntius shalynius* Yazdani & Talukdar, 1975
44. *Puntius sophore* (Hamilton, 1822)
45. *Puntius ticto* (Hamilton, 1822)
46. *Cyprinion semiplotum* (McClelland, 1839)
47. *Semiplotus manipurensis* Vishwanath and Kosygin, 2000**
48. *Cirrhinus cirrhosus* (Bloch, 1795)
49. *Catla catla* (Hamilton, 1822)
50. *Bangana devdevi* (Hora, 1936)**
51. *Labeo angra* (Hamilton, 1822)

52. *Labeo ariza* (Hamilton, 1807)
53. *Labeo dyocheilus* (McClelland, 1839)
54. *Labeo rohita* (Hamilton, 1822)
55. *Sinilabeo dero* (Hamilton, 1822)
56. *Schizothorax richardsonii* (Gray, 1832)
57. *Crossocheilus burmanicus* Hora, 1936
58. *Crossocheilus latius* (Hamilton, 1822)
59. *Garra annandalei* Hora, 1921
60. *Garra elongata* Vishwanath and Kosygin, 2000**
61. *Garra gotyla gotyla* (Gray, 1832)
62. *Garra kempfi* Hora, 1921
63. *Garra lamta* (Hamilton, 1822)
64. *Garra lissorhynchus* (McClelland, 1843)
65. *Garra naganensis* Hora, 1921
66. *Garra nasuta* (McClelland, 1839)
67. *Garra rupecula* (McClelland, 1839)

Family PSILORHYNCHIDAE

68. *Psilorhynchus balitora* (Hamilton, 1822)
69. *Psilorhynchus homaloptera* Hora & Mukherji, 1935

Family BALITORIDAE

70. *Balitora brucei* Gray, 1830
71. *Acanthocobitis botia* (Hamilton, 1822)
72. *Acanthocobitis zonalternans* (Blyth, 1861)
73. *Nemacheilus multifasciatus* Day, 1878
74. *Nemacheilus sikmaiensis* Hora, 1921
75. *Nemacheilus singhi* (Menon, 1987)
76. *Schistura kangjupkhulensis* (Hora, 1921)
77. *Schistura khugae* Vishwanath and Shanta, 2004**
78. *Schistura manipurensis* (Chaudhuri, 1912)
79. *Schistura minutus* Vishwanath and Shantakumar, 2005**

- 80. *Schistura nagaensis* (Menon, 1987)
- 81. *Schistura prashadi* (Hora, 1921)
- 82. *Schistura rupecola* (McClelland, 1838)
- 83. *Schistura savona* (Hamilton, 1822)
- 84. *Schistura scaturigina* (McClelland, 1839)
- 85. *Schistura tirapensis* Kottelat, 1990**

Family COBITIDAE

- 86. *Botia dario* (Hamilton, 1822)
- 87. *Botia rostrata* Gunther, 1868
- 88. *Lepidocephalichthys berdmorei* (Blyth, 1861)
- 89. *Lepidocephalichthys guntea* (Hamilton, 1822)
- 90. *Lepidocephalichthys irrorata* (Hora, 1921)
- 91. *Pangio pangia* (Hamilton, 1822)

Order SILURIFORMES

Family BAGRIDAE

- 92. *Mystus armatus* (Day, 1865)
- 93. *Mystus bleekeri* (Day, 1877)
- 94. *Mystus cavasius* (Hamilton, 1822)
- 95. *Sperata seenghala* (Sykes, 1841)

Family SILURIDAE

- 96. *Ompok bimaculatus* (Bloch, 1797)
- 97. *Wallago attu* (Schneider, 1801)
- 98. *Pterocryptis berdmorei* (Blyth, 1861)
- 99. *Pterocryptis indicus* Dutta, Barman and Jayaram, 1987

Family AMBLYCIPITIDAE

- 100. *Amblyceps mangois* (Hamilton, 1822)

Family ERETHISTIDAE

- 101. *Conta conta* (Hamilton, 1822)
- 102. *Erethistes pussilus* Muller & Troschel, 1845

103. *Pseudolaguvia shawi* (Hora, 1921)**

Family SISORIDAE

104. *Exostoma labiatum* (McClelland, 1842)

105. *Glyptothorax cavia* (Hamilton, 1822)

106. *Glyptothorax manipurensis* Menon, 1954**

107. *Glyptothorax platypogonoides* (Bleeker, 1855)

108. *Glyptothorax sinensis* (Regan, 1908)

109. *Glyptothorax trilineatus* Blyth, 1861

110. *Hara hara* (Hamilton, 1822)

111. *Pseudecheneis sulcatus* (McClelland, 1842)

112. *Sisor rhabdophis* Hamilton, 1822

Family CLARIIDAE

113. *Clarias batrachus* (Linnaeus, 1758)**

Family HETEROPNEUSTIDAE

114. *Heteropneustes fossilis* (Bloch, 1794)

Family CHACIDAE

115. *Chaca chaca* (Hamilton, 1822)**

Family OLYRIDAE

116. *Olyra burmanica* Day, 1871

117. *Olyra horae* (Prasad & Mukherji, 1929)

118. *Olyra longicaudata* McClelland, 1842

Order BELONIFORMES

Family BELONIDAE

119. *Strongylura strongylura* Van Hasselt, 1823

120. *Xenentodon cancila* (Hamilton, 1822)

Order SYNBRANCHIFORMES

Family SYNBRANCHIDAE

121. *Monopterusuchia* (Hamilton, 1822)

Order SYNBRANCHIFORMES

Family MASTACEMBELIDAE

122. *Macrogathus aral* (Bloch & Schneider, 1801)

123. *Macrogathus pancalus* (Hamilton, 1822)

124. *Mastacembelus armatus* (Lacepede, 1800)

Order PERCIFORMES

Family AMBASSIDAE

125. *Chanda nama* (Hamilton, 1822)

Family BADIDAE

126. *Badis assamensis* Ahl, 1937**

127. *Badis badis* (Hamilton, 1822)

Family CICHLIDAE

128. *Oreochromis mossambica* (Peters, 1852)

Family GOBIIDAE

129. *Glossogobius giuris* (Hamilton, 1822)

Family ANABANTIDAE

130. *Anabas cobojus* (Hamilton, 1822)

131. *Anabas testudineus* (Bloch, 1795)

Family OSPHRONEMIDAE

132. *Colisa fasciata* (Schneider, 1801)

133. *Colisa lalia* (Hamilton, 1822)

134. *Trichogaster chuna* (Hamilton, 1822)

135. *Pseudosphromenus cupanus* (Cuvier, 1831)

Family CHANNIDAE

136. *Channa barca* (Hamilton, 1822)

137. *Channa gachua* (Hamilton, 1822)**

138. *Channa orientalis* (Schneider, 1801)

139. *Channa punctata* (Bloch, 1793)

140. *Channa striata* (Bloch, 1793)

SYSTEMATIC ACCOUNT

PHYLUM CHORDATA

CLASS ACTINOPTERYGII

ORDER OSTEOGLOSSIFORMES

FAMILY NOTOPTERIDAE

1. *Notopterus notopterus* (Pallas, 1769)

Gymnotus notopterus Pallas, 1769. *Spicil. Zool.*, 7 : 40, pl. 6, fig. 2 (Type locality : ? Indian Ocean).

Material examined : Material not available for study from Nagaland but reported from the state (Karmakar & Das, 2005).

Diagnostic characters : Body oblong, strongly compressed with fine scales. Caudal region long and tapering. Abdomen edge serrated, head compressed with large membranous opercular flap. Mouth moderate, maxilla extends to middle of orbit. Preorbital serrated, not transverse bars on back. Dorsal fin short, inserted near middle of back, with 7-9 rays. Pectoral fins moderate, extend beyond anal fin origin. Anal fin confluent with caudal having 97-111 rays.

Distribution : INDIA : Throughout India.

Elsewhere : BANGLADESH; INDONESIA; JAVA; MALAYASIA; MYANMAR; NEPAL; PAKISTAN; SUMATRA and THAILAND

ORDER CYPRINIFORMES

FAMILY CYPRINIDAE

2. *Hypophthalmichthys molitrix* (Valenciennes, 1844)

Leuciscus molitrix Valenciennes, 1844, *Hist. nat. Poiss.*, 17 : 360 (Type locality : China).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body stout and compressed with small scales ; abdomen strongly compressed with sharp keel from throat to vent. Head rather small, snout blunt, obtusely rounded anteriorly. Mouth terminal, lower jaw slightly longer than upper. Barbels absent. Dorsal fin short with 1-3 spines, last simple ray not serrated. and 6-7 branched rays. Anal fin with 1-3 spines and 10-14 branched rays. Lateral line complete with 110-115 scales. Body olivaceous to silvery.

Distribution : INDIA : Introduced.

Elsewhere : CHINA; EASTERN SIBERIA; introduced around the world.

3. *Salmostoma acinaces* (Valenciennes, 1842)

Leuciscus acinaces Valenciennes, 1842, *Hist.nat.Poiss.*, 17 : 509 (Type locality : Kaveri drainage, Mysore)

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das 2005).

Dianostic characters : Body elongate and compressed, its ventral profile more convex than dorsal profile. Mouth oblique, lower jaw with a rudimentary symphysial process. Dorsal fin inserted above or slightly behind origin of anal fin. Scales large, lateral line slightly curved with 42-46 scales. Body silvery with a lateral band. Anal and caudal fins edged black.

Distribution : INDIA : Nagaland, Karnataka, West Bengal, Maharashtra, Bhavani river near Chennai and Cauvery river system.

Elsewhere : BANGLADESH

4. *Salmostoma bacaila* (Hamilton, 1822) (Fig. 15)

Cyprinus bacaila Hamilton, 1822. *Fish of Ganges*, pp. 265, 384, Pl. 8, fig. 76 (Type locality : Freshwater rivers of Gangetic Provinces).

Material examined : 1 ex. (Regd. no. V/F/2176), Saprai river, Mon district, coll. R. Mathew & party, 26.09.2006.

Diagnostic characters : Barbels absent. Pectoral axial scale not thickened along its lower border. Lateral line curved gently downward above pectoral fin with 86-110 scales. Dorsal fin with 7-8 branched rays; anal fin with 10-13 branched rays. Lateral transverse scales 17-19/4-6. Dorsal fin inserted well in advance of anal fin.

Distribution : INDIA : throughout India except Kerala, Karnataka and Tamil Nadu.

Elsewhere : AFGHANISTAN; BANGLADESH; MYANMAR; NEPAL; PAKISTAN.

5. *Aspidoparia morar* (Hamilton, 1822) (Fig. 16)

Cyprinus morar Hamilton, 1822. *Fishes of Ganges* : 264, 384, pl. 31, fig. 75 (Type locality : Yamuna river and Tista river).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das 2005).

Diagnostic characters : Body elongate and subcylindrical; abdomen rounded, head moderate. Mouth inferior, lower lip absent, lower jaw with a sharp crescentic edge; barbels absent. Dorsal fin with 9-11 rays inserted well behind pelvic fin base. Anal fin with 10-12 rays. Scales fairly deciduous; lateral line with 38-42 scales.

Distribution : INDIA : Northern and North Eastern India.

Elsewhere : AFGHANISTAN; BANGLADESH; IRAN; MYANMAR; NEPAL; PAKISTAN; THAILAND; IRAN.

6. *Barilius barila* (Hamilton, 1822)
(Fig. 17)

Cyprinus (Barilius) barila Hamilton, 1822, *Fishes of Ganges* : 267, 384 (Type locality : Rivers of northern Bengal).

Material examined : 9 exs. (Regd. no. V/F/ERS/2174), Saprai river, Mon district, coll. R. Mathew & party, 26.09.2006; 4 exs. (Regd. no. V/F/ERS/2278), Zingkhi river, Kiphire district, coll. R. Mathew & party, 16.09.2006.

Diagnostic characters : Body shallow, mouth moderate, maxilla extends to below anterior third of orbit. Barbels two pairs. Dorsal fin placed in advance of anal fin. Lateral line with 43-46 scales. Body silvery, generally with 14-15 vertical bands.

Distribution : INDIA : Assam, Manipur, Meghalaya, Nagaland, Bihar, Delhi, Jammu & Kashmir, Uttar Pradesh, Rajasthan, Orissa, Madhya Pradesh, Mysore, West Bengal.

Elsewhere : BANGLADESH; MYANMAR; NEPAL.

Remarks : Its status is Vulnerable at national level (Sen, 2003).

7. *Barilius barna* (Hamilton, 1822)

Cyprinus (Barilius) barna Hamilton, 1822. *Fishes of Ganges* : 268, 384 (Type locality : Yamuna river and Brahmaputra river).

Material examined : 2 exs. (Regd. no. V/F/ERS/2266), Jalukie, Peren district, coll. R. Mathew & party, 10.09.2006; 5 exs. (Regd. no. V/F/ERS/2272), Kaleirue river, New Jalukie, Peren district, coll. R. Mathew & party, 11.09.2006.

Diagnostic characters : Body rather deep, mouth moderate. Barbels usually absent, often rudimentary may be present. Dorsal fin inserted in advance of anal fin. Lateral line with 39-42 scales. Tubercles large and well developed on snout and lower jaw. Body dull green silvery with 7-11 well defined vertical dark bars. Dorsal and caudal fins edged with black.

Distribution : INDIA : Ganga, Yamuna and Brahmaputra river systems, Orissa.

Elsewhere : BANGLADESH; MYANMAR; NEPAL.

****8. *Barilius barnoides* Vinciguerra, 1890**
(Fig. 18)

Barilius barnoides Vinciguerra, 1890. *Annali Mus. Civ. Stor. nat. Giacoma Doria, Genova*, (2) **9** : 307, pl. 9, fig. 9 (Type locality : "Paesi dei Catcin" = east of Bhamo in Irrawaddy drainage).

Material examined : 2 exs. (Regd. no. V/F/ERS/2297), Phek town, Phek district, coll. R. Mathew & party, 15.09.2006.

Diagnostic characters : Body deep, mouth moderate. Barbels 2 pairs, maxillary barbels shorter than rostral barbels. Dorsal fin inserted entirely in advance of anal fin. Lateral line with 42-45 scales. Tubercles on head small and poorly developed. Body brownish on back with 14-15 vertical bars descending to above lateral line.

Distribution : INDIA : Nagaland.

Elsewhere : MYANMAR.

Remarks : Reported for the first time from the state.

9. *Barilius bendelisis* (Hamilton, 1807)
(Fig. 19)

Cyprinus bendelisis Hamilton, 1807. *Journey in Mysore*, **3** : 345, Pl.32 (Type locality : Vedwati stream, headwaters of Krishna river near Heriuru, Mysore).

Material examined : 2 exs. (Regd. no. V/F/ERS/1304), Pherema, Kohima district, coll. Y.P. Sinha & party, 14.03.1993; 2 exs. (Regd. no. V/F/ERS/1311), Paglapahar, Dimapur district, coll. Y.P. Sinha & party, 13.03.1993; 3 exs. (Regd. no. V/F/ERS/2175), Saprai river, Mon district, coll. R. Mathew & party, 26.09.2006; 3 exs. (Regd. no. V/F/ERS/2184) Turu river, Mon district, coll. R. Mathew & party, 25.09.2006; 1 ex. (Regd. no. V/F/ERS/2186), Sembeng stream, Turu vill. Mon district, coll. R. Mathew & party, 26.09.2006; 3 exs. (Regd. no. V/F/ERS/2200), Turu river, Mon district, coll. R. Mathew & party, 26.09.2006; 1 ex. (Regd. no. V/F/ERS/2216), Paglapahar nadi, Dimapur district, coll. R. Mathew & party, 09.09.2006; 13 exs. (Regd. no. V/F/ERS/2253), Nhezu river, Wokha district, coll. R. Mathew & party, 20/09/2006; 1 ex. (Regd. no. V/F/ERS/2265), Jalukie, Peren district, coll. R. Mathew & party, 10.09.2006; 1 ex. (Regd. no. V/F/ERS/2290), Paglapahar nadi, Razephema, Dimapur district, coll. R. Mathew & party, 10.09.2006.

Diagnostic characters : Body shallow, mouth moderate; jaws long. Barbels two short pairs, the rostral pairs reduced or often absent. Lateral line with 40-45 scales. Body silvery with 8-12 dark bands which become indistinct as spots in adults; lateral line scales with two black spots at their base.

Distribution : INDIA : Throughout India

Elsewhere : BANGLADESH; BHUTAN; NEPAL; PAKISTAN; SRILANKA.

10. *Barilius dogarsinghi* Hora, 1921
(Fig. 20)

Barilius dogarsinghi Hora, 1921. *Rec. Indian Mus.*, **22**(3) : 191, fig. 3 (Type locality : near Chenderkhong, Manipur).

Material examined : Material not available for study from Nagaland but reported from the State (Hora, 1921; Karmakar & Das, 2005).

Diagnostic characters : Body deep, mouth moderate, jaws short. Barbels one pair rostral. Lateral line with 38-39 scales. Anal fin with 9 branched rays. Dorsal surface of head and body dark, flanks and belly silvery with about 9 transverse bluish bands.

Distribution : INDIA : Manipur, Nagaland.

Elsewhere : Same as above.

Remarks : Its status is Endangered. It is endemic to North East India (Sen, 2003)

11. *Barilius shacra* (Hamilton, 1822)
(Fig.21)

Cyprinus (Barilius) shacra Hamilton, 1822. *Fishes of Ganges* : 271, 385 (Type locality : Kosi river, Uttar Pradesh).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body shallow, mouth moderate, jaws long. Barbels two well developed rostral and maxillary pairs. Lateral line with 59-70 scales. Body with 12 vertical bars (rarely absent) from back downwards towards lateral line. Dorsal fin with a black band along its upper third.

Distribution : INDIA : Meghalaya, Nagaland, Ganga, Yamuna and Brahmaputra river systems.

Elsewhere : BANGLADESH; NEPAL.

12. *Barilius tileo* (Hamilton, 1822)
(Fig. 22)

Cyprinus tileo Hamilton, 1822. *Fishes of Ganges* : 276,385 (Type locality : Kosi river, Uttar Pradesh).

Material examined : 1 ex. (Regd. no. V/F/ERS/2221), Taphi river, Mon district, coll. R. Mathew & party, 24.09.2006.

Diagnostic characters : Body deep, mouth moderate, jaws short. Barbels, a rudimentary maxillary pairs, sometimes absent. Lateral line scales 65-75. Tubercles large and well developed on snout and lower jaw. Body bluish brown on back, silvery on flanks and belly with 2 or 3 rows of blue spots and blotches having vertical character along sides of body.

Distribution : INDIA : Assam, Meghalaya, Nagaland, Eastern Himalayas, West Bengal.

Elsewhere : BANGLADESH; MYANMAR; NEPAL; PAKISTAN.

13. *Raiamas guttatus* (Day, 1869)

Opsarius guttatus Day, 1869. *Proc. zool. Soc. London* : 620 (Type locality : Irrawaddy river, from Prome to Mandalay, Burma).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body slender and compressed. Head sharply pointed with elongate and compressed snout. Mouth very wide, barbels minute, maxillary pairs always present, rostrals sometime present or absent. Body silvery, mottled with one or two rows of dark blue variable spots.

Distribution: INDIA : Manipur, Nagaland.

Elsewhere: MYANMAR; NORTHERN MALAYA PENINSULA.

Remarks : Its status is Endangered at National level (Sen, 2003).

14. *Chela cachius* (Hamilton, 1822)

(Fig. 23)

Cyprinus (Chela) cachius Hamilton, 1822. *Fishes of Ganges*, pp. 259, 384 (Type locality : River Ganges, above the commencement of the Delta).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body deep and greatly compressed, abdomen keeled between and behind pelvic fins. Outer ray of pelvic fins strongly produced. Lateral line complete with 51-56 scales. Body shining silvery with a greenish longitudinal band

Distribution : INDIA : Throughout India.

Elsewhere: BANGLADESH; MYANMAR; PAKISTAN.

15. *Chela laubuca* (Hamilton, 1822)
(Fig. 24)

Cyprinus (Chela) laubuca Hamilton, 1822. *Fishes of Ganges* : 260, 384 (Type locality : ponds in northern part of Bengal).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body deep and greatly compressed, abdomen keeled between and behind pelvic fins. Dorsal fin with 10-11 rays and anal fin with 20-22 rays. Outer ray of pelvic fins strongly produced. Lateral line complete with 31-37 scales. Body shining silvery to greenish grey with a black longitudinal stripe

Distribution : INDIA : Throughout India.

Elsewhere : BANGLADESH; INDOCHINA; INDONESIA; MYANMAR; MALAY PENINSULA; NEPAL; PAKISTAN; SRI LANKA and SUMATRA.

16. *Esomus danricus* (Hamilton, 1822)
(Fig. 25)

Cyprinus danrica Hamilton, 1822. *Fishes of Ganges*, pp. 325, 390, Pl. 16, fig. 88 (Type locality : Ponds and ditches of Bengal).

Material examined : 1 ex. (Regd. no. V/F/ERS/14), Zungti vill., Zunheboto district, coll. Y.P. Sinha & party, 14.07.1991; 8 exs. (Regd. no. V/F/ERS/18), Ashukhuto, Zunheboto district, coll. Y.P. Sinha & party, 17.07.1991; 5 exs. (Regd. no. V/F/ERS/1310), Paglapahar, Dimapur district, coll. Y.P. Sinha & party, 13.03.1993; 1 ex. (Regd. no. V/F/ERS/2203) Turu river, Mon district, coll. R. Mathew & party, 26.09.2006; 1 ex. (Regd. no. V/F/ERS/2224), Tamkie, Munglai nadi, Peren district, coll. R. Mathew & party, 12.09.2006; 3 exs. (Regd. no. V/F/ERS/2229), Cathe river, Dimapur district, coll. R. Mathew & party, 09.09.2006; 2 exs. (Regd. no. V/F/ERS/2260), Jalukie, Peren district, coll. R. Mathew & party, 10.09.2006; 11 exs. (Regd. no. V/F/ERS/2269), Kaleirue riv., New Jalukie, Peren district, coll. R. Mathew & party, 11.09.2006.

Diagnostic characters : Dorsal fin inserted opposite between anal and pelvic fins. Lateral line incomplete or absent, piercing only 4-6 scales anteriorly. Sides generally with a broad lateral dark band.

Distribution : INDIA : Throughout India

Elsewhere : BANGLADESH; MALAYA; MYANMAR; NEPAL; PAKISTAN; SRI LANKA; THAILAND; SOUTH VIETNAM (MEKONG BASIN).

17. *Danio dangila* (Hamilton, 1822)
(Fig. 26)

Cyprinus dangila Hamilton, 1822. *Fishes of Ganges*, pp. 321, 390 (Type locality : Mountain streams of Mongher, Bihar).

Material examined : 4 exs. (Regd. no. V/ERS/9295), Razephema, Dimapur district, coll. J.P. Sati & party, 11.01.1990; 3 exs. (Regd. no. V/ERS/9391), Tenang river, Mon district, coll. Y.P. Sinha & party, 04.06.1990; 3 exs. (Regd. no. V/ERS/9394), Leangnyu vill. Mon district, coll. Y.P. Sinha & party, 15.06.1990; 2 exs. (Regd. no. V/F/ERS/1302), Pherema, Kohima district, coll. Y.P. Sinha & party, 14.03.1993; 26 exs. (Regd. no. V/F/ERS/1858), Yisemyong, Mokokchung district, coll. R. Mathew & party, 08.08.2005; 2 exs. (Regd. no. V/F/ERS/1863), Tening rivr, Mon district, coll. R. Mathew & Party, 06.08.2005; 3 exs. (Regd. no. V/F/ERS/2171), Saprai river, Mon district, coll. R. Mathew & party, 26.09.2006; 1 ex. (Regd. no. V/F/ERS/2188), Sembeng stream, Turu vill., Mon district, coll. R. Mathew & party, 26.09.2006; 2 exs. (Regd. no. V/F/ERS/2206), Heningkunglwa, Peren district, coll. R. Mathew & party, 11.09.2006; 1 ex. (Regd. no. V/F/ERS/2211), Heningkunglwa stream, Peren district, coll. R. Mathew & Party, 11.09.2006; 1 ex. (Regd. no. V/F/ERS/2219), Jalukie, Peren district, coll. R. Mathew & party, 12.09.2006; 19 exs (Regd. no. V/F/ERS/2252), Nhezu river, Wokha district, coll. R. Mathew & party, 20.09.2006.

Diagnostic characters : Anterior rim of orbit without spine. Barbels 2 pairs, longer than eye diameter. Dorsal fin with 8-10 branched rays. Body with dark lateral bands breaking up into network anteriorly. Lateral line with 36-42 scales.

Distribution: India : Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, Eastern Himalayas, West Bengal, Bihar, Uttar Pradesh, Madhya Pradesh.

Elsewhere: BANGLADESH; BHUTAN; MYANMAR; NEPAL.

18. *Danio rerio* (Hamilton, 1822)
(Fig. 27)

Cyprinus rerio Hamilton, 1822, *Fishes of Ganges* : 323, 390 (Type locality : Kosi river, Uttar Pradesh).

Material examined : 4 exs. (Regd. no. V/ERS/9293), Jharnapani, Kohima district, coll. J.P. Sati, 11.01.1990; 4 exs. (Regd. no. V/ERS/9294), Razephema, Dimapur district, coll. J.P. Sati & party, 11.01.1990; 6exs. (Regd. no. V/F/ERS/13), Zungti vill., Zunheboto, coll. Y.P. Sinha & party, 14.07.1991; 2 exs. (Regd. no. V/ F /ERS /17), Ashukhuto, Zunheboto district, coll. Y.P. Sinha & party, 17.07.1991; 1 ex. (Regd. no. V/F/ERS/1303), Pherema, Kohima district, coll. Y.P. Sinha & party, 14.03.1993; 2 exs. (Regd. no. V/F/ERS/2168), Taphi river, Mon district, coll. R. Mathew & party, 24.09.2006; 10 exs. (Regd. no. V/F/ERS/2189), Sembeng stream, Turu vill., Mon district, coll. R. Mathew & party,

26.09.2006; 8 exs. (Regd. no. V/F/ERS/2217), Paglapahar nadi, Dimapur district, coll. R. Mathew & party, 09.09.2006; 5 exs. (Regd. no. V/F/ERS/2223), Tamkie, Munglai nadi, Peren district, coll. R. Mathew & party, 12.09.2006; 7 exs. (Regd. no. V/F/ERS/2228), Cathe river, Dimapur district, coll. R. Mathew & party, 09.09.2006; 9 exs. (Regd. no. V/F/ERS/2243), Chenla river, Tuensang district, coll. R. Mathew & party, 18.09.2006; 17 exs. (Regd. no. V/F/ERS/ 2268), Kaleirue riv., New Jalukie, Peren district, coll. R. Mathew & party, 11.09.2006; 2 exs. (Regd. no. V/F/ERS/2291), Paglapahar nadi, Razephema, Dimapur district, coll. R. Mathew & party, 10.09.2006.

Diagnostic characters : Barbels 2 pairs, well developed. Dorsal fin with 6-7 branched rays and anal fin with 10-12 branched rays. Body with four prominent golden coloured bands from head to caudal fin.

Distribution: INDIA : Throughout India.

Elsewhere: BANGLADESH; BHUTAN; MYANMAR; NEPAL; PAKISTAN.

19. *Devario acuticephala* (Hora, 1921) (Fig. 28)

Danio (Brachydanio) acuticephala Hora, 1921. *Rec. Indian Mus.*, **22** : 193, fig. 4 (Type Locality : small streams and ponds of Yaribuk, Manipur valley).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body elongate, subcylindrical. Lateral line incomplete, not extending to anal fin. Barbels absent. No black mark near upper angle of gill opening. Dorsal fin with 6-7 branched rays.

Distribution : INDIA : Assam, Arunachal Pradesh, Manipur, Nagaland.

Elsewhere : Same as above.

Remarks : It's status is Vulnerable. Endemic to North East India (Sen,2003).

20. *Devario aequipinnatus* (McClelland, 1839) (Fig. 29)

Perilampus aequipinnatus McClelland, 1839. *Asiat. Res.*, 19 (2) pp. 393, Pl. 60, fig. 1 (Type locality : Assam).

Material examined : 3 exs. (Regd. no. V/ERS/9388), Tizit, Mon district, coll. Y.P. Sinha & party, 16.05.1990; 3 exs. (Regd. no. V/ERS/9390), Tenang river, Mon district, coll. Y.P. Sinha & party, 04.06.1990; 2 exs. (Regd. no. V/ERS/9395), Leangnyu vill. Mon district, coll. Y.P. Sinha & party, 15.06.1990; 5 exs. (Regd. no. V/F/ERS/1306), Molvon, Kohima district, coll. Y.P. Sinha & party, 15.03.1993; 2 exs. (Regd. no. V/F/ERS/2169),

Taphi river, Mon district, coll. R. Mathew & party, 24.09.2006; 1 ex. (Regd. no. V/F/ERS/2180), Turu river, Mon district, coll. R. Mathew & party, 25.09.2006; ex. (Regd. no. V/F/ERS/2187), Sembeng stream, Turu vill., Mon district, coll. R. Mathew & party, 26.09.2006; 11 exs (Regd. no. V/F/ERS/2242), Chenla river, Tuensang district, coll. R. Mathew & party, 18.09.2006; 1 ex. (Regd. no. V/F/ERS/2263), Jalukie, Peren district, coll. R. Mathew & party, 10.09.2006.

Diagnostic characters : Anterior rim of orbit with a small backwardly directed spine. Barbels 2 pairs, shorter than eye diameter. Dorsal fin with 8-11 branched rays. Several well marked and uniform lateral bands present. Lateral line complete with 34-37 scales.

Distribution : INDIA : Throughout India.

Elsewhere: BANGLADESH; INDOCHINA; MYANMAR; NEPAL; SRI LANKA; THAILAND.

21. *Devario devario* (Hamilton, 1822)

Cyprinus devario Hamilton, 1822. *Fishes of Ganges*, pp. 341, 393, Pl. 6, fig. 94 (Type locality : rivers and ponds of Bengal).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body rhomboidal and compressed. Mouth small, oblique, barbels absent. Lateral line complete with 33-38 scales. Body silvery, back greenish, anterior part of the body reticulated, bluish lines extending backwards to caudal fin.

Distribution : INDIA : Assam, Arunachal Pradesh, Meghalaya, Nagaland, Tripura, West Bengal, E. Himalayas, Western Himalayas, Eastern Punjab, Uttar Pradesh, Bihar, Orissa, Madhya Pradesh, Ahmedabad, Krishna-Godavari river system, Deccan

Elsewhere : AFGHANISTAN; BANGLADESH; MYANMAR; NEPAL; PAKISTAN.

22. *Devario naganensis* Chaudhuri, 1912 (Fig. 30)

Danio naganensis Chaudhuri, 1912. *Rec. Indian Mus.*, 7 : 441, pl. 40, figs 1, 1a & 1b (Type locality : Lungting river, Naga Hills, Nagaland)

Material examined : 2 exs. (Regd. no. V/F/ERS/2277), Zingkhri riv., Kiphire district, coll. R. Mathew & party, 16.09.2006.

Diagnostic characters : Body elongate and compressed. Mouth small, oblique ; barbels two pairs (rostral and maxillary). Lateral line complete with 40-42 scales. Body silvery

with greenish brown back, sides with light steel-grey longitudinal band extending to caudal fin base.

Distribution : INDIA : Manipur, Nagaland.

Elsewhere : Same as above.

Remarks : Its status is Vulnerable. Endemic to North East India (Sen, 2003)

****23. *Rasbora daniconius* (Hamilton, 1822)**
(Fig. 31)

Cyprinus daniconius Hamilton, 1822. *Fishes of Ganges* : 327, 391, pl. 15, fig. 89 (Type locality : rivers of southern Bengal)

Material examined : 1 ex. (Regd. no. V/F/ERS/2172), Saprai river, Mon district, coll. R. Mathew & party, 26.09.2006; 2 exs. (Regd. no. V/F/ERS/2190), Sembeng stream, Turu vill., Mon district, coll. R. Mathew & party, 26.09.2006.

Diagnostic characters : Body oblong and compressed. Mouth small. Pectoral fin shorter than head. Dorsal fin with 9 soft rays and anal fin with 7 soft rays. Lateral line nearly complete with 31-34 scales. Body olive on back, flanks and belly silvery. A distinct blue black mid-dorsal stripe from eye to base of caudal fin.

Distribution : INDIA : Throughout.

Elsewhere : BANGLADESH; MEKONG; MYANMAR; PAKISTAN; SRI LANKA

Remarks : Reported for the first time from the state.

24. *Rasbora rasbora* (Hamilton, 1822)
(Fig. 32)

Cyprinus rasbora Hamilton, 1822. *Fishes of Ganges* : pp. 329, 391, Pl. 2, fig. 90 (Type locality : Ponds of Bengal).

Material examined : 3 exs. (Regd. no. V/F/ERS/2204), Turu river, Mon district, coll. R. Mathew & party, 26.09.2006.

Diagnostic characters : Body elongate, mouth moderate, oblique. Lateral line complete with 26-29 scales. Body olive brown above, silvery below ; generally with a blue-black lateral stripe from head to base of caudal fin. Caudal fin with sharply defined black hind margin.

Distribution : INDIA : Throughout India.

Elsewhere : BANGLADESH; MYANMAR; PAKISTAN; THAILAND.

25. *Amblypharyngodon mola* (Hamilton, 1822)
(Fig. 33)

Cyprinus mola Hamilton, 1822. *Fishes of Ganges* : 334, 392, pl. 38, fig. 92 (Type locality : ponds and rivers of Gangetic provinces).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Lateral line incomplete, with 65-91 scales. Lateral transverse scales 12/8-10. A silvery lateral band and dark markings on dorsal, anal and caudal fins. Branched pectoral fin rays 13-15.

Distribution : INDIA : Throughout India except Malabar.

Elsewhere : AFGHANISTAN; BANGLADESH; MYANMAR; NEPAL; PAKISTAN; SRI LANKA.

26. *Ctenopharyngodon idellus* (Valenciennes, 1844)

Leuciscus idella Valenciennes, 1844. *Hist. nat. Poiss.*, 17 : 362 (Type locality : China)

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body stout and elongate with dorsal and ventral profiles equally arched. Head broad, snout short, rounded. Dorsal fin with 3 spines and 7-8 soft rays and anal fin with 3 spines and 7-11 rays. Upper jaw slightly protractile. Lateral line with 40-42 scales. Body dark grey above and silvery on flanks and belly, fins dark.

Distribution : INDIA : Introduced.

Elsewhere : CHINA and the middle and lower reaches of river Amur in the USSR; introduced in MYANMAR; PHILIPPINES; NEPAL; SRI LANKA

27. *Cyprinus carpio carpio* Linnaeus, 1758
(Fig. 34)

Cyprinus carpio Linnaeus, 1758. *Systema Naturae*, ed.10, 1: 320 (Type locality: Europe).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body fully covered by regularly arranged rows of scales. Dorsal fin with 3-4 spines and 17-23 soft rays and anal fin with 2-3 spines and 5-6 soft rays. Last simple anal ray bony and serrated ; barbels 4 pairs Lateral line inconspicuous with 33-35 scales.

Distribution : INDIA : Introduced in India (Throughout).

Elsewhere : WESTERN EUROPE throughout EURASIA to CHINA and SOUTH-EAST ASIA; SIBERIA.

28. *Tor progenius* (McClelland, 1839)

Barbus progenius McClelland, 1839. *Asiat. Res.*, 19(2) : 270, 334, pl. 56, fig. 3. (Type locality : Assam).

Material examined : Material not available for study from Nagaland but reported from the State (Hora, 1936).

Diagnostic characters : Body slender, eyes small, mouth moderate, median fleshy lobe of lower lip occasionally lacking; behind upper lip a fan-shaped flap present. Barbels two pairs (maxillary and rostral). Snout smooth, cheeks with tubercles. Scales large, lateral line with 24-27 scales.

Distribution : INDIA : Nagaland and north east Himalaya.

Elsewhere : Same as above.

Remarks : Its status is Endangered. Endemic to North East India (Sen, 2003)

**29. *Tor putitora* (Hamilton, 1822)
(Fig. 35)**

Cyprinus putitora Hamilton, 1822. *Fishes of Ganges* : 303, 388 (Type locality : Eastern parts of Bengal).

Material examined : Material not available for study from Nagaland but reported from the State (Hora, 1936, Karmakar & Das, 2005).

Diagnostic characters : Length of head considerably greater than body depth. Dorsal fin inserted midway between snout and caudal fin base, with 8-10 branched rays, length of its spine equal to body depth. Anal fin with 5-6 rays. Lateral line complete with 25-29 scales.

Distribution : India : Throughout North East India. All along the Himalayas including Kashmir, Maharashtra,

Elsewhere : AFGHANISTAN; BANGLADESH; BHUTAN; NEPAL; PAKISTAN.

Remarks : Its status is Endangered at National level

**30. *Tor tor* (Hamilton, 1822)
(Fig. 36)**

Cyprinus tor Hamilton, 1822. *Fishes of Ganges* : 305, 388. (Type locality : Mahananda river, West Bengal).

Material examined : Material not available for study from Nagaland but reported from the State (Hora, 1936, Karmakar & Das, 2005).

Diagnostic characters : Body stout, fairly deep. Head relatively smaller than body depth. Eyes moderate, mouth small, lips fleshy. Barbels two pairs (maxillary and rostral). Dorsal fin with 8 branched rays and anal fin 5 branched rays. Lateral line with 22-27 scales. Snout and cheeks smooth, devoid of tubercles.

Distribution : INDIA : Assam, Meghalaya, Nagaland, North Bengal, Bihar, Uttar Pradesh, West Bengal, Madhya Pradesh, all along the Himalayas, Ganga and Narmada river system.

Elsewhere : BANGLADESH; BHUTAN; CHINA; MYANMAR; NEPAL and PAKISTAN.

Remarks : Its status is Endangered at National level

31. *Neolissocheilus hexagonolepis* (McClelland, 1839) (Fig. 37)

Barbus hexagonolepis McClelland, 1839. *Asiat. Res.*, 19(2) : 270, 340, pl. 41, fig. 3. (Type locality : Upper Assam).

Material examined : 3 exs. (Regd. no. V/F/ERS/2215), Paglapahar nadi, Dimapur district, coll. R. Mathew & party, 09.09.2006.

Diagnostic characters : Dorsal fin with 9-10 branched rays, last unbranched ray osseous but never serrated. Anal fin with 5-6 branched rays. Lateral line complete with 28-32 scales. Mouth nearly truncate, lower jaw edge sharp. Sides of snout and cheeks studded with large tubercles

Distribution : INDIA : throughout Northern and North East India; Darjeeling, Eastern Himalayas.

Elsewhere : BANGLADESH; CHINA; INDONESIA; MALAYSIA; MYANMAR; NEPAL; SUMATRA; THAILAND; PAKISTAN; VIETNAM.

Remarks : Its status is Endangered (Menon, 1999)

32. *Neolissocheilus hexastichus* (McClelland, 1839) (Fig. 38)

Barbus hexastichus McClelland, 1839. *Asiat. Res.*, 19(2) : 269, 333, pl. 39, fig. 2 (Type locality : great rivers in the plains of India)

Material examined : 1 ex. (Regd. no. V/F/ERS/2167), Taphi river, Mon district, coll. R. Mathew & party, 24.09.2006; 11 exs. (Regd. no. V/F/ERS/2280), Zingkhi riv., Kiphire district, coll. R. Mathew & party, 16.09.2006.

Diagnostic characters : Mouth rounded smoothly, edge of lower jaw blunt. Dorsal fin spine strong, insertion of dorsal fin nearer tip of snout than caudal base. Lower labial fold continuous. Lateral line scales 25-26. No tubercles on snout or cheek. Dorsal with 9 branched rays; anal fin with 5 branched rays.

Distribution : INDIA : Assam, Arunachal Pradesh, Meghalaya, Mizoram, Nagaland. Rivers from Kashmir to Sikkim along the Himalayan Foot hills.

Elsewhere : MYANMAR.

Remarks : It's status is Vulnerable at National level.

33. *Osteobrama cotio cotio* (Hamilton, 1822)

Cyprinus cotio Hamilton, 1822. *Fishes of Ganges*, p. 339, Pl. 39, fig. 93 (Type locality : Bengal).

Material examined : Material not available for study from Nagaland but reported from the States (Karmakar & Das, 2005).

Diagnostic characters : Body compressed, trapezoid; abdominal edge trenchant from behind pelvic fin base to anal fin, but rounded in front of pelvic fins. Mouth small, barbels absent. Dorsal spine weak and serrated. Scales small, lateral line with about 65 scales.

Distribution : INDIA : Assam, Arunachal Pradesh, Manipur, Meghalaya, Nagaland, Tripura, West Bengal, Bihar, Central province, Punjab, Uttar Pradesh, Maharashtra.

Elsewhere: BANGLADESH; CHINA; MYANMAR; NEPAL; PAKISTAN.

34. *Chagunius chagunio* (Hamilton, 1822) (Fig. 39)

Cyprinus chagunio Hamilton, 1822. *Fishes of Ganges*, pp. 295, 387 (Type locality : Yamuna river and northern rivers of Bihar and Bengal).

Material examined : 1 ex. (Regd. no. V/F/ERS/2173), Saprai river, Mon district, coll. R. Mathew & party, 26.09.2006; 1 ex. (Regd. no. V/F/ERS/2183), Turu river, Mon district, coll. R. Mathew & party, 25.09.2006.

Diagnostic characters : Body elongate, its depth slightly more than head length. Mouth narrow and subterminal, Barbels two pairs. Dorsal spine strong and serrated with 13 branched rays Scales small, lateral line with 44-47 scales. Snout and cheeks with tubercles.

Distribution : INDIA : Assam, Arunachal Pradesh, Meghalaya Mizoram, Manipur, Nagaland, Tripura, Himalayas : Ganges and Brahmaputra drainage, Chota Nagpur, Orissa).

Remarks : It's status is vulnerable (Menon, 1999).

35. *Poropuntius burtoni* (Mukherji, 1939)

Barbus clavatus bartoni Mukerji, 1939. *J. Bombay nat. Hist. Soc.*, **37** : 64, pl. 3, fig. 1, 10 & 11. (Type locality : Myitkyina Dist., Burma).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body laterally compressed, snout arched beset with pores and tubercles. Upper lip separated from upper jaw with a groove, lower labial fold interrupted in the middle. Barbels two pairs (maxillary and rostral). Last unbranched ray of dorsal fin strong, bony and denticulated with 8 branched rays and anal fin with 6 branched rays. Lateral line complete with 38-40 scales.

Distribution : INDIA : Manipur, Nagaland.

Elsewhere : MYANMAR

**36. *Poropuntius clavatus* (McClelland, 1845)
(Fig. 40)**

Barbus clavatus McClelland, 1845, *Calcutta J. nat. Hist.*, **5** : 280, pl. 21, fig. 2 (Type locality : Sikkim mountains on northern frontier of Bengal)

Material examined: Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body elongate and strongly compressed. Mouth wide and terminal, barbels two pairs, rostral barbels minute often absent. Last unbranched ray of dorsal fin osseous, robust and strongly serrated. Lateral line complete with 41-42 scales.

Distribution : INDIA : Assam, Manipur, Meghalaya, Nagaland, West Bengal, North Bengal below the Himalayan foot hills, Sikkim

Elsewhere : BANGLADESH; MYANMAR; NEPAL.

Remarks : Its status is Endangered.

**37. *Puntius chelynoides* (McClelland, 1839)
(Fig. 41)**

Barbus chelynoides McClelland, 1839, *Asiat. Res.*, **19**(2) : 271, 340, pl. 57, fig. 5. (Type locality : Simla).

Material examined Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body elongate, head length more than body depth. Eyes small, mouth large, subterminal; lips fleshy and continuous at angles of mouth. Barbels two pairs (maxillary and rostral), longer than eye diameter. Scales relatively small, lateral line with 33-37 scales. Snout smooth, devoid of tubercles.

Distribution : INDIA : Ganga river system, Himalayas as far east as Assam, Meghalaya, Nagaland.

Elsewhere : PAKISTAN.

Remarks : Its status is Endangered.

38. *Puntius chola* (Hamilton, 1822)

Cyprinus chola Hamilton, 1822. *Fishes of Ganges*, 312, 289 (Type locality : north eastern part of Bengal).

Material examined : 6 exs. (Regd. no. V/F/ERS/2182), Turu river, Mon district, coll. R. Mathew & party, 25.09.2006; 2 exs. (Regd. no. V/F/ERS/2202), Turu river, Mon district, coll. R. Mathew & party, 26.09.2006.

Diagnostic characters : Body fairly deep and compressed. Mouth moderate; barbels one short maxillary pairs. Last unbranched ray of dorsal fin osseous, fairly strong and smooth. Lateral line complete with 26-28 scales. Body silvery with olive green on back, a deep black blotch present near base of caudal fin.

Distribution : INDIA : Throughout India.

Elsewhere : BANGLADESH; BHUTAN; MYANMAR, NEPAL; PAKISTAN; SRILANKA.

Remarks : It's status is Vulnerable.

39. *Puntius conchoni* (Hamilton, 1822)

Cyprinus conchoni Hamilton, 1822. *Fishes of Ganges* : 317, 389 (Type locality : ponds of north east Bengal; Kosi river and Ami river).

Material examined : 1 ex. (Regd. no. V/F/ERS/2220), Taphi river, Mon district, coll. R. Mathew & party 24.09.2006; 2 exs. (Regd. no. V/F/ERS/2262), Jalukie, Peren district, coll. R. Mathew & party, 10.09. 2006; 14 exs. (Regd. no. V/F/ERS/2270), Kaleirue riv., New Jalukie, Peren district, coll. R. Mathew & party, 11.09.2006.

Diagnostic characters : Barbels absent. Dorsal fin spine short, strong, osseous and serrated; with 7-8 branched rays. Anal fin with 5 branched rays. Lateral line incomplete with 24-26 scales. Two blotches on body; anterior spot sometimes may be absent.

Distribution : INDIA : Assam, Arunachal Pradesh, 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.

40. *Puntius filamentosus* (Valenciennes, 1844)

Leuciscus filamentosus Valenciennes, 1844. *Hist. nat. Poiss.*, 17 : 96, pl. 492. (Type locality : "les eaux douces d'Alypey"= Alleppey, Kerala State).

Material examined : Material not available for study from Nagaland but reported from the State (Malhotra & Suri, 1969).

Diagnostic characters : Body elongate, mouth moderate, barbels a very small pair of maxillary, often hidden in grooves round corner of mouth. Last unbranched ray of dorsal fin non-osseous, weak and smooth. A distinctive deep black oval blotch on lateral line, which generally extends from 14th to 16th lateral scales. Lateral line complete with about 21 scales.

Distribution : INDIA : Assam, Meghalaya, Nagaland, Tripura, Goa, Karnataka, Kerala, Tamil Nadu, Andhra Pradesh, Maharashtra.

Elsewhere : MYANMAR; THAILAND; SRI LANKA.

**41. *Puntius manipurensis* Menon, Rema Devi and Vishwanath, 2000 (Fig. 42)

Puntius manipurensis Menon, Rema Devi and Vishwanath, 2000. *J. Bombay nat. Hist. Soc.*, 97(2) : 263-268.

Material examined : 4 exs. (Regd. no. V/F/ERS/2191), Sembeng stream, Turu vill., Mon district, coll. R. Mathew & party, 26.09.2006.

Diagnostic characters : Body elongate, head small, barbels absent. Last unbranched ray of dorsal fin ossified and denticulated. Lateral line incomplete, pored scales 5-6; and with 24-25 scales in lateral series; 3.5 scale rows between lateral line and root of the pelvic fins. Body with two spots; a shoulder spot on 3rd and 4th lateral line scale rows and a caudal spot on 17th and 18th lateral line scales.

Distribution : INDIA : Manipur

Elsewhere : Same as above.

Remarks : Reported for the first time from the state. So far endemic to North East India only.

42. *Puntius orphoides* (Valenciennes, 1842)

Barbus orphoides Valenciennes, 1842. *Hist. nat. Poiss.*, 16 : 193. (Type locality: Java).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body somewhat deep, eyes moderate. Mouth small, terminal; barbels two pairs (maxillary and rostral). Last unbranched ray of dorsal fin osseous, strong and finely serrated behind with 8 branched rays and anal fin with 5 branched rays. Barbels 4. Lateral line complete with 28-34 scales. A broad black marginal horizontal band on each lobe of caudal fin.

Distribution: INDIA : Manipur, Nagaland, Western Ghats

Elsewhere : BORNEO; INDONESIA; JAVA; MEKONG BASINS; MALAYA PENINSULA; MYANMAR; THAILAND.

Remarks : Its status is Endangered.

**43. *Puntius shalynius* Yazdani & Talukdar, 1975
(Fig. 43)**

Puntius shalynius Yazdani and Talukdar, 1975. *J. Bombay nat. Hist. Soc.*, 72(1) : 218 (Type locality: Barapani lake near Shillong, Meghalaya).

Material examined : 4 exs. (Regd. no. V/F/ERS/2300), Mutsure river, Phek district, coll. R. Mathew & party, 14.09.2006.

Diagnostic characters : Barbels absent. Dorsal fin spine serrated, with 7-8 branched rays. Anal fin with 5-6 branched rays. A thin blue horizontal line along mid body present; Two spots on side of caudal peduncle. Lateral line incomplete with 20-23 scales.

Distribution : INDIA : Assam, Arunachal Pradesh, Manipur, Meghalaya, Nagaland.

Elsewhere : Same as above.

Remarks : It's status is Vulnerable. Endemic to North East India (Sen, 2003)

**44. *Puntius sophore* (Hamilton, 1822)
(Fig. 44)**

Cyprinus sophore Hamilton, 1822. *Fishes of Ganges* : 310, 389, pl. 19, fig. 86. (Type locality : ponds & rivers in the Gangetic provinces).

Material examined : 3 exs, (Regd. no. V/F/ERS/2181), Turu river, Mon district, coll. R. Mathew & party 25.09.2006; 1 ex. (Regd. no. V/F/ERS/2201), Turu river, Mon district, coll. R. Mathew & party, 26.09. 2006; 1 ex. (Regd. no. V/F/ERS/2261), Jalukie, Peren

district, coll. R. Mathew & party, 10.09.2006 ; 1 exs. (Regd. no. V/F/ERS/ 2271), Kaleirue riv., New Jalukie, Peren district, coll. R. Mathew & party, 11.09.2006.

Diagnostic characters : Barbels absent. Body not very deep; dorsal fin spine smooth, with 8-9 branched rays. Anal fin with 5-6 branched rays. Dark blotch on caudal peduncle. Complete lateral line with 22-27 scales.

Distribution : INDIA : Throughout India

Elsewhere : AFGHANISTAN; BANGLADESH; BHUTAN; CHINA; MYANMAR; NEPAL; PAKISTAN; YUNAN; SRI LANKA.

45. *Puntius ticto* (Hamilton, 1822) (Fig. 45)

Cyprinus ticto Hamilton, 1822. *Fishes of Ganges* : 314, 398, pl. 8, fig. 87. (Type locality : south-eastern part of Bengal).

Material examined : 1 ex. (Regd. no. V/ERS/9296), Razephema, Dimapur district, coll. J.P. Sati & party, 11.01.1990; 1 ex. (Regd. no. V/F/1862), Sedzii river, Phek district, coll. R. Mathew & party, 11.08.2005; 2exs. (Regd. no. V/F /2205), Heningkunglwa, Peren district, coll. R. Mathew & party, 11.09. 2006; 2 exs. (Regd. no. V/F/2210), Heningkunglwa stream, Peren district, coll. R. Mathew & party, 11.09.2006; 15 exs. (Regd. no. V/F/2251), Nhezu river, Wokha district, coll. R. Mathew & party, 20.09.2006.

Diagnostic characters : Barbels absent. Dorsal fin spine strong, osseous, serrated with 8 branched rays. Two blotches on body, first on anterior part either above pectoral fin or adjacent to dorsal fin; another on posterior part of anal fin. Lateral line incomplete with 23-25 scales.

Distribution : INDIA : Throughout India.

Elsewhere : BANGLADESH; MEKONG BASIN; MYANMAR; NEPAL; PAKISTAN; SRI LANKA; THAILAND.

46. *Cyprinion semiplotum* (McClelland, 1839) (Fig. 46)

Cyprinus semiplotus McClelland, 1839. *Asiat. Res.*, 19(2) : 274, 346, pl. 37, fig. 2. (Type locality : Brahmaputra river, Upper Assam).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body extremely deep and laterally compressed. Snout obtuse and broad, overhanging mouth and with transverse rows of open pores. Mouth very wide and inferior with an exposed cornified mandibular cutting edge. A small pair of maxillary

barbels present in groove at corners of mouth. Last unbranched ray of dorsal fin strong, osseous and entire with 23-25 branched rays and anal fin with 7 branched rays. Lateral line with 27 to 33 scales.

Distribution : INDIA : All the states of North East India, North Bengal

Elsewhere : BHUTAN; NEPAL, UPPER MYANMAR

Remarks : Its status is Vulnerable at National level.

**** 47. *Semiplotus manipurensis* Vishwanath and Kosygin, 2000**
(Fig. 47)

Semiplotus manipurensis Vishwanath and Kosygin, 2000. *J. Bombay nat. Hist. Soc.*, **97**(1) : 92-102.

Material examined : 10 exs. (Regd. no. V/F/ERS/2279), Zingkhri river, Kiphire district, coll. R. Mathew & party, 16.09.2006.

Diagnostic characters : Body short, deep and compressed, head short. Snout broad, blunt with open pores or tubercles; randomly distributed. Last unbranched ray of dorsal fin strong, not serrated with 20-23 branched rays. Mouth inferior, wide with exposed cornified mandibular cutting edge. Maxillary barbels rudimentary. Lateral line scales with 32-36 scales.

Distribution : INDIA : Manipur.

Elsewhere : Same as above.

Remarks : Reported for the first time from the State. Endemic to North East India (Sen, 2003).

48. *Cirrhinus cirrhosus* (Bloch, 1795)

Cyprinus cirrhosus Bloch, 1795, *Naturges. ausland. Fische*, **9** : 52, fig. 411 (Type locality : Cauvery river, Tamil Nadu).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body moderately elongate, snout blunt, often with pores. Mouth broad, upper lip entire. Barbels, a short pair of rostrals only. Dorsal fin with 13 or 15 branched rays. Lateral line with 40-46 scales.

Distribution : INDIA : Throughout India

Elsewhere : INDIAN SUBCONTINENT.

Remarks : Its status is endangered. *Cirrhinus mrigala* is the synonym of this species (www.fishbase.org).

49. *Catla catla* (Hamilton, 1822)

Cyprinus catla Hamilton, 1822, *Fishes of Ganges* : 287, 318, pl. 13, fig. 81. (Type locality : Rivers and tanks of Bengal).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body deep, Head enormously large. Mouth wide and upturned with a prominent protruding lower jaw. Dorsal fin with 17 rays and anal fin with 7-8 rays. Lateral line with 40-43 scales.

Distribution : INDIA : Throughout India

Elsewhere : BANGLADESH; CHINA; MYANMAR; NEPAL; PAKISTAN; SRILANKA

Remarks : Its status is Vulnerable at National level.

****50. *Bangana devdevi* (Hora, 1936)
(Fig. 48)**

Labeo devdevi Hora, 1936. *Rec. Indian Mus.*, 38(3) : 324. (Type locality : Mali Hka river system, Burma).

Material examined : 1 ex. (Regd. no. V/F/ERS/2259), Jalukie, Peren district, coll. R. Mathew & party, 10.09.2006.

Diagnostic characters : Body elongate, its dorsal and ventral profiles equally convex. Head moderately large; snout bluntly rounded overhanging the jaws. Mouth large, thick and fleshy, lower lip papillated and joined to isthmus by a narrow bridge. Lateral line with 40- 41 scales. Body dark green on back, silvery on flanks and abdomen.

Distribution: INDIA : Arunachal Pradesh

Elsewhere : MYANMAR; THAILAND.

Remarks : Reported for the first time from the state. Earlier it was reported from Arunachal Pradesh (Nath & Dey, 1997). Single specimen has been collected from Nagaland.

**51. *Labeo angra* (Hamilton, 1822)
(Fig. 49)**

Cyprinus angra Hamilton, 1822. *Fishes of Ganges* : 331, 391. (Type locality : Brahmaputra river).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body elongate and cylindrical, its dorsal profile more convex than ventral profile. Snout overhanging mouth with a lateral lobe. Lips fringed, lower lip separated from isthmus by a deep post-labial groove. Eyes large. Barbels one short maxillary pair, concealed in labial fold. Lateral line with about 42 scales.

Distribution : INDIA : Assam, Nagaland, West Bengal, Bihar, Uttar Pradesh, Punjab, Orissa.

Elsewhere : AFGHANISTAN; BANGLADESH; MYANMAR; NEPAL

52. *Labeo ariza* (Hamilton, 1807)
(Fig. 50)

Cyprinus ariza Hamilton, 1807. *Journey in Mysore*, 3 : 344, pl. 31. (Type locality : rivers of Penninsular India).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body fairly elongate. Snout slightly projecting beyond mouth. Mouth broad, upper lip entire, often fringed in juveniles. Barbels one pair of short rostrals only. Dorsal fin with 8-9 branched rays. Scales hexagonal and moderate. Lateral line with 34 to 38 scales.

Distribution : INDIA : Throughout India.

Elsewhere: BANGLADESH; MYANMAR; NEPAL; PAKISTAN; THAILAND

Remarks : It's status is vulnerable at National level. *Cirrhinus reba* is synonymised with this species (www.fishbase.org).

53. *Labeo dyocheilus* (McClelland, 1839)

Cyprinus (Labeo) dyocheilus McClelland, 1839. *Asiat. Res.*, 19(2) : 268, 330, pl. 37, fig. 1. (Type locality : Brahmaputra river).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body elongate, snout conical, projecting beyond mouth with a distinct lateral lobe. Eyes small. Mouth wide, inferior; lips thick, not fringed. Lower lip with a fold which is interrupted and joined to isthmus by a narrow bridge. Barbels one short maxillary pair. Lateral line with about 43 scales.

Distribution : INDIA : all along the Himalayas and also in Mahanadi and Damodar rivers

Elsewhere : BANGLADESH; MEKONG BASIN; NEPAL; PAKISTAN.

Remarks : Its status is Vulnerable at National level.

54. *Labeo rohita* (Hamilton, 1822)

Cyprinus rohita Hamilton, 1822. *Fishes of Ganges* : 301, 388, pl. 36, fig. 85. (Type locality : Freshwater rivers of Gangetic provinces).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body moderately elongate, snout fairly depressed, projects beyond mouth, devoid of lateral lobe. Eyes large. Mouth small and inferior, lips thick and fringed with a distinct inner fold to each lip. Barbels a small maxillary pair concealed in lateral groove. Lateral line with 40-44 scales.

Distribution : INDIA : north, north-east and central India.

Elsewhere : BANGLADESH; MYANMAR; TERAJ REGION OF NEPAL; PAKISTAN.

55. *Sinilabeo dero* (Hamilton, 1822)

(Fig. 51)

Cyprinus dero Hamilton, 1822. *Fishes of Ganges* : 277, 385, pl. 22, fig. 78. (Type locality : Brahmaputra river).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body elongate, head rather small. Snout very prominent, overhanging mouth without any lateral lobe but with a distinct groove across it and generally covered with pores. Eyes fairly small. Mouth inferior, lips thick and continuous, lower lip closely papillated internally joined to isthmus by a narrow bridge. Barbels one small maxillary pair. Lateral line with 40-44 scales

Distribution : INDIA : all along the Himalayas including Kashmir, Chota Nagpur, Satpura-Vindhya ranges, Deccan.

Elsewhere : AFGHANISTAN; BANGLADESH; BHUTAN; CHINA; IRAN; MYANMAR; NEPAL; PAKISTAN; SRI LANKA.

Remarks : Its status is Vulnerable at National level.

56. *Schizothorax richardsonii* (Gray, 1832)

(Fig. 52)

Cyprinus richardsonii Gray, 1832, *Illustrations of Indian Zoology*, (10) : pl. 14, fig. 2. (Type locality : not known).

Material examined: 1ex. (Regd. no. V/F/ERS/2281), Zingkhi river, Kiphire district, coll. R. Mathew, 16.09.2006.

Diagnostic characters : Body streamlined, mouth inferior, transverse and slightly arched, hard cartilaginous covering below lower jaw extends between corners of mouth, followed by a fleshy and flat lower lip. Barbels two pairs (maxillary and rostral). Dorsal spine strong and serrated behind. Scales minute, lateral line with 85 to 110 scales.

Distribution : INDIA : all along the Himalayas.

Elsewhere: AFGHANISTAN; BHUTAN; NEPAL; PAKISTAN.

Remarks : Its status is Vulnerable.

57. *Crossocheilus burmanicus* Hora, 1936

Crossocheilus latius burmanicus Hora, 1936, *Rec. Indian Mus.*, **38**(3) : 324 (Type locality : Burma)

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body fairly elongate, head small. Eyes moderate. Dorsal fin with 9 branched rays. Gill rakers 50-53 on first arch. Barbels only rostral pair. Lateral line with 39-41 scales.

Distribution : INDIA : Assam, Arunachal Pradesh, Manipur, Nagaland.

Elsewhere : MYANMAR.

Remarks : Its status is Vulnerable at National level.

58. *Crossocheilus latius* (Hamilton, 1822) (Fig. 53)

Cyprinus latius Hamilton, 1822. *Fishes of Ganges* : 345, 393 (Type locality : Tista river at base of Darjeeling Himalayas).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body rather elongate, head flat and compressed. Eyes moderate. Dorsal fin with 8 branched rays. Gill rakers 37-39 on first arch. Barbels two pairs (maxillary and rostral). Lateral line with 39-41 scales.

Distribution : INDIA : Assam, Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, Manipur, Tripura. West Bengal, Bihar, Uttar Pradesh, Gangetic Watershed of Himalayas, Orissa, Karnataka, Bombay, Western Ghats, Kaimur hills.

Elsewhere : BANGLADESH; CHINA; MYANMAR; NEPAL; PAKISTAN.

59. *Garra annandalei* Hora, 1921

(Fig. 54)

Garra annandalei Hora, 1921. *Rec. Indian Mus.*, **22**(5) : 657. (Type locality : Mahananda river, below Darjeeling).

Material examined : 1 ex. (Regd. no. V/F/ERS/2225), Tamkie, Munglai nadi, Peren district, coll. R. Mathew & party, 12.09.2006; 1 ex. (Regd. no. V/F/ERS/2240), Chenla river, Tuensang district, coll. R. Mathew & parth, 18.09.2006.

Diagnostic characters : Snout without proboscis. Tip of snout not marked off by a deep transverse groove. Dorsal fin inserted nearer tip of snout than caudal fin base with 7-8 branched rays. Anal fin with 5 branched rays. Dorsal and Caudal fins without any marking. Distance between vent to anal fin 2.62-3.21 in that between origin of pelvic and anal fins. Lateral line with 33-34 scales.

Distribution : INDIA : Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Bihar, Darjeeling, Himalayas, North Bengal and West Bengal.

Elsewhere : BANGLADESH; BHUTAN; EASTERN NEPAL.

**60. *Garra elongata* Vishwanath and Kosygin, 2000

(Fig. 55)

Garra elongata Vishwanath and Kosygin, 2000. *J. Bombay nat. Hist. Soc.*, **97**(3) : 408-414.

Material examined : 1 ex. (Regd. no. V/F/ERS/2241), Chenla river, Tuensang district, coll. R. Mathew & party, 18.09.2006.

Diagnostic characters : Body elongate, subcylindrical; head moderately compressed. Snout rounded with a deep transverse groove at the tip and studded with horny tubercles. Proboscis weakly developed. Lateral line with 39-40 scales. Position of vent midway between pelvic and anal fin origins. Body dark greenish-grey; dorsally black, ventral surface pale white. A broad dark grey longitudinal stripe from gill opening to caudal fin base. Dorsal fin with a transverse black bar near free margin; Caudal fin with a black, longitudinal mark on median rays.

Distribution : INDIA : Manipur

Elsewhere : Same as above

Remarks : Reported for the first time from the state. Endemic to North East India (Sen, 2003)

61. *Garra gotyla gotyla* (Gray, 1832)
(Fig. 56)

Cyprinus gotyla Gray, 1832, *Illustr. Indian Zool.*, 1 : pl. 88, figs. 3, 3a. (Type locality : Northern India)

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body elongate, head much depressed. Snout with a well developed median proboscis and a transverse lobe at tip covered with spiny tubercles. Barbels two pairs. Lateral line scales 32-35.

Distribution : INDIA : 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

62. *Garra kempi* Hora, 1921
(Fig. 57)

Garra kempi Hora, 1921, *Rec. Indian Mus.*, 22(5) : 665, pl. 26, figs. 3, 3a. (Type locality : Siyom river below Demda, Abor Hills, Arunachal Pradesh).

Material examined : 5 exs. (Regd. no. V/F/ERS/1866), Tening river, Mon district, coll. R. Mathew & party, 06.08.2005; 3 exs. (Regd. no. V/F/ERS/2284), Zingkhi riv., Kiphire district, coll. R. Mathew & party, 16.09.2006.

Diagnostic characters : Body strongly depressed and flattened. Head also strongly depressed. Snout broad with minute tubercles. Barbels two pairs, maxillary one shorter than rostral pair. Vent placed almost midway between pelvic fin origin and anal fin. Lateral line with 38-40 scales

Distribution : INDIA : Assam, Arunachal Pradesh, Manipur, Meghalaya, Nagaland.

Elsewhere : Same as above

Remarks : Its status is Vulnerable. Endemic to North East India (Sen, 2003).

63. *Garra lamta* (Hamilton, 1822)
(Fig. 58)

Cyprinus (Garra) lamta Hamilton (*partim*), 1822. *Fishes of Ganges* : 343, 393. (Type locality : Rapti river, Gorakhpur, U.P.).

Material examined : 1 ex. (Regd. no. V/F/ERS/2264), Jalukie, Peren district, coll. R. Mathew & party, 10.09.2006; 1 ex. (Regd. no. V/F/ERS/2273), Kaleirue riv., New Jalukie,

Peren district, coll. R. Mathew & party, 11.09.2006; 9 exs. (Regd. no. V/F/ERS/2294), Paglapahar nadi, Razephema, Dimapur district, coll. R. Mathew & party, 10.09.2006.

Diagnostic characters : Body subcylindrical, somewhat flattened on undersurface. Head short bluntly pointed. Snout rounded and smooth, its tip marked off by a deep transverse groove; transverse lobe at tip and sides of snout in front of nostrils covered with horny tubercles. Barbels two pairs. Lateral line with 31-34 scales.

Distribution : INDIA : Eastern Himalayas, Western Ghats.

Elsewhere : NEPAL.

64. *Garra lissorhynchus* (McClelland, 1843)
(Fig. 59)

Platycara lissorhynchus McClelland, 1843, *Calcutta J. nat. Hist.*, 2 : 587, pl. 68, figs. (Type locality : Khasi Hills, Meghalaya).

Material examined : 2 exs. (Regd. no. V/ERS/9389), Tizit, Mon district, coll. Y.P. Sinha & party, 16.05.1990; 1 ex. (Regd. no. V/ERS/9456), Wakching, Mon district, coll. Y.P. Sinha & party, 17.05.1990; 1 ex (Regd. no. V/F/ERS/1872), Secu Zubza stream, Kohima district, coll. R. Mathew & party, 12.08.2005; 6 exs (Regd. no. V/F/ERS/2238), Chenla riv., Tuensang district, coll. R. Mathew & party, 18.09.2006; 14 exs. (Regd. no. V/F/ERS/2282), Zingkhi riv., Kiphire district, coll. R. Mathew & party, 16.09.2006.

Diagnostic characters : Body elongate, head and body strongly depressed. Snout somewhat broadly rounded and smooth. Barbels two pairs. ~~Back~~ and post pelvic region scaled. Lateral line with 32-34 scales. A broad black W-shaped band on anterior half of caudal fin

Distribution: INDIA : Assam, Arunachal Pradesh, Manipur, Meghalaya, Nagaland.

Elsewhere : Same as above.

Remarks : Its status is vulnerable. Endemic to North East India (Sen, 2003).

65. *Garra naganensis* Hora, 1921
(Fig. 60)

Garra naganensis Hora, 1921. *Rec. Indian Mus.*, 22(5) : 667, pl. 25, figs. 2, 2a. (Type locality : nr. Kairong, Naga Hills, Nagaland).

Material examined : 2 exs. (Regd. no. V/F/ERS/138), Mon, Mon district, coll. Y.P. Sinha & party, 13.06.1990; 4 exs. (Regd. no. V/F/ERS/1301), Kohima, Kohima district, coll. J.P. Sati & party, 13.01.1990; 3 exs. (Regd. no. V/F/ERS/2283), Zingkhi riv., Kiphire district, coll. R. Mathew & party, 16.09.2006; 22 exs. (Regd. no. V/F/ERS/2299), Putsure riv., Phek district, coll. R. Mathew & party, 14.09.2006.

Diagnostic characters : Body depressed and flattened. Barbels two pairs. Vent placed nearer to origin of pelvic fins than to anal fin. Lateral line scales 38-40.

Distribution : INDIA : Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland.

Elsewhere : Same as above.

Remarks : Its status is Vulnerable. Endemic to North East India (Sen, 2003).

66. *Garra nasuta* (McClelland, 1839)
(Fig. 61)

Platycara nasuta McClelland, 1839. *J. Asiat. Soc. Beng.*, 7(2) : 947, pl. 55, figs. 2, 2a, 2b. (Type locality : Khasi Hills, Meghalaya).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body strongly depressed. Head depressed, almost as broad as long. Snout with a prominent trilobed proboscis, the lateral lobes small and in front of nostrils; tip of snout marked off into a transverse lobe. Barbels two pairs, maxillary one hardly visible. Lateral line with 33-34 scales.

Distribution : INDIA : Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland.

Elsewhere : MYANMAR; SOUTH CHINA; THAILAND; VIETNAM.

67. *Garra rupecula* (McClelland, 1839)

Gonorhynchus rupeculus McClelland, 1839. *Asiat. Res.*, 19 : 281, 343, pl. 43, figs. 4, 5. (Type locality : Mishmi Hills, Arunachal Pradesh).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body fusiform, snout somewhat broadly rounded and smooth. Barbels two pairs. Back and post pelvic regions naked. Lateral line with 32-34 scales. A black W-shaped marking on caudal fin.

Distribution : INDIA : Assam, Arunachal Pradesh, Manipur, Meghalaya, Nagaland.

Elsewhere : Same as above.

Remarks : Its status is Vulnerable. Endemic to North East India (Sen, 2003).

FAMILY PSILORHYNCHIDAE

68. *Psilorhynchus balitora* (Hamilton, 1822)
(Fig. 62)

Cyprinus balitora Hamilton, 1822. *Fishes of Ganges* : 348, 394. (Type locality : rivers of north-east Bengal).

Material examined : 2 exs, (Regd. no. V/F/2177), Saprai river, Mon district, coll. R. Mathew & party, 26.09.2006; 8 exs. (Regd. no. V/F/ERS/2185), Turu river, Mon district, coll. R. Mathew & party, 25.09.2006; 8 exs. (Regd. no. V/F/ERS/2193), Sembeng stream, Turu vill., Mon district, coll. R. Mathew & party, 26.09.2006; 1 ex. (Regd. no. V/F/ERS/2298), Phek town, Phek district, coll. R. Mathew & party, 15.09.2006.

Diagnostic characters : Body rather robust and moderately elevated. Head rather small and conical. Eyes small, dorso-lateral in position. Branched dorsal fin rays 8 or 9, simple pectoral fin rays 6 or 7. Lateral line with 30-34 scales.

Distribution : INDIA : All the states of North East India, North Bengal, upper reaches of Jamuna river, Gomti river at Lucknow.

Elsewhere : BANGLADESH; MYANMAR; NEPAL.

69. *Psilorhynchus homaloptera* Hora & Mukherji, 1935
(Fig. 63)

Psilorhynchus homaloptera Hora and Mukerji (partim), 1935. *Rec. Indian Mus.*, 37(3) : 391, pl. 7, figs. 1-6. (Type locality : Emilomi, Naga Hills, Nagaland).

Material examined : 3 exs. (Regd. no. V/ERS/9387), Tizit, Mon district, coll. Y.P. Sinha & party, 16.05.1990; 6 exs. (Regd. no. V/F/ERS/2239), Chenla river, Tuensang district, coll. R. Mathew & party, 18.09.2006.

Diagnostic characters : Body depressed and flattened. Head greatly depressed, small and subtriangular. Eyes rather small, dorsol-lateral in position. Branched dorsal fin rays 7, simple pectoral finrays 7 or 8. Lateral line with 42-44 scales.

Distribution : INDIA : Assam, Arunachal Pradesh, Manipur, Meghalaya, Nagaland.

Elsewhere : MYANMAR; NEPAL; TIBET.

Remarks : Its status is Vulnerable.

FAMILY BALITORIDAE

70. *Balitora brucei* Gray, 1832
(Fig. 64)

Balitora brucei Gray, 1832. *Ill. Ind. Zool.*, 1 : Pl. 88, fig. 1 (Type locality : Mountain streams, India).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body depressed, head and abdomen flattened. Eyes small almost on dorsal aspect of head. Mouth inferior, both jaws covered by a horny sheath, rostral flap divided into three lobes. Dorsal fin with 11 rays and anal fin with 8 rays. Rostral barbels 4, stout, arranged in a single row; one maxillary barbel at corner of mouth. Lateral line with 61-66 scales.

Distribution : INDIA : Assam, Arunachal Pradesh, Manipur, Meghalaya, Nagaland, West Bengal, Darjeeling.

Elsewhere : BANGLADESH; BHUTAN; NEPAL (Gandak drainage).

71. *Acanthocobitis botia* (Hamilton, 1822)
(Fig. 65)

Cobitis botia Hamilton, 1822. *Fishes of Ganges* : 350, 394 (Type locality : rivers of north eastern Bengal).

Material examined : 2 exs. (Regd. no. V/ERS/8401), Dikhu River, Mokokchung district, coll. V.T. Darlong, 25.01.1987; 2 exs. (Regd. no. V/F/ERS/2196), Sembeng stream, Turu vill. Mon district, coll. R. Mathew & party, 26.09.2006; 1 ex. (Regd. no. V/F/ERS/2212), Heningkunglwa stream, Peren district, coll. R. Mathew & party, 11.09.2006; 2 exs. (Regd. no. V/F/ERS/2236), Chenla river, Tuensang district, coll. R. Mathew & party, 18.09.2006; 6 exs. (Regd. no. V/F/ERS/2249), Nhezu river, Wokha district, coll. R. Mathew & party, 20.09.2006; 1 ex. (Regd. no. V/F/ERS/2274), Kaleirue river, New Jalukie, Peren district, coll. R. Mathew & party, 11.09.2006; 3 exs. (Regd. no. V/F/ERS/2293), Paglapahar nadi, Razephema, Dimapur district, coll. 10.09.2006.

Diagnostic characters : Body slender, eyes moderate. Mouth semicircular; lips moderately fleshy. Barbels well developed. Dorsal fin inserted nearer to snout tip than base of caudal fin. Branched dorsal fin rays 9-11. Caudal fin slightly emarginate, a black ocellus at upper margin of base of caudal fin. Lateral line usually complete.

Distribution : INDIA : Throughout India except Malabar coast & south of R. Krishna.

Elsewhere : BANGLADESH; CHINA; MYANMAR; NEPAL; PAKISTAN; SRILANKA; THAILAND; YUNNAN.

72. *Acanthocobitis zonalternans* (Blyth, 1861)
(Fig. 66)

Cobitis zonalternans Blyth, 1861. *J. Asiat. Soc. Bengal*, 29 : 172. (Type locality: Tenasserim Provinces, Burma).

Material examined : 7 exs. (Regd. no. V/ERS/9393), Tenga river, Mon district, coll. Y.P. Sinha & party, 04.06.1990; 1 ex. (Regd. no. V/ERS/9396), Leangnyu vill. Mon district, coll. Y.P. Sinha & party, 15.06.1990; 3 exs. (Regd. no. V/F/ERS/139), Mon, Mon district, coll. Y.P. Sinha & party, 13.06.1990; 1 ex. (Regd. no. V/F/ERS/1867), Tening river, Mon district, coll. R. Mathew & party, 06.08.2005.

Diagnostic characters : Body slender, eyes small. Mouth semicircular; lips moderately fleshy. Barbels well developed. Dorsal fin inserted nearer to snout tip than base of caudal fin. Branched dorsal fin rays 10. Caudal fin emarginated, a black ocellus at upper margin of base of caudal fin. Lateral line incomplete, ending below dorsal fin base.

Distribution : INDIA : Arunachal Pradesh, Manipur, Nagaland.

Elsewhere: BANGLADESH; MALAYA; MYANMAR; THAILAND.

73. *Nemacheilus multifasciatus* Day, 1878

Nemacheilus multifasciatus Day (*partim*), 1878. *Fishes of India* : 617, pl. 153, fig. 7. (Type locality : Darjeeling and Assam).

Material examined : Material not available for study from Nagaland but reported from the State (Hora, 1936).

Diagnostic characters : Body rather robust and slender, eyes small. Dorsal fin inserted slightly nearer base of caudal fin than to snout tip with 8 branched rays. Lateral line complete. Caudal fin truncate or slightly emarginated. Body marked with 14 -16 vertical bands often bands split up particularly in front of dorsal fin into several narrower bands.

Distribution : INDIA : Eastern Himalayas.

Elsewhere: NEPAL.

74. *Nemacheilus sikmaiensis* Hora, 1921

Nemacheilus sikmaiensis Hora, 1921. *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 : 1 ex. (Regd. no. V/F/ERS/2230), Cathe river, Dimapur district, coll. R. Mathew & party, 09.09.2006; 1 ex. (Regd. no. V/F/ERS/2250), Nhezu river, Wokha district, coll. R. Mathew & party, 20.09.2006; 2 exs. (Regd. no. V/F/ERS/2292), Paglapahar nadi, Razephema, Dimapur district, coll. R. Mathew & party, 10.09.2006.

Diagnostic characters : Body elongate, eyes small. Dorsal fin inserted midway between snout and caudal fin base;

with 8 branched rays. Body with 12-13 bars, posterior ones conspicuously wider than interspace. A black spot at base of dorsal fin. Lateral line incomplete. Caudal fin forked.

Distribution : INDIA : Assam, Arunachal Pradesh, Manipur, Meghalaya, Nagaland.

Elsewhere : MYANMAR.

Remarks : It's status is endangered at National level.

75. *Nemacheilus singhi* (Menon, 1987)

Noemacheilus singhi Menon, 1987. *Fishes of India*, Pisces, 4 : 119, pl. 16, fig. 1. (Type locality : Kiphire, Nagaland).

Material examined : 6 exs. (Regd. no. V/F/ERS/1868), Akarchiung stream, Minkong Reserve forest Mokokchung district, coll. R. Mathew & party, 08.08.2005; 3 exs. (Regd. no. V/F/ERS/1869), Chozuba, Phek district, coll. R. Mathew & party, 11.08.2005; 7 exs. (Regd. no. V/F/ERS/1871), Secu Zubza stream, Kohima district, coll. R. Mathew & party, 12.08.2005.

Diagnostic characters : Body elongate, eyes small. Dorsal fin inserted nearer base of caudal fin than to snout tip. Caudal fin truncate or slightly emarginated. Lateral line incomplete, ending below origin of dorsal fin. Body marked with 12 or 13 dark irregular vertical bars descending from back to sides below lateral line, not extending to ventral surface.

Distribution : INDIA : Nagaland.

Elsewhere: Same as above.

Remarks : Its status is Critical. Endemic to North East India (Sen, 2003)

**76. *Schistura kangjupkhulensis* (Hora, 1921)
(Fig. 67)**

Nemachilus kangjupkhulensis Hora, 1921. *Rec. Indian Mus.*, 22 (3) : 202, pl. 10, figs. 4 and 4a. (Type locality : Yaribku, Manipur Valley).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body elongate, eyes small. Dorsal fin inserted slightly nearer base of caudal fin than to snout tip with 7 branched rays. Body marked with 7-11 broad black bands. Lateral line incomplete ending before origin of dorsal fin. Caudal fin truncate or slightly emarginated.

Distribution : INDIA : Assam, Arunachal Pradesh, Manipur, Nagaland.

Elsewhere : MYANMAR.

****77. *Schistura khugae* Vishwanath and Shanta, 2004**
(Fig. 68)

Schistura macrocephalus Vishwanath and Shanta, 2004. *J. Bombay Nat. Hist. Soc.*, **101**(1) : 138-140.
(Type locality : Khuga R., Churachandpur district, Manipur).

Schistura khugae Vishwanath and Shanta, 2004. *Ichthyol. Explor. Freshwaters*, **15**(4) : 330.
(replacement name).

Material examined : 1 ex. (Regd. no. V/F/ERS/2235), Chenla river, Tuensang district, coll. R. Mathew & party, 18.09.2006.

Diagnostic characters : Body elongate, slightly compressed posteriorly. Dorsal fin with 8 branched rays. Snout broadly rounded and blunt. Cheeks greatly inflated in males. Pelvic fin origin under last simple or first branched dorsal rays. Caudal fin emarginate. Dorsal adipose crest extends from posterior extremity of dorsal fin base to caudal origin. Lateral line incomplete, reaching at least to anal fin base. Body with 15-16 dark bars which are faintly marked regularly. Bars in front of dorsal fin conspicuously thinner than those behind.

Distribution : INDIA : Manipur.

Elsewhere : Same as above.

Remarks : Reported for the first time from the state. So far endemic to North East India only.

78. *Schistura manipurensis* (Chaudhuri, 1912)
(Fig. 69)

Nemachilus manipurensis Chaudhuri, 1912. *Rec. Indian Mus.*, **7** : 443, pl. 40, figs. 4, 4a, 4b and pl. 41, figs. 1, 1a, 1b. (Type locality : Manipur).

Material examined : 1 ex. (Regd. no. V/ERS/9297), Khomi vill., Phek district, coll. J.P. Sati & party, 18.01.1990; 3 exs. (Regd. no. V/ERS/9298), Kohima, Kohima district, coll. J.P. Sati & party, 12.01.1990; 2 exs. (Regd. no. V/F/ERS/140), Mon, Mon district, coll. Y.P. Sinha & party 13.06.1990; 2 exs. (Regd. no. V/F/ERS/151), Kiphire, Khaphire district, coll. K.P. Singh & party, 17.09.1981; 7 exs. (Regd. no. V/F/ERS/152), Tuensang, Tuensang district, coll. K.P. Singh & party, 21.09.1981; 4 exs. (Regd. no. V/F/ERS/1300), Kohima, Kohima district, coll. J.P. Sati & party, 13.01.1990; 1 ex. (Regd. no. V/F/ERS/1312), Piphima, Kohima district, coll. Y.P. Sinha & party, 16.03.1993; 1 ex. (Regd. no. V/F/ERS/1313), Tizit, Mon district, coll. Y.P. Sinha & party, 10.06.1990; 8 exs. (Regd. no. V/F/ERS/1870), Angityongtsu, Mokokchung district, coll. R. Mathew & party, 08.08.2005; 3 exs. (Regd. no. V/F/ERS/2214), Chepiru stream, Phek district, coll. R. Mathew & party, 14.09.2006; 1 ex. (Regd. no. V/F/ERS/2286), Zingkhi riv., Kiphire district, coll. R. Mathew & party, 16.09.2006; 5 exs. (Regd. no. V/F/ERS/2301), Mutsure river, Phek district, coll. R. Mathew & party, 14.09.2006; 15 exs. (Regd. no. V/F/ERS/2302), Netsutsu, Wokha district, coll. R. Mathew & party, 21.09.2006.

Diagnostic characters : Body of uniform depth, eyes small. Dorsal fin with 7 branched rays. Lateral line incomplete ending above end of pelvic fins. Body marked with 14-20 brown vertical stripes. Caudal fin truncate.

Distribution : INDIA : Assam, Arunachal Pradesh, Manipur, Mizoram, Nagaland.

Elsewhere : MYANMAR.

Remarks : Its status is Vulnerable. Endemic to North East India (Sen, 2003).

****79. *Schistura minutus* Vishwanath and Shantakumar, 2005
(Fig. 70)**

Schistura minutus Vishwanath and Shantakumar, 2005. *J. Bombay nat. Hist. Soc.*, **102**(2) : 210-213.

Material examined : 19 exs. (Regd. no. V/F/ERS/2289), Zingkhi river, Kiphire district, coll. R. Mathew & party, 16.09.2006.

Diagnostic characters : Body moderately elongate, small sized with uniform body depth. Snout moderately pointed; processus dentiformes poorly developed. Barbels small, longer than eye diameter. Dorsal fin with 8 branched rays. Pelvic fin origin under last simple or first branched dorsal fin rays. Caudal fin emarginated. Small dorsal and ventral adipose crests on caudal peduncle. Lateral line incomplete extending upto the region between the pelvic and anal fin origins. Body with 14-18 bars.

Distribution : INDIA : Manipur.

Elsewhere : Same as above.

Remarks : Reported for the first time from the state.

80. *Schistura nagaensis* (Menon, 1987)

Material examined : 2 exs. (Regd. no. V/F/ERS/2288), Zingkhi river, Kiphire district, coll. R. Mathew & party, 16.09.2006.

Diagnostic characters : Body rather elongate, eyes small. Dorsal fin inserted slightly nearer base of caudal fin than to snout tip, with 8 branched rays. Lateral line incomplete, ending before origin of dorsal fin. Caudal fin usually slightly emarginated, often truncate. Body marked with 7 -11 broad black bands, often the bands of the anterior region coalesce to form a uniform dusky surface.

Distribution : INDIA : Arunachal Pradesh, Nagaland.

Elsewhere: Same as above.

Remarks : Its status is Endangered. Endemic to North East India (Sen, 2003).

81. *Schistura prashadi* (Hora, 1921)
(Fig. 71)

Nemachilus prashadi Hora, 1921. *Rec. Indian Mus.*, 22(3) : 203, pl. 10, figs 2, 2a. (Type locality : nr. Yaribuk, Manipur).

Material examined : 3 exs. (Regd. no. V/F/ERS/2287), Zingkhi river, Kiphire district, coll. R. Mathew & party, 16.09.2006.

Diagnostic characters : Body of uniform depth, eyes small. Dorsal fin inserted nearer snout tip than to base of caudal fin with 8 branched rays. Caudal fin deeply forked. Lateral line almost complete, extending to anal fin. Body marked with 12-14 short black vertical bands across lateral line ; characteristic reticulum formed by numerous dark bands and blotches above. Dorsal and caudal fins with 2 bands.

Distribution : INDIA : Arunachal Pradesh, Manipur, Meghalaya, Nagaland.

Elsewhere : Same as above.

Remarks : Endemic to North East India (Sen, 2003).

82. *Schistura rupecola* (McClelland, 1838)

Schistura rupecola McClelland, 1838. *J. Asiat. Soc. Beng.*, 7 : 948, pl. 55, fig. 3. (Type locality : Simla).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body elongate, eyes small. Dorsal fin inserted equidistant between snout tip and base of caudal fin with 8 branched rays. Caudal fin truncate or slightly emarginated. Lateral line complete. Body marked with 9 to 12 vertical bands broader than interspaces; the bands before dorsal fin sometimes coalesces to form a uniform ground colour. Dark streaks on outer rays of dorsal and caudal fins.

Distribution : INDIA : Nagaland, Simla, Kashmir, Doon Valley, Poonch Valley, Western Himalaya, Kumaon Garhwal Himalaya, Yamuna, Satlej drainages in Himachal Pradesh.

Elsewhere : NEPAL

83. *Schistura savona* (Hamilton, 1822)
(Fig. 72)

Cobitis savona Hamilton, 1822. *Fishes of Ganges* : 357, 394 (Type locality : Kosi river at Nathpur, Uttar Pradesh).

Material examined : 1 ex. (Regd. no. V/F/ERS/2195), Sembeng stream, Turu vill., Mon district, coll. R. Mathew & party, 26.09.2006.

Diagnostic characters : Body slender, more or less cylindrical, eyes prominent. Dorsal fin inserted nearer to snout tip than to base of caudal fin with 9 branched rays. Caudal fin deeply emarginate. Lateral line complete. Body marked with 9 or 10 narrow, yellowish bands. Caudal fin often with 1 or 2 V-shaped bands.

Distribution : INDIA : Assam, Arunachal Pradesh, Meghalaya, Nagaland, Tripura. Widely distributed in Eastern sub-Himalayan region, North Bengal, Uttar Pradesh.

Elsewhere : BANGLADESH; NEPAL.

84. *Schistura scaturigina* (McClelland, 1839)
(Fig. 73)

Cobitis (Schistura) scaturigina McClelland, 1839 *Asiat. Res.*, 19 : 308, 443, pl. 53, fig. 6 (Type locality : Assam).

Material examined : 4 exs. (Regd. no. V/F/ERS/2231), Cathe river, Dimapur district, coll. R. Mathew & party, 09.09.2006.

Diagnostic characters : Body elongate, eyes small. Dorsal fin inserted midway between snout and caudal fin base; with 8 branched rays, its edge straight. Body with 11 bands across lateral line interspaced with narrow short bands from above. Caudal and dorsal fins with spots.

Distribution : INDIA : Assam, Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, Tripura, Eastern Himalayas, Darjeeling, Uttar Pradesh

Elsewhere : BANGLADESH; BHUTAN; NEPAL.

Remarks : It's status is vulnerable.

**85. *Schistura tirapensis* Kottelat, 1990
(Fig. 74)

Schistura tirapensis Kottelat, 1990. *Verlag. Dr. Friedrich Pfeil, Munchen* : 262

Noemacheilus arunachalensis Menon (nec, Datta and Barman), 1987. *Fauna of India, Pisces*, 4 : 129, pl. 16, fig. 10. (Type locality : Riwa river at Nampong, Tirap district, Arunachal Pradesh).

Material examined: 1 ex. (Regd. no. V/F/ERS/1305), Pherema, Kohima district, coll. Y.P. Sinha & party, 14.03.1993.

Diagnostic characters : Body of uniform depth, eyes large. Dorsal fin placed nearer caudal fin base than snout tip with 8 branched rays. Body with 10-11 regular bands. Lateral line incomplete. Caudal fin forked.

Distribution : INDIA : Assam, Arunachal Pradesh.

Elsewhere : Same as above.

Remarks : Reported for the first time from the State. It's status is Endangered at National level. Endemic to North East India (Sen, 2003). *Schistura arunachalensis* is synonymised with this species (www.fishbase.org)

FAMILY COBITIDAE

86. *Botia dario* (Hamilton, 1822)

Cobitis dario Hamilton, 1822. *Fishes of Ganges* : 354, 394, pl. 29, fig. 95. (Type locality : northern rivers of Bengal).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body elongate and laterally compressed. Head moderate, eyes moderately large, placed in posterior part of head. Mouth small, barbels 4 pairs (rostral two pairs; maxillary and mandibular one pair each). Body with 7 or 8 brownish oblique vertical bands. Caudal fin lobe with 2 or 3 oblique thin black bars

Distribution : INDIA : Assam, Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, Manipur, Tripura. North Bengal, West Bengal, Bihar, Uttar Pradesh, Punjab, Rajmahal hills

Elsewhere : BANGLADESH; BHUTAN; PAKISTAN.

87. *Botia rostrata* Gunther, 1868

Botia rostrata Gunther, 1868. *Cat. Fishes Br. Mus.*, 7 : 367, fig. (Type-locality : Ganges river in Bengal, and ? Assam).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body elongate and compressed. Head long, narrow and pointed. Snout very long, eyes small. Mouth small, barbels 4 pairs. Body yellowish with brown cross bands of irregular pattern which forms rings or blotches. Dorsal and anal fins with 2 brown cross bands. Pectoral and pelvic fins and caudal lobes with 3 crossbands.

Distribution : INDIA : Assam, Meghalaya, Nagaland, West Bengal

Elsewhere : BANGLADESH; SALWEEN and Irrawaddy basin in CHINA

Remarks : Its status is Endangered.

88. *Lepidocephalichthys berdmorei* (Blyth, 1861)
(Fig. 75)

Acanthopsis berdmorei Blyth, 1861. *J. Asiat. Soc. Bengal*, 29 : 163 (Type locality : Tenasserim Province, Burma).

Material examined : 1 ex. (Regd. no. V/F/ERS/2227), Tamkie, Munglai nadi, Peren district, coll. R. Mathew & party, 12.09.2006.

Diagnostic characters : Body elongate, low, slightly compressed. Mouth inferior, mental lobe produced posteriorly into 3 or more short barbel like projections. Dorsal fin inserted behind origin of pelvic fin base; much nearer to caudal fin base than snout tip. Caudal fin emarginate and speckled. One dark spot placed slightly above middle of caudal fin base.

Distribution : INDIA : Arunachal Pradesh, Manipur, Meghalaya, Nagaland, Tripura.

Elsewhere : BANGLADESH; CHINA; MYANMAR; PENINSULAR THAILAND; MEKONG Basin.

Remarks : It's status is endangered.

89. *Lepidocephalichthys guntea* (Hamilton, 1822)
(Fig. 76)

Cobitis guntea Hamilton, 1822. *Fishes of Ganges* : 353, 394 (Type locality : ponds and freshwaters of Bengal).

Material examined : 1 ex. (Regd. no. V/F/ERS/16), Zungti vill., Zunheboto district, coll. Y.P. Sinha & party, 14.07.1991; 1 ex. (Regd. no. V/F/ERS/2194), Sembeng stream, Turu vill., Mon district, coll. R. Mathew, 26.09.2006; 2 exs. (Regd. no. V/F/ERS/2207), Heningkunglwa, Peren district, coll. R. Mathew & party, 11.09.2006; 1 ex. (Regd. no. V/F/ERS/2232), Cathe river, Dimapur district, coll. R. Mathew & party, 09.09.2006; 1 ex. (Regd. no. V/F/ERS/2258), Jalukie, Peren district, coll. R. Mathew & party, 10. 09.2006.

Diagnostic characters : Body not very elongate, depth less than 6.0 in standard length. A dark lateral band or spots on body. Dorsal fin inserted somewhat posterior to pelvic fins; placed mid way between snout tip and caudal fin base. Caudal fin convex or truncate. Bands on caudal in form of rows of dark spots. One dark spot placed slightly above middle of caudal fin base.

Distribution : INDIA : Throughout India except Karnataka, Kerala and South of Krishna.

Elsewhere : BANGLADESH; NEPAL; PAKISTAN; MYANMAR; SALWEEN BASIN; THAILAND.

90. *Lepidocephalichthys irrorata* (Hora, 1921)
(Fig. 77)

Lepidocephalichthys irrorata Hora, 1921. *Rec. Indian Mus.*, 22 : 196, pl. 9, figs. 5, 5a, 5b. (Type locality : Loktak lake, Manipur).

Material examined : 1 ex. (Regd. no. V/F/ERS/20), Ashukhuto, Zunheboto district, coll. Y.P. Sinha & party, 17.07.1991.

Diagnostic characters : Body elongate, mouth inferior. Dorsal side of head scaled. Dorsal fin inserted nearer to caudal fin base than to snout tip. Caudal fin slightly emarginate, almost truncate. Body pale with minute dark spots on sides. Fins profusely spotted.

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

Elsewhere : BANGLADESH

Remarks : Its status is Vulnerable. Endemic to North East India (Sen, 2003)

91. *Pangio pangia* (Hamilton, 1822)
(Fig. 78)

Cobitis pangia Hamilton, 1822. *Fishes of Ganges* : 355, 394. (Type locality : North-East Bengal).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body very elongate, compressed. Head compressed, eyes very small. Mouth small and inferior, barbels 3 pairs (rostral one pair and maxillary two pairs). Dorsal fin small, inserted in posterior half of body. Caudal fin truncate. Body uniformly reddish brown, lighter below.

Distribution : INDIA : Assam, Manipur, Nagaland, North Bengal

Elsewhere : BANGLADESH; MYANMAR.

Remarks : Its status is Vulnerable at National level.

ORDER SILURIFORMES

FAMILY BAGRIDAE

92. *Mystus armatus* (Day, 1865)

Hypselobagrus armatus Day, 1865. *Proc. Zool. Soc. London* : 289. (Type locality : Cochin).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body elongate and compressed. Head compressed, occipital process extends to basal bone of dorsal fin. Adipose dorsal fin usually short ; inserted after an interspace from rayed dorsal fin. Branchiostegal rays 10. Barbels 4 pairs; maxillary barbels extends posteriorly to base of pelvic fins. Body brownish, lighter below, usually without longitudinal bands on flanks. Often with a brown band along flank. A dark blotch on base of caudal fin.

Distribution : INDIA : Nagaland, Western Ghats.

Elsewhere : BANGLADESH; LOWER MYANMAR.

93. *Mystus bleekeri* (Day, 1877)
(Fig. 79)

Bagrus keletius (nec. Valenciennes) Bleeker, 1846. *Nat. Geneesk. Arch. Ned. Indie*, 3(2) : 135. (Type locality : Bengal) (name occupied by Valenciennes, 1839)

Macrones bleekeri Day, 1877, *Fishes of India* : 451, pl. 101, fig. 1. (Replacement name for *Bagrus keletius* Bleeker, 1846).

Material examined: Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body elongate and compressed. Head depressed; occipital process extends to basal bone of dorsal fin. Median longitudinal groove shallow, reaching to base of occipital process. Barbels 4 pairs; maxillary barbels extend posteriorly to anal fin. Adipose fin long, inserted just behind rayed dorsal fin. Branchiostegal rays 10. Body brownish above, lighter below, with two longitudinal bands, one above and the other below lateral line.

Distribution : INDIA : Assam, Arunachal Pradesh, Meghalaya, Nagaland, Manipur, Tripura. Darjeeling, West Bengal, North India, Mahanadi headwaters, Baroda, Godavari estuary, Kerala, Maharashtra, Tamil Nadu.

Elsewhere : BANGLADESH; BHUTAN; INDONESIA; MYANMAR; MALAYA; NEPAL; PAKISTAN; SUMATRA.

Remarks : It's status is vulnerable.

94. *Mystus cavasius* (Hamilton, 1822)
(Fig. 80)

Pimelodus cavasius Hamilton, 1822. *Fishes of Ganges*, pp. 203, 379, Pl. 11, fig. 67. (Type locality : Gangetic Provinces).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body elongate and compressed. Head conical, occipital process extends to basal bone of dorsal fin. Median longitudinal groove on head extends to base of occipital process. Barbels 4 pairs; maxillary barbels extends to beyond caudal fin base. Adipose fin large, inserted close behind base of rayed dorsal fin. Body grayish with a more or less well defined mid lateral longitudinal stripe.

Distribution : INDIA : Throughout India

Elsewhere: BANGLADESH; BORNEO; JAVA; MYANMAR; MALAYSIA; NEPAL; PAKISTAN; SRI LANKA; SUMATRA; THAILAND.

95. *Sperata seenghala* (Sykes, 1839)
(Fig. 81)

Platystoma seenghala Sykes, 1839. *Trans. Zool. Soc. Lond.*, 2 : 371, Pl. 65, fig. 2. (Type locality : Mutha-Mula river, Poona).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body elongate and compressed. Snout broad and spatulate. Barbels 4 pairs, extend posteriorly to pelvic fins or beyond. Adipose fin base short. Body brownish grey on back, silvery on flanks and belly. A dark well defined spot on adipose dorsal fin.

Distribution : INDIA : Assam, Arunachal Pradesh, Manipur, Meghalaya, Nagaland, Tripura, Ganga, Yamuna, Brahmaputra, Godavary, Krishna and Cauvery river system.

Elsewhere : AFGHANISTAN; BANGLADESH; NEPAL; PAKISTAN.

FAMILY SILURIDAE

96. *Ompok bimaculatus* (Bloch, 1797)

Silurus bimaculatus Bloch, 1797. *Ichthyol. Hist. nat. des. Poiss.*, 11 : 17, pl. 364 (Type locality : Malabar).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body elongate and strongly compressed. Eyes moderate, mouth large and oblique. Barbels 2 pairs, maxillary barbels long and extend to anal fin origin, mandibular pair very short. Anal fin long, with 57-58 branched rays. Body silvery with purplish tinged. A large dusky spot on shoulder, a small black spot on caudal peduncle.

Distribution : INDIA : Throughout India.

Elsewhere : AFGHANISTAN; BANGLADESH; BORNEO; CHINA; JAVA; MYANMAR; PAKISTAN; SRI LANKA; SUMATRA; THAILAND.

Remarks : Its status is Endangered at National level.

**97. *Wallago attu* (Schneider, 1801)
(Fig. 82)**

Silurus attu Schneider, 1801. *Syst. Ichth.*, p. 378, Pl. 75. (Type locality : Malabar).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body elongate and compressed. Eyes small, mouth wide; its gape extends beyond eyes. Barbels 2 pairs, maxillary pair long, mandibular pair short. Anal fin long with 77-96 rays. Body silvery.

Distribution : INDIA : Throughout India

Elsewhere: AFGHANISTAN; BANGLADESH; INDONESIA; JAVA MYANMAR; MALAYA PENINSULA; NEPAL; PAKISTAN; SRI LANKA ;SUMATRA; THAILAND; VIETNAM; KAMPUCHEA.

**98. *Pterocryptis berdmorei* (Blyth, 1861)
(Fig. 83)**

Silurichthys berdmorei Blyth, 1861. *J. Asiat. Soc. Beng.*, **29** : 156. (Type locality : Tenasserim, Burma).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body elongate and compressed. Head slightly depressed. Barbels 2 pairs, maxillary pair extend to base of pelvic fins; mandibular pair extend to base of pectoral fin. Caudal fin rounded. Body leaden above, purplish below, covered with minute black dots.

Distribution : INDIA : Assam, Nagaland.

Elsewhere : MYANMAR.

99. *Pterocryptis indicus* Dutta, Barman & Jayaram, 1987

Kryptopterus indicus Dutta, Barman and Jayaram, 1987. *Bull. zool. Surv. India*, **8** : 29, fig. 1. (Type locality : Namdapha river at Hornbill port, Arunachal Pradesh).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body compressed, head depressed. Eyes small, barbels 2 pairs. Maxillary pair filamentous, mandibular pair about half length of head. Dorsal fin rudimentary and hair like with one or two rays. Caudal fin rounded. Body yellowish brown.

Distribution : INDIA : Arunachal Pradesh, Nagaland.

Elsewhere : Same as above.

Remarks : Its status is Critical. Endemic to North East region (Sen, 2003).

FAMILY AMBLYCIPITIDAE

100. *Amblyceps mangois* (Hamilton, 1822) (Fig. 84)

Pimelodus mangois Hamilton, 1822. *Fishes of Ganges* : 199, 379 (Type locality : Northern Bihar).

Material examined : 1 ex. (Regd. no. V/F/ERS/2197), Sembeng stream, Turu vill. Mon district, coll. R. Mathew & party, 26.09.06.

Diagnostic characters : Body elongate, head small, broad, depressed and covered with thick skin. Mouth wide, barbels 4 pairs. Dorsal spine weak and concealed. Pectoral spine also concealed. Caudal fin truncate, emarginated or forked.

Distribution : INDIA : Assam, Arunachal Pradesh, Manipur, Meghalaya, Nagaland, Tripura. All along the base of the Himalayas & Krishna river system.

Elsewhere : BANGLADESH; MYANMAR; LAOS; NEPAL; PAKISTAN; THAILAND.

FAMILY ERETHISTIDAE

101. *Conta conta* (Hamilton, 1822) (Fig. 85)

Pimelodus conta Hamilton, 1822. *Fishes of Ganges*, p. 191. (Type locality : River Mahananda).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body elongate, subcylindrical. Head small, oval. Mouth small, lips thick, fleshy, papillated. An elongate adhesive pad on ventral surface of body distinct and well developed. Barbels 4 pairs. Dorsal fin inserted in advance of pelvic fins. Caudal fin forked, its upper lobe with a filamentous prolongation. Body deep brown grey above, dirty white below.

Distribution : INDIA : Assam, Arunachal Pradesh, Meghalaya, Nagaland, Terai of North Bengal, Mahanadi river.

Elsewhere : BANGLADESH

102. *Erethistes pussilus* Muller & Troschel, 1845
(Fig. 86)

Erethistes pussilus Muller and Troschel, 1845. *Horae Ichthyol.*, 3 : 12, pl. 1, fig. 3. (Type locality : Assam).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body moderately elongate, flattened ventrally. Head sharply pointed anteriorly. Mouth small, barbels 4 pairs, maxillary pair broad based. Dorsal spine distinctly serrated, pectoral spine with 9-12 divergent serrae on anterior edge. Body with 4 or 5 rows of tubercles. Body yellowish brown dorsally, lighter below.

Distribution : INDIA : Ganga and Brahmaputra drainages.

Elsewhere : BANGLADESH; MYANMAR; TENASSERIM.

**103. *Pseudolaguvia shawi* (Hora, 1921)
(Fig. 87)

Laguvia shawi Hora, 1921. *Rec. Indian Mus.*, 22(5) : 740, pl. 29, fig. 2. (Type locality : Mahananda and Sivoke rivers, Darjeeling Himalaya).

Material examined : 2 exs. (Regd. no. V/F/2178), Saprai river, Mon district, coll. R. Mathew & party, 26.09.2006; 26 exs. (Regd. no. V/F/2192), Sembeng stream, Turu vill., Mon district, coll. R. Mathew & party, 26.09.2006.

Diagnostic characters : Body more or less elongate; eyes small. Barbels 4 pairs. Thoracic adhesive apparatus faintly developed. Dorsal spine strong and smooth. Pectoral spine strong and serrated internally; pelvic fins inserted distinctly nearer caudal fin base than to tip of snout. Caudal fin semi circular, skin tuberculated. Body dark greyish yellow above, dull whitish below with two broad dark crossbands. Fins indistinctly marked with black transverse bands.

Distribution : INDIA : Meghalaya, Darjeeling Himalayas, Northern India.

Elsewhere : BANGLADESH

Remarks : Reported for the first time from Nagaland. Its status is Endangered.

FAMILY SISORIDAE

104. *Exostoma labiatum* (McClelland, 1842)

Glyptosternon labiatum McClelland, 1842. *Calcutta J. nat. Hist.*, 2 : 588. (Type locality: Mishmee Hills, Meghalaya).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body elongate, flattened ventrally. Barbels 4 pairs. Gill openings moderate, extending below to opposite base of pectoral fins. Ventral surface of head behind mouth, and sides of head sparsely and minutely papillated. Body yellowish-grey above, becoming paler below.

Distribution : INDIA : Arunachal Pradesh, Meghalaya, Nagaland, North Bengal

Elsewhere : TIBET.

105. *Glyptothorax cavia* (Hamilton, 1822)
(Fig. 88)

Pimilodus cavia Hamilton, 1822. *Fishes of Ganges* : 188, 378. (Type locality: rivers of north Bengal).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body elongate, head depressed, longer than broad. Occipital process not reaching basal bone of dorsal fin. Barbels 4 pairs. Adhesive thoracic apparatus longer than broad with a central pit. Dorsal fin spine strong and smooth. Paired fins non plaited. Skin on head and body smooth. Body brownish above, dirty yellowish below; the flanks and dorsal surface mottled with spots. Fins with dark bands at their base.

Distribution : INDIA : Assam, Nagaland, North Bengal.

Elsewhere : BANGLADESH; CHINA ; MYANMAR; NEPAL; PAKISTAN

Remarks : Its status is Endangered.

**106. *Glyptothorax manipurensis* Menon, 1954
(Fig. 89)

Glyptothorax manipurensis Menon, 1954. *Rec. Indian Mus.*, 52(1) : 23, fig. 1. (Type locality : Barak river at Karong, Manipur).

Material examined : 2 exs. (Regd. no. V/F/ERS/2285), Zingkhi riv., Kiphire district, coll. R. Mathew & party, 16.09.2006.

Diagnostic characters : Body elongate, laterally compressed. The head and part of the body in front of the ventrals is greatly depressed. The head is broadly pointed. Occipital process apposed to basal bone of dorsal fin. Barbels 4 pairs. Adhesive thoracic apparatus longer than broad; without central pit. The paired fins are non plaited. The skin is smooth. Body olivaceous with dark patches at the base of the dorsal, caudal and the adipose fins.

Distribution : INDIA : Manipur.

Elsewhere : MYANMAR.

Remarks : Reported for the first time from the State. The species was synonymised with *G. sinense* but presently its separate identity is recognised.

107. *Glyptothorax platypogonoides* (Bleeker, 1855).
(Fig. 90)

Pimelodus platypogonoides Bleeker, 1855. *Nat. Tijdschr. Ned-Indie*, 9 : 272. (Type locality: Lahat, Sumatra).

Material examined : Material not available for study from Nagaland but reported from the State (Malhotra & Suri, 1969).

Diagnostic characters : Body elongate, head depressed. Occipital process apposed to basal bone of dorsal fin. Barbels 4 pairs. Adhesive thoracic apparatus longer than broad; without central pit. Dorsal fin spine fairly strong and finely serrated on its inner edge. Paired fins non plaited. Skin on head and body rough with prominent tubercles arranged in regular longitudinal rows. Body brownish on dorsal and lateral regions, pale yellowish on belly; head and flanks speckled with dark spots; a whitish saddle shaped spot below and either side of dorsal fin. Fins marbled with spotted bands.

Distribution : INDIA : Assam, Manipur, Nagaland.

Elsewhere : INDONESIA; MYANMAR; SUMATRA; THAILAND; WEST BORNEO.

108. *Glyptothorax sinensis* (Regan, 1908)

Glyptosternon sinense Regan, 1908, *Ann. Mag. Nat. Hist.*, (8)11 : 110. (Type locality : Tungting, China)

Material examined : Material not available for study from Nagaland but reported from the State.

Diagnostic characters : Body elongate, head depressed, longer than broad. Mouth inferior, lips papillated. Occipital process separated from basal bone of dorsal fin. Barbels 4 pairs. Adhesive thoracic apparatus triangular and prominent devoid of a central pit; longer than broad. Body greenish-brown with two faint, irregular dusky patches, one below rayed dorsal fin and second below adipose fin. Rayed dorsal fin with a broad black longitudinal band in middle.

Distribution : INDIA : Manipur, Nagaland, Godavary estuary.

Elsewhere : CHINA ; UPPER MYANMAR

109. *Glyptothorax trilineatus* Blyth, 1861
(Fig. 91)

Glyptothorax trilineatus Blyth, 1861. *J. Asiat. Soc. Beng.*, **29** : 154. (Type locality : Tenasserim, Burma).

Material examined : 1 ex. (Regd. no. V/F/ERS/2237), Chenla river, Tuensang district, coll. R. Mathew & party, 18.09.2006.

Diagnostic characters : Body elongate, head broadly pointed and depressed. Occipital process apposed to basal bone of dorsal fin. Barbels 4 pairs. Adhesive thoracic apparatus longer than broad without a central pit. Dorsal fin spine weak and usually smooth, often finely serrated at its apex. Paired fin non plaited. Skin on head and body granulated. Body chestnut brown, pale yellow beneath. Three dirty white longitudinal streak present; one along back, second along lateral line and third along abdominal margin.

Distribution : INDIA : Manipur, Nagaland.

Elsewhere : CHINA; LAOS; MYANMAR; NEPAL; THAILAND.

110. *Hara hara* (Hamilton, 1822)
(Fig. 92)

Pimelodus hara Hamilton, 1822. *Fishes of Ganges* : 190, 378. (Type locality : Kosi river).

Material examined : Material not available for study from Nagaland but reported from the State (Hora & Mukherji, 1935).

Diagnostic characters : Body moderately elongate, flattened ventrally. Mouth inferior, barbels 4 pairs, all annulated. Dorsal spine strong and serrated. Pectoral spine does not extend to pelvic fin. Body yellowish brown with four broad crossbands behind dorsal fin, a dark blotch at end of adipose. Nagaland, Bihar, North Bengal, Uttar Pradesh, Orissa.

Elsewhere : BANGLADESH; MYANMAR, NEPAL.

111. *Pseudecheneis sulcatus* (McClelland, 1842)

Glyptosternon sulcatus McClelland, 1842. *Calcutta J. nat. Hist.*, **2** : 587, pl. 6. (Type locality : Khasi Hills, Meghalaya).

Material examined : Material not available for study from Nagaland but reported from the State (Hora, 1936).

Diagnostic characters : Body elongate, ventrally flattened upto pelvic fins. Head short, provided with a broad and oval thoracic apparatus composed of a series of transverse

muscular folds. Barbels 4 pairs, maxillary barbels broad based. Dorsal spine weak and roughened on its posterior edge. Paired fins large and expanded. Caudal fin emarginated. Body greyish-brown or black with about four large irregular blotches on sides above lateral line

Distribution : INDIA : Meghalaya, Nagaland, North Bengal, Uttar Pradesh.

Elsewhere : BANGLADESH; NEPAL; TIBET.

Remarks : Its status is Vulnerable at National level.

112. *Sisor rhabdophorus* Hamilton, 1822

Sisor rhabdophorus Hamilton, 1822. *Fishes of Ganges* : 208, 379. (Type locality : northern rivers of Bengal and Bihar).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body elongate, with a long tapering tail. Mouth small and inferior. Barbels 6 pairs, one pair of maxillary and five pairs of mandibular. Rayed dorsal fin with a weak spine (serrated anteriorly); adipose fin in form of a spine. Caudal fin truncate; uppermost ray elongated, filamentous. A series of bony plates from basal bone of dorsal fin to base of caudal fin. Body brownish above and lighter below.

Distribution : INDIA : Ganga, Yamuna and Brahmaputra river systems.

Elsewhere : BANGLADESH; NEPAL; PAKISTAN.

Remarks : Its status is Endangered at National level.

FAMILY CLARIIDAE

**113. *Clarias batrachus* (Linnaeus, 1758)

Silurus batrachus Linnaeus, 1758. *Systema Naturae*, 1, ed. 10 : 305. (Type locality : Asia and Africa).

Material examined : 1 ex. (Regd. no. V/F/ERS/2255), Jalukie, Peren district, coll. R. Mathew & party, 10.09.2006

Diagnostic characters : Body elongate, head moderately depressed; occipital process angular. Mouth terminal ; barbels 4 pairs, maxillary pair extend beyond base of pectoral fin, nasal barbels extend to gill opening. Dorsal fin inserted at a considerable distance from end of head with 60-76 rays. Anal fin with 47-58 rays. Pectoral fin spine strong, finely serrated on both edges. Body brownish to green-blue.

Distribution : INDIA : Throughout India.

Elsewhere : BANGLADESH; BORNEO; INDONESIA; JAVA; MEKONG BASIN; MALAYA PENINSULA; MYANMAR; NEPAL; PAKISTAN; PHILIPPINES; SUMATRA; SINGAPORE; SRI LANKA.

Remarks : Its status is vulnerable.

FAMILY HETEROPNEUSTIDAE

114. *Heteropneustes fossilis* (Bloch, 1794)

Silurus fossilis Bloch, 1794. *Naturgesch. Ausl. Fische*, 8 : 46, pl. 370, fig. 2. (Type locality : Tranquebar, Tamil Nadu).

Material examined : 1 ex. (Regd. no. V/ERS/9457), Tizit, Mon district, coll. Y.P. Sinha & party, 16.06.1990.

Diagnostic characters : Body elongate, subcylindrical to pelvic fin base, compressed behind. Head depressed, occipital process not extending to base of dorsal fin. Dorsal fin short, without spine. Anal fin long based, separated from caudal by deep notch. Pectoral fins with strong spine, serrated along inner edge and with a few serrations at its anterior end externally. Body purplish brown above, lighter below.

Distribution : INDIA : Throughout India

Elsewhere : BANGLADESH; INDO-CHINA; LAOS; MYANMAR; NEPAL; PAKISTAN; SRI LANKA; THAILAND.

Remarks : It's status is vulnerable at National level.

FAMILY CHACIDAE

** 115. *Chaca chaca* (Hamilton, 1822)

Platystacus chaca Hamilton, 1822, *Fishes of Ganges* : 140, 374, pl. 28, fig. 43. (Type locality : rivers and ponds of north-eastern parts of Bengal).

Material examined : 1 ex. (Regd. no. V/F/ERS/2501), Mon, Mon district, coll. S. Konyak, 29.06.2007.

Diagnostic characters : Body flat and stumpy; anteriorly broad and strongly depressed. Head exceedingly large, mouth wide, flattened flaps of skin present along dorsal surface of head and immediately posterior to eyes, barbels 3 pairs. Pectoral spine with 8-10 serrae along its anterior edge. Caudal fin rounded. Body brownish, marbled with darker blotches. Fins dark brown, with black blotches.

Distribution: INDIA : Meghalaya, Assam, Tripura, Ganges-Brahmaputra drainages, Irrawady river system, some fresh waters of Bombay

Elsewhere : BANGLADESH; BORNEO; MALAYA; MYANMAR; NEPAL; SUMATRA.

Remarks : Reported for the first time from the State. Rarely occurring species.

FAMILY OLYRIDAE

116. *Olyra burmanica* Day, 1871

Olyra burmanica Day, 1871. *Proc. Zool. Soc. Lond.* : 711 (Type locality : Pegu Yomas, Burma)

Material examined: Material not available for study from Nagaland but reported from the State (Malhotra & Suri, 1969).

Diagnostic characters : Body elongate, fairly stout. Mouth terminal, barbels 4 pairs. Pectoral fin with 4 soft rays, its spine moderately strong, slightly serrated on its external edge but strongly on its inner edge. Caudal fin lanceolate, with its central rays elongated. Body dark brown above, pale below.

Distribution : INDIA : Nagaland

Elsewhere : MYANMAR

117. *Olyra horae* (Prasad & Mukherji, 1929) (Fig. 93)

Amblyceps horae Prashad and Mukherjee, 1929. *Rec. Indian Mus.*, **31** : 173, fig. 1 and pl. 7, fig. 1. (Type locality : Indawgyi lake, Upper Burma).

Material examined : 4 exs. (Regd. no. V/ERS/9458), Tizit, Mon district, coll. Y.P. Sinha & party, 16.06.1990; 4 exs. (Regd. no. V/F/338), Wokha, Wokha district, coll. Y.P. Sinha & party, 20.03.1993.

Diagnostic characters : Body elongate, mouth terminal. Barbels 4 pairs. Pectoral spine serrated on both edges. Caudal fin forked. Upper lobe of caudal fin not very long than lower lobe. Body dark brownish above, pale below.

Distribution : INDIA : Assam, Meghalaya, Nagaland.

Elsewhere : MYANMAR.

118. *Olyra longicaudata* McClelland, 1842 (Fig. 94)

Olyra longicaudata McClelland, 1842 *Calcutta Jour. Nat. Hist.*, **2** : 588, pl. 21, fig. 1. (Type locality : Khasi hills, Meghalaya).

Material examined : 3 exs. (Regd. no. V/F/1865), Tening river, Mon district, coll. R. Mathew & party, 06.08.2005; 1 ex. (Regd. no. V/F/ERS/2198), Sembeng stream, Turu vill., Mon district, coll. R. Mathew & party, 26.09.2006.

Diagnostic characters : Body elongatem ; mouth terminal. Barbels 4 pairs. Pectoral spine strong, serrated on both edges. Caudal fin forked. Upper lobe of caudal fin almost twice as long as lower. Body depth 9-11 times in standard length. Anal fin rays 18-23.

Distribution : INDIA : Assam, Arunachal Pradesh, Meghalaya, Nagaland, Tripura. Darjeeling Himalayas.

Elsewhere : MYANMAR

ORDER BELONIFORMES

FAMILY BELONIDAE

119. *Strongylura strongylura* (van Hasselt, 1823)

Belone strongylura van Hasselt, 1823. *Algem Konst. Letter-Bode*, 2 : 130. (Type locality : Vizagapatnam).

Material examined : Material not available for study from Nagaland but reported from the State (Malhotra & Suri, 1969).

Diagnostic characters : Body elongate, rounded in cross section. Upper and lower jaw greatly elongated, studded with sharp teeth. Dorsal fin with 12-15 rays, inserted slightly posterior to origin of anal fin. Anal fin rays 15-18 rays. Caudal fin rounded or truncate. Body greenish above, silvery laterally, white ventrally. A prominent black spot at base of caudal fin.

Distribution : INDIA : Nagaland, Orissa.

Elsewhere : INDO-WEST PACIFIC.

120. *Xenentodon cancila* (Hamilton, 1822) (Fig. 95)

Esox cancila Hamilton, 1822. *Fishes of Ganges* : 213, 380, pl. 27, fig. 70. (Type locality : Gangetic provinces).

Material examined: 2 exs. (Regd. no. V/F/ERS/2179), Saprai river, Mon district, coll. R. Mathew & party, 26.09.2006.

Diagnostic characters : Body very elongate and slightly compressed. Dorsal fin inserted usually anterior to vertical through origin of anal fin with 15-18 rays and anal fin with 16-18 rays. Caudal fin truncate. Body greenish above, flanks green silvery; a silvery lateral band extend on flank of body.

Distribution : INDIA : Throughout India

Elsewhere : BANGLADESH; BORNEO; MALAYA; MEKONG BASIN; MYANMAR; NEPAL; PAKISTAN; SRI LANKA; SUMATRA; THAILAND.

ORDER SYNBRANCHIFORMES
FAMILY SYNBRANCHIDAE

121. *Monopterus cuchia* (Hamilton, 1822)
(Fig. 96)

Unibranchapertura cuchia Hamilton, 1822. *Fishes of Ganges* : 16, 363, pl. 16, fig. 4. (Type locality : rivers and ponds of southeast parts of Bengal).

Material examined : Material not available for study from Nagaland but reported from the State (Malhotra & Suri, 1969).

Diagnostic characters : Body eel like and robust. Head not conspicuous, eyes small covered by skin. Gill opening crescentic, occupying ventral region divided into a pair of pore like lateral aperture. Skin of branchial region of ventral side of head drawn into deep longitudinal folds. Dorsal and anal fin fold or ridges rudimentary. Body greenish or chestnut brown, becoming lighter on abdomen, with numerous black spots on body.

Distribution : INDIA : Northern and northeastern India, Orissa.

Elsewhere : BANGLADESH; MYANMAR; NEPAL; PAKISTAN.

ORDER SYNBRANCHIFORMES
FAMILY MASTACEMBELIDAE

122. *Macrognathus aral* (Bloch & Schneider, 1801)
(Fig. 97)

Rhynchobdella aral Bloch and Schneider, 1801, *Syst. Ichth.* : 479, pl. 89. (Type locality : Trnaquebar, Tamil Nadu).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body elongate, rostrum relatively large, with concave ventral surface. Mouth very small. Dorsal fin inserted far behind tip of pectoral fin, last dorsal spine small. Caudal fin distinctly separated from dorsal and anal fins. Body brownish or greenish, marbled superiorly; with two broad pale longitudinal bands extending its entire length. Dorsal fin pale or orange, 3 to 11 ocelli at its base often present; dorsal and caudal fins with numerous fine streaks.

Distribution : INDIA : Throughout India.

Elsewhere : BANGLADESH; BORNEO; INDO-CHINA; CHINA; JAVA; MALAYA PENINSULA; MOLUCCAS; MYANMAR; NEPAL; PAKISTAN; SIAM; SRI LANKA; SUMATRA; THAILAND; VIETNAM.

123. *Macragnathus pancalus* (Hamilton, 1822)
(Fig. 98)

Macragnathus pancalus Hamilton, 1822. *Fishes of Ganges* : 30, 364, pl. 22, fig. 7. (Type locality : tanks of Gangetic provinces).

Material examined: 2 exs. (Regd. no. V/F/ERS/2254), Jalukie, Peren district, coll. R. Mathew & party, 10.09.2006.

Diagnostic characters : Body eel like, slightly compressed. Preopercle with 2-5 spines; preorbital spine strong. Mouth small; rostrum rounded, devoid of toothplates. Dorsal fin inserted above middle of pectoral fins with 24 to 26 spines. Soft dorsal, anal pectoral and caudal fins with numerous minute black spots.

Distribution : INDIA : Throughout India.

Elsewhere : BANGLADESH; NEPAL; PAKISTAN.

124. *Mastacembelus armatus* (Lacepede, 1800)
(Fig. 99)

Macragnathus armatus Lacepede, 1800. *Hist. Nat. Poiss.*, 2 : 286. (Type locality : not mentioned).

Material examined : 1 ex. (Regd. no. V/F/ERS/2246), Nhezu river, Wokha district, coll. R. Mathew & party, 20.09.2006; 1 ex. (Regd. no. V/F/ERS/2275), Kaleirue riv., New Jalukie, Peren district, coll. R. Mathew & party, 11.09.2006.

Diagnostic characters : Body relatively slender. Preopercle with 2 or 3 spines; preorbital spine strong. Mouth small, rostrum simple devoid of toothplates. Spinous dorsal fin inserted above middle or posterior third of pectoral fins with 32-40 spines. Dorsal and anal fins broadly joined to caudal fin. Body brownish with zig-zag lines, sometimes connecting to form a network; often a row of spots along base of soft dorsal fin.

Distribution : INDIA : Throughout India.

Elsewhere: BANGLADESH; BALUCHISTAN; CAMBODIA; INDONESIA; SOUTH CHINA; HAINAN ISLAND; JAVA; MALAYA; MYANMAR; NEPAL; PAKISTAN; SRILANKA; SUMATRA; THAILAND; TONKIN; VIETNAM.

ORDER PERCIFORMES

FAMILY AMBASSIDAE

125. *Chanda nama* (Hamilton, 1822)
(Fig. 100)

Chanda nama Hamilton-Buchanan, 1822. *Fishes of Ganges* : 109, 371, pl. 39, fig. 37. (Type locality : ponds throughout Bengal).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body moderately elongate, strongly compressed. Mouth large, with a prominent 3 canine teeth on either side of lower jaw. Scales minute; lateral line with 100-107 scales. Body transparent, silvery yellowish with a silvery longitudinal band along the flank. Upper half of first dorsal fin deep black.

Distribution : INDIA : Throughout India

Elsewhere : BANGLADESH; MYANMAR; NEPAL; PAKISTAN.

Remarks : Its status is vulnerable

FAMILY BADIDAE

****126. *Badis assamensis* Ahl, 1936** (Fig. 101)

Badis badis assamensis Ahl, 1936. *Zool. Anz.*, 117 : 118. (Type locality : Assam, India).

Material examined : 5 exs. (Regd. no. V/F/ERS/2208), Heningkunglwa, Peren district, coll. R. Mathew & party, 11.09.2006; 3 exs. (Regd. no. V/F/ERS/2213), Heningkunglwa, Peren district, coll. R. Mathew & party, 11.09.2006; 2 exs. (Regd. no. V/F/ERS/2222), Tamkie, Munglai nadi, Peren district, coll. R. Mathew & party, 12.09.2006; 1 ex. (Regd. no. V/F/ERS/2267), Jalukie, Peren district, coll. R. Mathew & party, 10.09.2006; 14 exs. (Regd. no. V/F/ERS/2276), Kaleirue river, Peren district, coll. R. Mathew & party, 11.09.2006.

Diagnostic characters : Body moderately elongate, slightly compressed. Dorsal fin with 16-17 spines and 10 rays; anal fin with 3 spines and 7-8 rays. Lateral line with 28-30 scales. Possess a prominent dark blotch posterodorsally on opercle; two rows of irregular blackish blotches along side and one prominent blotch at caudal peduncle.

Distribution : INDIA : Assam.

Elsewhere : Same as above.

Remarks : The species was so far synonymised with *Badis badis* but presently its separate identity is recognized (www.fishbase.org). Reported for the first time from the State.

127. *Badis badis* (Hamilton, 1822) (Fig. 102)

Labrus badis Hamilton-Buchanan, 1822. *Fishes of Ganges* : 70, 368, pl. 25, fig. 23. (Type locality : Gangetic provinces).

Material examined : 4 exs. (Regd. no. V/ERS/9292), Jharnapani, Kohima district, coll. J.P. Sati & party, 11.01.1990; 4 exs. (Regd. no. V/ERS/9392), Tenang River, Mon district, coll. Y.P. Sinha & party, 04.06.1990; 2 exs. (Regd. no. V/F/ERS/1308), Ashukhuto, Zunheboto district, coll. Y.P. Sinha & party, 17.07.1991; 5 exs. (Regd. no. V/F/ERS/1309), Paglapahar, Dimapur district, coll. Y.P. Sinha & party, 13.03.1993; 5 exs. (Regd. no. V/F/ERS/1859), Yisemyong, Mokokchung district, coll. R. Mathew & party, 08.08.2005; 3 exs. (Regd. no. V/F/ERS/1864), Tening river, Mon district, coll. R. Mathew & party, 06.08.2005; 2 exs. (Regd. no. V/F/ERS/2170), Taphi river, Mon district, coll. R. Mathew & party, 24.09.2006; 5 exs. (Regd. no. V/F/ERS/2199), Sembeng stream, Turu vill. Mon district, coll. R. Mathew & party, 26.09.2006; 4 exs. (Regd. no. V/F/ERS/2245), Chenla river, Tuensang district, coll. R. Mathew & party, 18.09.2006; 17 exs. (Regd. no. V/F/ERS/2248), Nhezu river, Wokha district, coll. R. Mathew & party, 20.09.2006; 1 ex. (Regd. no. V/F/ERS/2296), Paglapahar nadi, Razephema, Dimapur district, coll. R. Mathew & party, 10.09.2006.

Diagnostic characters : Body moderately elongate, slightly compressed with bands or spots. Eyes large. Dorsal fin with 15-17 spines and 7- 9 rays. Anal fin with 3 spines and 6-8 rays. Caudal fin wedged shaped. Lateral line interrupted or absent with 26-28 scales in lateral series. Lacks a dark caudal peduncle blotch.

Distribution: INDIA : Throughout India.

Elsewhere : BANGLADESH; BHUTAN; MYANMAR, NEPAL; PAKISTAN.

FAMILY CICHLIDAE

128. *Oreochromis mossambica* (Peters, 1852)

(Fig. 103)

Chromis (Tilapia) mossambicus Peters, 1852. *Montab. Akad. Wiss., Berlin* : 681. (Type locality : Mozambique)

Material examined : 2 exs. (Regd. no. V/F/ERS/2234), Cathe river, Dimapur district, coll. R. Mathew & party, 09.09.2006.

Diagnostic characters : Body elongate, fairly deep and compressed. Mouth large. Dorsal fin inserted above base of pectoral fins with 15-18 spines and 10-13 soft rays; anal fin with 3 spines and 7-12 soft rays. Caudal fin truncate. Scales cycloid, 30-32 in lateral series. Body grey to yellowish with 3 or 4 blotches or bands often present along flanks.

Distribution : INDIA : Introduced.

Elsewhere : EAST AFRICA; PAKISTAN; SRI LANKA.

FAMILY GOBIIDAE

129. *Glossogobius giuris* (Hamilton, 1822)

(Fig. 104)

Gobius giuris Hamilton, 1822. *Fishes of Ganges* : 51, pl .33, fig. 15. (Type locality : Gangetic provinces).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body elongate, somewhat compressed. Eyes small. Branchiostegal membranes attached to sides of isthmus. Body yellowish brown with 4-5 blotches on flank; sides of head with irregular violet spots. Dorsal fin with 7 spines and 8-9 soft rays; anal fin with 1 spine and 8-9 soft rays. Dorsal, pectoral and caudal fins mottled with spots.

Distribution : INDIA : Throughout India including Andamans.

Elsewhere : BANGLADESH; MYANMAR; CHINA; MALAYA PENINSULA; NEPAL; PAKISTAN; PHILLIPINES; SRILANKA; THAILAND; E. COAST of AFRICA to JAPAN; AUSTRALIA; INDO-AUSTRALIAN ARCHIPELAGO; SOUTH PACIFIC ISLANDS.

FAMILY ANABANTIDAE

130. *Anabas cotojius* (Hamilton, 1822)

(Fig. 105)

Coius cotojius Hamilton, 1822. *Fishes of Ganges*, 98, 370, pl. 13, fig. 33. (Type locality : Gangetic provinces).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body elongate and fairly deep. Mouth fairly large. Scales large, 25-28 in lateral series. Depth of body 2.2-2.8 times in standard length. Body greenish on dorsal side, paler below. A dark spot on base of caudal fin.

Distribution : INDIA : Assam, Nagaland, Andhra Pradesh, Orissa, West Bengal.

Elsewhere : BANGLADESH; BORNEO.

Remarks : Its status is vulnerable at National level.

131. *Anabas testudineus* (Bloch, 1795)

(Fig. 106)

Anthias testudineus Bloch, 1795. *Naturges. ausland. Fische*, (6) : 121, pl. 322. (Type locality : ? Java).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body elongate, moderately deep. Mouth fairly large. Scales large, 21-29 in lateral series. Depth of body 3 to 3.5 times in standard length. Body greenish to dark grey on dorsal side, paler below. A distinct dark spot at base of caudal fin, often faded with age.

Distribution : INDIA : Throughout India

Elsewhere : BANGLADESH ; CAMBODIA; INDO-CHINA; CHINA; MALAYA; MALAYA ARCHIPELAGO; MYANMAR; NEPAL; PAKISTAN; PHILIPPINES; POLYNESIA; SINGAPORE; SRI LANKA ; THAILAND

Remarks : Its status is vulnerable at National level.

FAMILY OSPHRONEMIDAE

132. *Colisa fasciata* (Schneider, 1801) (Fig. 107)

Trichogaster fasciatus Schneider, 1801. *Syst. Ichthy.* 164, pl. 36. (Type locality : Tranquebar).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body oval and strongly compressed. Mouth small, slightly protrusible. Preorbital serrated in young ones. Dorsal and anal fins long based. Caudal fin truncate. Scales large, 29-31 in longitudinal series. Anal fin scaly at base only. Body greenish with orange or bluish oblique bars.

Distribution : INDIA : Assam, Arunachal Pradesh, Manipur, Meghalaya, Nagaland, Tripura, Northern India, Estuaries of Ganga, Coromondol coast, R. Krishna.

Elsewhere : BANGLADESH; MYANMAR; NEPAL; PAKISTAN.

**133. *Colisa lalia* (Hamilton, 1822) (Fig. 108)

Trichopodus lalius Hamilton, 1822. *Fishes of Ganges* : 120, 372. (Type locality : Gangetic provinces).

Material examined : 1 ex. (Regd. no. V/F/ERS/15), Zungti vill, Zunheboto district, coll. Y.P. Sinha, 14.07.1991.

Diagnostic characters : Body oval and strongly compressed. Mouth small, strongly protrusible. Preorbital denticulate. Soft dorsal and anal fins rounded. Caudal fin rounded to truncate. Scales large, 27 or 28 in longitudinal series. Anal fin densely scaled, scales

covering fin to tips of posterior spines. Body scarlet crossed by somewhat oblique bands of pale blue. Fins with scarlet spots or bars; anal fin with a red margin.

Distribution : INDIA : Ganga and Yamuna river systems.

Elsewhere : BANGLADESH; BORNEO; PAKISTAN.

Remarks : Reported for the first time from the State.

134. *Trichogaster chuna* (Hamilton, 1876)
(Fig. 109)

Trichogaster chuna Hamilton, 1876. *Fishes of India* : 373, pl. 79, fig. 3. (Type locality: Ganges river).

Material examined : 2 exs. (Regd. no. V/F/ERS/19), Ashukhuto, Zunheboto district, coll. Y.P. Sinha & party, 17.07.1991.

Diagnostic characters : Body oblong and compressed. Mouth small, strongly protrusible. Preorbital serrated. Caudal fin slightly emarginated. Scales large, 27-29 in longitudinal series. Body dull greenish, lighter along belly; a blackish longitudinal band from eye to caudal fin.

Distribution : INDIA : Assam, Meghalaya, Nagaland, Gangetic province.

Elsewhere : BANGLADESH.

135. *Pseudosphromenus cupanus* (Valenciennes, 1831)

Polyacanthus cupanus Valenciennes, 1831. *Hist. nat. Poiss.*, 7 : 357. (Type locality : Ariancoupan river at Pondicherry).

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body oblong and compressed. Mouth small. Outer soft ray of pelvic fin produced into a single moderately long filament. Caudal fin pointed with median rays elongated. Scales large, lateral line rudimentary with 29-32 scales in longitudinal series. Body dark olive to green; often with a brown stripe from eye to corner of opercle and brown spots on head. A dusky blotch on caudal peduncle. Soft dorsal and caudal fins with rows of black spots.

Distribution : INDIA : Eastern India, Karnataka, Kerala and Tamil Nadu.

Elsewhere: INDONESIA; BANGLADESH; MALAYA PENINSULA; WESTERN MYANMAR; SUMATRA; SRI LANKA.

FAMILY CHANNIDAE

136. *Channa barca* (Hamilton, 1822)
(Fig. 110)

Ophiocephalus barca Hamilton, 1822. *Fishes of Ganges* : 67, 367, pl. 35, fig. 20. (Type locality : Brahmaputra river, nr. Goalpara, Assam)

Material examined : Material not available for study from Nagaland but reported from the State (Karmakar & Das, 2005).

Diagnostic characters : Body elongate and rounded in cross section. 9 scales between orbit and angle of preopercle; predorsal scales 15. Lateral line scales 60-65. Dorsal fin with 47-52 rays; anal fin with 34-36 rays. Pelvic fin about 40% of pectoral fin length. Body dark violet on back and with black blotches. Dorsal, anal and caudal fins with blotches. Pectoral fins reddish with numerous black spots.

Distribution : INDIA : Assam, Meghalaya, Nagaland, West Bengal, North –West provinces.

Elsewhere : BANGLADESH; PAKISTAN.

**137. *Channa gachua* (Hamilton, 1822)
(Fig. 111)

Ophiocephalus gachua Hamilton, 1822. *Fishes of Ganges* : 68, 367, pl. 21, fig. 21. (Type locality : Bengal).

Material examined : 1 ex. (Regd. no. V/F/ERS/2247), Nhezu river, Wokha district, coll. R. Mathew & party, 20.09.2006; 1 ex. (Regd. no. V/F/ERS/2257), Jalukie, Peren district, coll. R. Mathew & party, 10.09.2006.

Diagnostic characters : Body elongate and rounded in cross section. 4-5 scales between orbit and angle of preopercle; predorsal scales 12-13. Anal fin with 21-23 rays. Dorsal fin with 32-37 rays. Length of pelvic fins less than half of pectoral fins. Lateral line with 40-50 scales. Body usually greenish, ventrally lighter. Dorsal, anal and caudal fins slate coloured; pectoral fins with a black base.

Distribution: INDIA : North East India, Maharashtra.

Elsewhere : BALI; INDONESIA; MEKONG BASIN; SRI LANKA.

Remarks : Reported for the first time from the State. So far the species was synonymised with *C.orientalis* but presently its separate identity is recognised.

138. *Channa orientalis* (Schneider, 1801)
(Fig. 112)

Channa orientalis Schneider, 1801. *Syst. Ichtyol*, 496, pl. 90, fig. 2. (Type locality : India).

Material examined : 4 exs. (Regd. no. V/F/ERS/388), Changki valley, Mokokchung district, coll. Sapu Changkija, 12.01.1998; 1 ex. (Regd. no. V/F/ERS/1860), Yisemyong, Mokokchung district, coll. R. Mathew & party, 08.08.2005; 6 exs. (Regd. no. V/F/ERS/1861), Zunheboto town, Zunheboto district, coll. R. Mathew & party, 10.08.2005; 1 ex. (Regd. no. V/F/ERS/2218), Paglapahar nadi, Dimapur district, coll. R. Mathew & party, 09.09.2006; 1 ex. (Regd. no. V/F/ERS/2233), Cathe river, Dimapur district, coll. R. Mathew & party, 09.09.2006; 1 ex. (Regd. no. V/F/ERS/2295), Paglapahar nadi, Razephema, Dimapur district, coll. R. Mathew & party, 10.09.2006.

Diagnostic characters : Body elongate and rounded in cross section. 4-5 scales between orbit and angle of preopercle; predorsal scales 12-13. Anal fin with 17-23 rays, no black spots on scales. Dorsal fin with 29-37 rays. Length of pelvic fins less than half of pectoral fins. Pectoral fins with bluish vertical bands. Chin marbled. Lateral line with 37-50 scales. Body dorsally greenish, ventrally pale with bluish or reddish tinged. Pectoral fins with series of bands. Dorsal, anal and caudal fins barred. Young specimens often with 1-3 ocellus on end of dorsal fin.

Distribution : INDIA : 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.

139. *Channa punctata* (Bloch, 1793)
(113)

Ophiocephalus punctatus Bloch, 1793. *Naturges ausland. Fische*, (7) : 139, pl. 358. (Type locality : rivers and lakes of Coromondol coast).

Material examined : 1 ex. (Regd. no. V/F/ERS/1307), Ashukhuto, Zunheboto district, coll. Y.P. Sinha & party, 17.07.1991; 1 ex. (Regd. no. V/F/ERS/2256), Jalukie, Peren district, coll. R. Mathew & party, 10.09.2006.

Diagnostic characters : Body elongate, rounded in cross section. 4-5 scales between orbit and angle of preopercle, predorsal scales 12-13. Length of pelvic fins more than half of pectoral fins. Pectoral fins plain. Dorsal fin with 28-33 rays; anal fin with 20-23 rays. Lateral line scales 37-40. Body black to light green on dorsal side and flanks, belly whitish; several blotches on flanks.

Distribution : INDIA : Throughout India.

Elsewhere : AFGHANISTAN; BANGLADESH; CHINA; MALAYA; MYANMAR; NEPAL; PAKISTAN; POLYNESIA; SRI LANKA, TAHITI.

140. *Channa striata* (Bloch, 1793)

Ophiocephalus striatus Bloch, 1793, *Naturges. ausland. Fische*, (7) : 141, pl. 359. (Type locality : Malabar).

Material examined : Material not available for study from Nagaland but reported from the State (Malhotra & Suri, 1969).

Diagnostic characters : Body elongate and rounded in cross section. Eyes moderate. Pectoral fin about 2 times in head length. 9 scale rows between preopercular angle and posterior border of orbit; predorsal scales 18-20; lateral line scales 50-57. Dorsal fin with 38-43 rays. Anal finrays 23-27. Body grey green to black green on upper side; belly usually whitish several dark vertical bands below lateral line

Distribution : INDIA : Throughout India

Elsewhere : BANGLADESH; MALAYA; MALAYA ARCHIPELAGO; MYANMAR; HONOLULU (introduced); NEPAL; PAKISTAN; PHILIPPINES; SOUTH CHINA; SRI LANKA; THAILAND.



Fig. 15 : *Salmostoma bacaila* (Hamilton, 1822)



Fig. 16 : *Aspidoparia morar* (Hamilton, 1822)



Fig. 17 : *Barilius barila* (Hamilton, 1822)



Fig. 18 : *Barilius barnoides* Vinciguerrae, 1890



Fig. 19 : *Barilius bendelisis* (Hamilton, 1807)



Fig. 20 : *Barilius dogarsinghi* Hora, 1921



Fig. 21 : *Barilius shacra* (Hamilton, 1822)



Fig. 22 : *Barilius tileo* (Hamilton, 1822)



Fig. 23 : *Chela cachius* (Hamilton, 1822)

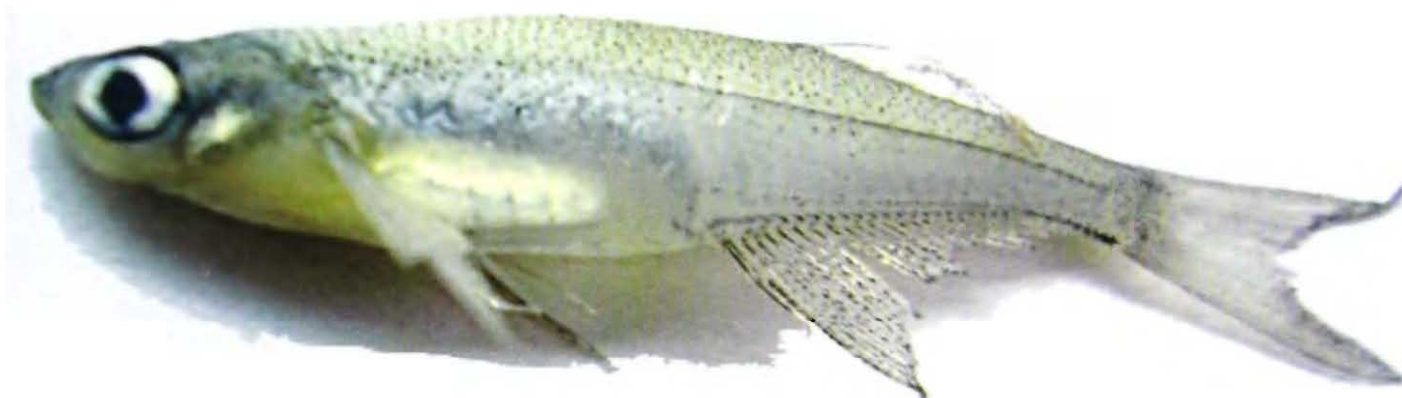


Fig. 24 : *Chela laubuca* (Hamilton, 1822)



Fig. 25 : *Esomus danricus* (Hamilton, 1822)



Fig. 26 : *Danio dangila* (Hamilton, 1822)



Fig. 27 : *Danio rerio* (Hamilton, 1822)



Fig. 28 : *Devario acuticephala* (Hora, 1921)



Fig. 29 : *Devario aequipinnatus* (McClelland, 1839)



Fig. 30 : *Devario naganensis* (Chaudhuri, 1912)



Fig. 31 : *Rasbora daniconius* (Hamilton, 1822)



Fig. 32 : *Rasbora rasbora* (Hamilton, 1822)



Fig. 33 : *Amblypharyngodon mola* (Hamilton, 1822)



Fig. 34 : *Cyprinus carpio carpio* Linnaeus, 1758



Fig. 35 : *Tor putitora* (Hamilton, 1822)



Fig. 36 : *Tor tor* (Hamilton, 1822)



Fig. 37 : *Neolissocheilus hexagonolepis* (McClelland, 1839)



Fig. 38 : *Neolissocheilus hexastichus* (McClelland, 1839)



Fig. 39 : *Chagunius chagunio* (Hamilton, 1822)



Fig. 40 : *Poropuntius clavatus* (McClelland, 1845)



Fig. 41 : *Puntius chelynoides* (McClelland, 1839)



Fig. 42 : *Puntius manipurensis* Menon, Remadevi and Vishwanath, 2000



Fig. 43 : *Puntius shalynius* Yazdani & Talukdar, 1975



Fig. 44 : *Puntius sophore* (Hamilton, 1822)



Fig. 45 : *Puntius ticto* (Hamilton, 1822)



Fig. 46 : *Cyprinion semiplotum* (McClelland, 1839)



Fig. 47 : *Semiplotus manipurensis* Vishwanath and Kosygin, 2000



Fig. 48 : *Bangana devdevi* (Hora, 1936)



Fig. 49 : *Labeo angra* (Hamilton, 1822)



Fig. 50 : *Labeo ariza* (Hamilton, 1807)



Fig. 51 : *Sinilabeo dero* (Hamilton, 1822)



Fig. 52 : *Schizothorax richardsonii* (Gray, 1832)



Fig. 53 : *Crossocheilus latius* (Hamilton, 1822)



Fig. 54 : *Garra annandalei* Hora, 1921



Fig. 55 : *Garra elongata* Vishwanath and Kosygin, 2000



Fig. 56 : *Garra gotyla gotyla* (Gray, 1832)



Fig. 57 : *Garra kempfi* Hora, 1921



Fig. 58 : *Garra lamta* (Hamilton, 1822)



Fig. 59 : *Garra lissorhynchus* (McClelland, 1843)



Fig. 60 : *Garra naganensis* Hora, 1921



Fig. 61 : *Garra nasuta* (McClelland, 1839)



Fig. 62 : *Psilorhynchus balitora* (Hamilton, 1822)



Fig. 63 : *Psilorhynchus homaloptera* Hora & Mukherji, 1935



Fig. 64 : *Balitora brucei* Gray, 1830



Fig. 65 : *Acanthocobitis botia* (Hamilton, 1822)



Fig. 66 : *Acanthocobitis zonalternans* (Blyth, 1861)



Fig. 67 : *Schistura kangjupkhulensis* (Hora, 1921)



Fig. 68 : *Schistura khugae* Vishwanath and Shanta, 2004



Fig. 69 : *Schistura manipurensis* (Chaudhuri, 1912)



Fig. 70 : *Schistura minutus* Vishwanath and Shantakumar, 2005



Fig. 71 : *Schistura prashadi* (Hora, 1921)



Fig. 72 : *Schistura savona* (Hamilton, 1822)



Fig. 73 : *Schistura scaturigina* (McClelland, 1839)



Fig. 74 : *Schistura tirapensis* Kottelat, 1990



Fig. 75 : *Lepidocephalichthys berdmorei* (Blyth, 1861)



Fig. 76 : *Lepidocephalichthys guntea* (Hamilton, 1822)



Fig. 77 : *Lepidocephalichthys irrorata* (Hora, 1921)



Fig. 78 : *Pangio pangia* (Hamilton, 1822)



Fig. 79 : *Mystus bleekeri* (Day, 1877)



Fig. 80 : *Mystus cavasius* (Hamilton, 1822)

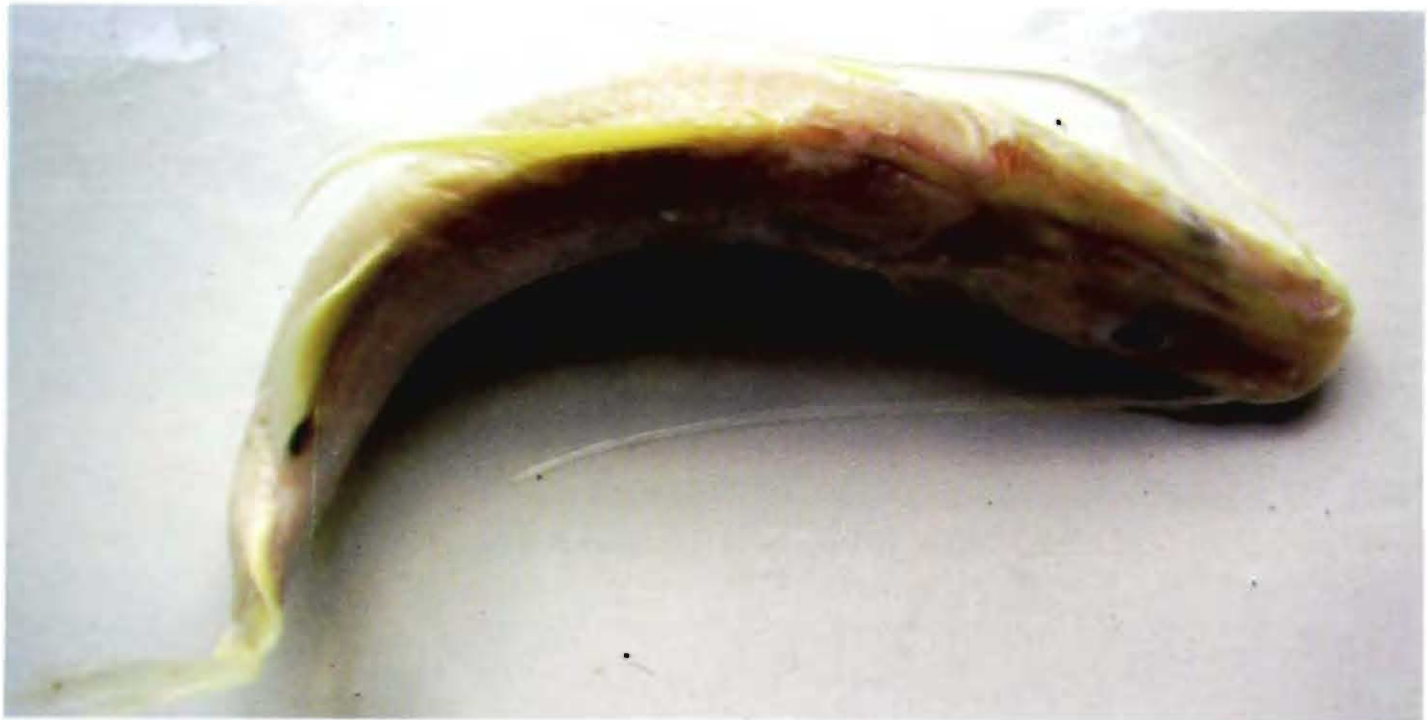


Fig. 81 : *Sperata seenghala* (Sykes, 1841)



Fig. 82 : *Wallago attu* (Schneider, 1801)



Fig. 83 : *Pterocryptis berdmorei* (Blyth, 1861)



Fig. 84 : *Amblyceps mangois* (Hamilton, 1822)



Fig. 85 : *Conta conta* (Hamilton, 1822)



Fig. 86 : *Erethistes pussilus* Muller & Troschel, 1845



Fig. 87 : *Pseudolaguvia shawi* (Hora, 1921)



Fig. 88 : *Glyptothorax cavia* (Hamilton, 1822)



Fig. 89 : *Glyptothorax manipurensis* Menon, 1954



Fig. 90 : *Glyptothorax platypogonoides* (Bleeker, 1855)



Fig. 91 : *Glyptothorax trilineatus* Blyth, 1861



Fig. 92 : *Hara hara* (Hamilton, 1822)



Fig. 93 : *Olyra horae* (Prasad & Mukherji, 1929)



Fig. 94 : *Olyra longicaudata* McClelland, 1842



Fig. 95 : *Xenentodon cancila* (Hamilton, 1822)



Fig. 96 : *Monopterus albus* (Hamilton, 1822)



Fig. 97 : *Macrognathus aral* (Bloch & Schneider)



Fig. 98 : *Macrognathus pancalus* (Hamilton, 1822)



Fig. 99 : *Mastacembelus armatus* (Lacepede, 1800)



Fig. 100 : *Chanda nama* (Hamilton, 1822)



Fig. 101 : *Badis assamensis* Ahl, 1937



Fig. 102 : *Badis badis* (Hamilton, 1822)



Fig. 103 : *Oreochromis mossambica* (Peters, 1852)



Fig. 104 : *Glossogobius giuris* (Hamilton, 1822)



Fig. 105 : *Anabas cobojus* (Hamilton, 1822)



Fig. 106 : *Anabas testudineus* (Bloch, 1795)



Fig. 107 : *Colisa fasciata* (Schneider, 1801)



Fig. 108 : *Colisa lalia* (Hamilton, 1822)



Fig. 109 : *Trichogaster chuna* (Hamilton, 1822)



Fig. 110 : *Channa barca* (Hamilton, 1822)



Fig. 111 : *Channa gachua* (Hamilton, 1822)



Fig. 112 : *Channa orientalis* (Schneider, 1801)

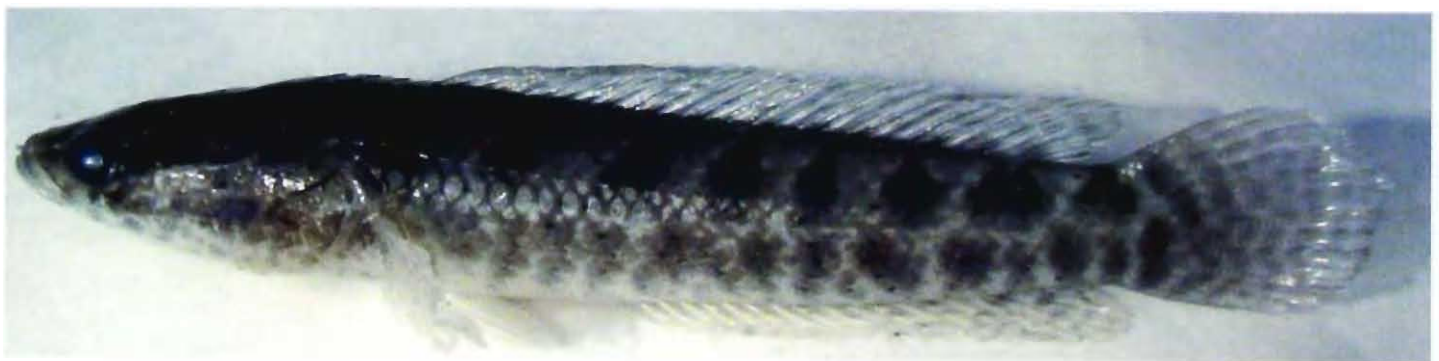


Fig. 113 : *Channa punctata* (Bloch, 1793)

AMPHIBIA

SYSTEMATIC LIST

CLASS AMPHIBIA

ORDER ANURA

FAMILY BUFONIDAE

1. *Duttaphrynus melanostictus* (Schneider, 1799)

FAMILY DICROGLOSSIDAE

2. *Euphlyctis cyanophlyctis* (Schneider, 1799)
3. *Euphlyctis hexadactylus* (Lesson, 1834)
4. *Fejervarya limnocharis* (Gravenhorst, 1829)
5. *Fejervarya nepalensis* (Dubois, 1975)
6. *Fejervarya pierrei* (Dubois, 1975)
7. *Fejervarya teraiensis* (Dubois, 1984)
8. *Hoplobatrachus crassus* (Jerdon, 1853)
9. *Hoplobatrachus tigerinus* (Daudin, 1803)
10. *Limnonectes mawphlangensis* (Pillai & Chanda, 1977)
11. *Nanorana mokokchungensis* (Das & Chanda, 2000)
12. *Occidozyga borealis* (Annandale, 1912)

FAMILY HYLIDAE

13. *Hyla annectans* (Jerdon, 1870)

FAMILY MEGOPHRYIDAE

14. *Scutiger sikimensis* (Blyth, 1855)
15. *Xenophrys glandulosa* (Boulenger, 1890)
16. *Xenophrys major* (Boulenger, 1908)
17. *Xenophrys parva* (Boulenger, 1893)
18. *Xenophrys wuliangshanensis* (Ye & Fei, 1995)
19. *Xenophrys zunhebotoensis* Mathew and Sen, 2007

FAMILY MICROHYLIDAE

20. *Microhyla ornata* (Dumeril and Bibron, 1841)

21. *Microhyla rubra* (Jerdon, 1853)

FAMILY RANIDAE

22. *Amolops formosus* (Gunther, 1876)

23. *Amolops gerbillus* (Annandale, 1912)

24. *Amolops marmoratus* (Blyth, 1855)

25. *Amolops monticola* (Anderson, 1871)

26. *Amolops viridimaculatus* (Jiang, 1983)

27. *Huia livida* (Blyth, 1855)

28. *Humerana humeralis* Boulenger, 1887

29. *Hylarana erythraea* (Schlegel, 1837)

30. *Hylarana tytleri* Theo

31. *Nasirana alticola* (Boulenger

32. *Pterorana khare* Kiyasetuo and Khare, 1986

33. *Sylvirana garoensis* (Boulenger, 1920)

FAMILY RHACOPHORIDAE

34. *Chiromantis vittatus* (Boulenger, 1887)

35. *Philautus andersoni* (Ahl, 1927)

36. *Philautus annandalii* (Boulenger, 1906)

37. *Philautus garo* (Boulenger, 1919)

38. *Polypedates gongshanensis* (Yang & Su, 1984)

39. *Polypedates leucomystax* (Gravenhorst, 1829)

40. *Polypedates megacephalus* Hallowell, 1861

41. *Rhacophorus bipunctatus* Ahl, 1927

42. *Rhacophorus maximus* Gunther, 1858

43. *Theloderma asperum* (Boulenger, 1886)

SYSTEMATIC ACCOUNT

ORDER ANURA

FAMILY BUFONIDAE

1. *Duttaphrynus melanostictus* Schneider, 1799
(Fig. 114)

Bufo melanostictus Schneider, 1799, *Hist. Amph.*, 1 : 216.

Material examined : 3 exs. (Regd. no. V/A/ERS/81), Tizit, Mon-Sonari road, Mon district, coll. Y.P. Sinha & party, 16.06.1990; 1 ex. (Regd. no. V/A/ERS/218), on way to Aboi, Mon district, coll. Y.P. Sinha & party, 18.06.1990; 1 ex. (Regd. no. V/A/ERS/263), Shoixe vill., Zunheboto district, coll. Y.P. Sinha & party, 16.07.1990; 2 exs. (Regd. no. V/A/ERS/265), Zungti and around, Zunheboto district, coll. Y.P. Sinha & party, 14.07.1991; 3 exs. (Regd. no. V/A/ERS/275), Asukhuto and around, Zunheboto district, coll. Y.P. Sinha & party, 17.07.1991; 1 ex. (Regd. no. V/A/ERS/630), Mon forest IB, Mon district, coll. R. Mathew & party, 08.05.2005; 4 exs. (Regd. no. V/A/ERS/631 and 762), Imkongmeren sports complex lake, Mokokchung district, coll. R. Mathew & party, 08.08.2005; 1 ex. (Regd. no. V/A/ERS/632), tourist lodge, Kohima, Kohima district, coll. R. Mathew & party, 08.11.2005.

Diagnostic characters : Head with canthal, preorbital, supra orbital, post orbital and a short supra tympanic bony ridges. Dorsally brown or yellowish brown; sometimes with black spots. Tips of warts and ridges of head usually deep brown to black. Ventrally smooth, yellowish, more or less spotted with brown. Tibio tarsal articulation (TTA), reaching eyes. Tympanum large, very distinct, more than $2/3^{\text{rd}}$ the diameter of eye. Toes blunt, $1/2$ webbed.

Distribution : India : Throughout India.

Elsewhere: CHINA; HONGKONG; INDONESIA; MALAYSIA; MYANMAR; NEPAL; PAKISTAN; PHILIPPINES; THAILAND; SRI LANKA.

Remarks : Its status is vulnerable.

FAMILY DICROGLOSSIDAE

2. *Euphlyctis cyanophlyctis* (Schneider, 1799)
(Fig. 115)

Rana cyanophlyctis Schneider, 1799, *Hist. Amph.*, Vol. 8 : 137 (Type locality : " Eastern India").

Material examined : 2 exs. (Regd. no. V/ERS/9173), Kohima, Kohima district, coll. J.P. Sati & party, 14.01.1990; 4 exs. (Regd. no. V/ERS/9174), Tuensang, Tuensang district, coll. K.P. Singh & party, 19.09.1981; 3 exs. (Regd. no. V/A/ERS/72), Tizit, Mon-Sonari road, Mon district, coll. Y.P. Sinha & party, 16.06.1990; 4 exs. (Regd. no. V/A/ERS/268 & 284), Piphima, Kohima district, coll. Y.P. Sinha & party, 16. 03.1993; 1 ex. (Regd. no. V/A/ERS/276), Molvon and around, Kohima district, coll. Y.P. Sinha & party, 15.03.1993; 3 exs. (Regd. no. V/A/ERS/286), Pagla pahar, Kohima district, coll. Y.P. Sinha & party, 13.03.1993; 9 exs. (Regd. no. V/A/ERS/820), Tiru river, Mon district, coll. R. Mathew & party, 26.09.2006.

Diagnostic characters : Dorsum greyish, brownish or olive; skin with small tubercles and warts, spotted or marked with black. Ventrally smooth, white or pale yellowish, speckled with blackish dots. Laterally with a distinct row of pores. Fingers and toes pointed; toes fully webbed. TTA reaches a little beyond eyes.

Distribution : INDIA : Throughout India

Elsewhere: AFGHANISTAN; BANGLADESH; BHUTAN; MYANMAR; NEPAL; PAKISTAN; SOUTH ARABIA; SRI LANKA.

3. *Euphlyctis hexadactylus* (Lesson, 1834)

(Fig. 116)

Rana hexadactylus Lesson, 1834. *Voy. Ind. Or. Rept.*, : 331. (Type locality : South India).

Material examined : 11 exs. (Regd. no. V/A/ERS/629), Yisemyong, Mokokchung district, coll. R. Mathew & party, 08.08.2005; 6 exs. (Regd. no. V/A/ERS/635), Tening river, Mon district, coll. R. Mathew & party, 08.08.2005; 11 exs. (Regd. no. V/A/ERS/760), Sedzii river, Phek district, coll. R. Mathew & party, 11.08.2005; 3 exs. (Regd. no. V/A/ERS/772), Pagla nadi, Dimapur district, coll. R. Mathew & party, 10.09.2006; 15 exs. (Regd. no. V/A/ERS/815), Kaleru river, new Jalukie, Peren district, coll. R. Mathew & party, 11.09.2006; 10 exs. (Regd. no. V/A/ERS/817), Chathe river, Dimapur district, coll. R. Mathew & party, 09.09.2006; 2 exs. (Regd. no. V/A/ERS/819), Tamon, Mon district, coll. R. Mathew & party, 24.09.2006; 6 exs. (Regd. no. V/A/ERS/827), Chenia river, Tuensang district, coll. R. Mathew & party, 18.09.2006; 4 exs. (Regd. no. V/A/ERS/828), Sembeng stream, Tiru village, Mon district, coll. R. Mathew & party, 26.09.2006; 2 exs. (Regd. no. V/A/ERS/831), Nhezu river, Wokha district, coll. R. Mathew & party, 20.09.2006.

Diagnostic characters : Dorsum brownish to blackish with darker blotches and usually with prominent warts; ventrally either plain or thinly or thickly mottled with brown and with distinct rows of pores, one each on lateral side, two rows on either side of belly and one across throat; snout pointed; nostril dorsally placed; tympanum distinct, 3/4th to once

the size of the eye; pineal ocellus present; fingers rather blunt, 1st longer than 2nd; toes fully webbed; TTA reach between tympanum and eye; inner meta tarsal tubercle digitiform; outer metatarsal tubercle absent.

Distribution : INDIA : Throughout India

Elsewhere : AFGHANISTAN; BANGLADESH; BHUTAN; MYANMAR; NEPAL; PAKISTAN; SOUTH ARABIA; SRI LANKA.

Remarks : *Euphlyctis hexadactylus* is distinguished from its closely associated species, *cyanophlyctis* on the basis of the former possessing double row of porous lines on abdomen.

4. *Fejervarya limnocharis* (Gravenhorst, 1829) (Fig. 117)

Rana limnocharis Gravenhorst, 1829. *Del. Mus. Zool.*, : 42. (Type locality: "Java", Indonesia).

Material examined : 2 exs. (Regd. no. V/A/ERS/69), Longpho, Mon district, coll. Y.P. Sinha & party, 19. 06.1990; 1 ex. (Regd. no. V/A/ERS/70), Totak vill., Mon district, coll. Y.P. Sinha & party 06.05.1990; 1 ex. (Regd. no. V/A/ERS/73), Mon area, Mon district, coll. Y.P. Sinha & party, 14.06.1990; 1 ex. (Regd. no. V/A/ERS/76), Tenhai, Mon district, coll. Y.P. Sinha & party, 06.07.1990; 1 ex. (Regd. no. V/A/ERS/77), Mon area, Mon district, coll. Y.P. Sinha & party, 17.06.1990; 2 exs. (Regd. No. V/A/ERS/79), Veterinary colony, Mon district, coll. Y.P. Sinha & party, 06.09.1990; 1 ex. (Regd. No. V/A/ERS/214), Surohototo vill., Zunheboto district, coll. Y.P. Sinha & party, 07.10.1991; 1 ex. (Regd. no. V/A/ERS/216), Satakha, Zunheboto district, coll. Y.P. Sinha & party, 13.07.1991; 1 ex. (Regd. no. V/A/ERS/219), Mon, Mon district, coll. Y.P. Sinha & party, 18.06.1990; 6 exs. (Regd. no. V/A/ERS/269), Akhuloto, Zunheboto district, coll. Y.P. Sinha & party, 07.11.1991; 3 exs. (Regd. no. V/ A/ERS/273), Kokesha vill., Zunheboto district, coll. Y.P. Sinha & party, 15.07.1991; 1 ex. (Regd. no. V/A/ERS/ 274), Asukhoto and around, Zunheboto district, coll. Y.P. Sinha & party, 17.07.1991; 14 exs. (Regd. no. V/A/ERS/814), New Jalukie, Kalereu river, Peren district, coll. R. Mathew & party, 11. 09.2006; 4 exs. (Regd. no. V/A/ERS/816), Secu Zuhza stream, Kohima district, coll. R. Mathew & party, 12.08.2005; 4exs. (Regd. no. V/A/ERS/818), Chathe river, Dimapur district, coll. R. Mathew & party, 09.09.2006; 5 exs. (Regd. no. V/A/ERS/822), Tiru river, Mon district, coll. R. Mathew & party, 26.09. 2006; 4 exs. (Regd. no. V/A/ERS/ 825), Mutsure river, Phek district, coll. R. Mathew & party, 14.09.2006; 3 exs. (Regd. no. V/A/ERS/829), Tiru river, Mon district, coll. R. Mathew & party, 26.09.2006.

Diagnostic characters : Head slightly broader than long; snout oval protruding. Tympanum distinct, $\frac{1}{2}$ diameter of eye. Pineal ocellus present. Tips of fingers and toes pointed. Toe webbing moderate, $\frac{1}{2}$ webbed; dermal fringe along fifth toe well developed.

TTA reaching tip of snout. Inner metatarsal tubercle short, prominent; outer absent. Dorsum light brown to black or olive with distinct or variable markings. Dorsal chevron present, a distinct thin or thick, complete or incomplete; mid dorsal vertebral line present or absent.

Distribution : INDIA : Throughout India

Elsewhere : BANGLADESH; BORNEO; SOUTH WEST CHINA; INDONESIA; S.E.JAPAN; JAVE; MALAY PENINSULA; MYANMAR; NEPAL; PHILIPPINES; PAKISTAN; SRI LANKA; SUMATRA; TAIWAN; THAILAND; VIETNAM.

Remarks : Its status is vulnerable.

5. *Fejervarya nepalensis* (Dubois, 1975) (Fig. 118)

Rana nepalensis Dubois, 1975, C .R Acad .Sc., Paris, t. (D) 281 : 1771-1720.

Material examined : Material not available for study from Nagaland but reported by Ao *et al.* (2003).

Diagnostic characters : Head pointed in dorsal view; canthus rostralis indistinct; loreal region concave; inter orbital width half the eye diameter; nostrils much close to tip of snout; tympanum small, round, indistinct, half the eye diameter. Fingers with rounded tips, inner metacarpal tubercle oval, oblong and oval palmar tubercle. Toes webbed, inner metatarsal tubercle flattened, outer oval, weak, indistinct; skin fringe present on outer side of 5th toe. TTA reaches between nostrils and anterior corner of eye. A dark inter-orbital band present; a distinct mid dorsal line present often with red patches. Thigh distinctly barred.

Distribution : INDIA : Assam, Nagaland.

Elsewhere : NEPAL.

6. *Fejervarya pierrei* (Dubois, 1975)

Rana pierrei Dubois, 1975, C .R Acad. Sc., Paris, t. (D) 281 : 1771-1720.

Material examined : 1 ex. (Regd. no. V/A/ERS/791), Taphi river, Mon district, coll. R. Mathew & party, 24.09.2006; 1 ex. (Regd. no. V/A/ERS/792), Chozube, Phek district, coll. R. Mathew & party, 11.08.2005.

Diagnostic characters : Head strikingly pointed, canthus rostralis indistinct; loreal region slightly concave; inter orbital width half the eye diameter; nostril closer to snout tip; tympanum round, not very distinct, less than half eye diameter. Fingers with rounded

tips, 1st finger scarcely longer than 2nd; sub articular tubercles globular; an oblong inner metacarpal tubercle and a transverse and oval palmar tubercle. Toes webbed; inner metatarsal tubercle oblong, oval and laterally flattened; outer metatarsal tubercle very small. Dorsum brownish olive with few dark irregular oblong spots; sides of the body marbled; a cream coloured mid dorsal stripe from snout tip to cloaca with or without reddish spots. Forelimbs with dark bands; hindlimb pattern indistinct and usually broken up into diffused spots.

Distribution : INDIA : Assam, Meghalaya, Nagaland

Elsewhere : NEPAL

7. *Fejervarya teraiensis* (Dubois, 1984)
(Fig. 119)

Rana (Fejervarya) teraiensis Dubois, 1984. *Alytes*, 3 : 143-159.

Material examined : 1 ex. (Regd. no. V/A/ERS/770), Jalukie, Peren district, coll. R. Mathew & party, 11. 09.2006; 1 ex. (Regd. no. V/A/ERS/771), Jalukie, Peren district, coll. R. Mathew & party, 10.09.2006. 1 ex. (Regd. no. V/A/ERS/821), Tiru river, Mon district, coll. R. Mathew & party, 26.09.2006; 1 ex. (Regd. no. V/A/ERS/830), Nhezu river, Wokha district, coll. R. Mathew & party, 20.09.2006.

Diagnostic characters : Head broader or as broad as long; snout oval projecting; nostril placed dorso-laterally; tympanum distinct, 2/3rd the diameter of eye; a whitish depressed mark from eye to shoulder covering tympanum; pineal ocellus present; symphysial knob prominent; rictal gland present; tips of fingers blunt, round, not enlarged, without dermal fringe; sub articular tubercles well developed; palm cushioned; hind limbs short, TTA reach shoulder; inner meta tarsal tubercle elongate, distinct, outer meta tarsal tubercle indistinct; dorsum minutely granulated with or without thin or broad mid dorsal line; back with distinct symmetrical longitudinal folds, blotches and warts of various sizes; limbs with symmetrical

Distribution : INDIA : Nagaland.

Elsewhere : NEPAL

Remarks : Closely related to *F. limnocharis* having various morphological differences. Reported for the first time from Meghalaya, Mizoram, Manipur and Tripura (Mathew and Sen, 2004, sent for publication).

8. *Hoplobatrachus crassus* (Jerdon, 1853)

Rana crassa Jerdon, 1853, *J. Asiat. Soc. Bengal*, 22 : 531.

Material examined : Material not available for study from Nagaland but reported by Ao *et al.* (2003)

Diagnostic characters : Dorsum with regular longitudinal glandular folds; inner meta tarsal tubercle large, shovel shaped; outer meta tarsal tubercle absent; sub articular tubercles feebly distinct; TTA reach tympanum or eye; heels do not overlap when hind limbs are folded at right angles to the body.

Distribution : INDIA : Arunachal Pradesh, Assam, Nagaland, Tripura, Andhra Pradesh, Karnataka, Kerala, Madhya Pradesh, Orissa, Tamil Nadu, Uttar Pradesh, West Bengal.

Elsewhere : NEPAL, SRI LANKA.

9. *Hoplobatrachus tigerinus* (Daudin, 1803) (Fig. 120)

Rana tigerina Daudin, 1803. *Hist. Rain. Gren. Crap.*, : 64. (Type locality : Bengal).

Material examined : 1 ex. (Regd. no. V/A/ERS/ 217), Satakha, Zunheboto district, coll. Y.P. Sinha & party, 13.07.1991; 1 ex. (Regd. no. V/A/ERS/823), Tiru river, Mon, Mon district, coll. R. Mathew & party, 26.09.2006.

Diagnostic characters : Dorsum with regular longitudinal folds; dorsally yellowish, green or olive with dark spots, narrow yellow vertical streak often present. Tibio tarsal articulation reaching eye or between eye and nostrils, sometimes beyond *snout*; *heels* overlapping. Toes fully webbed. Inner meta tarsal tubercle blunt, feebly compressed; no outer meta tarsal tubercle.

Distribution : INDIA : Throughout India

Elsewhere: BANGLADESH; CHINA; INDO-CHINA; MADAGASCAR (introduced); MYANMAR; NEPAL; PAKISTAN; SRI LANKA.

Remarks : It's status is vulnerable.

10. *Limnonectes mawphlangensis* (Pillai & Chanda, 1977)

Rana mawphlangensis Pillai and Chanda, 1977, *J. Bombay nat. Hist. Soc.*, **74** : 138.

Material examined : Material not available for study from Nagaland but reported by Ao *et al.* (2003).

Diagnostic characters : Dorsally bluish black to slate coloured, ventrally yellowish to white; lower jaw, lateral sides of body and ventral sides of limbs spotted or marbled with black; inner two toes whitish and the outer toes bluish black; tympanic fold indistinct;

tympanum distinct; toes $\frac{3}{4}$ webbed; ultimate and penultimate phalanges of 4th toe free; inner metatarsal tubercle moderately prominent; outer metatarsal tubercle absent; TTA reach tip of snout; tips of toes dilated into prominent discs.

Distribution : INDIA : Assam, Manipur, Meghalaya, Nagaland, West Bengal.

Elsewhere : Same as above.

Remarks : Its status is Critical.

11. *Nanorana mokokchungensis* (Das & Chanda, 2000)

Scutiger mokokchungensis Das and Chanda, 2000, *Herpetol. J.*, 10 : 60.

Material examined : Material not available for study from Nagaland but reported by Ao *et al.* (2003).

Diagnostic characters : Dorsum grey; thighs with diffused bands; upper eyelid yellowish grey, ventrum including throat, pectoral region and abdomen cream with yellowish variegations; dorsum of body with large scattered conical tubercles; upper eyelid smooth; upper surface of thighs tuberculate which are arranged in a linear series; throat and pectoral region smooth; tips of fingers swollen, fingers free; tips of toes weakly swollen, toes not fully webbed; subarticular tubercles less prominent.

Distribution : INDIA : Nagaland.

Elsewhere : As above.

Remarks : The present species is endemic to North East India.

12. *Occidozyga borealis* (Annandale, 1912) (Fig. 121)

Micrixalus borealis Annandale, 1912. *Rec. Indian Mus.*, 8(1) : 10-12. (Type locality : Rotung, Arunachal Pradesh, India).

Material examined : 1 ex. (Regd. no. V/A/ERS/563), Nagaland, coll. S. Bordoloi & party.

Diagnostic characters : Dorsum smooth, light grey to dark brown, speckled with purplish brownish on throat and chest; lower abdomen somewhat plain; thigh and lower parts ventrally powdered with purplish brown; limbs with dark bars, one prominent white spot below the eye on upper jaw; inter orbital bar present; head broader than long; nostril lateral, equidistant to eyes and nostrils; tympanum not distinct; vomerine teeth absent; a prominent tooth on apex of lower jaw; supratympanic glandular folds prominent;

rudiment of web on all the fingers; fingers with rounded discs; TTA reach eye; toes fully webbed; distal phalanges of 4th toe free; inner metatarsal tubercle elongate, outer metatarsal tubercle absent; palm and sole fleshy/cushioned.

Distribution : INDIA : Arunachal Pradesh, Meghalaya, Nagaland.

Elsewhere : EASTERN HIMALAYAS; CHINA.

Remarks : This species was rediscovered after about 90 years of its original description (Mathew and Sen, 2003). It's status is endangered. Endemic to North East India.

FAMILY HYLIDAE

13. *Hyla annectans* (Jerdon, 1870) (Fig. 125)

Polypedates annectans Jerdon, 1870, *Proc. Asiat. Soc. Bengal* : 84.

Material examined : 1 ex. (Regd. no. V/A/ERS/264), Shoihe vill. and around, Zunheboto district, coll. Y. P. Sinha & party, 16.07.1991.

Diagnostic characters : Dorsally dark grey to slate coloured, a light brownish stripe from eyes to nostrils. A black lateral stripe present up to groin; often terminating in two black spots of different sizes with inter connections. Ventral surface of thighs yellowish, a few black spots arranged more or less in a line present on ventral surface of femur and tibia. Hands and feet stout. A strong tuberculated fold from eye to shoulder over tympanum.

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

Elsewhere : CHINA; MALAYSIA; MYANMAR; THAILAND; VIETNAM.

FAMILY MEGOPHRYIDAE

14. *Scutiger sikimensis* (Blyth, 1854)

Bombinator sikimensis Blyth, 1855, *J. Asiat. Soc. Bengal*, 23 : 300.

Material examined : 1 ex. (Regd. no. V/A/ERS/272), Mon, Mon district, coll. Y.P. Sinha & party, 06.12. 1990; 1 ex. (Regd. no. V/A/ERS/291), Mon, Mon district, coll. Y.P. Sinha & party, 13.06.1990.

Diagnostic characters : Dorsally varying from yellowish to brown. Hind part of the body yellowish (including belly and throat) with conspicuous black spots. Dorsal skin

with large porous warts forming irregular longitudinal series on the back. Lower parts smooth. Limbs dorsally with dark brown patches; whole body covered with warts of various sizes.

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

Elsewhere : BHUTAN; CHINA; MYANMAR; NEPAL; TIBET.

Remarks : Not very common in occurrence.

15. *Xenophrys glandulosa* (Boulenger, 1890)
(Fig. 122)

Megophrys glandulosa Fei, Ye and Huang, 1991, *Key Chinese Amph.*, : 99, 273.

Material examined : 1 ex. (Regd. no. V/A/ERS/568), Puliebadze, coll. Meren Ao.

Diagnostic characters : Snout pointed; nostril closer to eye; tympanum $\frac{1}{3}$ rd the diameter of eye, smooth, bordered by tympanic fold which is very prominent; flanks with small to medium roundish or oval tubercles; fingers free; toes with rudiment of web; tips of fingers and toes slightly enlarged; TTA crossing snout; axillary glands prominent; chest and throat with irregular brown spots; tympanic glandular fold dark chocolate in color; limbs with chocolate spots.

Distribution : INDIA : Nagaland

Elsewhere : CHINA

16. *Xenophrys major* (Boulenger, 1908)
(Fig. 123)

Megalophry major Boulenger, 1908, *Proc. Zool. Soc. London*, : 416. (Replacement name for *Xenophrys gigas* Jerdon, 1870).

Material examined : Materials not available for study from Nagaland but reported by Ao *et al.* (2003).

Diagnostic characters : Head distinctly triangular, canthus pronounced; nostrils half way between eyes and snout; eyes large, prominent, jutting out above head; pupil just a vertical slit during day; tympanum vertically oval; limbs long and sturdy; digits free with round flattened tips; dorsum brown with dark markings mostly confined to mid dorsal glandular ridges and some of the warts. Skin coarse, rather smooth on head; more or less symmetrically arranged rows of glandular warts run along body axis, the dorso-lateral ones are most pronounced, uninterrupted, beginning after a small gap behind supra

temporal ridge and continuing to the groin. Large rounded warts over back, side and upper side of limbs, most distinct on thighs and very dense on anal field.

Distribution : INDIA : Arunachal Pradesh, Assam, Nagaland.

Elsewhere : BANGLADESH; CHINA; HONGKONG; MYANMAR; VIETNAM.

17. *Xenophrys parva* (Boulenger, 1893)

Leptobrachium parva Boulenger, 1893, *Ann. Mus. Genova* (2) 13 : 344.

Material examined : 1 ex. (Regd. no. V/ERS/9124), Nagaland, coll. K.P. Singh & party, 13.09.1981; 1 ex. (Regd. no. V/A/ERS/832), Agityongtsu, Mokonchung district, coll. R. Mathew & party, 08.08.2005.

Diagnostic characters : Head depressed, broader than long; snout very short with angular canthus rostralis; loreal region concave; nostril slightly closer to eye and snout tip; inter orbital width very broad, almost equals eye diameter; tympanum feebly distinct, $\frac{1}{2}$ to $\frac{2}{3}$ rd eye diameter; vomerine teeth in two widely separated small groups. Tips of fingers feeble swollen, 1st and 2nd finger subequal; TTA reaches eyes, inner and outer metatarsal tubercles absent.

Distribution : INDIA : Arunachal Pradesh, Assam, Meghalaya, Sikkim, West Bengal.

Elsewhere: BANGLADESH; CHINA; MALAYSIA; MYANMAR; THAILAND.

18. *Xenophrys wuliangshanensis* Ye & Fei, 1995 (Fig. 124)

Megophrys wuliangshanensis Ye and Fei, 1995, *Acta Herpetol. Sinica, Zunyi*, 4-5 : 73-74.

Material examined : 1 ex. (Regd. no. V/A/ERS/564), Nagaland, coll. S. Borodoloi.

Diagnostic characters : Snout pointed; nostril equidistant to eye and snout; tympanum large, dark brown, $\frac{2}{3}$ rd the diameter of eye; supratympanic fold distinct; head depressed with triangular mark above; lips with brown bands; limbs with dark bands; TTA reaches the middle of eye; digits with slightly swollen tips; fingers and toes free; dorsum with few small to medium roundish oval tubercles and longitudinal lines; ventrally speckled with brown.

Distribution : INDIA : Nagaland.

Elsewhere : CHINA.

19. *Xenophrys zunhebotoensis* Mathew & Sen, 2007

Xenophrys zunhebotoensis Mathew & Sen, 2007, *Cobra*, vol. I, Issue-2 : 20.

Material examined : 2 exs. (Regd. no. V/A/ERS/774 & 775), Nguti (Sukhanu), Zunheboto district, coll. R. Mathew & party, 10.08.2005.

Diagnostic characters : Dorsum smooth with few ridges and warts; a dark triangular patch between the orbit; a broad incomplete V shaped ridge behind the eye; another similar ridge of inverted V toward the posterior side thereby imparting an indistinct hour glass pattern on the back. 2 parallel lines on either side between the V shaped ridges; supra tympanic glandular fold white, distinct, curving on to the anterior region of the tympanum to give it a round shape. Nostrils closer to eye, vomerine teeth prominent, close to each other; snout slightly upturned, obtusely pointed; flanks with small round tubercles. TTA reach middle of eye; digits free with small swollen disc, that on the toes smaller. Dorsum slaty brown, ventrally throat and chest the colour of dorsum; abdomen, thighs and shank off white with light brown blotches; legs with dark bands dorsally; axial and femoral glands prominent.

Distribution : INDIA : Nagaland.

FAMILY MICROHYLIDAE**20. *Microhyla ornata* (Dumeril and Bibron, 1841)**

Engystoma ornatum Dumeril and Bibron, 1841, *Erp.Gen.*, 8 : 745.

Material examined : 2 exs. (Regd. no. V/A/ERS/813), Jalukie, Rubber plantation, Peren district, coll. R. Mathew & party, 11.09.2006.

Diagnostic characters : Moderately slender; toes webbed at the base; metatarsal tubercles sub-equal, very small; TTA not reaching beyond eye; tips of fingers and toes swollen into very small discs; subarticular tubercles very distinct; skin smooth, reddish or grayish, dorsally a dark longitudinal mark, with symmetrical lateral projections, which broadens towards the posterior region

Distribution : INDIA : Throughout India.

Elsewhere : BANGLADESH; BHUTAN; CHINA; INDO CHINA; JAPAN; MALAYSIA; MYANMAR; NEPAL; PAKISTAN; TAIWAN.

Remarks : Not very common in the area under report.

21. *Microhyla rubra* (Jerdon, 1853)

Engystoma rubrum Jerdon, 1854, *J. Asiat. Soc. Bengal*, 22 : 534.

Material examined : Material not available for study from Nagaland but reported by Sen (2004).

Diagnostic characters : Of moderate build; toes very slightly webbed; metatarsal tubercles prominent, compressed; toes moderate, nearly 1/3rd webbed; subarticular tubercles very distinct; TTA reach beyond shoulder but not up to eye; skin smooth, brownish to golden brown above, sides darker; a dark brown, almost black, line from tip of snout through eye along the side of the back to the groin; a mid dorsal dark mark beginning at the orbit level and broaden towards the posterior region; limbs with distinct cross bars; ventrally with or without dark spots.

Distribution : INDIA : Assam, Mizoram, Nagaland, Goa, Karnataka, Kerala, Tamil Nadu, West Bengal.

Elsewhere : MYANMAR; SRI LANKA.

FAMILY RANIDAE

22. *Amolops formosus* (Gunther, 1876) (Fig. 127)

Polypedates formosus Gunther, 1876. *Proc. Zool. Soc., London* : 570. (Type locality : "Khassya" India).

Material examined : Material not available for study from Nagaland but reported by Sen(2004).

Diagnostic characters : Vomerine teeth in oblique rows; tympanum not very distinct; TTA beyond nostril or up to tip of snout but never beyond; length of tibia more than half SVL; sub articular tubercles moderate; dorsum bright green with blackish spots on head and body; limbs with cross bars; fingers very long, tips with large grooved discs; toes fully webbed, discs on them smaller than that of the fingers; inner metatarsal tubercle oval, outer metatarsal tubercle absent; males with internal vocal sacs.

Distribution : INDIA : Arunachal Pradesh, Meghalaya, Nagaland. Punjab, Sikkim, West Bengal, Uttar Pradesh.

Elsewhere : NEPAL.

Remarks : This species has its type locality in Khasi Hills (Meghalaya).

23. *Amolops gerbillus* (Annandale, 1912) (Fig. 126)

Rana gerbillus Annandale, 1912. *Rec. Indian Mus.*, 8(1) : 10 (Type locality : Yembung, Abor foot hills at an altitude of 1100 feet, Arunachal Pradesh, India).

Material examined : 2 exs. (Regd. no. V/A/ERS/824), Mutsure river, Phek district, coll. R. Mathew & party, 14.09.2006.

Diagnostic characters : Vomerine teeth large, oblique; TTA reaching beyond tip of snout; subarticular tubercles small, prominent; dorsum dark grey marbled with black; limbs with cross bars of irregular pattern; skin smooth, occasionally finely granulate, often tuberculated laterally; a faint glandular fold from eye to groin.

Distribution : INDIA : Arunachal Pradesh, Assam, Meghalaya, Mizoram, West Bengal.

Elsewhere : CHINA; MYANMAR; TIBET.

Remarks : Collected from rock on the streamlet.

24. *Amolops marmoratus* (Blyth, 1855)

Polypedates (?) *marmoratus* Blyth, 1855. *J. Asiat. Soc., Bengal*, **24** : 187-188

Material examined : 1 ex. (Regd. no. V/ERS/9066), Tuensang, Tuensang district, coll. K.P. Singh & party, 21.09.1981; 1 ex. (Regd. no. V/A/ERS/826), Chenia river, Tuensang district, coll. R. Mathew & party, 18.09.2006.

Diagnostic characters : Vomerine teeth in straight or slightly oblique series; tympanum not very distinct; toes entirely webbed; both inner and outer metatarsal tubercles indistinct; TTA reach beyond tip of snout; skin smooth above or with rounded glandules which are larger on sides of body; belly granular; dorsum brown variegated with grey, spotted with darker; beneath yellowish, immaculate or marbled with brown; limbs with dark cross bars; males with internal vocal sacs.

Distribution : INDIA : Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, West Bengal

Elsewhere : CHINA; MYANMAR; NEPAL; TIBET; THAILAND.

Remarks : Collected from the rock near river.

25. *Amolops monticola* (Anderson, 1871)

Hylorana monticola Anderson, 1871, *J. Asiat. Soc. Bengal*, **40** : 20.

Material examined : Material not available for study from Nagaland but reported by Ao *et al.* (2003).

Diagnostic characters : Pineal ocellus present; tympanum indistinct, covered with warty granules; finger tips with large grooved discs; toes fully webbed, discs on toes

smaller; inner metatarsal tubercle flat, oblong; TTA reach beyond snout; dorsal and ventral skin smooth; very small rounded warts posterior to eyes and anal region; dorso-lateral fold slightly prominent and end below axilla and groin; ventrally a gular and pectoral fold slightly indicated; dorsum greyish or brownish with few irregular darker spots; a bluish black stripe extending from tip of snout along canthus and lateral fold; upper lip, post oral glands and supra tympanic fold yellowish.

Distribution : INDIA : Nagaland.

Elsewhere : CHINA; NEPAL; TIBET.

26. *Amolops viridimaculatus* (Jiang, 1983)

Staurois viridimaculatus Jiang, 1983, *Acta. Herpetol. Sinica*, N.S., 2(3) : 71

Material examined : 1 ex. (Regd. no. V/A/ERS/570), Dzunga, coll. Meren Ao.

Diagnostic characters : Head broader than long; snout rounded; nostril closer to eye; pineal ocellus present; tympanum $1/3^{\text{rd}}$ the diameter of eye, depressed; supratympanic fold distinct; fingers free, tips with large circummarginal grooves; toes fully webbed, toe discs much smaller than that of fingers; TTA reaching between anterior portion of eye and nostril; Dorsum comparatively smooth with slaty blue roundish spots; flanks and ventral side powdered all over with small white spots; lips above and below nostril, behind eye and below tympanum and the angle of the jaws with small round tubercles; Orangish brown above; limbs with broad bands of the colour of the dorsal spots.

Distribution : INDIA : Nagaland

Elsewhere : CHINA, expected in adjacent MYANMAR

27. *Huia livida* (Blyth, 1856)

(Fig. 128)

Polypedates lividus Blyth, 1856, *J. Asiat. Soc. Bengal*, 24 : 718.

Material examined : Material not available for study from Nagaland but reported by Ao *et al.* (2003).

Diagnostic characters : Head as long as broad; nostrils closer to snout; tympanum very distinct with whitish circular rim; tips of fingers and toes dilated into very large discs with a groove separating upper and lower portion; TTA reach beyond tip of snout; toes fully webbed, feebly notched; inner metatarsal tubercle oval and flat; outer meta tarsal tubercle absent; skin smooth, flanks and back of thighs granulated; tympanic glandular fold ending in glandule; dorsum green with or without few black spots; sides of head and

belly dark brown with; white streak along upper lip; limbs with blackish cross bands; groin and back of thighs with yellow spots or marbling; lower part white or yellowish; throat and chest usually brown or speckled with brown.(males with external vocal sacs?).

Distribution : INDIA : Assam, Manipur, Meghalaya, Nagaland, Eastern Himalaya, West Bengal.

Elsewhere : CHINA; MALAYA PENINSULA; MYANMAR; THAILAND; VIETNAM; YUNNAN.

28. *Humerana humeralis* Boulenger, 1887
(Fig. 129)

Rana humeralis Boulenger, 1887, *Ann. Mus. Civ. Stor. Nat. Genova*, (2) 5 : 420.

Material examined : 1 ex. (Regd. no. V/A/ERS/833), Tiru river, Mon district, coll. R. Mathew & party, 25.09.2006.

Diagnostic characters : Head as long as broad; snout projecting beyond mouth; nostrils nearer to tip of snout; tympanum distinct; tips of fingers and toes dilated into small discs with a horseshoe shaped groove between upper and lower; TTA reach nostrils; toes fully webbed; inner metatarsal tubercle oval, outer metatarsal tubercle absent; skin smooth, a narrow dorsolateral glandular fold from above tympanum to groin; supratympanic glandular fold ending in glandules; grayish brown or pale olive above, greenish on the flanks; upper lip whitish; limbs without cross bands; hinder parts of thighs blackish, lower parts white; males with external vocal sacs and large oval glands on arm.

Distribution : INDIA : Nagaland.

Elsewhere : MYANMAR; NEPAL.

29. *Hylarana erythraea* (Schlegel, 1837)
(Fig. 130)

Hyla erythraea Schlegel, 1837. *Abbild.* : 27 (Type locality : "Java", Indonesia).

Material examined : 1 ex. (Regd. no. V/ERS/9080), Nagaland, coll. K.P. Singh & party, 21.02.1984.

Diagnostic characters : Tympanum very distinct, nearly the diameter of eyes; toes dilated into distinct discs; inner meta tarsal tubercles small oval; outer metatarsal tubercles absent; TTA reach tip of snout; distinct dorsolateral glandular fold; tympanic fold ending in a glandule; brown or olive above; upper lip and glandular fold white; hind limbs speckled with brown; longitudinally striped; ventrally immaculate.

Distribution : INDIA : Arunachal Pradesh, Assam, Meghalaya, Mizoram, Nagaland, West Bengal.

Elsewhere: BORNEO; CELEBES (Introduced); INDO CHINA; INDONESIA; MALAY PENINSULA; PHILIPPINES; MYANMAR; THAILAND; VIETNAM.

Remarks : Not common in occurrence.

30. *Hylarana tytleri* (Theobald, 1868)

Hylarana tytleri, Theobald, 1868, *J. Asiat. Soc. Bengal*, extra no., 88 : 84.

Material examined: Material not available for study from Nagaland but reported by Ao *et al.* (2003).

Diagnostic characters : tympanum very distinct; fingers slender; toes moderate, fully webbed; tips of fingers and toes dilated into small but very distinct discs; both inner and outer metatarsal tubercles prominent, large; hind limbs with cross bars; TTA reach snout; supratympanic glandular fold ending in glandules; upper lip and glandular folds white.

Distribution : INDIA : Nagaland.

Elsewhere : As above.

31. *Nasirana alticola* Boulenger, 1882

Rana alticola Boulenger, 1882, *Cat. Batr. Sal. Brit. Mus.*, : 62.

Material examined : 1 ex. (Regd. no. V/A/ERS/ 290), Mon area, Mon district, coll. Y.P. Sinha & party, 13.06.1990.

Diagnostic characters : Head longer than broad; nostrils laterally placed, nearer to snout; tympanum very distinct, 2/3rd the diameter of eye; fingers and toes with small discs with groove separating upper and lower surface; subarticular tubercles prominent; TTA reach nostrils, tip of snout or beyond; toes fully webbed except 2 phalanges of 4th toe which are free; inner metatarsal tubercle small, oval; outer metatarsal tubercles indistinct; skin smooth; tympanic fold ending in glandules at corner of mouth; males green and females orangish, colour fade in preservative.

Distribution : INDIA : Assam, Meghalaya, Mizoram, Nagaland, Tripura, Andamans, Orissa, Sikkim, West Bengal.

Elsewhere : BANGLADESH; CHINA; INDONESIA; JAPAN; MALAYSIA; MYANMAR; NEPAL; SRI LANKA; THAILAND; VIETNAM.

32. *Pterorana khare* Kiyasetuo and Khare, 1986

Pterorana khare Kiyasetuo and Khare, 1986, *Asian J. Expl. Sci.*, **1** : 12.

Material examined : 1 ex. (Regd. no. V/ERS/8214), Sanuorii, Kohima district, coll. Kiyasetuo, 10.01. 1983; 1 ex. (Regd. no. V/ERS/8215), Riikhroma, Kohima district, coll. Kiyasetuo, 15.05.1984.

Diagnostic characters : Head broader than long; nostrils laterally placed equidistant from eyes and snout; tympanum distinct; vomerine teeth narrow, oblique in position; tongue elongate, bifid; supratympanic fold distinct, ending in a large gland; a dark band from corner of eye to shoulder along tympanic fold; rudiment of web between fingers; fingers with swollen oblong discs; TTA reach nostril; toes fully webbed; a lateral expansion of skin from behind the tympanum to the posterior region including thighs measuring a maximum width of 12-14 mm in the middle when stretched; ventrally thorax and part of belly darker brown, remaining lighter; a distinct dorsolateral glandular fold from behind eye to groin.

Distribution : INDIA : Manipur, Mizoram, Nagaland.

Elsewhere : Same as above.

Remarks : Its status is Endangered. Endemic to North East India.

33. *Sylvirana garoensis* Boulenger, 1920

Rana garoensis Boulenger, 1920, *Rec. Indian Mus.*, **20** : 170.

Material examined : Material not available for study from Nagaland but reported by Ao *et al.* (2003).

Diagnostic characters : Head longer than broad, snout pointed, nostrils equidistant to eyes and snout; tympanum distinct; tips of fingers and toes dilated into very small discs with grooves separating upper from lower; TTA reach a little beyond tip of snout; toes entirely webbed; subarticular tubercles prominent; inner metatarsal tubercle oval, outer round; kidney glandular above; a feebly prominent narrow interrupted dorsolateral glandular fold from above tympanum to groin; ventrally smooth; grayish brown above, blackish brown on the sides; a white stripe along upper lip; limbs with dark cross bars.

Distribution : INDIA : Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland.

Elsewhere : As above.

Remarks : Its status is Endangered. Endemic to North East India.

FAMILY RHACOPHORIDAE

34. *Chiromantis vittatus* (Boulenger, 1887)
(Fig. 131)

Ixalus vittatus Boulenger, 1887, *Ann. Mus. Civ. Stor. Nat. Genova*, (2) 5 : 421.

Material examined : 3 exs. (Regd. no. V/ERS/8221), Touliezi, Sanuorii, Kohima district, coll. Kiyasetuo, 19.06.1982.

Diagnostic characters : Nostril closer to snout; tympanum distinct; fingers free; TTA reaching between eye and tip of snout; toes more or less half webbed; a small prominent inner meta tarsal tubercle present; outer metatarsal tubercle absent; dorsum grayish to blackish; limbs with dark cross bars, lower surface spotted with brown; dorsal surface with small wart or with oblique granular lines; a very narrow and faint mid dorsal line; ventral surface granular.

Distribution : INDIA : Arunachal Pradesh, Mizoram, Nagaland.

Elsewhere : CHINA; MYANMAR, THAILAND; VIETNAM.

Remarks : Its status is Endangered.

35. *Philautus andersoni* (Ahl, 1927)

Rhacophorus andersoni Ahl, 1927, *Sitzungsber. Ges. Naturforsch. Freunde, Berlin* : 36.

Material examined : 1 ex. (Regd. no. V/A/ERS/220), Kolo village, Wokha district, coll. J.P. Sati & party, 24.01.1990.

Diagnostic characters : Head broader than long; nostril closer to snout; tympanum distinct; fingers free with swollen tips; sub articular tubercles small, indistinct; palm and sole with moderately fleshy pad; TTA reach anterior corner of eyes; toes webbed at base with prominent swollen tips; dorsally brown to olive, ventral surface white to yellowish; dorsum smooth; flank and thigh with numerous small warts; supra tympanic fold present

Distribution : INDIA : Arunachal Pradesh, Assam, Meghalaya, Mizoram.

Elsewhere : CHINA; MYANMAR; TIBET.

Remarks : Its status is Endangered.

36. *Philautus annandalii* (Boulenger, 1906)

Ixalus annandalii Boulenger, 1906, *J. Asiat. Soc. Bengal, N.S.*, 2 : 385.

Material examined : Material not available for study from Nagaland but reported by Ao *et al.* (2003).

Diagnostic characters : Head broader than long; nostril equidistant to eye and snout; tympanum distinct, as large as eye; fingers free; tips of fingers and toes dilated into round discs; sub articular tubercles not very prominent; TTA reach tip of snout; toes webbed at base; both inner and outer meta tarsal tubercles absent; dorsally grey to brown, a dark bar connecting eyes; a dorso-lateral band from either side meeting on the groin; limbs with dark bands; ventrally grayish, spotted or marked with brown; skin smooth; supra tympanic glandular fold distinct; throat smooth; belly and ventral parts granulated.

Distribution : INDIA : Arunachal Pradesh, Assam, Meghalaya, Nagaland.

Elsewhere : EASTERN HIMALAYAS; BHUTAN; NEPAL.

37. *Philautus garo* (Boulenger, 1919)

Ixalus garo Boulenger, 1919, *Rec. Indian Mus.*, 16 : 207.

Material examined : Material not available for study from Nagaland but reported by Ao *et al.* (2003).

Diagnostic characters : Head broader than long; nostrils equidistant to eye and tip of snout; tympanum distinct, $1/3^{\text{rd}}$ the diameter of eye; fingers free; TTA reach eye; toes webbed at base; discs on toes round; both inner and outer metatarsal tubercles absent; dorsally dark brown to blackish, ventrally grayish to white; lateral sides greenish; a dark brown patch on loreal and temporal region; limbs with irregular dark brown patches; supra tympanic glandular fold present; skin smooth both dorsally and ventrally.

Distribution : INDIA : Assam, Meghalaya, Nagaland.

Elsewhere : Same as above.

Remarks : Its status is Critical. Endemic to North East India.

38. *Polypedates gongshanensis* (Yang & Su, 1984)

Rhacophorus gongshanensis Yang and Su, 1984, *Acta Herpetol, Sinica*, N.S., 3(3) : 51.

Material examined : 1 ex. (Regd. no. V/A/ERS/569), Puliebadze, coll. Meren Ao & party.

Diagnostic characters : Nostril closer to eye than to snout; tympanum large, $2/3^{\text{rd}}$ the diameter of eye; supratympanic fold distinct; TTA just crossing posterior end of eye; toes fully webbed but not from tip to tip; flanks and thighs behind marbled with white; Dorsum smooth, dark brown with indistinct irregular orangish spots above; ventrally white, spotted with grey. Web between 2^{nd} and 3^{rd} and 3^{rd} and 4^{th} fingers

Distribution : INDIA : Nagaland.

Elsewhere : CHINA; MYANMAR.

39. *Polypedates leucomystax* (Gravenhorst, 1829)

1829. *Hyla leucomystax* Gravenhorst, *Syst. Rept.*, : 31. (Type locality : "Java").

Material examined : Material not available for study from Nagaland but reported by Chanda (1994).

Diagnostic characters : Head broader than long, acuminate; snout length less than eye diameter; nostril closer to snout tip; upper lip white; supra tympanic glandular fold prominent; tympanum distinct, $3/4^{\text{th}}$ eye diameter; inter orbital width slightly broader or equal to upper eyelid; inter narial width slightly less than inter orbital. Finger tips with horse shoe shaped disc with circum marginal groove, sub articular tubercle distinct; 1st finger shorter than 2nd. Toes $3/4^{\text{th}}$ or slightly more webbed; inner metatarsal tubercle present, outer absent; TTA reaches eye or crosses snout. Dorsum olive green to brown with faint longitudinal stripes; distinct black edged yellow spots or network on thigh and lateral side of abdomen; belly and ventral part of thigh granulated

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.

Remarks : Occurring throughout North Eastern States.

40. *Polypedates megacephalus* Hallowell, 1861

Polypedates megacephalus Hallowell, 1861, *Proc. Acad. Nat. Sci.*, Philadelphia, 12 : 507

Material examined : 1 ex. (Regd. no.V/A/ERS/566), Watiyem, coll. Meren Ao.

Diagnostic characters : Snout pointed; tympanum distinct, large, close to eye; nostril closer to snout; skin on head between eyes loose; TTA between nostril and eye; toes sparsely fully webbed; skin smooth; Dorsum with indistinct longitudinal lines; fingers and toes with enlarged discs, that on toes smaller; Dorsum brown, with indistinct longitudinal lines; skin smooth; thighs with the usual roundish spots.

Distribution : INDIA : Nagaland.

Elsewhere : CHINA; JAPAN (Introduced); LAOS; THAILAND; VIETNAM.

41. *Rhacophorus bipunctatus* Ahl, 1927
(Fig. 132)

Rhacophorus bipunctatus Ahl, 1927, *Sitzungsber. Ges. Naturforsch. Freunde Berlin* : 46.

Material examined : Material not available for study from Nagaland but reported by Ao *et al.* (2003).

Diagnostic characters : Head broader than long; supra tympanic fold prominent; nostril equidistant to tip of snout and eye; tympanum distinct, $\frac{2}{3}$ rd the diameter of eye; fingers and toes with prominent discs with circum-marginal groove; fingers webbed to disc except 1st finger; sub articular tubercles moderately large and prominent; TTA crossing front of eye; toes fully webbed; inner meta tarsal tubercle small, outer absent; a cutaneous flap above the vent and along the hind limb; dorsum green or slaty; ventrally yellow; web on toes reddish-orangish; black spots on flanks; dorsal skin smooth; belly, lateral sides of body and thighs fully granulated.

Distribution : INDIA : Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland. Tripura.

Elsewhere : CHINA; GUANGXI; HAINAN. HUNAN; INDONESIA; LAOS; MALAYA; MALAY PENINSULA; MYANMAR; THAILAND; TIBET; VIETNAM.

42. *Rhacophorus maximus* Gunther, 1858
(Fig. 133)

Rhacophorus maximus Gunther, 1858, *Arch. Naturgesch.*, **24** : 325

Material examined : 1 ex. (Regd. no. V/A/ERS/785), Wokha, Wokha district, coll. R. Mathew & party, 20.09.2006; 1 ex. (Regd. no. V/A/ERS/786), Tiru village, Mon district, coll. R. Mathew & party, 26.09. 2006.

Diagnostic characters : Head broader than long; tympanum distinct, more than $\frac{1}{2}$ the diameter of eye; nostril closer to tip of snout; fingers webbed, discs prominent; TTA reach eye or nostril; sub articular tubercles well developed; inner meta tarsal tubercle present, outer absent; dorsum green, grey or purple; ventrally yellowish; dorsal skin smooth, ventral and lateral sides minutely granulated; toes fully webbed; thigh dorsally with or without dorsal spots.

Distribution : INDIA : Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, West Bengal.

Elsewhere : Possibly BANGLADESH; CHINA; INDONESIA; MALAYSIA; NEPAL; THAILAND.

43. *Theلودerma asperum* (Boulenger, 1886)

Ixalus asper Boulenger, 1886, *Proc. Zool. Soc. London*, 1886 : 415.

Material examined : Material not available for study from Nagaland but reported by Ao *et al.* (2003).

Diagnostic characters : Head broader than long; nostril closer to eye; tympanum distinct, slightly depressed; fingers free, tips dilated into round discs; subarticular tubercles not prominent; TTA nearly reaching nostril; toes ½ webbed with prominent tips; both inner and outer meta tarsal tubercles present; dorsum dark grey to brown; ventrally grayish to white; limbs dark brown with indistinct cross bars; skin more or less smooth, occasionally with microscopic tubercles on dorsum; ventral surface almost smooth.

Distribution : INDIA : Arunachal Pradesh, Assam, Nagaland.

Elsewhere : CHINA; INDONESIA; MALAY PENINSULA; MYANMAR; THAILAND; VIETNAM.



Fig. 114 : *Duttaphrynus melanostictus*



Fig. 115 : *Euphlyctis cyanophlyctis*



Fig. 116 : *Euphlyctis hexadactylus*



Fig. 117 : *Fejervarya limnocharis*



Fig. 118 : *Fejervarya nepalensis*



Fig. 119 : *Fejervarya teraiensis*



Fig. 120 : *Hoplobatrachus tigerinus*



Fig. 121 : *Occidozyga borealis*



Fig. 122 : *Xenophrys glandulosa*



Fig. 123 : *Xenophrys major*



Fig. 124 : *Xenophrys wuliangshanensis*



Fig. 125 : *Hyla annectans*



Fig. 126 : *Amolops gerbillus*



Fig. 127 : *Amolops formosus*



Fig. 128 : *Huia livida*



Fig. 129 : *Humerana humeralis*



Fig. 130 : *Hylarana erythraea*



Fig. 131 : *Chiromantis vittatus*



Fig. 132 : *Rhacophorus bipunctatus*



Fig. 133 : *Rhacophorus maximus*

REPTILIA**SYSTEMATIC LIST**

PHYLUM CHORDATA

CLASS REPTILIA

ORDER TESTUDINES

FAMILY BATAGURIDAE

1. *Cuora amboinensis* (Daudin)
2. *Kachuga dhongoka* (Gray)
3. *Melanochelys trijuga* (Schweiggr)
4. *Pangshura sylhetensis* (Jerdon)

FAMILY TESTUDINIDAE

5. *Indotestudo elongata* (Blyth)
6. *Manouria emys* (Schlegel & Muller)

ORDER SQUAMATA

SUBORDER SAURIA

FAMILY GEKKONIDAE

7. *Cyrtodactylus khasiensis* (Jerdon)
8. *Cosymbotus platyurus* (Schneider)
9. *Gekko gecko* (Linnaeus)
10. *Hemidactylus brookii* Gray
11. *Hemidactylus frenatus* Schlegel

FAMILY AGAMIDAE

12. *Calotes emma* Gray
13. *Calotes jerdoni* Gunther
14. *Calotes maria* (Gray)
15. *Calotes mystaceus* Dumeril & Bibron
16. *Calotes versicolor* (Daudin)
17. *Draco maculatus* Gray
18. *Draco norvilli* Alcock

19. *Ptyctolaemus gularis* Peters

FAMILY SCINCIDAE

20. *Lygosoma punctata* (Gmelin)
21. *Mabuya carinata* (Schneider)
22. *Mabuya multifasciata* (Kuhl)
23. *Sphenomorphus indicus* (Gray)
24. *Sphenomorphus maculatus* (Blyth)

FAMILY LACERTIDAE

25. *Takydromus khasiensis* (Boulenger)

FAMILY ANGUIDAE

26. *Ophisaurus gracilis* (Gray)

FAMILY VARANIDAE

27. *Varanus bengalensis* (Daudin)
28. *Varanus salvator* (Laurenti)

SUBORDER SERPENTES

FAMILY TYPHLOPIDAE

29. *Ramphotyphlops braminus* (Daudin)
30. *Typhlops diardii* (Schlegel)
31. *Typhlops tenuicollis* (Peters)

FAMILY BOIDAE

32. *Python molurus* (Linnaeus)

FAMILY COLUBRIDAE

33. *Pareas monticola* (Cantor)
34. *Ahaetulla prasina* (Boie)
35. *Amphiesma khasiense* (Boulenger)
36. *Amphiesma parallelum* (Boulenger)
37. *Amphiesma stolatum* (Linnaeus)
38. *Blythia reticulata* (Blyth)
39. *Boiga cynodon* (Boie)

40. *Boiga gokool* (Gray)
41. *Chrysopelea ornata* (Shaw)
42. *Coelognathus helena* (Daudin)
43. *Coelognathus radiatus* (Schlegel)
44. *Dendrelaphis cyanochloris* (Wall)
45. *Dendrelaphis gorei* (Wall)
46. *Dendrelaphis pictus* (Gmelin)
47. *Dinodon septentrionalis* (Gunther)
48. *Elaphe porphyracea* (Cantor)
49. *Elaphe prasina* (Blyth)
50. *Euprepiophis mandarinus* (Cantor)
51. *Liopeltis stoliczkae* (Sclator)
52. *Lycodon jara* (Shaw)
53. *Oligodon albocinctus* (Cantor)
54. *Oligodon cinereus* (Gunther)
55. *Oligodon dorsalis* (Gray & Hardwicke)
56. *Oligodon erythrorhachis* Wall
57. *Psammodynastes pulverulentus* (Boie)
58. *Ptyas korros* (Schlegel)
59. *Ptyas nigromarginatus* (Blyth)
60. *Rhabdophis himalayanus* (Boulenger)
61. *Rhabdophis nuchalis* (Boulenger)
62. *Rhabdophis subminiatus* (Schlegel)
63. *Trachischium monticolum* (Cantor)
64. *Xenochrophis piscator* (Schneider)
65. *Enhydris sieboldii* Schlegel

FAMILY ELAPIDAE

66. *Bungarus fasciatus* (Schneider)
67. *Bungarus caeruleus* (Schneider)
68. *Bungarus niger* Wall

69. *Sinomicrurus macclellandi* (Reinhardt)

70. *Naja kaouthia* Lesson

FAMILY CROTALIDAE

71. *Ovophis monticola* (Gunther)

72. *Protobothrops mucrosquamatus* (Cantor)

73. *Trimeresurus erythrurus* (Cantor)

74. *Trimeresurus popeiorum* Smith

SYSTEMATIC ACCOUNT

ORDER TESTUDINES

FAMILY BATAGURIDAE

1. *Cuora amboinensis* (Daudin, 1802)

Testudo amboinensis Daudin, 1802, *Hist. Nat. Rept.*, ii, p. 309

Material examined : Material not available, known to occur in Nagaland (Dasgupta and Raha, 2005).

Diagnostic characters : Plastron rounded posteriorly or feebly nicked; carapace distinctly convex, posterior margin not serrated; digits fully webbed; limbs with transversely enlarged, subimbricate scales; sole of feet with numerous (40-50) small flat scales; Shell dark olive, brown or black above; yellowish white below with a black spot at the outer margin of each shield. Head dark brown or green above, yellow below; a bright yellow band borders the top of the head, meeting its fellow above the nostril; a second paler one passes through the eye and is separated from the margin of the upper jaw by a dark band; a third borders the mandible; limbs olivaceous or yellowish.

Distribution: INDIA : Nagaland.

Elsewhere: CAMBODIA; COCHIN CHINA; MALAY PENINSULA AND ARCHIPELAGO; PHILIPPINE ISLANDS; TENASSERIM.

2. *Kachuga dhongoka* (Gray, 1834)

Emys dhongoka Gray, 1834, *Illus. Ind. Zool.* ii, pl. 60.

Material examined : Material not available. Known to occur in Nagaland (Dasgupta and Raha, 2005). Description based on literature.

Diagnostic characters : Third vertebral shield forming a broad suture with the fourth, which embraces four neural plates; neural plates much longer than broad; second vertebral shield pointed and produced behind, entering the third; humero- pectoral suture straight; carapace unicarinate; plastron long and narrow, narrower than the opening of the shell, notched posteriorly; head moderate; skin of hinder part of the head divided into shields by fine lines; digits fully and broadly webbed; limbs with transversely enlarged scales; shell olive or brownish above, with a black vertebral and two lateral stripes; yellowish below; a yellow stripe along the side of the head starting from the nostrils and passing above the eye and the tympanum.

Distribution : INDIA : Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, Bihar, Uttar Pradesh, West Bengal.

Elsewhere : NEPAL.

3. *Melanochelys trijuga* (Schweigggr, 1814)

Emys trijuga Schweigger, 1814, *Prodr. Monog. Chel.*, p. 41.

Material examined : Material not available, known to occur in Nagaland (Dasgupta and Raha, 2005).

Diagnostic characters : Carapace moderately depressed, tricarinate, the lateral margins more or less reverted; plastron nearly as long as the carapace, truncate or openly emarginated anteriorly; hind lobe narrower than the shell opening, deeply notched posteriorly; skin of hinder part of head smooth or more or less divided into rather large shields; limbs flattened; front of arm and hinder part of leg with enlarged horny scales; digits fully or nearly fully webbed; tail very short; shell light brown to dark brown or black; plastron usually with a yellow margin which diminishes in width with age; head grayish or olivaceous with yellow or pink reticulations, best marked on the sides.

Distribution : INDIA : Nagaland, Kerala, Maharashtra, Tamil Nadu, West Bengal.

Elsewhere : SRI LANKA.

4. *Pangshura sylhetensis* (Jerdon, 1870) (Fig. 134, 135)

Pangshura sylhetensis Jerdon, 1870, *Proc. Asiat. Soc. Bengal*, p. 69.

Material examined : Material not available, known to occur in Nagaland (Dasgupta and Raha, 2005).

Diagnostic characters : Carapace elevated with a strong vertebral keel which is produced into a very strong backwardly projecting spike at the posterior margin of the third shield; hinder margin very strongly serrated; 26 marginal shields; plastron about as

long as the carapace; Shell olive brown above, the vertebral keel paler; yellow below, each shield with a large dark brown spot; head and limbs brown; a yellow sinuous transverse stripe across the back of the head; another similarly coloured along the lower jaw; neck with light longitudinal streaks.

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

Elsewhere : Not known.

FAMILY TESTUDINIDAE

5. *Indotestudo elongata* (Blyth, 1853)

Testudo elongata Blyth, 1853, *J. Asiat. Soc. Bengal*, xxii, p. 639.

Material examined : Material not available for study from Nagaland but reported by Mathew, 1995.

Diagnostic characters : Head moderate; dorsally with shields; carapace elongate, narrow, flattened on the vertebral portion; vertebrals five, as broad as the costals; costals four, supracaudal single; forelimbs with large pointed scales; heels with large flat scales; yellow or greenish yellow above, with black markings.

Distribution : INDIA : Arunachal Pradesh, Assam, Meghalaya, Manipur, Mizoram, Nagaland, Tripura, Bihar, West Bengal.

Elsewhere : CAMBODIA; LAOS; MALAYSIA; MYANMAR; THAILAND; VIETNAM.

6. *Manouria emys* (Schlegel & Muller, 1844)

Testudo emys Schlegel and Muller, 1844. In : Temminck, *Verh. Nat. Ind. Rept*, p. 34.

Material examined: Material not available, known to occur in Nagaland (Dasgupta and Raha, 2005).

Diagnostic characters : Head massive, covered with large symmetrical shields; carapace convex and dome shaped, depressed on the vertebral region in juveniles but elevated in adults; five vertebrals, as broad or slightly broader than the costals; costals four; plastron sometimes longer than carapace owing to the extended gular shields; pectoral shields usually wide apart; inguinals large, often divided into two; forelimbs with five and hind limbs with four claws; adults with a greatly enlarged conical scute on the back of the thigh; Dark brown or black above, head and limbs black.

Distribution : INDIA : Assam, Meghalaya, Manipur, Mizoram, Nagaland, Tripura.

Elsewhere : BANGLADESH; BORNEO; MALAYSIA; MYANMAR; SUMATRA; THAILAND.

ORDER SQUAMATA
SUBORDER SAURIA
FAMILY GEKKONIDAE

7. *Cyrtodactylus khasiensis* (Jerdon, 1870)
(Fig. 136)

Pentadactylus khasiensis Jerdon, 1870, *P. Asiat. Soc. Beng.*, p. 75

Material examined : 2 exs. (Regd.no.V/R/ERS/ZSI/214), Mokokchung circuit house compound, Mokokchung district, coll. R. Mathew and party, 07.08.2005.

Diagnostic characters : Digits angularly bent; not dilated, cylindrical, inferiorly with a row of transverse plates. 10-12 upper and as many lower labials; body and limbs with granular scales intermixed with tubercles; belly with imbricate scales, 30-40 across the middle; male with angular series of 8-14 preanal pores; a dorsal series of enlarged scales on the basal part; Light brown or greyish-brown above with dark regular markings; tail covered with small flat scales, those on the median line below larger than the others.

Distribution : INDIA : Assam, Meghalaya, Mizoram, Nagaland, West Bengal.

Elsewhere : MYANMAR.

Remarks : A common species.

8. *Cosymbotus platyurus* (Schneider, 1792)
(Fig. 137)

Stellio platyurus Schneider, 1792, *Amphib. Physiol.* ii, p. 30

Material examined : 3 exs. (Reg. No. VR/ERS/ZSI/208), Kohima, Kohima district, Tourist Lodge, 11.8.2005, coll. R. Mathew and party; 1 ex. (Reg. No. VR/ERS/ZSI/209), Mokokchung Circuit house compound, Mokokchung district, 7.8.2005, coll. R. Mathew and party; 1 ex. (Reg. No. VR/ERS/ZSI/210), Mon Inspection Banglow compound, Mon district, 5.8.2005, Coll. R. Mathew and party; 3 exs. (Reg. No. VR/ERS/ZSI/211), Imkongmeren Sports complex, Mokokchung district, 8.8.2005, coll. R. Mathew and party.

Diagnostic characters : Digits dilated; dorsal scales granular; belly with imbricate scales; a well marked dermal fringe along the side of the body from axilla to groin; tail very strongly depressed with sharply denticulated lateral margin covered above with small scales and below with a series of transversely enlarged plates; males with a continuous series of preanal and femoral pores, from 13-20 on each side; Grey or grayish brown above, marbled with darker; tail sometimes red.

Distribution : INDIA : Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, West Bengal, Sikkim.

Elsewhere : FORMOSA; HONG-KONG; INDO-CHINA; NEPAL; SRI LANKA.

Remarks : A common species.

9. *Gekko gekko* (Linnaeus, 1758)
(Fig. 138)

Lacerta gekko Linnaeus, 1758, *Syst. Nat. ed. 10.*, p. 205

Material examined : Material not available, known to occur in Nagaland (Dasgupta and Raha, 2005)

Diagnostic characters : Digits dilated, subdigital lamellae undivided; 12-14 upper and 10-12 lower labials; head covered above with small polygonal scales, back with small juxtaposed flat scales, intermixed with larger subconical tubercles arranged in about 12 longitudinal series; belly with large imbricate scales; digits free or with a rudiment of web; 20- 23 lamellae under the 4th toe; males with a series of 10-24 preanal pores. Grey, blue grey or violet-grey above, spotted all over with brick red and whitish grey; whitish spots on back arranged in 7 or 8 narrow bands; tail with alternating bands of dark grey and white; below whitish, usually with small pinkish spots

Distribution : INDIA : Andamans, Bihar, Meghalaya, Mizoram, Nagaland, Tripura, West Bengal.

Elsewhere : CHINA; INDO-CHINA; EAST INDIAN ARCHIPELAGO; MALAY PENINSULA.

Remarks : A common species.

10. *Hemidactylus brookii* Gray, 1845

Hemidactylus brookii Gray, 1845. *Cat. Liz. Brit. Mus.*, p. 153

Material examined : Material not available, known to occur in Nagaland (Dasgupta and Raha, 2005).

Diagnostic characters : Digits free, moderately dilated with a double series of lamellae beneath; terminal phalanges free, clawed, rising angularly from within the expansion; 8 to 10 upper and 7 to 9 lower labials; two pairs of post mentals, the inner elongate and larger than the outer; snout covered with small, convex, or keeled scales; hinder part of head with small granules and larger tubercles; back with small granular scales and conical, keeled or sub-trihedral tubercles arranged in from 16 to 20 more or less regular longitudinal rows; belly with smooth, rounded imbricate scales; tail considerably depressed, verticillate, covered above with small scales and series of 6 or 8 long, pointed, keeled tubercles; below with imbricate scales and a median series of transversely enlarged plates; males with from 7-16 preano-femoral pores on each side, usually interrupted

mesially; light brown or grayish above, with dark brown spots, more or less regularly arranged; a dark streak along the side of the head; dirty whitish below.

Distribution : INDIA : Arunachal Pradesh, Assam, Meghalaya, Mizoram, Nagaland, West Bengal, the whole of India.

Elsewhere : SRI LANKA.

Remarks : A common species.

11. *Hemidactylus frenatus* Schlegel, 1836
(Fig. 139)

Hemidactylus frenatus Schlegel, 1836. In : Dum. and Bibron., *Erp. Gen. iii*, p. 366.

Material examined : 1 ex. (Reg. No. V1/ERS/ZSI/9377), 33 km from Mon on way to Sonari, Tizit area, Mon district, 16.6.1990, coll. Y.P. Sinha and party; 1 ex. (Reg. No. VR/ERS/ZSI/27), Naginimora and around, approximately 80 km from Mon, Mon district, 11.6.1990, coll. Y.P. Sinha and party; 2 exs. (Reg. No. VR/ERS/ZSI/307), Chathe riverside, Dimapur district, 9.9.2006, coll. R. Mathew and party; 1 ex. (Reg. No. VR/ERS/ZSI/310), Kiphire, G.A. Rest House, Kiphire district, 15.9.2006, coll. R. Mathew and party; 9 exs. (Reg. Nos. VR/ERS/ZSI/321 and 322), in and around Mon Circuit House, 24.9.2006, coll. R. Mathew and party.

Diagnostic characters : Digits free, moderately dilated; 10 to 12 upper and 8 to 10 lower labials; snout covered with large granules, hinder part of head with small granules; back with small granules intermixed with scattered, rounded, feebly keeled, or conical tubercles; belly with smooth, rounded, imbricate scales; tail feebly depressed, covered above with small scales and a series of six enlarged pointed tubercles; males with a continuous series of 26-36 preano-femoral pores; grayish above, uniform or with indistinct darker markings; tail sometimes coral red.

Distribution : INDIA : Assam, Meghalaya, Manipur, Mizoram, Tripura, Nagaland, West Bengal, Southern India.

Elsewhere : HAINAN; HONG-KONG; INDO-CHINA; MALAY PENINSULA; SRI LANKA; AUSTRALIA; AFRICA; ST. HELENA; YUNNAN.

Remarks : Common species.

FAMILY AGAMIDAE

12. *Calotes emma* Gray, 1845

Calotes emma Gray, 1845. *Cat. Liz Brit. Mus.*, p. 244

Material examined : Material not available, known to occur in Nagaland (Dasgupta and Raha, 2005).

Diagnostic characters : Body compressed; dorsal scales on the body pointing backwards and upwards, keeled, large, regular, 49 to 65 round the body; an oblique fold in front of the shoulder; 9-12 upper and as many lower labials; canthus rostralis and superciliary edge sharp; one supraorbital spine, another spine above tympanum; four enlarged scales in a line above tympanum towards eye; two enlarged scales above tympanum obliquely on its posterior side; head above on prefrontal area with dark diamond shaped spot; a black bar from eye to tympanum; black streaks radiating from eye; a small vertebral spot between supraorbital spines; black marking in front of shoulder continue anteriorly to form a slanting 'V' shaped marking; Olive- brown above with dark vertebral row of ocellate spots, indistinct dark markings on flanks, limbs and tail; A dorso-lateral stripe may or may not be present.

Distribution : INDIA : Assam, Meghalaya, Manipur, Mizoram, Nagaland.

Elsewhere : FRENCH INDO-CHINA; MALAY PENINSULA; MYANMAR; PULO CONDORE; SIAM; YUNNAN.

Remarks : Not a common species.

13. *Calotes jerdoni* Gunther, 1870
(Fig. 140)

Calotes jerdoni Gunther, 1870. *Proc. zool. Soc. Nov.* p. 778

Material examined : 1 ex. (Reg. No. VR/ERS/ZSI/223), 5 km from Chetheba towards Kohima, Phek district, 11.8.2005, coll. R. Mathew and party; 1 ex. (Reg. No. VR/ERS/ZSI/224), Nguti (Sakhulu), Zunheboto district, 11.8.2005, coll. R. Mathew and party; 2 exs. (Reg. No. VR/ERS/ZSI/303), Mokokchung, Mokokchung district, 19.9.2006, coll. R. Mathew and party; 1 ex. (Reg. No. VR/ERS/ZSI/311), (road kill), Phek district, 13.9.2006, coll. R. Mathew and party; 1 ex. (Reg. No. VR/ERS/ZSI/315), 1 km from Phek G.A. Rest house, Phek town, Phek district, 15.9.2006, coll. R. Mathew and party.

Diagnostic characters : Scales on the sides of the body pointing backwards and upwards; 45 to 57 scales round the body; an oblique pit, covered with small granules, in front of the shoulder; two parallel rows of compressed scales above the tympanum; Green above with light markings; light spots on limbs at the elbow, knee and ankle.

Distribution : INDIA : Meghalaya, Mizoram, Nagaland.

Elsewhere : CHINA; MYANMAR; YUNNAN.

Remarks : A common species.

14. *Calotes maria* (Gray, 1845)
(Fig. 141)

Calotes maria Gray, 1845, *Cat. Liz. Brit. Mus.*, p. 243

Material examined : 1 ex. (Reg. No. VR/ERS/ZSI/7), Settsu village and around, Zunheboto district, 12.7.1991, coll. Y.P. Sinha and party.

Diagnostic characters : Dorsal scales large, more or less distinctly keeled, 53 to 63 round the middle of the body; two parallel ridges of compressed, more or less spinous scales above the tympanum, the upper continuous with the supraciliary edge, the lower separated from the tympanum by 4 or 5 small scales; 9 to 11 upper and as many lower labials; Green with pale streaks and spots; several oblique stripes upon the flanks and elongated or rounded spots upon the limbs and upper aspect of the tail; greenish white below.

Distribution : INDIA : Meghalaya, Nagaland, Kerala.

Elsewhere : Not known.

Remarks : Not a common species.

15. *Calotes mystaceus* Dumeril and Bibron, 1837
(Fig. 142, 143)

Calotes mystaceus Dumeril and Bibron, 1837, *Erp. Gen.*, iv, p. 408

Material examined: 1 ex (Reg. No. VR/ERS/ZSI/304), 11 km from Wokha town, Wokha district, 20.9.2006, coll. R. Mathew and party; 1 ex. (Reg. No. VR/ERS/ZSI/305), Mokokchung, Mokokchung district, 19.9.2006, coll. R. Mathew and party; 1 ex. (Reg. No. VR/ERS/ZSI/ 306), Chathe river side, Dimapur district, 9.9.2006, coll. R. Mathew and party; 2 exs. (Reg. No. VR/ERS/ZSI/308), 14 km towards Waphers village, Tuensang district, 17.9.2006, coll. R. Mathew and party; 4 exs. (Reg. No. VR/ERS/ZSI/314, 317 and 318), 2 km from Jalukie town, Peren district, 12.9.2006, coll. R. Mathew and party.

Diagnostic characters : Canthus rostralis and supraciliary edge sharp; two short, separated spines or groups of 2 or 3 spines on each side of the back of the head, the lower and posterior one being separated from the tympanum by 4 or 5 scales; a row of 3 or 4 enlarged scales between the eye and the tympanum; 9 to 11 upper and as many lower labials; dorsal scales keeled, 48 to 58 round the middle of the body; an oblique fold covered with small granular scales in front of the shoulder; Olive or brownish-grey above with indistinct darker spots and markings ; dark lines radiating from the eye and one from eye to the tympanum; 3 or 5 large rusty-red or chocolate-coloured vertebral spots (distinct in the young); upper lip white or yellow, the stripe broad and extending to the shoulder; dirty white below.

Distribution : INDIA : Manipur, Nagaland.

Elsewhere : CAMBODIA; MYANMAR; THAILAND; VIETNAM.

Remarks : A common species where it occurs.

16. *Calotes versicolor* (Daudin, 1802)

Agama versicolor Daudin, 1802, *Hist. Nat. Rept.*, iii, p. 395

Material examined : 1 ex. (Reg. No. V1/ERS/ZSI/3172), Kiphire, 17.9.1981, coll. K.P. Singh and party; 1 ex. (Reg. No. VR/ERS/ZSI/8), Atoiju village and around, Zunheboto district, 8.7.1991, coll. Y.P. Sinha and party; 1 ex. (Reg. No. VR/ERS/ZSI/65), Pherema and around, Kohima district, 14.3.1993, coll. Y.P. Sinha and party; 1 ex. (Reg. No. VR/ERS/ZSI/309), Tiru village, Mon district, 25.9.2006, coll. R. Mathew and party; 5 exs. (Reg. No. VR/ERS/ZSI/313), Dhansiri river side, Dimapur district, 9.9.2006, coll. R. Mathew and party; 1 ex. (Reg. No. VR/ERS/ZSI/319), Jalukie, Munglai river side, 12.9.2006, coll. R. Mathew and party; 1 ex. (Reg. No. VR/ERS/ZSI/324), Cheula river side, Tuensang district, 18.9.2006, coll. R. Mathew and party.

Diagnostic characters : 9 to 11 upper and as many lower labials; No fold or pit in front of the shoulder; two separated spines above the tympanum; 35 to 52 scales round the body; Brownish or grayish above, uniform or with more or less distinct dark brown transverse spots or bars upon the back and sides; young and females with light dorso-lateral stripe; tail with dark and light annuli; dirty whitish below.

Distribution : INDIA : The whole of India.

Elsewhere : INDO-CHINESE SUB REGIONS; AFGHANISTAN; CHINA; HAINAN; HONG-KONG; MALAY PENINSULA; SRI LANKA; SUMATRA.

Remarks : Much variations in size, colour pattern and other morphological features are observed in the specimens grouped under this species. A comparative study of materials from different regions would reveal the presence of more than one species in this species.

17. *Draco maculatus* Gray, 1845 (Fig. 146)

Dracunculus maculatus Gray, 1845, *Cat. Liz. Brit. Mus.*, p. 262

Material examined : Material not available for study from Nagaland, known to occur in Nagaland (Dasgupta and Raha, 2005).

Diagnostic characters : Lateral expansions of body supported by five ribs; a gular appendage and a lateral flap or wattle on either side of the throat; gular appendage of the males much longer than the head; tympanum covered with small scales; upper head scales unequal, strongly keeled; dorsal scales unequal; Greyish or bronze above, with darker markings ; wing membranes above orange, reddish brown, yellowish or greenish, with scattered black spots which are very variable both in size and number, and often arranged in longitudinal lines; pale yellow below, immaculate or with irregular black spots; inside of wattles reddish brown or yellow; gular pouch pale yellowish or brownish, with a blue spot at the base and sometimes at the tip.

Distribution : INDIA : Arunachal Pradesh, Assam, Mizoram, Nagaland.

Elsewhere : THE WHOLE OF INDO-CHINESE REGION; HAINAN; SIAM; TONGKING.

Remarks : Not a common species.

18. *Draco norvilli* Alcock, 1895
(Fig. 144, 145)

Draco norvillii Alcock, 1895, *J. Asiat. Soc., Beng.* lxiv, pt. ii, p. 14

Material examined : Material not available for study from Nagaland, known to occur in Nagaland (Dasgupta and Raha, 2005).

Diagnostic characters : Head moderate; snout slightly turned upwards, nostrils dorsal and pointed slightly backwards, five scales between them; tympanum covered with small scales; upper head scales unequal; grayish or bronzy above, with mid dorsal spots, one on the head, five on body; indistinct bands on tail; patagium supported by five ribs and with three transverse bands; the first band indistinct, second and third scarlet and bifurcate as they approach the body; ground colour of patagium yellowish with irregular dark spots dorsally; ten to eleven enlarged scales at regular intervals bordering the patagium; throat and chin mottled with purple; inside of wattle scarlet; gular appendage of male longer than head, distendable, covered with large scales and of very faded purple colour; lower portion of thigh and sides of tail with crest; belly almost uniform yellowish, sides mottled with grey.

Distribution : INDIA : Assam, Meghalaya, Nagaland.

Elsewhere : Not known

Remarks : Not a common species.

19. *Ptyctolaemus gularis* Peters, 1864
(Fig. 147, 148)

Otocryptis (Ptyctolaemus) gularis Peters, 1864, *Mon. Akad. Berlin*, p. 836.

Material examined : 1 ex. (Reg. No. VR/ERS/ZSI/216), Angityongtsu, Mokokchung district, 8.8.2005, coll. R. Mathew and party; 1 ex. (Reg. No. VR/ERS/ZSI/217), 5 km from Chetheba, Phek district, 11.8.2005, coll. R. Mathew and party; 2 ex. (Reg. No. VR/ERS/ZSI/323), G.A. Rest House, Phek, Phek district, 14.9.2006, coll. R. Mathew and party.

Diagnostic characters : Throat with three parallel longitudinal folds (on each side of the middle) tympanum hidden; dorsal scales unequal, keeled; ventrals as large as the

dorsals, strongly keeled and mucronate; gular pouch longer and better developed in the male than in the female; Olive brown above with darker transverse bars or spots; two curved dark brown cross-bars, separated by a light one, between the eyes; a dark stripe below the eye to the angle of the mouth; yellowish-white below.

Distribution : INDIA : Meghalaya, Mizoram, Nagaland.

Elsewhere : Not known.

Remarks : A common species.

FAMILY SCINCIDAE

20. *Lygosoma punctata* (Gmelin, 1799) (Fig. 149)

Scincus punctatus Gmelin, 1799, *Hist. Amphib.*, p. 197.

Material examined : Material not available for study, but known to occur in Nagaland (Dasgupta and Raha, 2005).

Diagnostic characters : Body elongate; lower eyelid with undivided transparent disc; 24 to 26 scales round the body; limbs short; 11 to 14 lamellae under the 4th toe; tail thick at base; colour brown above, sides with a dark spot forming longitudinal series; belly yellowish white.

Distribution : INDIA : Mizoram, Nagaland, Andhra Pradesh, Bihar, Himachal Pradesh, Karnataka, Madhya Pradesh, Orissa, Tamil Nadu, Uttar Pradesh.

Elsewhere : SRI LANKA.

Remarks : This species is widely distributed in India.

21. *Mabuya carinata* (Schneider, 1801) (Fig. 151 A & B)

Scincus carinatus Schneider, 1801, *Hist. Amphib.*, ii, p. 183.

Material examined : 1 ex. (Reg. No. VR/ERS/ZSI/213), Mon, Tening river cum paddy field area, Mon district, 6.8.2005, coll. R. Mathew and party; 1 ex. (Reg. No. VR/ERS/ZSI/316), Heningkunghoa Tanghairoi river side, Peren district, 11.9.2006, coll. R. Mathew and party.

Diagnostic characters : Lower eye lid scaly; supranasals separated from or just touching one another, fronto-nasal broader than long; prefrontals usually in contact with one another; a pair of nuchals; no post nasals; dorsal and lateral scales subequal, with 3, 5 or 7 distinct keels; 30-34 scales round the middle of the body; 14-18 lamellae beneath the

4th toe; Brown or bronzy above with longitudinal streaks along the lateral margins of the scales; a light dorso-lateral line starting from above the eye and continued to the base of the tail ; a white line starting from the upper lip and passing along the side of the flank to the groin; lower parts whitish or yellow; flanks of the male scarlet in the breeding season, belly yellow.

Distribution : INDIA : Meghalaya, Nagaland, West Bengal, Peninsular India.

Elsewhere : SRI LANKA.

Remarks : Common.

22. *Mabuya multifasciata* (Kuhl, 1820)
(Fig. 150)

Scincus multifasciatus Kuhl, 1820, *Beitr. Zool. Vergl. Anat.*, p. 126.

Material examined : Material not available for study, but the species is reported from Nagaland (Dasgupta and Raha, 2005).

Diagnostic characters : Supranasals separated from or just touching one another; prefrontals usually in contact with one another; a pair of nuchal, a post nasal ; ear opening subcircular with small, pointed lobules anteriorly; 30-34 scales round the middle of the body; dorsals with 3 or 5 keels; Brown above, uniform or with dark brown or black longitudinal spots or streaks along the lateral margins of the scales; flanks dark brown or black, with or without white black edged spots; a pale dorsolateral line often present; upper head scales often margined with black; whitish below.

Distribution : INDIA : Assam, Meghalaya, Manipur, Nagaland, Nicobar Island, West Bengal.

Elsewhere : EAST INDIES; HAINAN; MALAY PENINSULA; NEW GUINEA; PULO CONDORE; TONGKING; YUNNAN.

Remarks : A common species.

23. *Sphenomorphus indicus* (Gray, 1853)
(Fig. 152)

Hinulia indica Gray, 1853, *Ann. Mag. Nat. Hist.*, (2) xii, p. 388.

Material examined : 1 ex. (Reg. No. VR/ERS/ZSI/215), Mokokchung Petrol bunk complex, Moriani road, Mokokchung district, 9.8.2005, coll. R. Mathew and party.

Dignostic characters : Rostral in broad contact with the frontonasal; prefrontals separated from one another; frontal as long or longer than the fronto-parietal and inter-parietal together; the latter not separating the parietals posteriorly; tympanum deeply sunk;

30-39 scales round the middle of the body; a pair of enlarged preanals; 16-22 keeled lamellae beneath the 4th toe; palm and sole covered with conical tubercles; Brown above, uniform or with small brown or black spots usually arranged in longitudinal lines; a dark brown or black stripe along the sides of the head, body, and tail.

Distribution : INDIA : Meghalaya, Nagaland, Sikkim, West Bengal, Andaman and Nicobar Islands.

Elsewhere : CHINA; HAINAN; INDO-CHINA; MALAY PENINSULA; TIBET.

Remarks : A very common species.

24. *Sphenomorphus maculatus* (Blyth, 1853) (Fig. 153)

Lissonota maculata Blyth, 1853, *J. Asiat. Soc. Beng.*, xxii, p. 653.

Material examined : 1 ex. (Reg. No. VR/ERS/ZSI/6), Settsu village and around, Zunheboto district, 12.7.1991, coll. Y.P. Sinha and party; 1 ex. (Reg. No. VR/ERS/ZSI/9), Akhuloto, Zunheboto district, 11.7.1991, coll. Y.P. Sinha and party; 1 ex. (Reg. No. VR/ERS/ZSI/10), Asukhuto and around, Zunheboto district, 11.7.1991, coll. Y.P. Sinha and party; 1 ex. (Reg. No. VR/ERS/ZSI/11), Kokesha village, Zunheboto district, 15.7.1991, coll. Y.P. Sinha and party; 2 exs. (Reg. No. VR/ERS/ZSI/34), Layani river side, Phek district, Nagaland-Manipur border, 20.1.1990, coll. J.P. Sati and party; 2 exs. (Reg. No. VR/ERS/ZSI/302), Netsuku, Wokha district, 21.9.2006, coll. R. Mathew and party; 1 ex. (Reg. No. VR/ERS/ZSI/312), Mukure river side, Phek district, 14.9.2006, coll. R. Mathew and party; 3 exs. (Reg. No. VR/ERS/ZSI/320), Chepiru stream side, 3 km from Phek town, Phek district, 14.9.2006, coll. R. Mathew and party.

Diagnostic characters : Rostral flat or concave, in contact with the fronto-nasal; prefrontals separated from one another; frontal as long or longer than the fronto-parietals and inter-parietals together, the latter not separating the parietals behind; 7 upper labials; 38 to 42 scales round the middle of the body; a pair of large preanals; tail almost twice the length of the body; 16-22 keeled lamellae beneath the 4th toe; Brown above with small light spots and two median series of small black spots; a dark brown or black lateral band more or less spotted with white and usually edged below with white extends the length of the body; lower parts of the flanks more or less thickly speckled with black and white; whitish below.

Distribution : INDIA : Assam, Meghalaya, Mizoram, Nagaland, West Bengal, Andaman and Nicobar Islands.

Elsewhere : ANNAM; CAMBODIA; MYANMAR; SIAM; YUNNAN.

Remarks : Common.

FAMILY LACERTIDAE

25. *Takydromus khasiensis* Boulenger, 1917
(Fig. 154)

Takydromus khasiensis Boulenger, 1917, *Mem. Asiat. Soc. Beng.*, v. p. 221

Material examined: 2 exs. (Reg. No. VR/ERS/ZSI/212), 3 km from Mon Rest House, Mon district, 6.8.2005, coll. R. Mathew and party.

Diagnostic characters : Fronto-nasal broader than long; scales on the flanks large, pointed, keeled, bordered above and below by larger strongly keeled scales, 3 to 5 small scales in a vertical series between the larger ones; 2 or 3 femoral pores on each side; Greenish-brown above with metallic glow; a light dorso-lateral stripe, bordered above and below with black spots, from the eye to the base of the tail; a black streak along the side of the head through the ear, and along the flank to the hind limb; lower parts greenish-white.

Distribution : INDIA : Assam, Meghalaya, Nagaland.

Elsewhere : MYANMAR.

Remarks : Not a common species.

FAMILY ANGUIDAE

26. *Ophisaurus gracilis* (Gray, 1845)
(Fig. 155)

Pseudopus gracilis Gray, 1845, *Cat. Liz. Brit. Mus.*, p. 56.

Material examined: Material not available for study from Nagaland but reported by (Dasgupta and Raha, 2005).

Diagnostic characters : Serpentine form, limbs absent; a lateral fold; dorsal scales squarish- rhomboidal, forming straight (14 to 16) longitudinal and (88 to 94) transverse series, keeled; ventrals smooth in 10 longitudinal series; tail twice the length of head and body; three shields in a line between nasal and prefrontal; five supraoculars; Light brown above with a darker lateral band and irregular transverse series of blue, black edged spots, imparting to it a bright blue- green sheen in life; sometimes a series of vertebral spots; below pale brownish or yellowish; Juveniles golden brown with small black dorsal spots.

Distribution : INDIA : Assam, Meghalaya, Nagaland, West Bengal.

Elsewhere : EASTERN HIMALAYAS; MYANMAR.

Remarks : A beautiful species.

FAMILY VARANIDAE

27. *Varanus bengalensis* (Daudin, 1802)

Tupinambis bengalensis Daudin, 1802, *Hist. Nat. Rept.*, iii, p. 67

Material examined : Material not available for study from Nagaland. Reported from Nagaland by (Dasgupta and Raha, 2005).

Diagnostic characters : Scales on the crown of the head larger than the nuchals; supraocular scales small, subequal; abdominal scales smooth, in 90 to 110 transverse rows; tail strongly compressed with a low double-toothed crest above; lateral caudal scales keeled. Brownish or olive above, usually with blackish dots; lower parts yellowish, uniform or mottled with black; young dark olive, with numerous light spots or ocelli more or less transversely arranged and often alternating with dark spots or bars; top of head with light spots; lower parts whitish with narrow dark transverse bars which may be broken up into spots.

Distribution : INDIA : Meghalaya, Mizoram, Nagaland, the whole of India.

Elsewhere : MYANMAR; NEPAL; PAKISTAN; PERSIA; SRI LANKA.

Remarks : Commonly occurring species.

28. *Varanus salvator* (Laurenti, 1768)

Stellio salvator Laurenti, 1768, *Syst. Rept.* (based on Seba's illustr., ii, pl. 88, fig. 2).

Material examined : Material not available for study from Nagaland, but reported from Nagaland by (Dasgupta and Raha, 2005).

Diagnostic characters : Snout depressed at the end; median supraoculars transversely enlarged; dorsal scales keeled; tail strongly compressed with a low double-toothed crest above; Dark olive above with indistinct yellow spots; young with bright yellow rings on a dark skin.

Distribution : INDIA : Assam, Meghalaya, Nagaland, Andaman and Nicobar Islands, Orissa, West Bengal.

Elsewhere : BANGLADESH; SRI LANKA.

Remarks : Common.

SUBORDER SERPENTES

FAMILY TYPHLOPIDAE

29. *Ramphotyphlops braminus* (Daudin, 1803)
(Fig. 156)

Eryx braminus Daudin, 1803, *Hist. Nat. Rept.*, vii, p. 27.

Material examined : 2 exs. (Reg. No. VR/ERS/ZSI/40), 10 km inside the village from Medziphema town, 15 km from Jharnapani, 17.3.1993, coll. Y.P. Sinha and party.

Diagnostic characters : Snout rounded and strongly projecting; rostral $\frac{1}{3}$ to $\frac{1}{4}$ the breadth of the head; 20 rows of scales round the body; 290-320 transverse rows of scales; Light to dark brown above, lighter below; snout, anal region and tip of tail whitish.

Distribution : INDIA : Arunachal Pradesh, Assam, Meghalaya, Manipur, Mizoram, Nagaland, Tripura, whole of India.

Elsewhere : ARABIA; CHINA; HAINAN; INDO-CHINA; MALAY PENINSULA; PERSIA; SRI LANKA.

Remarks : A common species.

30. *Typhlops diardii* (Schlegel, 1839)
(Fig. 157)

Typhlops diardi Schlegel, 1839, *Abbild. Amphib.*, p. 39.

Material examined : 1 ex. (Reg. No. VR/ERS/ZSI/335), Mon, Mon district, 21.6.2007, coll. Shingwong Konyak.

Diagnostic characters : Snout rounded, strongly projecting; rostral $\frac{1}{3}$ to $\frac{3}{5}$ th the breadth of the head; prefrontals in contact with the rostral; 24-26 or 28 scales round the body; 260-300 transverse rows of scales; tail ending in a spine; Brown to blackish above, paler below.

Distribution : INDIA : Assam, Meghalaya, Mizoram, Nagaland, West Bengal.

Elsewhere : FRENCH INDO-CHINA; MALAY PENINSULA AND ARCHIPELAGO; MYANMAR; SIAM

Remarks : A common species.

31. *Typhlops tenuicollis* (Peters, 1864)

Onychocephalus (Ophthalmidion) tenuicollis Peters, 1864, *Mon. Akad. Berlin*, p. 272.

Material examined : Material not available for study from Nagaland, reported by (Mathew, 1995).

Diagnostic characters : Snout rounded, strongly projecting; rostral half as broad as the head, extending to the level of the ocular shields; eyes just distinguishable; supraocular twice as long; nasal incompletely divided; 22 scales round the body; 480- 520 transverse rows of scales.

Distribution : INDIA : Nagaland, Meghalaya.

Elsewhere : Not known.

Remarks : A rare species.

FAMILY BOIDAE

32. *Python molurus* (Linnaeus, 1758) (Fig. 158)

Coluber molurus Linnaeus, 1758, *Syst. Nat.*, 10th Ed. p. 225.

Material examined : Material not available from Nagaland for study. Reported by (Mathew, 1995).

Diagnostic characters : Rostral with a deep pit on either side; 2 pairs of prefrontals, the posterior pair smaller and often broken up; 2 pre and 3 -4 post oculars; 11- 13 upper labials, the first 2 deeply pitted; scales in 60- 75 rows; ventrals 245- 270; caudals 58- 73, paired; anal 1.

Distribution : INDIA : Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, West Bengal, Peninsular India.

Elsewhere : CHINA; HAINAN; HONG-KONG; SRI LANKA.

Remarks : A beautiful snake.

FAMILY COLUBRIDAE

33. *Pareas monticola* (Cantor, 1839) (Fig. 159)

Dipsas monticola Cantor, 1839, *P.Z.S.*, p. 53.

Material examined: 1 ex. (Reg. No. VR/ERS/ZSI/220), 10 km from Zunheboto towards Kohima, Zunheboto district, 11.8.2005, coll. R. Mathew and party.

Diagnostic characters : Diameter of the eye greater than its distance from the mouth; prefrontals in contact with the eye; a subocular in contact with the loreal separate the anterior labials from the eye; 2 post oculars, the lower elongated and extending below the eye; 2 or 3 temporals; 6 or 7 upper labials; ventrals 177-196; caudals 69-87, paired; anal 1; Brown above with transverse blackish bars on the sides; a black bar from above the eye to the nape, and another from behind the eye to the angle of the mouth; head above more or less thickly spotted with black; yellowish below, dotted with brown.

Distribution : INDIA : Assam, Meghalaya, Nagaland, Sikkim, West Bengal.

Elsewhere : Not known.

Remarks : Common.

34. *Ahaetulla prasina* (Boie, 1827)

Dryophis prasinus Boie, 1827, *Isis*, p. 545.

Material examined : 1 ex. (Reg. No. VR/ERS/ZSI/288), Phek district, (road kill), 13.9.2006, coll. R. Mathew and party; 1 ex. (Reg. No. VR/ERS/ZSI/293), 8 km from Kiphire town, Kiphire district, (road kill), 17.9.2006, coll. R. Mathew and party; 1 ex. (Reg. No. VR/ERS/ZSI/295), Chepini stream side, 3 km from Phek town, Phek district, (road kill), 14.9.2006, coll. R. Mathew and party.

Diagnostic characters : Snout without a dermal appendage; nasals in contact with the labials; prefrontals separated from them by 2 or 3 loreals; 1 preocular in contact with the frontal; 2 post oculars; temporals 2+2 or 2+3; 9 upper labials; anterior genials much shorter than the posterior; the scales of the sacral region strongly keeled in males often forming tubercles; ventrals 194- 235; caudals 151- 187, paired; Anal 2; Green above, the interstitial skin black and white forming oblique lines; a white or yellow line along the outer margin of the ventrals.

Distribution : INDIA : Meghalaya, Mizoram, Nagaland, West Bengal.

Elsewhere : THE EASTERN HIMALAYAS; THE WHOLE OF INDO-CHINESE REGION; INDO-AUSTRALIAN ARCHIPELAGO: BANGLADESH.

Remarks : A common species.

35. *Amphiesma khasiense* (Boulenger, 1890)
(Fig. 160, 161)

Tropidonotus khasiensis Boulenger, 1890, *F.B.I.*, p. 344.

Material examined : 1 ex. (Reg. No. VR/ERS/ZSI/290), Lungkhumjung village, Wokha district, 21.9.2006, coll. R. Mathew and party.

Diagnostic characters : Internasals truncate anteriorly; 1 or 2 post oculars; temporals 1+1 or 1+2; 9 upper labials; scales in 19 rows; ventrals 145-155; caudals 94-110, paired; anal 2; Greyish above with a series of dorso-lateral spots; ventrals and caudals yellowish, the outer margins with a spot; parietals usually with 2 small white spots; labials whitish, bordered with black.

Distribution : INDIA : Arunachal Pradesh, Meghalaya, Nagaland.

Elsewhere : MYANMAR.

Remarks : A rare snake.

36. *Amphiesma parallelum* (Boulenger, 1890)
(Fig. 164)

Tropidonotus parallelus Boulenger, 1890, *F.B.I.*, p. 345

Material examined : Material not available for study, reported from Nagaland by (Mathew, 1995).

Diagnostic characters : Internasals truncate; nostril lateral; temporals 1+1 or 1+2; scales in 19 rows; ventrals 163-172; caudals 73-108, paired; anal 2; Greyish brown above, the scales black edged and with 2 dorso-lateral black edged stripes; a black streak from the eye to the angle of the mouth; labials yellow, uniform or black edged; ventrals and caudals yellow with or without black dot on each side.

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

Elsewhere : MYANMAR; TONG-KING; YUNNAN.

Remarks : Commonly occurring species.

37. *Amphiesma stolatum* (Linnaeus, 1758)
(Fig. 162)

Coluber stolatus Linnaeus, 1758, *Syst. Nat.*, 10th Ed. p. 219.

Material examined : 1 ex. (Reg. No. VR/ERS/ZSI/12), Aochakali village near Akhuloto, Zunheboto district, 11.7.1991, coll. Y.P. Sinha and party.

Diagnostic characters : Nostrils placed dorsolaterally; internasals much narrowed anteriorly; frontal constricted in the middle; 1 preocular; temporals 1+1 or 1+2; 8 upper labials; scales in 19 rows; ventrals 118-158; caudals 50- 89, paired; anal 2; Brownish above with black spots and 2 dorso-lateral buff stripes, the stripes best marked on the posterior part of the body where the black spots are least evident; lower parts with or without a spot on the ventral shield; labials yellowish, may or may not be black edged.

Distribution : INDIA : Arunachal Pradesh, Assam, Meghalaya, Manipur, Mizoram, Nagaland, Tripura Sikkim, West Bengal, throughout India.

Elsewhere : BANGLADESH; BHUTAN; NEPAL; PAKISTAN; SRI LANKA.

Remarks : A common species.

38. *Blythia reticulata* (Blyth, 1854)

Calamaria reticulata Blyth, 1854, *J.A.S. Bengal*. xxiii, p. 287

Material examined : Material not available for study from Nagaland, reported by (Dasgupta and Raha, 2005).

Diagnostic characters : Rostral visible dorsally; 1 anterior temporal; 1 post ocular; 6 upper labials; anterior genials twice as long as the posterior; ventrals 127- 155; caudals 26- 32, paired; anal 2; Olive to darker brown above, highly iridescent; young with a white collar.

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

Elsewhere : MYANMAR.

Remarks : An uncommon species.

39. *Boiga cynodon* (Boie, 1827)

Dipsas cynodon Boie, 1827, *Isis.*, p. 549.

Material examined : Material not available for study from Nagaland, reported by (Dasgupta and Raha, 2005).

Diagnostic characters : Pre ocular 1, reaching the upper surface of the head; temporals 2+3 or 3+3; upper labials 8 or 9; scales in 23 (or rarely 25) rows; vertebral row strongly enlarged; ventrals 250- 282, with an obtuse lateral keel; caudals 120-157; Brownish, grayish or pinkish above, with dark brown or black chevron shaped spots; white spots or cross bars sometimes present, best marked on the posterior part of the body; a series of large white (pink in life), dark edged, rounded or rosette shaped spots on the outer margins of the ventrals and usually including scale rows 1 and 2; nape with two longitudinal, parallel, black stripes; another from below the eye to the angle of the mouth; yellowish or grayish below, more or less thickly powdered with brown or black.

Distribution : INDIA : Assam, Meghalaya, Nagaland, West Bengal.

Elsewhere : CAMBODIA; MALAY PENINSULA AND ARCHIPELAGO; MYANMAR; SIAM.

Remarks : Not common.

40. *Boiga gokool* (Gray, 1834) (Fig. 163)

Dipsas gokool Gray, 1834, *Ill. Ind. Zool.*, ii, pl. 83, fig. 1.

Material examined : 1 ex. (Reg. No. VR/ERS/ZSI/301), (road kill), 11 km from Wokha town, Wokha district, 20.9.2006, coll. R. Mathew and party.

Diagnostic characters : Pre ocular 1 or 2; posterior genials in contact with one another; dorsal scales in 21 or 19 rows, vertebrals strongly enlarged; ventrals 219-232; caudals 87-103, paired; yellowish brown above, with a series of vertical Y- shaped markings on each side of the back, separated from one another by a light vertebral line; head with a large, arrow shaped, brown, longitudinally bisected, black-edged mark; a black stripe from the

eye to the angle of the mouth; lower parts whitish, with an almost continuous series of brown or black spots on either side of the ventrals.

Distribution : INDIA : Arunachal Pradesh, Assam, Manipur, Nagaland, West Bengal.

Elsewhere : THE EASTERN HIMALAYAS; BANGLADESH.

Remarks : Not common.

41. *Chrysopelea ornata* (Shaw, 1802)
(Fig. 165)

Coluber ornatus Shaw, 1802, *Gen. Zool.*, iii, p. 477.

Material examined : Material not available for study, reported from Nagaland by (Dasgupta and Raha, 2005).

Diagnostic characters : Frontal shield bell-shaped; loreal elongate; 1 large pre ocular; 2 post oculars; temporals 2 + 2; upper labials 9; dorsal scales in 17 rows; ventrals 213-234; caudal 110-138, paired; anal 2. Greenish yellow above, each scale edged and mesially streaked with black, with more or less distinct black cross bars and a series of large coral red spots on every alternate yellow bands; ventrals yellow with a small black spot on either side.

Distribution : INDIA : Meghalaya, Assam, Nagaland, Bihar, Gujarat, Maharashtra, Orissa, West Bengal.

Elsewhere : THE WHOLE OF INDO-CHINESE REGION; BANGLADESH; CHINA; HONG-KONG; NEPAL; SRI LANKA.

Remarks : A beautiful snake.

42. *Coelognathus helena* (Daudin, 1803)

Coluber helena Daudin, 1803, *Hist. Nat. Rept.*, vi, p. 277

Material examined : Material not available for study from Nagaland, reported by (Dasgupta and Raha, 2005).

Diagnostic characters : Scales in 23 to 29 rows round the middle of the body, more or less distinctly keeled on the posterior part of the body; 8- 11 upper labials, last labial below the eye in contact with the temporal; Ventrals 217-265; caudals 73-100; Anal 1; Brown above with dark brown or black cross bars containing white ocelli, most conspicuous on the anterior part, disappearing gradually on the hinder part of the body, which is brown above with a broad dark stripe on either side; a black vertical streak below the eye, and an oblique one behind it; lower parts yellowish.

Distribution : INDIA : Assam, Nagaland, Uttarakhand, West Bengal, throughout India.

Elsewhere : BANGLADESH; NEPAL; PAKISTAN; SRI LANKA.

Remarks : Not a common species.

43. *Coelognathus radiatus* (Schlegel, 1837)
(Fig. 166)

Coluber radiatus Schlegel, 1837, *Phys. Serp.*, ii. p. 135.

Material examined : 1 ex. (Reg. No. VR/ERS/ZSI/287), Zingkhi river side, 14 km from Kiphire town, Kiphire district, 16.9.2006, coll. R. Mathew and party.

Diagnostic characters : Pre ocular 1; post oculars 2; temporals 2+3; scales in 21 rows; ventrals 222-250; caudals 82-108, paired; anal 1; reddish brown above with four black stripes in the anterior half or two thirds of the body, commencing a short distance behind the neck; the upper pair on either side of the vertebral line broader; the outer pair narrower, usually broken into a series of elongated spots on the anterior part of the body; a black bar across the occiput and three black streaks radiating from below the eye; the young brightly patterned.

Distribution : INDIA : Arunachal Pradesh, Meghalaya, Manipur, Mizoram, Nagaland, Chhatisgarh, Madhya Pradesh, Orissa, Sikkim, Uttaranchal, West Bengal.

Elsewhere : BANGLADESH; MALAY ARCHIPELAGO; THE EASTERN HIMALAYAS; INDO-CHINESE SUBREGION; NEPAL.

Remarks : A common species.

44. *Dendrelaphis cyanochloris* (Wall, 1921)

Dendrophis pictus var. *cyanochloris* Wall, 1921, *Rec. Ind. Mus.* xxii, p. 155.

Material examined: Material not available for study, reported by (Dasgupta and Raha, 2005).

Diagnostic characters : Scales in 15 rows; ventrals 186-211; caudals 135-159; anal 2; Bronzy-olive above, the scales black-edged; ventrals and outer scale rows pale greenish or yellowish; usually no black flank stripe; a broad black temporal stripe, extending on to the neck and forebody, where it may be broken up into spots; lips and lower jaw yellowish.

Distribution : INDIA : Arunachal Pradesh, Assam, Nagaland, West Bengal, Andaman and Nicobar Islands.

Elsewhere : MYANMAR; SIAM; TENASSERIM; THAILAND.

Remarks : Not a common species.

45. *Dendrelaphis gorei* (Wall, 1910)

Dendrophis gorei Wall, 1910, *J. Bombay N. H. S.* xix, p. 829, figs. 1-3.

Material examined: Material not available for study, reported by (Dasgupta and Raha, 2005).

Diagnostic characters : Scales in 13 rows; ventrals 187-199; caudals 139-154; Bronzy-brown above, greenish or grayish below; a more or less distinct yellowish stripe along scale row 1 and 2; a black stripe along each side of the head, extending on to the neck, where it breaks up into vertical bars; lips and chin yellowish.

Distribution : INDIA : Arunachal Pradesh, Assam, Nagaland.

Elsewhere : EASTERN HIMALAYAS; MYANMAR; TONG-KING.

Remarks : Not a common species.

46. *Dendrelaphis pictus* (Gmelin, 1789) (Fig. 167)

Coluber pictus Gmelin, 1789, *Syst. Nat.* i, p. 1116.

Material examined : 1 ex. (Reg. No. VR/ERS/ZSI/13), Aochakali village, near Akhuloto, Zunheboto district, 11.7.1991, coll. Y.P. Sinha and party.

Diagnostic characters : Pre ocular 1; post oculars 2; temporals 2+2; Scales in 15 rows round the middle of the body; ventrals 163-211; with a lateral keel; caudals 112-174; anal 1 or 2; vertebral scales much larger than adjacent ones, but not wider than lowest dorsals, with a distinctly delimited light lateral stripe; Bronze-brown or bronze-olive above; a yellowish or cream coloured stripe bordered on both sides with black runs along flank on to the tail; head brown above with a lateral black stripe running from the nasal scale to the neck where it breaks up into oblique bars; blue or greenish-blue spots on the lateral side, visible when the snake is excited; belly whitish to greenish- yellow.

Distribution : INDIA : Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, West Bengal.

Elsewhere : BANGLADESH, CAMBODIA; INDONESIA; LAOS; MALAYSIA the whole of INDO-CHINESE REGION; EASTERN HIMALAYAS TO SOUTHERN CHINA.

Remarks : An elegant species.

47. *Dinodon septentrionalis* (Gunther, 1875)

Ophites septentrionalis Gunther, 1875, *P.Z.S.* p. 233.

Material examined : Material not available for study from Nagaland, reported by (Dasgupta and Raha, 2005).

Diagnostic characters : Loreal 1; Scales in 17 rows round the middle of the body; Ventrals 207-217; caudals 81-92; anal 1; purplish black above and on the sides, with narrow, white, 25-35 transverse bars, (which expand laterally) on the body; lower parts white, spotted or barred with black; tail heavily marked with black below; hinder part of head white in the young, usually black in the adult.

Distribution : INDIA : Assam, Nagaland, West Bengal.

Elsewhere : THE EASTERN HIMALAYAS; LAOS; MYANMAR; SIAM; TONG-KING.

Remarks : Not a common species.

48. *Elaphe porphyracea* (Cantor, 1839)
(Fig. 168)

Coluber porphyraceus Cantor, 1839, *P.Z.S.* p. 51.

Material examined : Material not available for study from Nagaland, reported by (Dasgupta and Raha, 2005).

Diagnostic characters : Scales in 19 rows; ventrals 190-218; caudals 52-76; Anal 2; 1 pre ocular, 2 post oculars; 1+2 temporals. Reddish brown above with broad dark brown, black edged cross bars; in the young they are entirely black; 2 black dorsolateral lines on the posterior part of the body and tail; a black stripe down the middle of the head and another on each side usually connecting with the first transverse mark on the neck; lower parts uniform yellow.

Distribution : INDIA : Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland, Sikkim, West Bengal.

Elsewhere : CHINA; MALAYA PENINSULA; MALASIA; MYANMAR; SIAM; SUMATRA; THAILAND; YUNNAN.

Remarks : Common species.

49. *Elaphe prasina* (Blyth, 1854)

Coluber prasinus Blyth, 1854, *J.A.S. Bengal*, xxiii, p. 291.

Material examined: Material not available for study from Nagaland, reported by (Dasgupta and Raha, 2005).

Diagnostic characters : Scales in 19 rows; 9 upper labials; 1 preocular; 2 post oculars; temporals 2+2 or 2+3; ventrals 191-209; caudals 91-111; anal 1; Uniform green above, the interstitial skin with black and white reticulations.

Distribution : INDIA : Arunachal Pradesh, Assam, Meghalaya, Nagaland, West Bengal.

Elsewhere : BANGLADESH; CHINA; MALAYSIA; MALAY PENINSULA; MYANMAR; THAILAND; TENG-KING; VIETNAM; YUNNAN

Remarks : Common.

50. *Euprepiophis mandarinus* (Cantor, 1840)
(Fig. 179)

Coluber mandarina Cantor, 1840, *Zool. Chusan*, p. 483.

Material examined : 1 ex. (Reg. No. VR/ERS/ZSI/206), (road kill), Nguti (Sukhalu), Zunheboto district, 10.8.2005, coll. R. Mathew and party; 1 ex. (Reg. No. VR/ERS/ZSI/207), (road kill), Shoire, 10 km from Zunheboto towards Kohima, 11.8.2005, coll. R. Mathew and party.

Diagnostic characters : Head short, very slightly broader than neck; snout round; 7 or 8 upper labials; loreal small or absent; 1 preocular; 1 or 2 post oculars; temporals 2+2 or 2+3; 23 or 21 rows of scales round the middle of the body; Ventrals 200-241; caudals 59-82; Anal 2; Gray or brown above, with a series of large black, diamond shaped marks that enclose oval, rounded or squarish yellow spots; black marks have narrow yellow outer margins; head with three black markings- a band across snout, a crescent-shaped mark that pass through eye and after which it divides in to two, and a forward pointing ^ shaped mark on the neck; yellow or white beneath with large black rectangular spots.

Distribution : INDIA : Arunachal Pradesh, Nagaland.

Elsewhere : CHINA; MYANMAR; TAIWAN.

Remarks : This species could be easily mistaken for an *Oligodon* species. Mathew (2006), reported it for the first time from Nagaland.

51. *Liopeltis stoliczkae* (Sclater, 1891)

Ablabes stoliczkae Sclater, 1891, *J.A.S.Bengal*, lx, p. 234.

Material examined : Material not available for study, reported by (Dasgupta and Raha, 2005).

Diagnostic characters : Scales in 15 rows round the middle of the body; 8 upper labials, 4th and 5th touching the eye; Ventrals 148-154; caudals 116-134; Anal 2; Greyish above, lighter below; a broad black stripe on the side of the head, extending and gradually disappearing on fore part of the body; a grey stripe on the outer margins of the ventrals and a less distinct and thinner median one present or absent.

Distribution : INDIA : Nagaland, Sikkim, West Bengal.

Elsewhere : MYANMAR.

Remarks : Not common.

52. *Lycodon jara* (Shaw, 1802)
(Fig. 169)

Coluber jara Shaw, 1802, *Gen. Zool.*, iii, p. 525.

Material examined : 1 ex. (Reg. No. V1/ERS/ZSI/9376), Chui village, 7 km from Mon, Mon district, 5.6.1990, coll. Y.P. Sinha and party; 1 ex. (Reg. No. VR/ERS/ZSI/291), (road kill), V.K. Village, Zunheboto district, 19.9.2006, coll. R. Mathew and party.

Diagnostic characters : Loreal in contact with the internasal, not touching the eye; 1 preocular; 1+2 or 2+3 temporals; Scales in 17 rows; ventrals 167-188; caudals 52-74, paired; Anal 2. Purplish or brownish black above, stippled all over with yellow.

Distribution : INDIA : Arunachal Pradesh, Assam, Meghalaya, Mizoram, Nagaland, Orissa, Tamil Nadu, West Bengal.

Elsewhere : BANGLADESH, NEPAL.

Remarks : Common.

53. *Oligodon albocinctus* (Cantor, 1839)
(Fig. 170, 171)

Coronella albocinctus Cantor, 1839, *P.Z.S.* p. 50.

Material examined : 1 ex. (Reg. No. VR/ERS/ZSI/289), Tiru village, Mon district, 27.9.2006, coll. R. Mathew.

Diagnostic characters : Scales in 19 rows at mid body; ventrals 177-208; caudals 40-69, paired; Anal 1; upper labials 7; 1 preocular; 2 postoculars; 1+2 temporals. Brown above (pinkish in life) with white, yellow or fawn coloured, black edged cross bars (19-28 on the body and 4-8 on the tail); belly whitish with large black squarish spots at the outer margins of the ventrals; head with typical *Oligodon* pattern.

Distribution : INDIA : Arunachal Pradesh, Assam, Meghalaya, Mizoram, Nagaland, Sikkim, West Bengal.

Elsewhere : BANGLADESH; MYANMAR; NEPAL.

Remarks : Common.

54. *Oligodon cinereus* (Gunther, 1864)
(Fig. 172)

Simotes cinereus Gunther, 1864, *Rept. Brit. India*, p. 215.

Material examined : 1 ex. (Reg. No. VR/ERS/ZSI/39), 10 km inside the village from Medziphema town, 15 km from Jharnapani, 17.3.1993, coll. Y.P. Sinha and party.

Diagnostic characters : Scales in 17 rows; ventrals 157-185; caudals 29-42, paired; Anal 1. Reddish brown above with very distinct black cross bars alternating with one or two indistinct ones in between ; lower portion heavily marked with squarish spots at the outer margins of the ventrals; head with a chevron mark and two other dark transverse bars anterior to it; a black bar across the snout.

Distribution : INDIA : Assam, Meghalaya, Mizoram, Nagaland. West Bengal.

Elsewhere : CAMBODIA; COCHIN CHINA; FRENCH INDO-CHINA; HAINAN; HONGKONG; MYANMAR; SIAM; TENASSERIM; THUA LUN; TONG-KING.

Remarks : Common.

55. *Oligodon dorsalis* (Gray and Hardwicke, 1834)
(Fig. 174, 175)

Elaps dorsalis Gray and Hardwicke, 1834, *Ill. Ind. Zool.*, ii.

Material examined : Material not available for study from Nagaland, reported by (Dasgupta and Raha, 2005).

Diagnostic characters : Scales in 15 rows; ventrals 162-188; caudals 27-51, paired; Anal 2; 7 upper labials; 1 anterior temporal. Brown above with a light vertebral stripe edged with black; tail with 2 black spots above, the first one on the base of the tail, the other near the tip; below brick red or orange.

Distribution: INDIA : Meghalaya, Nagaland, West Bengal.

Elsewhere: MYANMAR.

Remarks : Not common.

56. *Oligodon erythrorhachis* Wall, 1910

Oligodon erythrorhachis Wall, 1910, *J. Bombay N.H.S.* xix, p. 923.

Material examined : Material not available for study from Nagaland, reported by (Dasgupta and Raha, 2005).

Diagnostic characters : Scales in 15 rows round the middle of the body; head scales reduced, no loreal, 7 upper labials; 1 anterior temporal; Ventrals 154, caudals 46; Anal 2; Brown above with light (red in life) vertebral stripe, and with 29 narrow, black, light-edged cross-bars on the body and 7 on tail; yellowish below with squarish black spots at the outer margins of the ventrals and caudals; head with a chevron mark across the prefrontals passing through the eyes, a broad oblique temporal stripe, and a narrow chevron on the nape extending forwards to the prefrontals.

Distribution : INDIA : Assam, Nagaland.

Elsewhere : Not known.

Remarks : A rare snake.

57. *Psammodynastes pulverulentus* (Boie, 1827)
(Fig. 173)

Psammophis pulverulenta Boie, 1827, *Isis*, p. 547.

Material examined : Material not available for study from Nagaland, reported by (Dasgupta and Raha, 2005).

Diagnostic characters : Snout truncate and slightly upturned; frontal narrow and elongated, more or less bell shaped; loreal may or may not be transversely divided; 1 or 2 pre oculars; 2 or 4 post oculars; temporals 2+3; 8 upper labials; 3 pairs of genials, the anterior most pair broadest; ventrals 146-175; caudals 44-71, paired; Anal 1. Light brown above with small black streaks; a series of yellow spots on either side of the vertebral line; lower parts mottled with brown; head with symmetrical markings.

Distribution : INDIA : Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, Orissa, West Bengal.

Elsewhere : EASTERN HIMALAYAS; THE WHOLE OF INDO-CHINESE REGION, BANGLADESH; BORNEO; CHINA; HAINAN; MALAY ARCHIPELAGO; NEPAL; PHILIPPINES; TAIWAN.

Remarks : A common species.

58. *Ptyas korros* (Schlegel, 1837).
(Fig. 176)

Coluber korros Schlegel, 1837, *Phys. Serp.* ii. p. 139.

Material examined : Material not available for study from Nagaland, reported by (Dasgupta and Raha, 2005).

Diagnostic characters : Scales in 15 rows; ventrals 160-187; caudals 120-147, paired; Anal 2; Greyish brown above, yellowish below; the scales on the posterior part of the body edged with black; the young ones olive green with narrow white cross bars.

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

Elsewhere : CHINA; HAINAN; MALAYSIA; MYANMAR.

Remarks : Not very common.

59. *Ptyas nigromarginatus* (Blyth, 1854)
(Fig. 177)

Coluber nigromarginatus Blyth, 1854, *J.A.S. Bengal*, xxiii, p. 290.

Material examined : Material not available for study, reported by (Dasgupta and Raha, 2005).

Diagnostic characters : Internasals nearly as long as the prefrontals; loreal longer than high; upper labials 8, 4th and 5th in contact with the eye; scales in 16 or 14 rows, 4-6 median rows keeled; Ventrals 190-209; caudals 123-142; Anal 2. Green above, the scales edged with black, with four broad, black, longitudinal stripes which in adult are confined to the posterior one third of the body; the dorsal pair, on each side of the vertebral line, are the broadest; the lower pair border the ventrals; lower parts greenish –white.

Distribution : INDIA : Arunachal Pradesh, Assam, Meghalaya, Nagaland, Sikkim, West Bengal.

Elsewhere : BANGLADESH; BHUTAN; CHINA; NEPAL; MYANMAR; TONG-KING; YUNNAN.

Remarks : Not a common species.

60. *Rhabdophis himalayanus* (Gunther, 1864)
(Fig. 178)

Tropidonotus himalayanus Gunther, 1864, *Rept. Brit. Ind.*, p. 265

Material examined : 1 ex. (Reg. No. VR/ERS/ZSI/299), (road kill), 9 km ahead of Mokokchung town from Tuensang, Mokokchung district, 19.9.2006, coll.R.Mathew and party.

Diagnostic characters : Scales in 19 rows; ventrals 151-176; caudals 79-95; upper labials 8 or 9, 4th and 5th or 5th and 6th in touch with the eyes; 1 pre ocular; 3 post oculars; temporals 2+2 or 2+ 3. Olive above with small black spots and two dorsolateral series of small yellow spots; neck with an orange collar; lower parts yellowish, uniform or speckled with brown; labials bordered with black; 2 black cross bars, one below and the other behind the eye.

Distribution : INDIA : Arunachal Pradesh, Meghalaya, Manipur, Mizoram, Nagaland, Sikkim.

Elsewhere : EASTERN HIMALAYAS; BANGLADESH; CHINA; MYANMAR.

Remarks : A common species.

61. *Rhabdophis nuchalis* (Boulenger, 1891)

Tropidonotus nuchalis Boulenger, 1891, *Ann. Mag. Nat. Hist.* p. 221.

Material examined : Material not available for study from Nagaland, reported by (Dasgupta and Raha, 2005).

Diagnostic characters : A nuchal groove and gland present; internasals truncate anteriorly; 1 preocular; temporals 1+1 or 1+2; 6 upper labials; scales in 15 (or 17) rows round the middle of the body; Ventrals 139-160; caudals 41-65; Olive or greenish above, the scales sometimes edged with black; an indistinct dorso-lateral chain of small yellow spots sometimes present; pale greenish below, uniform or the scales edged, spotted or thickly powdered with black; young with a complete yellow collar.

Distribution : INDIA : Nagaland.

Elsewhere : CHINA; MYANMAR; TIBET; TONG-KING; YUNNAN

Remarks : A hill species.

62. *Rhabdophis subminiatus* (Schlegel, 1837)

Tropidonotus subminiatus Schlegel, 1837, *Phys. Serp.*, ii, p. 313.

Material examined : 1 ex. (Reg. No. VR/ERS/ZSI/300), (road kill), Tizit village, Mon district, 25.9.2006, coll. R. Mathew and party.

Diagnostic characters : Scales in 19 rows; 8 upper labials; 1 preocular; 3 post oculars; temporals 2+3; ventrals 163-190; caudals 88-100, paired; Anal 2. Olive brown or greenish above, almost uniform or with black and yellow reticulations, the colour being confined to the interstitial skin and the edges of the scales; an oblique black bar below the eye; belly yellowish, sometimes with a black dot on the outer end of each ventral shield; neck tinged with vermillion, prominent in live specimens.

Distribution : INDIA : Assam, Meghalaya, Manipur, Mizoram, Nagaland, Sikkim, Tripura.

Elsewhere : EASTERN HIMALAYAS; INDO-CHINESE REGION; CHINA; HAINAN; HONGKONG; MALAY PENINSULA AND ARCHIPELAGO.

Remarks : Commonly found.

63. *Trachischium monticolum* (Cantor, 1839)
(Fig. 180)

Calamaria monticola Cantor, 1839, *P.Z.S.* p. 50.

Material examined : Material not available for study from Nagaland, reported by (Dasgupta and Raha, 2005).

Diagnostic characters : Scales in 15 rows; 2 prefrontals; 2 post oculars; temporals 1+1; ventrals 113-130; caudals 26-40, paired; Anal 1. Light brown with blackish longitudinal lines and two more or less distinct dorsolateral stripes; yellowish below, with or without a yellow spot on either side of the neck.

Distribution : INDIA : Meghalaya, Mizoram, Nagaland, West Bengal.

Remarks : A common species.

64. *Xenochrophis piscator* (Schneider, 1799)

Hydrus piscator Schneider, 1799, *Hist. Amphib.*, i. p. 247.

Material examined : 1 ex. (Reg. No. VR/ERS/ZSI/292), Dhansiri river, Dimapur, Dimapur district, 9.9.2006, coll. R. Mathew and party.

Diagnostic characters : Scales in 19 rows; ventrals 122-158; caudals 70-97, paired; Anal 2; 1 preocular; 2 or 3 post oculars; temporals 2+2 or 2+3; 9 upper labials; frontal shield much constricted in the middle. Olive grey above with black spots quincuncially arranged; belly whitish, the ventrals edged with black.

Distribution : INDIA : Meghalaya, Mizoram, Nagaland, the whole of India.

Elsewhere : CHINA; HAINAN; HONGKONG; LAOS; MYANMAR; PAKISTAN; SRI LANKA.

Remarks : Most common species.

65. *Enhydris sieboldii* Schlegel, 1837

Homalopsis sieboldii Schlegel, 1837, *Phys. Serp.*, ii. p. 349.

Material examined : Material not available for study, reported by (Dasgupta and Raha, 2005).

Diagnostic characters : Snout blunt, squarish; internasal longitudinally divided, touching or just separated from the loreal; frontal broader than the supraocular; sometimes 2 preoculars, the lower of the two and the post ocular often extending to below the eye; 7 or eight upper labials, 4th touching the eye.

Distribution : INDIA : Assam, Bihar, Delhi, Madhya Pradesh, Nagaland, Uttar Pradesh, Uttaranchal, West Bengal.

Elsewhere : BANGLADESH; MYANMAR; NEPAL.

Remark : Not a common species.

FAMILY ELAPIDAE

66. *Bungarus fasciatus* (Schneider, 1801) (Fig. 182)

Pseudoboa fasciata Schneider, 1801, *Hist. amph.* ii, p. 234.

Material examined : Material not available for study from Nagaland, reported by (Dasgupta and Raha, 2005)

Diagnostic characters : Scales in 15 rows; ventrals 200-234; caudals 23-39; Anal 1; A prominent vertebral ridge down the middle of the back and tail; alternately banded with black or purplish black and yellow or buff; the black bands as broad as the interspaces or a little broader; a large black mark on the nape; tail blunt.

Distribution : INDIA : Assam, Meghalaya, Mizoram, Nagaland, Andhra Pradesh, Bihar, Orissa, Uttar Pradesh, West Bengal.

Elsewhere : THE WHOLE OF INDO-CHINESE REGION; CHINA; MALAYA PENINSULA and ARCHIPELAGO; MYANMAR.

Remarks : A common species.

67. *Bungarus caeruleus* (Schneider, 1801)** (Fig. 181)

Pseudoboa caerulea Schneider, 1801, *Hist. Amphib.*, 2 : 284

Material examined : Material not available for study, reported by (Dasgupta nad Raha, 2005).

Diagnostic characters : Scales in 15 rows; 1 preocular; 2 post oculars; temporals 1+2; 7 upper labials; Ventrals 194-234 ; caudals 33-52 ; Anal 1; head barely distinct from neck; snout blunt; rostral wider than high; nostril between two nasals; vertebral row of dorsals enlarged; caudals single; blackish above with narrow white cross bars arranged in pairs; belly white.

Distribution : INDIA : Nagaland, Tripura; West Bengal; Peninsular India.

Elsewhere : SRI LANKA.

Remarks : Not very common. A large specimen (road kill) of this species was photographed at Phek. Reported for the first time from Nagaland.

68. *Bungarus niger* Wall, 1908

Bungarus niger Wall, 1908, *J. Bombay N.H.S.*, xviii. p.715

Material examined : Material not available for study from Nagaland, reported by Dasgupta and Raha, 2005.

Diagnostic characters : Scales in 15 rows; 1 preocular, 2 post oculars, Temporals 1+2; Ventrals 216-235; Caudals 49-56; Anal 1. Uniform or bluish-black or black above, white below, with more or less distinct dark mottlings at the base of the ventral and caudal shields.

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

Elsewhere : THE EASTERN HIMALAYAS.

Remarks : Common where it occurs.

**69. *Sinomicrurus macclellandi* (Reinhardt, 1844)
(Fig. 183)**

Elaps macclellandi Reinhardt, 1844, *Calcutta J. Nat. Hist.*, iv, p. 532.

Material examined : 1 EX. (Reg. No. VR/ERS/ZSI/294), Tiru village, Mon district, 27.9.2006, coll. R. Mathew and party.

Diagnostic characters : Scales in 13 rows, smooth; ventrals 182-244; caudals 25-36, paired; Anal 2; 1 pre ocular in contact with the posterior nasal; 2 post oculars; temporals 1+1; 7 upper labials. Reddish above with regular narrow, black transverse bars; head black except for the broad, white, transverse bar; yellow beneath with large black spots or cross bars.

Distribution : INDIA : Assam, Meghalaya, Mizoram, Nagaland, Sikkim, West Bengal.

Elsewhere : EASTERN HIMALAYAS; ANNAM; CHINA; FORMOSA; HAINAN; TONG KING; MYANMAR.

Remarks : A common species.

**70. *Naja kaouthia* (Lesson, 1831)
(Fig. 184)**

Coluber naja Lesson, 1831, *Syst. Nat.* 10th ed, p. 221.

Material examined: 1 ex. (Reg. No. VR/ERS/ZSI/298), (a mutilated dead specimen), Kiphire, Kiphire district, 15.9.2006, coll. R. Mathew and Party.

Diagnostic characters : 1 pre and 3 post oculars; 7 upper labials; temporals 2 + 3; a cuneate scale in between the 4th and 5th lower labials; scales in 21 rows; Neck dilatable into a hood, hood with monocellate mark; ventrals 164-196; caudals 43-58. Olivaceous or brownish to black above with a yellow or orange coloured monocellate mark on the hood; a black spot on the lower surface of the hood on either side, and one or two broad black cross bars on the belly behind it.

Distribution : INDIA : Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, Andaman and Nicobar Islands, Bihar, Uttar Pradesh, West Bengal.

Elsewhere : EASTERN HIMALAYAS; CHINA; MYANMAR; NEPAL.

Remarks : A common species.

FAMILY CROTALIDAE

71. *Ovophis monticola* (Gunther, 1864) (Fig. 186)

Trimeresurus monticola Gunther, 1864, *Rept. Brit. India*, p. 388.

Material examined : Material not available for study. Reported by Smith (1943).

Diagnostic characters : Scales in 23 rows round the middle of the body; 5-9 scales between supraoculars; internasals usually separated by 1 or 2 scales; 7-10 upper labials; 2-4 series small scales between the eye and the labials; ventrals 137-176; caudals 36-62, paired; Anal 1; Light to dark brown above, with large, squarish, irregularly placed dark brown spots or markings upon the back and smaller ones on the sides; head dark brown above; usually a light streak from the eye to the angle of the jaw; lips pale yellowish; lower parts whitish, spotted or powdered with brown.

Distribution : INDIA : Arunachal Pradesh, Assam, Meghalaya, Mizoram, Nagaland, West Bengal.

Elsewhere : EASTERN HIMALAYAS; THE WHOLE OF INDO-CHINESE REGION; ANNAM; CHINA; FORMOSA; MALAY PENINSULA; NEPAL; SIAM; TIBET; TONG-KING; YUNNAN.

Remarks : A common species.

72. *Protobothrops mucrosquamatus* (Cantor, 1839)

Trionocephalus mucrosquamatus Cantor, 1839, *P.Z.S.*, p. 32.

Material examined : Material not available for study, reported by Dasgupta and Raha (2005).

Diagnostic characters : Internasals separated from one another by 3-4 small scales, 2 enlarged scales on a line between them and the supraoculars; 9-11 upper labials, the 1st completely separated from the nasal; supraoculars long, narrow and entire, 14-16 scales in a line between them; scales in 25 rows round the middle of the body, strongly keeled;

ventrals 200-218; caudals 76-91, paired; Anal 1. Greyish or olive brown above, with a dorsal series of large brown, dark edged, irregularly shaped spots and a lateral series of smaller ones; whitish below, heavily powdered with light brown, the light areas appearing as squarish spots; head brown above, paler below, with or without a dark temporal streak; tail light brown, pink in life, with a dorsal series of conspicuous black spots.

Distribution : INDIA : Arunachal Pradesh, Nagaland.

Elsewhere : CHINA; TONG-KING.

Remarks : Not studied by me.

73. *Trimeresurus erythrurus* (Cantor, 1839)
(Fig. 185, 188)

Trigonocephalus erythrurus Cantor, 1839, *P.Z.S.*, p. 31.

Material examined : 1 ex. (Reg. No. VR/ERS/ZSI/297), (a mutilated specimen), Meriyang orchard, Wokha district, 20.9.2006, coll. R. Mathew and party.

Diagnostic characters : Scales in 23 rows; 11-14 scales between the supraoculars; 9-13 upper labials; 1-2 rows of scales between the labials and the elongate subocular; ventrals 151-180; caudals 49-79; Anal 1. Green above, yellowish below; a light stripe on scale row 1, distinct in males; tail usually mottled with brown, prehensile.

Distribution : INDIA : Assam, Meghalaya, Mizoram, Nagaland, West Bengal.

Elsewhere : EASTERN HIMALAYAS.

Remarks : A common species.

74. *Trimeresurus popeiorum* Smith, 1937
(Fig. 187, 189)

Trimeresurus popeiorum Smith, 1937, *J. Bombay N.H.S.* xxxix. p. 730.

Material examined : Material not available for study from Nagaland, reported by Dasgupta and Raha, (2005).

Diagnostic characters : Supra oculars narrow, sometimes divided by a transverse suture, 10-13 scales on a line between them; internasals small, elongate, separated from one another by 1-2 scales; 9-11 upper labials, the 1st separated from the nasal; a single series of scales between the labials and the elongate subocular; scales in 21 rows round the middle of the body; ventrals 164-170; caudals 60-76, paired; Anal 1; Green above, pale green or whitish below; a light stripe bordered below with orange or chocolate along the flank and base of tail on scale row 1; a light post ocular stripe bordered above with orange or chocolate; end of tail usually pinkish.

Distribution : INDIA : Meghalaya, Nagaland, West Bengal.

Elsewhere : BORNEO; MALAY PENINSULA; MYANMAR; SIAM; SUMATRA.

Remarks : Not a common species.

SUMMARY

The present paper deals with the findings of the research project work on 'Studies on Lower Vertebrates of Nagaland'. The study was based on the material deposited in the holdings of Eastern Regional Station, Zoological Survey of India, Shillong. Fresh material and more species were collected and studied in 2005 and 2006 by conducting two field surveys to the different districts of Nagaland. Literature reports on the Fauna of Nagaland are also incorporated to get an overall picture of the Lower vertebrates of Nagaland. In all 140 species of fish (under 70 genera, 24 families, 6 orders) 43 species of amphibians (under 23 genera, 7 families, 1 order) and 74 species of reptiles (under 48 genera, 13 families, 2 orders) are reported herein including 14 new records for fish and 1 new record for reptile.

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Fig. 134 : *Pangshura sylhetensis* – Dorsal view



Fig. 135 : *Pangshura sylhetensis* – Ventral view



Fig. 136 : *Cyrtodactylus khasiensis*



Fig. 137 : *Cosymbotus platyurus*



Fig. 138 : *Gecko gecko*

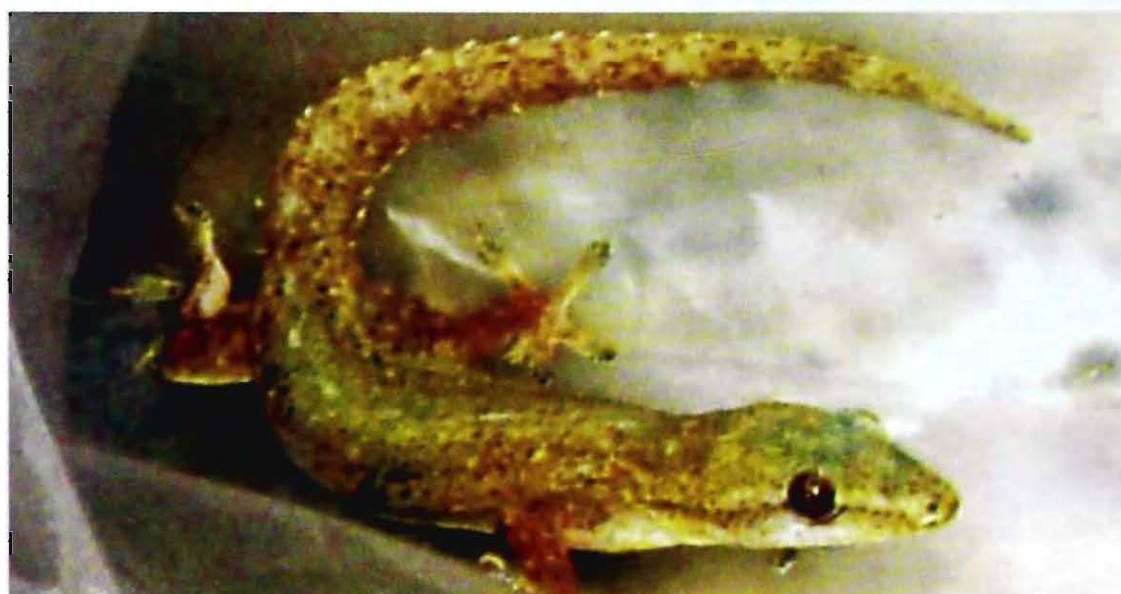


Fig. 139 : *Hemidactylus frenatus*



Fig. 140 : *Calotes jerdoni*



Fig. 141 : *Calotes maria*



Fig. 142 : *Calotes mystaceus*

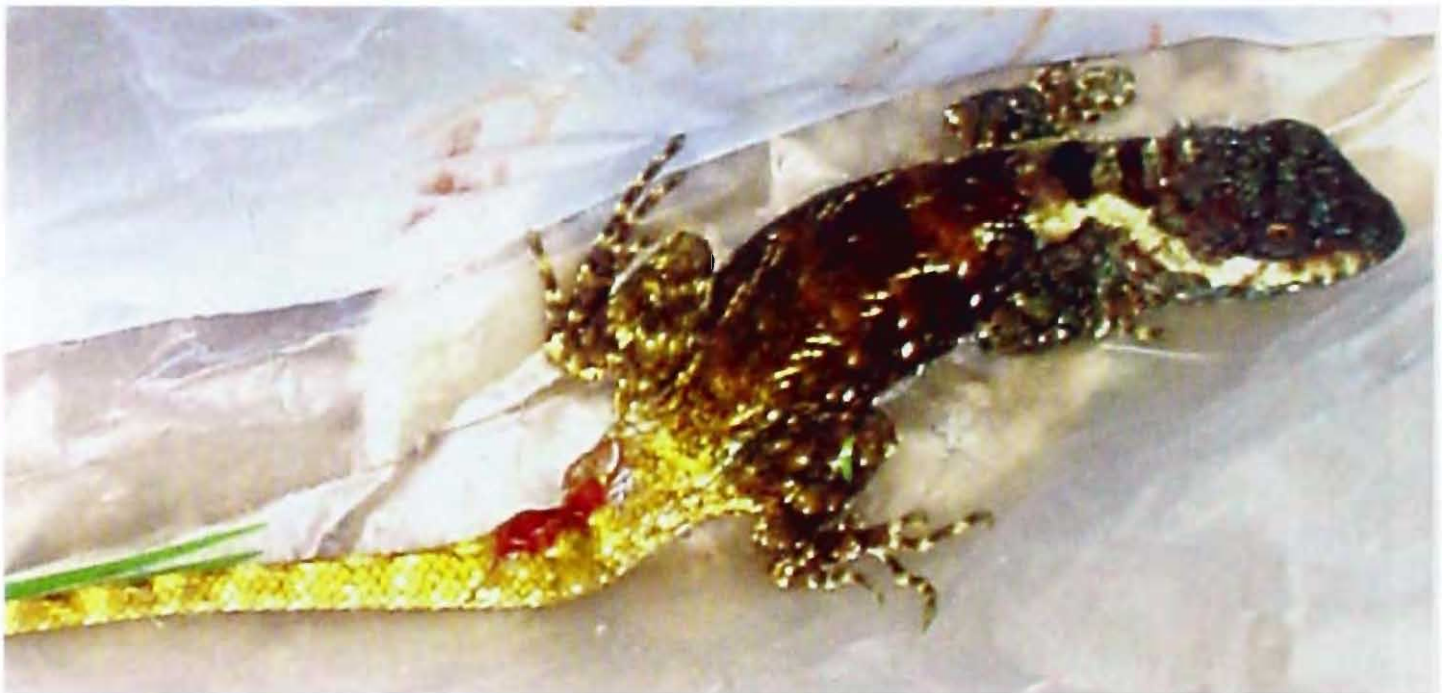


Fig. 143 : An injured *Calotes mystaceus* specimen



Fig. 144 : *Draco norvilli*

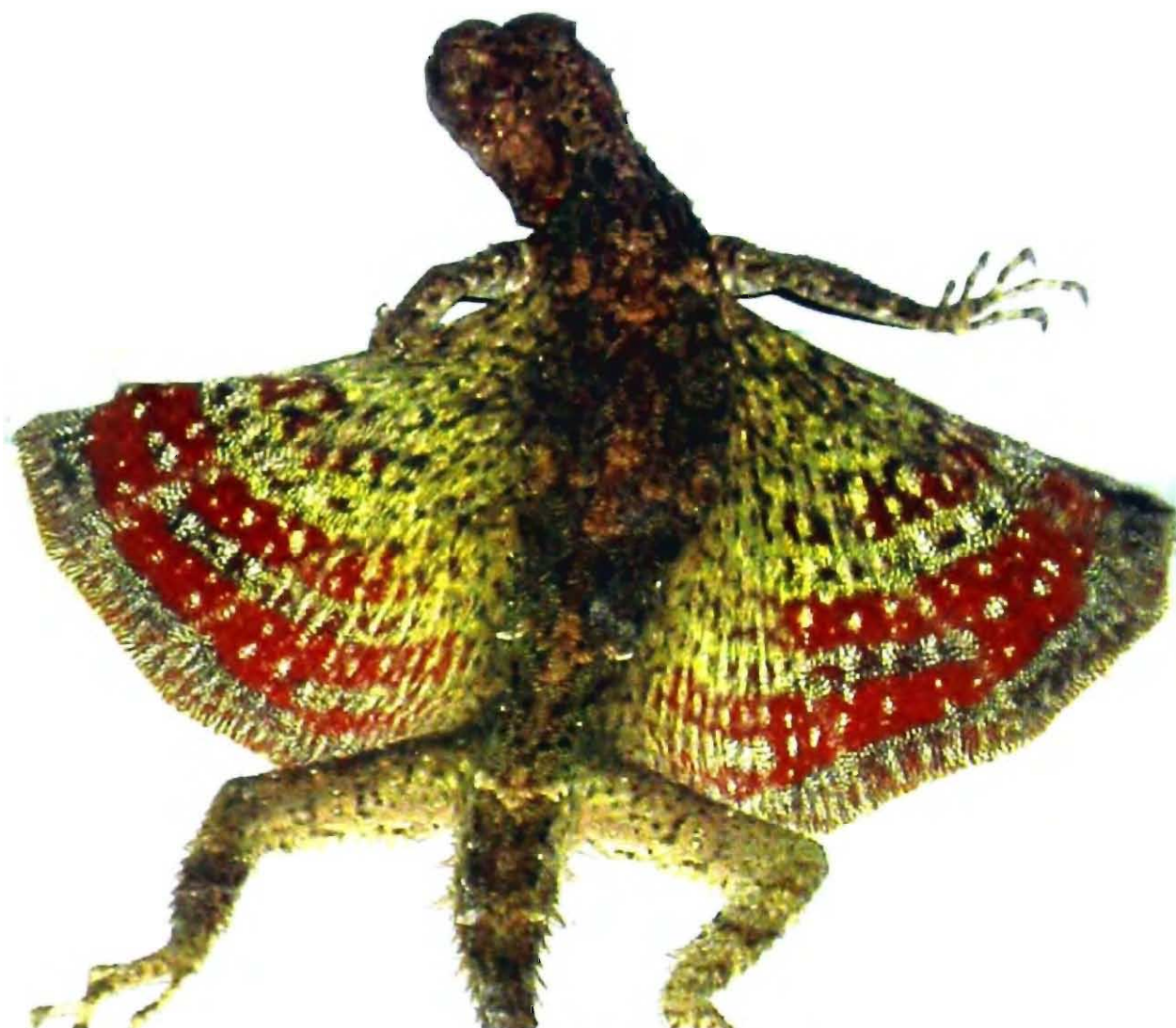


Fig. 145 : *Draco norvilli* with patagium spread out.

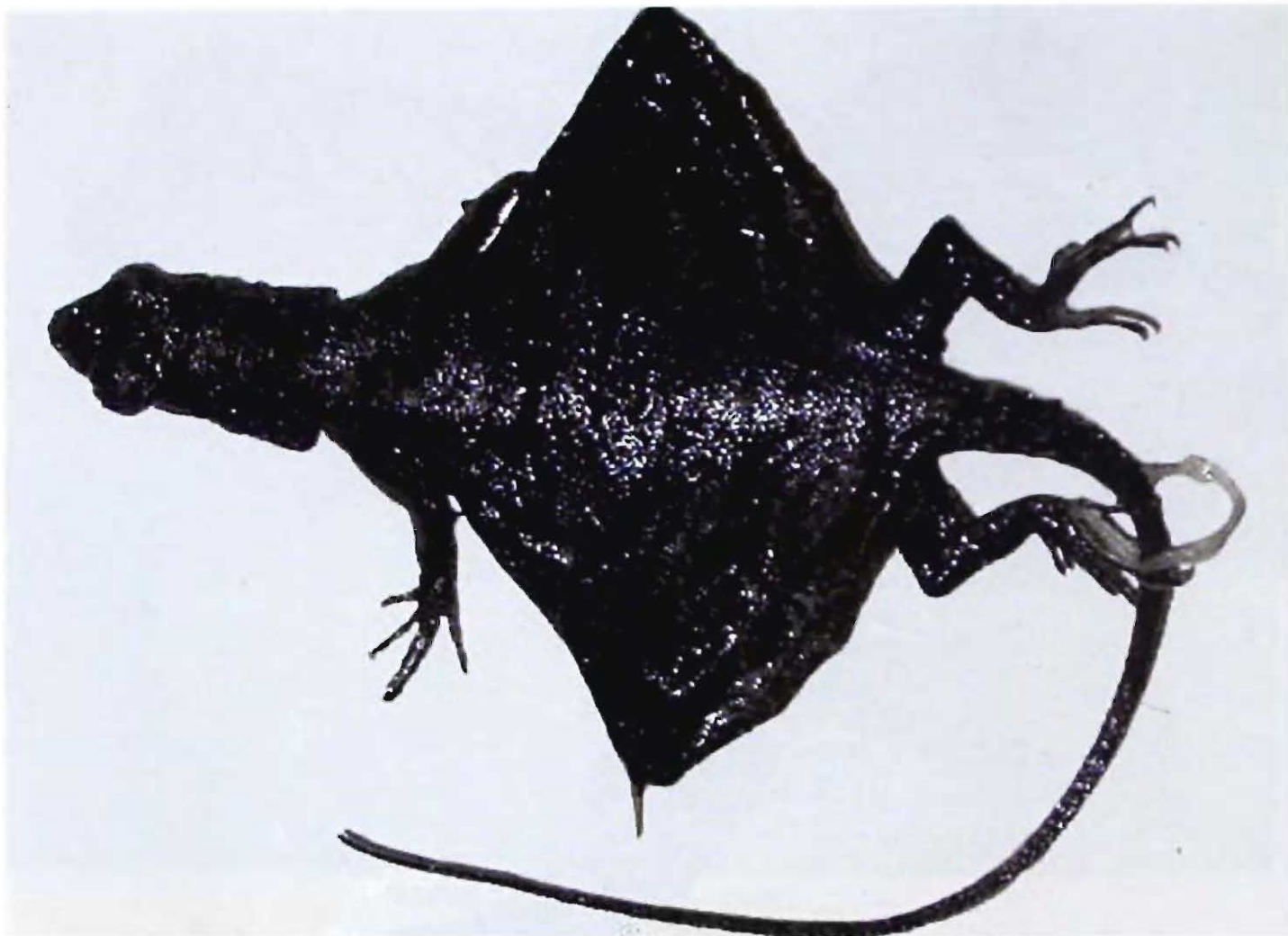


Fig. 146 : *Draco maculatus*



Fig. 147 : *Ptyctolaemus gularis*

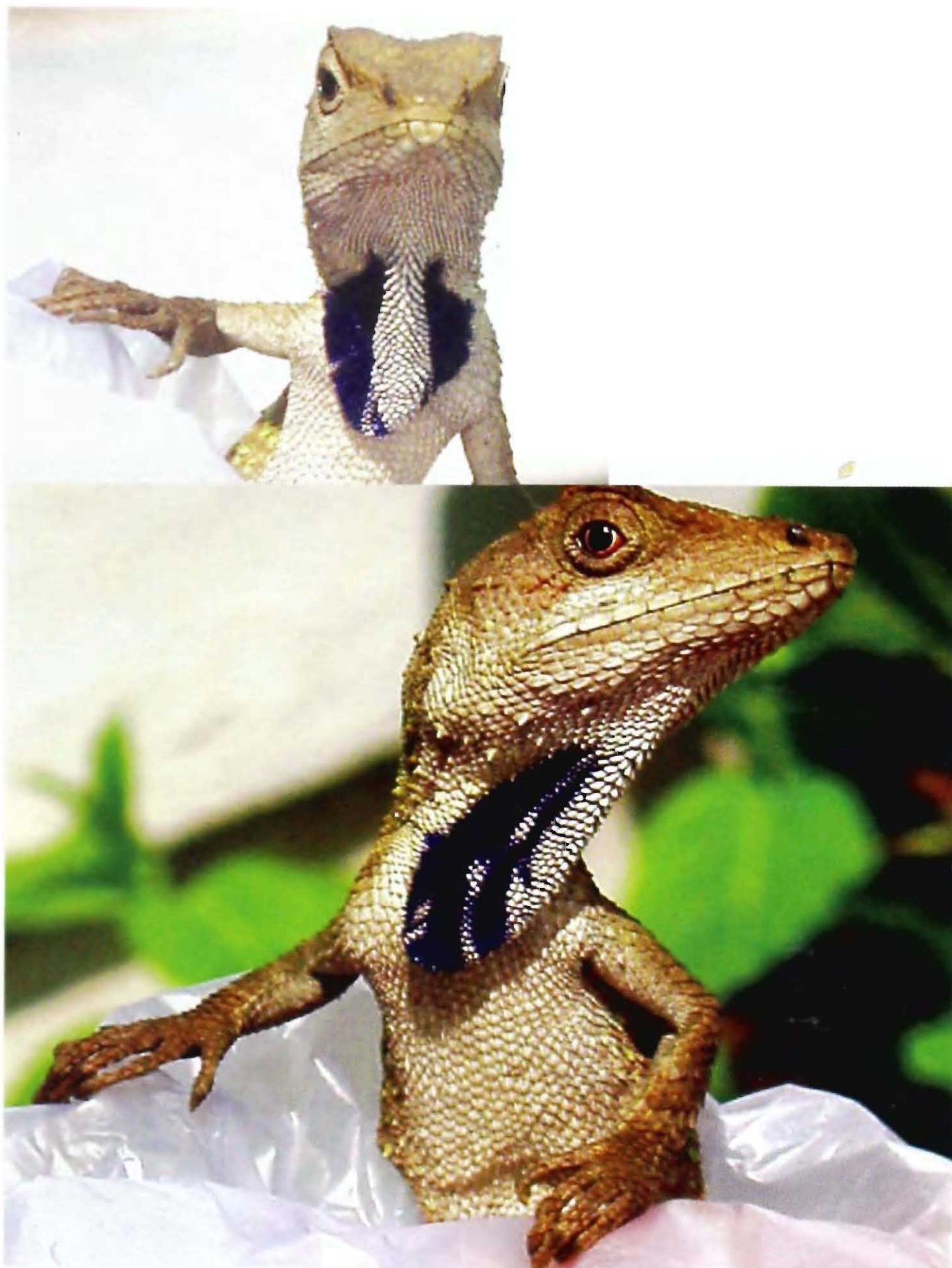


Fig. 148 : *Ptyctolaemus gularis* showing longitudinal folds on throat.



Fig. 149 : *Lygosoma punctata*

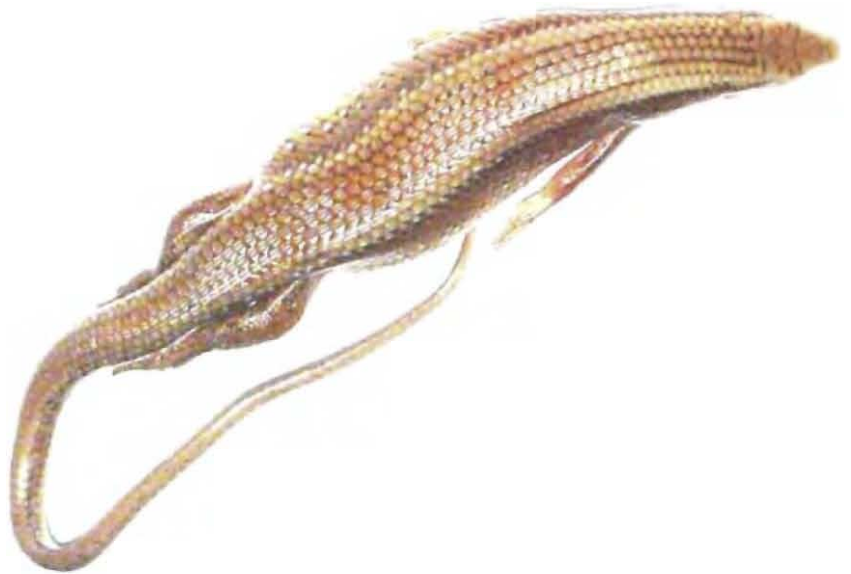


Fig. 150 : *Mabuya multifasciata*



A



B

Fig. 151 : *Mabuya carinata*, A. Dorsal; B. Ventral view



Fig. 152 : *Sphenomorphus indicus*



Fig. 153 : *Sphenomorphus maculatus*



Fig. 154 : *Takydromus khasiensis*



Fig. 155 : *Ophisaurus gracilis*



Fig. 156 : *Ramphotyphlops braminus*



Fig. 157 : *Typhlops diardii*



Fig. 158 : *Python molurus*

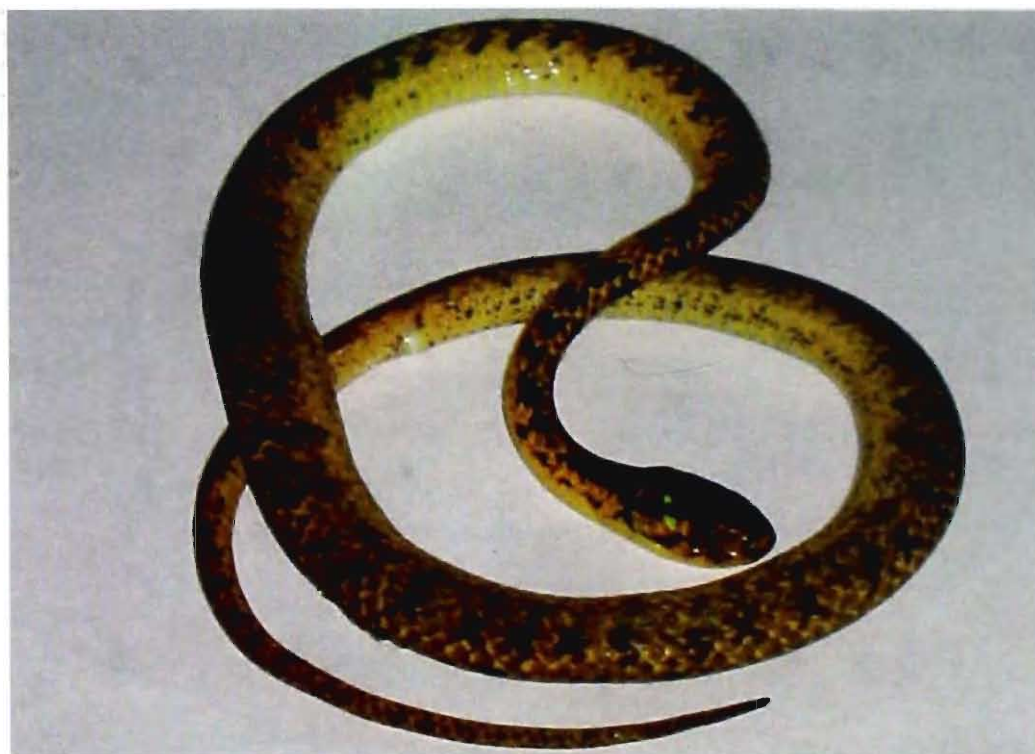


Fig. 159 : *Pareas monticola*



Fig. 160 : *Amphiesma khasiense* – Dorsal view



Fig. 161 : *Amphiesma khasiense* – Ventral view



Fig. 162 : *Amphiesma stolatum*



Fig. 163 : *Boiga gokool*



Fig. 164 : *Amphiesma parallelum*



Fig. 165 : *Chrysopelea ornata*



Fig. 166 : *Coelognathus radiatus*



Fig. 167 : *Dendrelaphis pictus*



Fig. 168 : *Elaphe porphyracea*



Fig. 169 : *Lycodon jara*



Fig. 170 : *Oligodon albocinctus* – Dorsal view



Fig. 171 : *Oligodon albocinctus* – Ventral view

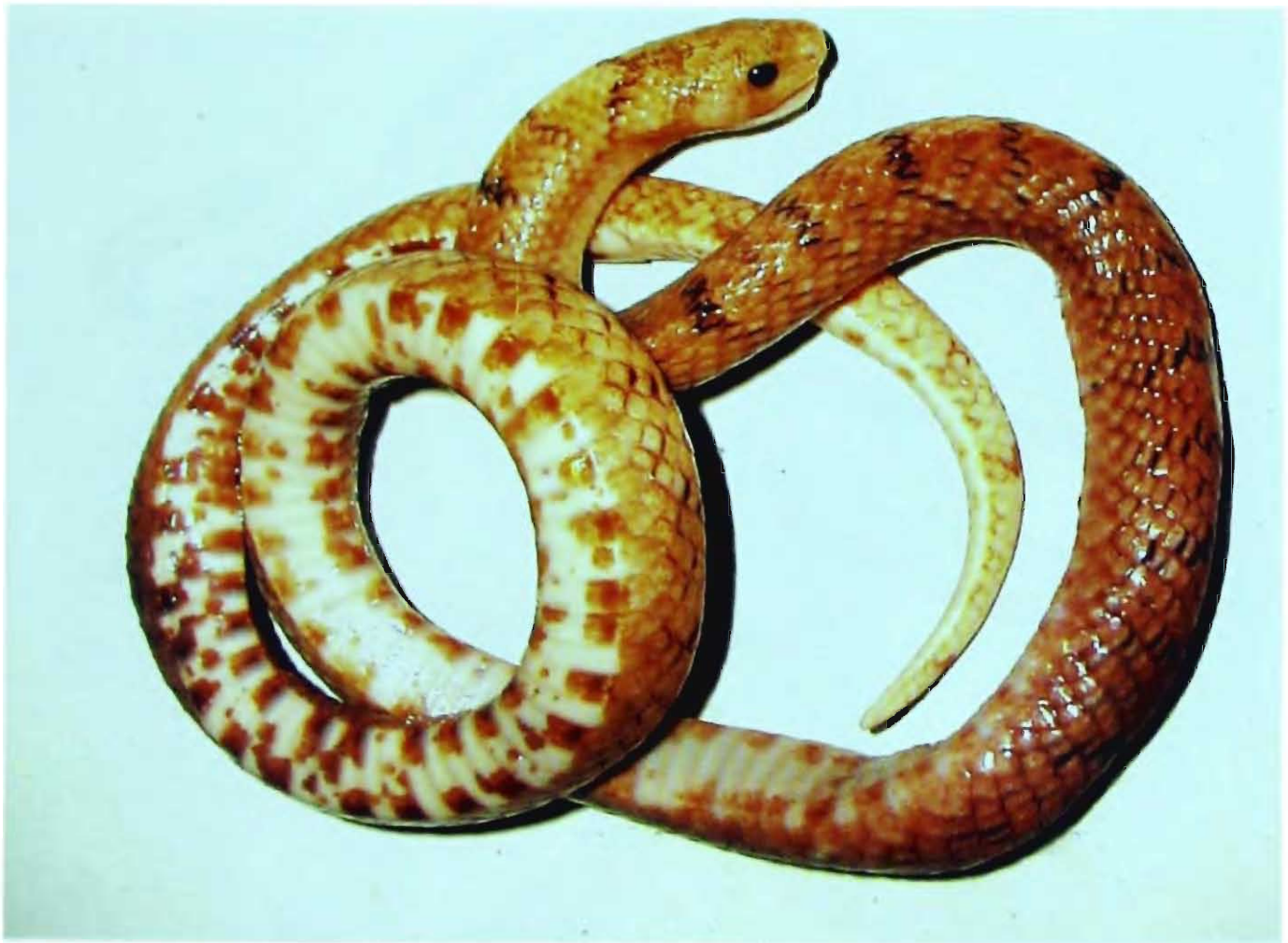


Fig. 172 : *Oligodon cinereus*



Fig. 173 : *Psammodynastes pulverulentus*

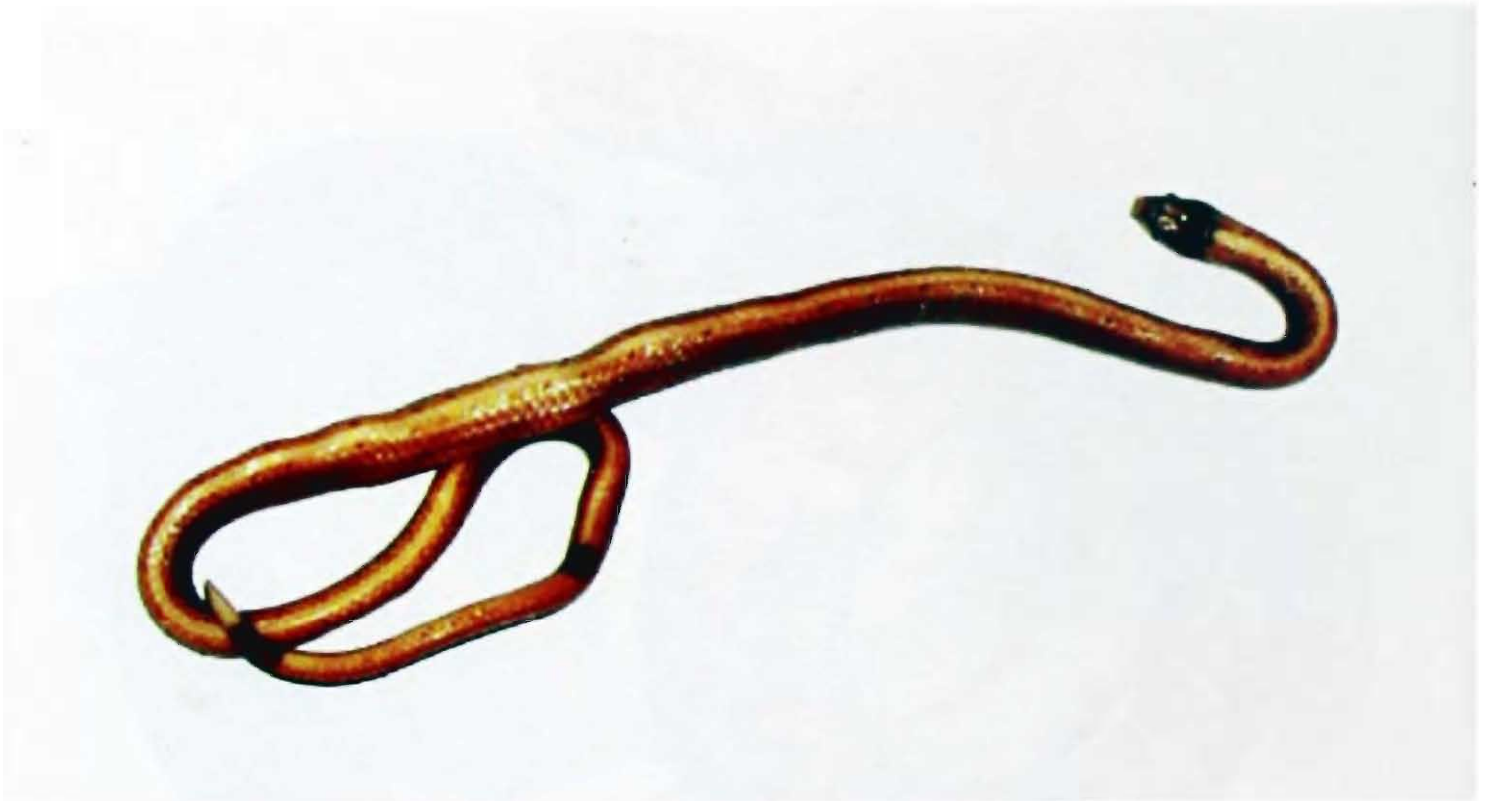


Fig. 174 : *Oligodon dorsalis* – Dorsal view

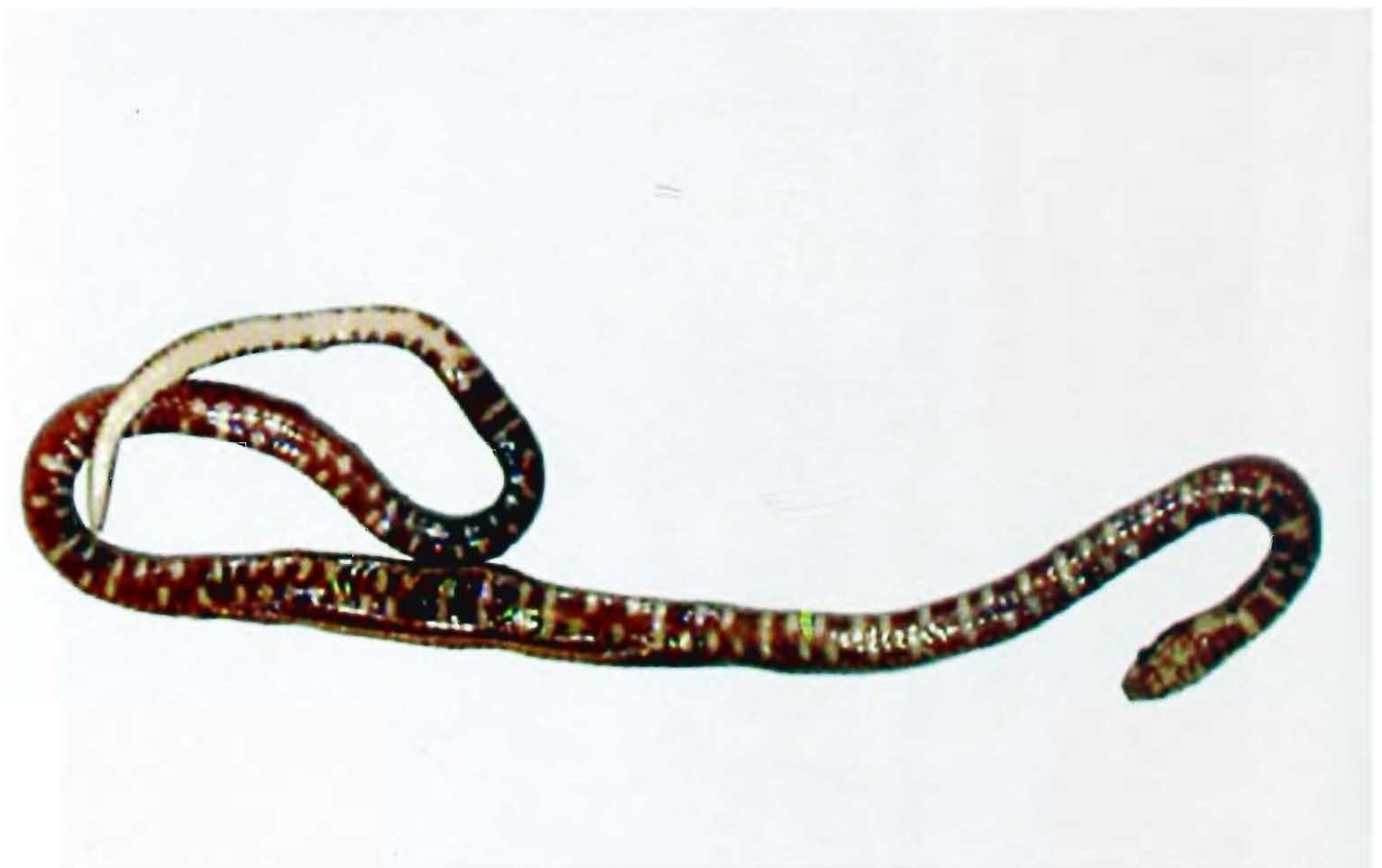


Fig. 175 : *Oligodon dorsalis* – Ventral view



Fig. 176 : *Ptyas korros*



Fig. 177 : *Ptyas nigromarginatus*



Fig. 178 : *Rhabdophis himalayanus*



Fig. 179 : *Euprepiophis mandarinus*



Fig. 180 : *Trachischium monticolum*



Fig. 181 : *Bungarus caeruleus*



Fig. 182 : *Bungarus fasciatus*



Fig. 183 : *Sinomicrurus macclellandi*



Fig. 184 : *Naja kaouthia*



Fig. 185 : *Trimeresurus erythrurus*



Fig. 186 : *Ovophis monticola*



Fig. 187 : *Trimeresurus popeiorum*



Fig. 188 : Head of *Trimeresurus erythrurus*



Fig. 189 : Head of *Trimeresurus popeiorum*